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Where Children Live and Have their Wellbeing; A Study of Housing Conditions and Health in Accra-Ghana.

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Abstract
The study investigates the links between housing conditions and reported health conditions of children in Madina, a suburb of the Greater Accra region of Ghana. The study used purposive sampling and snowballing sampling techniques to sample residents who were parents and guardians (N = 90; 79% = female; age 18 < 50; with children <15 years). Research questions explored include the resident's perceptions and classification of the housing conditions, their perceptions of the aspects of their housing which affects the health of their children and the children's health conditions commonly reported to health institutions. Housing conditions were measured with an observation checklist assessing: overcrowding, ventilation, structural problems, and sanitation among others. Health conditions were measured by the reporting of symptoms. Pearson's correlations, and chi-square tests were used to analyze the relationship between health and housing conditions. The results indicated that majority of respondents (83%) perceived their household conditions as poor. Among others, respondents mentioned poor ventilation, leaking roofs, and poor sanitary conditions as some of the problems they face. About 79% of sampled households reported the occurrence of at least one existing health condition in their children, which they attributed to their housing conditions. These findings highlight the need for housing policies to improve housing conditions in Ghanaian suburbs to strengthen the health and wellbeing among among the residents and especially children.
Keywords: Housing Conditions; Health Problems; Urban Areas; Accra Ghana.

1. Introduction

Ghana, as a developing country faces many concerns, one of the most fundamental is housing. An individual's housing environment has been acknowledged as one of the main settings that influences health (Jackson, 2003). Adequate housing is supposed to satisfy a trinity of needs in an occupant; physical needs, emotional needs (comprising both aesthetic and psychological) and intellectual needs (Astrolabe, 2002). This is especially true when it comes to children health, wellbeing and development since they are the most vulnerable. However, given conditions in Ghana's urban capital where lacking infrastructure and high immigration has created slum-like conditions (Luginaah, Arku, & Baiden, 2010; Fiadzo, 2004), these needs may not be met. The present study therefore examines the living and housing conditions and the associated health conditions of children in those residential facilities in Madina, a suburb of the capital Accra.

Research by Harker (2007) has demonstrated that children's life chances are affected by the standard of their housing conditions and also, these conditions play a vital role in the health of a child. Poor health and poor housing are interrelated in such a way that one cannot do without the other (Thomas & Thompson, 2012). Research demonstrates that, the housing circumstances in which children are raised have significant impact upon their development outcomes and wellbeing (Breysse, 2004; Dockery, Ong, Colquhoun, Li, & Kendall, 2013). Pevalin and his colleagues (2008) further reiterated that poor housing affects the general wellbeing of a person including all inner and outer characteristics of the person.

1.1 Housing situation in Ghana

Ghana has its own fair share of housing conditions. Many communities in the Ghanaian society encounter problems of poor sanitation, overcrowding, homelessness, and unsafe and insecure neighborhood characteristics (Ghana Statistical Service, 2008). Research indicates that (60%) of the Greater Accra Region residents live in houses characterized by poor housing conditions (Luginaah et al., 2010). An analysis of housing characteristics in Ghana revealed that in both urban and rural areas, forty-five (45%) of families dwell in compound houses with inadequate housing conditions (Bank of Ghana housing brief paper, 2007) and for this reason it has been estimated that urban areas in Ghana will require nearly 2 million self-contained dwellings by 2020 to alleviate the problem. Currently about ninety (90%) of urban housing in Ghana is classified as informal due to their lack of authorization and standardizations and almost sixty (60%) of households occupy single rooms, which mostly have poor living conditions.

1.2 Links between child health and aspects of poor housing conditions

The effect of overcrowding, poor ventilation, poor lighting and noisy atmosphere on child health cannot be overemphasized. They are collectively responsible for several acute respiratory infections, irritations of the eyes, nose and throat, severe headaches, dizziness and fatigue (Tulchinsky, 2014; Birley, 2013; Brown, 2002; Zilber, 1993). Noise is believed to disrupt sleep and sleep patterns as well as affect hearing in children. Extreme noise is linked to poor cognitive performance, effects on blood pressure and catecholamine hormone secretions (WHO, 2009; van Kempen et al., 2002). Access to unsafe drinking water; ineffective waste disposal and inadequate food storage and preservation protocols all contribute to the transmission of diarrhoeal diseases. Health problems arising from lack of sanitation facilities are greater among residents of informal settlements and deprived poor communities compared to towns and cities in Ghana.

Also another pathway linking poor housing conditions to poor health is pest and rodent infestation caused by overcrowding, poor sanitation and, cracks and crevices in houses that expose children to the risk of the transmission of many serious diseases and epidemics such as plaque, Hantavirus pulmonary syndrome, rat bite fever and salmonella infestations through food contamination and sometimes by releasing chemicals in the air that trigger allergic reactions and asthmatic conditions (Henriksen, 2013; Wang, Aboul, El-Nour, & Bennett, 2008; Bonnefoy, 2007). The National Institute of Environmental Health Science (2013) reports that one in every five children has severe to cockroach allergen, which increases the severity of asthma symptoms. Furthermore, chronic water intrusion through leaky roofs causes structural deterioration and damp that facilitates the growth of moulds and fungi that cause wheezing, shortness of breath, nasal congestion, eye irritation and skin rashes in children (Jackson, 2013; Morgenroth, 2014). These conditions are more devastating for children due to their vulnerability to diseases.

The Urban Multiple Indicator Cluster Survey (Ghana Statistical Service, 2011) conducted among residents of Accra living in five high-density urban neighborhoods showed that only eleven per cent (11%) of households used an improved sanitation facility or toilet. Fifty two per cent (52%) of households use public facilities and nearly twelve per cent (12%) of households share the toilet facility among five or more households. Despite the impact of housing conditions on the wellbeing of children, public policy has paid surprisingly little attention to this issue (Yawson et al., 2014). Since young children spend most of their time at home, it is important to understand how aspects of poor housing conditions influence the health of children. However, there is limited research in Ghana in this area. This study therefore sought to investigate some characteristics of poor housing quality and how they influenced the health of children in Libya Quarters, Madina – a suburb of Accra, Ghana.

From the above review, it seems that the living and housing conditions of children play a significant role in their health. General findings support a consistency in their influence in child health. Accordingly this study was guided by some research objectives. The first objective was to explore the general housing conditions at Madina, Libya Quarters. Based on the checklist, it is expected that the housing conditions of households would be classified as poor, standard or good based the availability or absence of certain housing variables as define broadly as space, sanitation, ventilation and lighting. It is also expected that the educational level, marital status, income, ethnic backgrounds and number of children of the participants would have an influence on their perceptions of their general housing conditions. The second objective was to determine the common health conditions of children that persist in the study area and to identify perceptions of aspects of housing conditions that influences the health of children in the study location. The authors expected to find a more positive relationship between poor child health and poor housing conditions as reported by residents.

2. Method

A sample consisting of ninety (90) parents and guardians (19 men and 71 women) aged between (18 – 50), who had children aged not more than 15 years, were recruited from the target population to participate in the study using purposive sampling and snowballing techniques.

2.1 Measures

A structured questionnaire comprising fixed-choice and close-ended questions were used to collect data. The questionnaire included questions on: demographic of participants; housing conditions (for example “Do you feel comfortable and secure in the house you live in?”) and; health conditions of their children (for example “Has there been an existing health condition with the child?”). An observation checklist adapted from a housing quality inspection checklist used by Gifford & Lacombe (2006) was also used to obtain information on the living conditions of the participants. The researchers completed the checklist through observation of the residences. The items on the checklist included physical evidence of the infestation of rodents, pests and insects, strong-urine smell and dirty litter, inadequate lighting, cracks in walls, poor ventilation, leaking roofs, noise, and access to clean water.

2.2 Procedure

The researchers identified households with children (≤15 years) within the Libya-Quarters community in Madina, Greater Accra Region, Ghana. The objectives of the study were explained to the parents and guardians of these children and consent was sought from the parents and guardian to participate in the study. The questionnaire was administered in English and in Twi, a common local dialect, to parents who were willing to participate in the study at a place of their choice, which was mostly in their home. The researchers also used an observation checklist to note observable characteristics of housing conditions. Upon completion, the researchers asked the participants to help identify other parents and guardians who would be willing to participate in the study. This procedure was followed on each visit till the sample size was obtained. Data was collected within a period of 4 weeks. The questionnaire was pre-tested at Legon staff village using 20 respondents to check for clarity of the questions and amendments were made where necessary.

2.3 Analysis

The data was analyzed using the Statistical Package for the Social Sciences (SPSS) Version 16. Data analysis was done using descriptive statistics, Pearson's correlations, and chi-square tests to determine the relationship between health and housing conditions.

3. Results

Table 1: Participants demographic characteristics

Demographic characteristics		No. (%)
Gender		
	Male	19(21)
	Female	71(79)
Age		
	18-25 years	10(11.1)
	26-35 years	34(37.8)
	36-50 years	34(37.8)
	>50	12(13.3)
Employment		
	Private sector	84(94)
	Government/civil service	2 (2.2)
	Unemployed	4(4.4)
Education		
	No formal education	10(9)
	Elementary	20(22.2)
	Junior Secondary School	35(38.9)
	Secondary/technical/vocational	16(17.8)
	Tertiary/ college	9 (10.1)
Income		
	GH¢50 – 300*	82(91.1)
	GH¢301 – 600	7(7.8)
	GH¢601 – 900	1(1.1)
Religion		
	Christian	53(59)
	Muslim	37(41)
Marital status		
	Married	73(81)
	Single	12(13.4)
	Divorced	4(4.4)
	Widowed	1(1.1)
Household size		
	2-3	21(23.3)
	4-6	47(52)
	7-12	22(24.4)
No. of rooms per household		
	1-2	47(52.2)

	3-5	43(47.8)
Years of residence		
	<1	4(4.4)
	<10 years	63(70.0)
	11-20 years	12(13.3)
	21-30 years	10(11.1)
	>30 years	1(1.1)

Note: * GH¢ 1 = $ 3.22 (11.11.2014)

Personal characteristics data were collected to describe this population (Table 1). A total of 90 caregivers participated in the study. These participants were more likely to be females (79%) than males (21%) and ranged in age from 18-50 years. They were predominantly Northerners (36.7%), Ewes (33.3%), Akans (25.6%) and Gas (4.4%). Majority (88.9%) of the participants had some formal education; primary (22.2%), Junior High School (JHS) (38.9%), Senior High School SHS/vocational/ technical (17.8%) and tertiary/training college (10%). A higher percentage of the participants worked in the private sector (94%) with only 2% in the government sector and 4% being unemployed and they earned regular monthly income of Gh₵ 50–300 (91.1%), Gh₵ 301–600 (7.8%) and Gh₵ 601–900 (1.1%) and had lived in the study area for varying number of years ranging from< 10 (74.4%), 11-20 (13.3%), 21-30 (11.1%) and >30 (1.1). Regarding religious affiliations and marital state, participants indicated that they were either Christians (59%) or Muslims (41%) and were either married (81%), single (13%), divorced (4%) or widowed (1%). They had household sizes of 2-3 (23.3%), 4-6 (52%) and 7-12 (24.4%) and shared 1-2 rooms (77.8%) or 3-5 (22.5%) per household. The number of children they had ranged from 1-10.

3.1 Housing conditions

Participants' understanding of poor housing conditions was assessed and analyzed based on two domains; physical and socio-emotional factors pertaining to the housing conditions. Nearly half of the participants (48.8%) had some knowledge about the physical factors within the housing environment that were more likely to have great effect on the health of the dwellers such as lack of toilet facilities, bathroom and kitchen facilities, limited space and poor ventilation in the rooms (Table 2). A third (32.2%) of the participants understood the socio-emotional factors as those that had influence on the emotional wellbeing of the dwellers based on the housing environment and its stability.

Table 2: Housing conditions and health problems reported

Housing conditions	No (%)
Housing factors affecting child health	
Structural factors	44(48.9)
Environmental factors	46(51.1)
Security/comfort	
Feels secure and comfortable	64(71)
Not safe	26(29)
Major child health conditions*	
Malaria	42(46.7)
Asthma	7(7.8)
Cold/coughs	7(7.8)
Severe headaches	5(5.6)
Eye problems	6(6.7)
Tuberculosis	3(3.3)
Ulcers	3(3.3)
Person who diagnosed health condition	
Participants themselves	53 (58.9)
Medical officers	36 (40)
Neighbors	1 (1.1)
Main contributors to poor health conditions*	
Poor sanitation	58(64.5)
Dust	24(27.1)

Poor ventilation	4(4.4)
Poor lighting	4(4.4)
No idea	26 (28.9)
Researchers' observation using the Housing Quality Inspection Checklist (2005)*	
Overcrowding	45(50)
Poor ventilation	45(50)
Structural problems	23(25.6)
Leaky roofs	22(24.4)
Poor sanitation	45(50)
Unsafe drinking water	58(64.4)
No toilets facilities	14(15.6)
No bathrooms	3(3.3)
Kitchen	9(10)
Noise	7(7.8)

*Includes multiple responses

Majority (83%) of the participants described their housing conditions as negative, indicating lack of proper infrastructure, toilet or bathroom facilities, poor sanitary and noisy environment, inadequate lighting in rooms and streets and presence of uncontrollable dust in the atmosphere as a result of untarred roads. The remaining (17%) perceived their housing conditions as favorable and manageable because they had good lighting systems, toilets, bathrooms, kitchens, good drinking water and at least two spacious rooms as well as a compound for other activities. A sizeable percentage (25%) of the participants reported that their dwellings had leaky roofs when it rained. 71% of respondents indicated that they felt secured and comfortable with their dwellings responded while 29% reported they did not.

Asthma, wheezing, cold, cough and severe headaches constituted 56.1% of the household health conditions reported by the participants. 79% of the participants had at least a child with an existing health condition such as severe headaches, malaria, wheezing, asthma, sever coughs, diarrhea, fever and cold which were diagnosed and treated by either the participants (58%), medical doctors (41%) or neighbors (1%). The parents attributed the health conditions of their children to poor sanitation (64.5%), dust (27.1%), poor ventilation (4.2%) and poor lighting (4.2%). The duration of the children's health condition ranged from one week to fourteen years.

Using the housing quality inspection checklist (2005), the researchers observe that the dwellings were overcrowded (50%) and poorly ventilated (50%), had structural problems (25%), had poor sanitation and unsafe drinking water (64.7%), lacked toilets (15.6%), bathrooms (3.3%) and kitchen (10%).

3.2 Relationships among study variables

To examine the relationships between the common health conditions and parental education and income, Pearson's bivariate correlations between these variables were investigated. Variables entered included demographic variables.

Table 3: Bivariate correlations among demographics, housing conditions and child health conditions

	1	2	3	4	5	6	7	8	9	10	11
Gender (1)											
Age (2)	-.091										
Religion (3)	.045	.191									
Marital status (4)	.159	**.227***	**.216***								
Ethnicity (5)	.239*	-.071	.114	.107							
Education (6)	-.104	-.079	**-.315****	-.137	-.059						
Household size (7)	-.096	.180	.059	.113	-.032	-.130					
Monthly Income (8)	-.008	-.108	-.047	-.028	.045	-.102	**-.212***				
Child Health condition (9)	-.033	.035	-.128	-.062	.098	-.078	.140	**.268***			
Structural housing condition (10)	.084	.118	-.095	-.045	.099	-.084	-.084	-.058	.054		
Environmental housing conditions (11)	-.103	.046	.019	-.006	.061	-.021	-.100	.140	.034	**.639****	

Note: *N*= 90; *. p <.05). ** p <.01.

Child health conditions were significantly and positively related to housing conditions (r = .27; p > 0.05), indicating the more structural problems were reported, the more the likelihood for child health conditions. Structural housing conditions were also related to environmental housing conditions (r = .64; p > 0.01), which means that when respondents reported structural problems, they were also likely to report environmental problems. The results indicate a significant negative correlation between monthly income and household size (r = -.21; p > 0.05).

4. Discussion

The UN-Habitat (2010) reports that, adequate housing is a basic human need that is important in order to enjoy all other human rights. Although issues such as childhood health and education have received mainstream support and attention from governmental and non-governmental agencies, housing needs and how they relate to health and education have received less attention. Adequate home and supportive environments are essential for children's overall development and school success. Importantly, many studies draw the connection between housing type and wellbeing of occupants (Fiadzo, 2004; Braimah & Lawson, 2014). The current study investigated the general housing conditions at Madina, Libya Quarters in Ghana, West Africa and the perceptions of aspects of housing conditions that influence the health of children in the study location. The study also explored the common childhood health conditions that persist in the study area.

First, according to the Housing Quality Inspection Multiple Checklist (2005) used, the dwellings in Madina, Accra that were observed were found to be overcrowded (50%), poorly ventilated (50%), had structural problems (25%), had poor sanitation and unsafe drinking water (64.7%), lacked toilets (15.6%), bathrooms (3.3%) and kitchen (10%). These housing conditions are reported to predispose dwellers especially children to myriad of issues such as lack of privacy, fast spread of communicable diseases, physical and mental health problems (Harker, 2006; UN-Habitat, 2010; UNICEF, 2012).

The results showed that majority (83%) of the participants described their housing conditions as negative, indicating lack of proper infrastructure, toilet or bathroom facilities, poor sanitary and noisy environment, inadequate lighting in rooms and streets and presence of uncontrollable dust in the atmosphere as a result of untarred roads. The remaining (17%) however perceived their housing conditions as favorable and manageable citing good lighting systems, toilets, bathrooms, kitchens, good drinking water and at least two spacious rooms as well as a compound for other activities. These results are comparable to recent results obtained in similar suburbs in Accra, Ghana where 57% and 70.7% of children sampled from Asylum Down and Old Fadama respectively described their housing conditions as poor (Braimah & Lawson, 2014). Indeed much of the housing in Ghana has been described as deteriorated with limited access to social services (Twum-Baah et al., 1995) which has been attributed to factors such as rapid urbanization, low income levels, and the gradual withdrawal of public funds for housing (Fiadzo, 2004).

Almost half of respondents (48%) in the current study exhibited good knowledge on the factors within their housing environment that were more likely to affect the health of the dwellers. They mentioned the lack of toilet, bathroom and kitchen facilities, limited space and poor ventilation in the rooms. In research work, a good indicator of sanitation in a house is the availability of these facilities especially toilet (Ferguson, Cassells, MacAllister, & Evans, 2013) and poor sanitation facilities has been consistently related with health conditions such as diarrhea in children particularly in low-income countries (Bradley & Putnick, 2012). Children are especially vulnerable due to their play and exploration habits and also their high body vulnerability to environmental pathogens. Additionally, children also have a limited capacity to suppress bowel movements hence the lack of toilet facilities in their homes affects their physical and mental health (Bradley & Putnick, 2012; Ludwig, Fernando, Firmino, & Tadeu, 1999).

Common health problems reported by respondents included Asthma, wheezing, cold, cough and severe headaches with (79%) of the participants indicating their child has an existing health condition such as severe headaches, malaria, wheezing, asthma, sever coughs, diarrhea, fever and cold. Poor housing leaves children vulnerable to mosquitoes and unfavorable weather conditions. Consequently, participants attributed the health conditions of their children to poor sanitation (64.5%), dust (27.1%), poor ventilation (4.2%) and poor lighting (4.2%). The finding is in line with UN-Habitat's (2010) state of the World Cities Report in which bad living conditions were found to be responsible for more than half of the global child mortality caused by pneumonia, diarrhea, malaria, measles, and HIV/AIDS. The duration of the children's health condition ranged from one week to fourteen years meaning that children will in addition miss essential school days.

With regards to the investigated relationships among the variables, the noteworthy significant correlations occurred between child health conditions and housing conditions ($r = .27$; $p > 0.05$), which is in agreement with previous literature (Morgenroth, 2014; Tulchinsky, 2014; Birley, 2013; Henriksen, 2013; Jackson, 2013; WHO, 2009). Structural housing conditions were also related to environmental housing conditions ($r = .64$; $p > 0.01$), which means that the residences that had structural problems were also likely to have environmental problems. The results showed a negative correlation between monthly income and household size ($r = -.21$; $p > 0.05$) which means that an increase in monthly income corresponds with a reduction in household size. This result may seem contradictory but could imply that lower income families are more likely to live in communal houses (shared facilities), which are larger than the average family house. According to the Ghana Living Standards Survey (Ghana Statistical Services, 2008), about 79% of households in Ghana lived in compound houses. Living in compound houses is associated with the sharing of toilets and kitchens, which impacts the wellbeing of children. Children are exposed to high noise levels, poor hygiene, and crowded areas.

5. Conclusion

Ghana has its own fair share of housing conditions. Many communities in the Ghanaian society encounter problems of poor sanitation, overcrowding, homelessness, and unsafe and insecure neighborhood characteristics (Ghana Statistical Service, 2008). The current study investigated the housing conditions and the corresponding health problems of children living in those conditions among a sample of respondents from Madina, Accra. Results indicate that a majority of respondents perceived their household conditions as poor (83%). Among others, respondents mentioned poor ventilation, leaking roofs, and poor sanitary conditions as some of the problems they face. Respondents also seemed to make the association between their household conditions and the health conditions children in the residences faced including asthma, vision problems and diarrhea (79% of the respondents' children had an existing health condition). In light of these results, it is recommended that governmental agencies responsible for child welfare promotion and protection and for improving the quality of homes such as the Ministry of Works may need to implement and enforce existing housing policies as well as formulate new housing policies to help families improve their housing conditions.

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