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RESEARCH ARTICLE

Neighbourhood Characteristics and Health of Urban Residents in Uyo Metropolis, Nigeria

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Abstract

The study seeks to demonstrate the interactive association among neighbourhood factors and the relationship between individual neighbourhood factor and the health status of the residents of Uyo Metropolis, Nigeria. A cross-sectional survey in Uyo Metropolis was based on 400 households drawn from 40 spatially demarcated areal units .Questionnaires were administered to heads of household to collect data on socio-economic, neighbourhood and health features. The multiple correlation analysis was applied to explore the interrelations among the set of neighbourhood factors and between individual neighbourhood factors and health status of residents. Results show significant relationship among the neighbourhood factors and between individual neighbourhood factor and health status. The results of this study urge State and Municipal authorities to evolve an effective urban development policy that would guarantee the provision of amenities within the neighbourhoods of the city.

Introduction:

Over the past decades, social, economic and physical conditions in neighbourhoods have been acknowledged to play critical roles in shaping the health and well-being of individuals (Robert,1999).It has become clear that there is need to create "healthy environments" that are conducive to socio-economic and physical activities and that support healthy living.

A growing body of research in epidemiology and public health has examined how characteristics of the places where people live are related to a variety of health outcomes including health related behaviours, prevalence and incidence of diseases. Studies in Orebro municipality Sweden investigated the association between different Neighbourhood factors and individual self-related health. In the said studies, 2346 respondents were asked questions about their living conditions, health risk factors and individual health. Findings showed that the Neighbourhood factors, housing area and residential stability were associated with self-related health (Carolyn, Gail and Krintin, 2011). Poor quality housing, few resources and usage conditions were linked to stress anxiety and depression (Aneshensel and Sucoff, 1990). Access to facilities, including hospitals, and reliable public transport and retail stores were established to have significant relationship to the well-being of residents (Leventhal and Brooks-Gunn, 2000). Further studies by Aneshensel and sucuff (1998) have linked Neighbourhood characteristics with poor mental health and problem behaviors like delinquency crime, drug abuse and adolescent childbearing. Chronic ailment such as tuberculosis, asthma, and diabetes have also been linked to physical characteristics of Neighbourhoods. Poor air water quality, building conditions, traffic conditions and other features of Neighbourhood were equally linked to health problems (Heinrick, Lee and Suminski, 2007).

Health can also be shaped by the social environment of Neighbourhood, that is, by the degree of mutual trust and feelings of among neighbours. Studies conducted in America revealed that residents of 'close-knit' neighbourhoods may be more likely to work together to achieve common goals, to exchange information and to maintain informal social controls all of which can directly or indirectly influence heath (Putnam, 1993). More so, when residential turnover is high, people are less likely to form relationships. Similarly, people do not tend to form relationships

when they live in social disorders, because they mistrust their neighbours- a situation which is critical to individual emotional well-being (Samson, Morenoff and Cannon-Rowley, 2002).

The present study is one of such efforts by urban planners to explore the interrelationships between Neighbourhood characteristics and health of the residents in cities of developing countries. To the authors' knowledge not much has been done on Neighbourhood characteristics in Uyo metropolis where this study was based.

Study Area

Uyo is a rapidly developing city situated in the Niger-Delta, South-South Nigeria. Its locational latitudes and longitudes are between $7^{o}47^{1}$ and $8^{o}03^{1}$ North and between $4^{o}52^{1}$ and $5^{o}07^{1}$ East respectively. Politically, Uyo is the state capital of Akwa Ibom State created in 1987. The city is currently undergoing major infrastructural and economic renaissance anchored on oil proceeds accruing to it from the federation account. Demographically, Uyo is a home to more than 150,177 people (NPC 1999 projection) with steady influx of people from neighbouring states. The sub-equatorial South climate condition of the area affords it a mean annual temperature of $27^{o}C$.

The urbanization process in Uyo has been quite dramatic. Uyo metamorphosed from the status of an administrative centre in 1905 to that of a "third class township" and later as district headquarter in 1919. Uyo attained the status of a provincial headquarter in 1959. She became a divisional headquarter in1970, and a capital city in 1987.

Method

Design and Data Collection

A cross-sectional survey in Uyo metropolis was based on 400 households drawn from forty spatially demarcated area units. The procedure for delineation of areal units followed the "distance-based units" (Network bands) concept of Neighbourhood (Guo and Bart, 2011). This method was preferred because it provides more tangible indication of the spatial extents of the Neighbourhood factors' influence. Moreover, since the networks bands are constructed based on the streets network, they have the desirable quality of including major natural/physical barriers in their boundary definition (Galster, 2001).

Household sampling was performed through the systematic method. A total of 10 households were drawn from each areal unit (Neighbourhood) to sum up to 400 households (N=400). Questionnaires were administered to heads of households or their representative who were asked to respond to questions bothering households socio-economic and neighbourhood features.

Outcome measures (Indicator of Health status)

The outcome measure in this study was the presence of commonly reported environmentally-induced illnesses. With zero (0) denoting the absence of illness and one (1) indicating its presence, a checklist of illnesses obtained from the Ministry of Health was included in the questionnaire for respondents to report all illnesses from which household members suffered. They were also required to provide additional information on other illnesses where applicable.

Neighbourhood Indicator

Neighbourhood indicators were selected in order to observe and accurately measure the attributes of the physical and social environment. Based on the theoretical significance of sets of variables from relevant literature, and an analysis of the environmental characteristics of our study Neighbourhoods, eight indicators of Neighbourhood characteristics were assessed as possible factors affecting the outcome variables of health. These include: pollution in the neighbourhood (noise and air); distance to workplace; distance to nearest neighbour; relationship with neighbour; distance to water supply; distance to health facility; distance to waste receptacle; and stagnant water.

Statistical Analysis

Apart from the computation of frequency distribution for categorical variable, (to explore how the neighbourhood factor interrelates with the health status) correlation analysis was used. An index representing the health status of the people per neighbourhood was formulated using the weighted scores (zero (0) for non-occurrence of illness and one (1) for occurrence) on households' response to the health features on the questionnaire. The health index representing dependent variable (Y) was cross-correlated with the sets of neighbourhood factors representing independent variables($X_1, X_2, X_3,\ldots,X_8$). Moreso, simultaneous analysis of interrelation among the neighbourhood factors was also performed.

Result and Discussion

Socio- demographics and Health Profile

The age distribution of the sample heads of household indicated young population with 81.5% aged between 20 and 60 years and only 18.5% over 60 years. The majority of households were male headed (77.5%), with an average household size of five persons per household. Crowding level showed that 42.2% of households had crowded rooms (more than two occupants). Of all the households sampled 50.8% lived in their own houses while 49.2% were renters (table 1).

Economically, all heads of households were gainfully employed, majority of whom belongs to the medium-low income class. While 64.3% of the household heads had tertiary education, only 9.0% and 26.7% attained primary and secondary education respectively as their highest educational levels.

Table 1
Household Socio-Demographic Characteristics

Item	Households (N=400)	%
Age(Years) (Head Of Household)		
<20	0	0
20-60	326	81.5
> 60	74	18.5
Gender (Head Of Household)		
Male	310	77.5
Female	90	22.5
Marital Status(Head Of Household)		
Single	60	15.0
Married	300	75.0
Widowed	20	5.0
Divorced/Separated	20	5.0
Employment (Head Of Household)		
Yes	400	100
No	0	0.0
Highest Educational Attainment		
Primary	36	9.0
Secondary	107	26.7
Tertiary	257	64.4

Monthly Income		
Low	102	25.5
Medium-Low	190	47.5
Medium-High	108	27.0
Household Crowding		
Two persons Or Less Per Room	231	57.8
More Than Two Persons	169	42.2
House Tenure		
Owners	203	50.8
Renters	197	49.2
Household Size		
<5	22	5.5
5	202	50.5
>5	176	44.0

Source: Field Survey by author, 2011

Like other emerging cities in Nigeria, Uyo has retained some of its traditional values such as male headed households and relatively large household sizes. Uyo is also characterised by a younger population most of whom are economically active with tertiary education and moderate income levels. The household crowding level in the city is of intolerable degree – a situation which reveals marked deficiency in housing stock. Moreso, the relatively high renters' household in the city is an indicator of the low level of socio – economic development status among her population. As an emerging and fast growing city, there is need to evolve an effective sustainable housing policy for the future.

Regarding the health profile of the people, illnesses were reported for 93% of households. With 43% reporting two or more types of illnesses (table 2), the main illnesses reported were unspecified malaria (35%), Acute malaria (24%) and Diarrhoea (14%).

Table 2: Types of Reported Illness among Households in Uyo (n = 400)

Variable	**No. of Households**	**%**
Reporting an illness		
Yes	370	93
No	30	17
Number of reported illness per household		
0	30	17
1	200	50
≥2	170	43
Types of reported illness		
Unspecified malaria	130	35
Acute malaria	90	24
Diarrhoea	50	14
Dysentery	44	12
Pneumonia	36	10
Tuberculosis	11	3
Hepatitis	9	2

Source: Ministry of Health, Uyo

The relatively high prevalence of Malaria as shown in table 2 affirms the already established fact about the prevalence of environmentally – induced illnesses in most tropical cities. In Uyo metropolis, the neighbourhood factor such as presence of stagnant water, inadequate access to waste facility, water supply and health facility are likely to have direct effects on the observed pattern of reported illnesses.

Neighbourhood Characteristics

Eight variables were used to assess households' neighbourhood characteristics. Households' responses on each variable (graded on a five (5) point Likert scale) were summed and then dichotomised as presented in table 3. As data in table 3 indicate, 50.7% of households lived in neighbourhood area characterised by high pollution (noise and air pollution), 45.8% of them lived in neighbourhood area distant from their workplaces while 62% lived in "water-stressed" neighbourhoods (that is inadequate water supply).

On waste facilities and residential environment, 54% of households lived in neighbourhood distant from waste facility while 46% have waste receptacles located close to their neighbourhood. Majority of the households lived in poorly drained neighbourhood evident by the presence of stagnant water. Specifically, 78% of households live close to stagnant water.

The social environment of neighbourhood as captured by such variable as closeness to nearest neighbour indicated that only 40% of households lived closer to their next neighbour (that is spatial distance). While 80% had very close relationship with their neighbours.

Table 3: Households' Neighbourhood Characteristics

Indicator	Households (n=400)	%
Pollution in the neighbourhood		
Low pollution	197	49.3
High pollution	203	50.7
Distance to workplace		
Near to workplace	217	54.2
Distant from workplace	183	45.8
Access to water supply		
Adequate access to water supply	152	38
Inadequate access to water supply	248	62
Distance to Health Facility		
Near to Health Facility	122	31
Distant from Health Facility	278	69
Distance to Waste Receptacle		
Near to Waste Receptacle	186	46
Distant from Waste Receptacle	214	54
Distance to Stagnant Water		
Near to Stagnant Water	312	78
Distant from Stagnant Water	88	22
Distance to next neighbour		
Near to neighbour	158	40
Distant from neighbour	242	60
Relationship with neighbours		
Neighbourhood advantage	320	80
Neighbourhood disadvantage	88	20

Source: **Authors Field Survey, 2010**

The neighbourhood characteristics in Uyo metropolis as shown in table 3 calls for urgent intervention in the provision of urban facilities (water, health facility, waste disposal and drainage). Conceptually, the liveability of a city is questioned if the above facilities are not available within the neighbourhoods. Nevertheless, the situation in Uyo metropolis is typical of most cities of developing countries.

Indeed, the health implication of poor neighbourhood condition needs no stressing. The ubiquity of stagnant water as a consequence of inadequate urban planning / poor drainage provides breeding grounds for mosquitoes which

causes malaria. This situation has serious negative impact on the health of residents of Uyo. As shown in table 2, about 220 households (59%) reported cases of malaria were observed in the area. The absence of waste receptacles in some neighbourhood amounts to improper waste disposal by residents, while overdependence on generators for power supply portends great health hazard in terms of noise and air pollution. Moreso, as residents travel long distances to access water and healthcare, the impact in terms of travel time / cost creates economic and psychological stress which in turn affects health.

The relatively positive social relationship among neighbours as reported in table 3 is a pointer to the strong social and cultural ties common among Africans. The above observation contradicts the assertion of Sampson et.al, (2002) that people are less likely to form relationships when residential turnover is high. Sound neighbourhood relationship promote emotional health of residents.

Inter-Correlation among Neighbourhood Factors and Health Status of Residents

Neighbourhood factors namely: pollution (X1), distance to workplace (X2), Water supply (X3), Health Facility (X4), Waste receptacle (X5), Stagnant water (X6), distance to next neighbour (X7), and relationship with neighbour(X8) were the independent variables which interacted either singly or jointly to influence residents health status.
This section of the study tested the relationship between any two of the variables and health status. This relationship was tested by constructing the matrix of inter-correlation of the set of independent variables (neighbourhood factors) and dependent variable (Health status). The lower triangle of the matrix was used to enter the zero-order product moment correlation co-efficient while the level of significance of each correlation co-efficient was entered in the corresponding cell of upper triangle.
The results appear in table 4.

Table 4: Cross – Correlation Matrix among Set of Neighbourhood Factors and Residents Health Status

		Y	X1	X2	X3	X4	X5	X6	X7	X8
Y	**Health status**		.000	.000	001	.000	.002	.000	.000	.002
X1	**Pollution**	.841		.001	.003	.001	.000	.002	.001	.000
X2	**Distance to workplace**	.860	.387		.000	.000	.001	.000	.000	.000
X3	**Access to water supply**	.772	.166	.510		.001	.001	.002	.000	.002
X4	**Distance to Health Facility**	.910	.210	.717	.560		.000	.001	.002	.004
X5	**Distance to waste Receptacle**	.732	.570	.419	.770	.478		.000	.004	.000
X6	**Distance to stagnant water**	.641	.344	.337	.591	.597	.313		.001	.000
X7	**Distance to next neighbour**	.474	.110	.412	.710	.116	.700	.334		.001
X8	**Relationship with neighbour**	.601	.018	.399	.661	.201	.812	.404	.809	

Table 4 shows that the zero – order correlation co-efficient were found significant ($P<0.05$) in every case. This shows that there is significant relationship between any two of the variables tested. Correlation between two variables signifies the extent to which they share an underlying component. Viewed in this light, the high correlation between paired variables selected from the set of neighbourhood factors and health status is readily seen to indicate the existence of a common property among them all. This common property which underlies the eight variables (pollution, distance to workplace, water supply, distance to health facility, waste receptacle, stagnant water, nearest neighbourhood and relationship with neighbour) and health status require urban development

planning. For example, the high correlation between health status and distance to health facility (.91) and that of health status and stagnant water (.64) were direct consequence of inadequate urban development efforts of both State and Municipal authorities.

This is so because an effective urban development drive is supposed to guarantee optimal location of facilities within the reach of residents irrespective of residential area. This is similar in other high correlations between health status and distance to water supply (.77); pollution and distance to waste receptacle (.57); distance to water supply and health facility (.56) and distance to workplace and health status (.86). All of them zeroed into inadequate urban planning.

Concluding Remarks

This study examined the relationship between a set of neighbourhood factors and the health status of residents in a rapidly growing Nigerian city. The study used the multiple correlation analysis, and it was found out that the neighbourhood factors interrelated with each other. It was further observed that individual neighbourhood factors had a high correlation with the health status of residents. The findings in this study are critical to urban planning. There is need for stakeholders in the development sector to evolve a development plan that guarantees equitable distribution of facilities/ amenities among the neighbourhoods within the city

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