# HOUSING AND MENTAL HEALTH IN INFORMAL SETTLEMENTS: A CASE OF IBADAN NORTH LOCAL GOVERNMENT AREA OF OYO STATE, NIGERIA

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## *ABSTRACT*

*Housing is a fundamentally key factor in people's mental health. However, research on housing and mental health is new and limited in developing countries. It is hinged on this premise that this study determined the links between housing and mental health in the informal settlements of Ibadan North Local Government Area (LGA), Nigeria. Sick home syndrome provided the conceptual anchor for the study while the survey research method was adopted. Both primary and secondary data were used. Twelve informal communities were purposively selected and 320 respondents were randomly chosen. The type and quality of housing units in informal settlements affected the mental health of residents. The effect of residential crowding on mental health was pronounced among those residing in a tenement building, otherwise known as Brazilian face-me-i-face-you. About 42.8% of residential buildings provided accommodations for 5-6 households. Unaffordable rent and insecurity of rental housing tenure worsen the mental health of 46.9% and 40% of residents respectively. The most occurring mental health problems were anxiety, depression, stress, sleeping problem, substance abuse. Schizophrenia, manic depression, phobias and panic disorders occur rarely among the residents. Suggested measures for improving housing quality and mental health of residents include housing improvement, urban regeneration, provision of green spaces and infrastructural facilities and public enlightenment on sanitary housing environment.*

***Key Words: Housing; Mental health; Informal settlements; Ibadan North LGA; Nigeria***

## 1. INTRODUCTION

Housing in its entirety is more than shelter, it embraces all social services and utilities that lead to worthy living (Aluko, 2012). A good dwelling, no doubt, enhances the entire well-being and aspirations of the occupants (Ahianba, Dimuna and Okogun, 2008). The residential space of a person's home plays a central role in shaping his health and well-being (Murphy, 2006).

Health is a combination of physical health, mental health and social health. Physical health is the general condition of a person in all aspects. It is also a level of functional and metabolic efficiency of an organism. While social health refers to the health of a person about his or her ability to interact with others and thrive in social settings. The term, mental health is used to describe either a level of cognitive or emotional well-being or an absence of a mental disorder. Mental health is an integral and essential component of health which the World Health Organization (WHO) (2012) describes as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.

Mental health refers to our cognitive and emotional wellbeing - it is all about how we think, feels and behaves (Nordqvist, 2009). Mental health is a state of well-being in which an individual realizes his or her abilities in coping with the normal stresses of life, working productively and making a contribution to the community. Mental health also includes a person's ability to enjoy life, which is to attain a balance between life activities and efforts to achieve psychological resilience. Boyle (2011) defined mental health as: emotional; behavioural, and social maturity or normality; the absence of a mental or behavioural disorder; a state of psychological well-being in which one has achieved a satisfactory integration of one's instinctual drives acceptable to both oneself and one's social environment; an appropriate balance of love, work and leisure pursuits. Quite simply, mental health refers to a person's health of the mind (Kozier, 2008).

The quality of housing is a risk factor for mental health problems. Poor quality housing can be a source of stress for individuals (Rogers and Pilgrim, 2010) and predisposes individuals to mental disorders by lowering their baseline mental health. Grayling et al. (2002) indicate that the dwellers living in deprived areas, where the incidence of poor housing is often highest, are three more times likely to be in dangers. Evans (2003) notes that house type (e.g., high-rise), floor

level and housing quality (e.g., structural problems) have all been linked to mental health. These effects seem particularly pronounced among low-income families living in informal neighbourhoods (Evans et.al, 2003).

The maintenance and promotion of health are achieved through different combination of physical, mental and social well-being, together sometimes referred to as the "health triangle" (Nutter, 2003). Physical and mental health is interconnected, but research on housing and mental health is limited. Also, several scholars have emphasised a strong connection between people and places (Casey, 1997, 2003; Donohoe, 2017; Seamon, 2017). For many years, the housing environment has been acknowledged as one of the main settings that affect human health (Bonnefoy, 2007). However, research on the mental health-housing nexus is relatively new (Newman, 2001) and there are still major gaps in the knowledge of how housing conditions may affect health (Bonnefoy, 2007). Against this background, this study determined the links between housing and mental health in the informal settlements of Ibadan North LGA of Oyo State, Nigeria

## 2. Conceptual Anchor and Related Literature

Sick building syndrome provided the conceptual anchor for this study. Sick building syndrome (SBS) is a name for a condition that's thought to be caused by being in a building or other type of enclosed space (Joshi, 2008; Legg, 2017). The term, "sick building syndrome" (SBS) is used to describe situations in which building occupants experience acute health and comfort effects that appear to be linked to time spent in a building, but no specific illness or cause can be identified (United States Environmental Protection Agency (USEPA), 1991). It is different from "building related illness". The term "building related illness" (BRI) is used when symptoms of diagnosable illness are identified and can be attributed directly to airborne building contaminants (USEPA, 1991). Signs and symptoms of the building-related disease are: cough, chest pain, shortness of breath on mild exertion, edema, palpitations, nosebleeds, cancers, pregnancy problems, miscarriages, extrinsic allergic alveolitis, legionnaire's disease, humidifier fever, pneumonia and occupational asthma (Joshi, 2008).

Sick building syndrome is defined as a complex of several unspecific health symptoms, such as the irritation of eyes, skin, nose and throat, or fatigue, headache, and decreased concentration capacity (Fiedler, 1998). Occupants of sick building also complain of symptoms such as cough; chest tightness; fever; muscle aches; headache; eyes, nose, or throat irritation; dry cough; dry or itchy skin; dizziness and nausea; and fatigue. In some cases, annoyance owing to odours and smells are possible. These health symptoms usually cannot be traced back to a specific cause, although it is widely accepted that heating, ventilation, draught and chemical emissions are closely related to the expression of sick building sydrome.

There is sufficient evidence to suggest that the type and quality of housing affects psychosocial processes, which in turn can affect mental health in a variety of ways. The following were cited by USEPA (1991) as causes of or contributing factors to sick building syndrome: inadequate ventilation; chemical contaminants from indoor sources; chemical contaminants from outdoor sources; and biological contaminants.

However, diagnosing SBS can be difficult because of the wide range of symptoms. These can also mimic other conditions, such as the common cold or flu. Also, it is important to note that complaints may result from other causes and these may include an illness contracted outside the building, acute sensitivity (e.g., allergies), job related stress or dissatisfaction and other psychosocial factors. Nevertheless, studies show that symptoms may be caused or exacerbated by indoor air quality problems (USEPA, 1991). The key to SBS is that your symptoms improve after leaving the building in question, only to come back when you return to the same location (Legg, 2017).

The link between health and housing is not a new one and its origination is traceable to industrial towns of 19th century in Britain where workers therein experienced high rates of diseases, such as tuberculosis, cholera and typhoid (Doling et al., 2013). Gilbertson (2008) have observed that there is a significant association between housing conditions and physical and mental health of an individual. Housing is a fundamentally key factor in people's mental health (Mental Health Foundation, 2020).

Welch (1997) examined the mental health effects of substandard housing on women living in public housing in Chicago. In this study, crowding, litter and poor maintenance of facilities were suggested as factors contributing towards creating an environment of ambivalence and hopelessness. Evans (2003) provided some explanations for the possible link between issues relating to housing quality and mental health, including insecurity/tenure concerns, difficulties with repairs and landlords, frequent relocations, less controllable social interactions and stigma associated with poor housing. Mental Health Foundation (2020) observed that compared with the general population, people with mental health conditions are: one and a half times more likely to live in rented housing; more likely to experience instability with regards to tenancy agreements; twice as likely as those without mental health problems to be unhappy with their housing; and four times as likely to say that it makes their health worse.

However, Evans et al. (2000) revealed that the degree of improvement in housing predicted the level of change in psychological distress. Good-quality, affordable and safe housing is a vital component in good mental health, as well as supporting those with existing mental health conditions (Mental Health Foundation, 2020).

## 3. The Study Area

Ibadan is the capital of Oyo state which is one of the 36 states in Nigeria. It is located in the south western part of Nigeria. Ibadan city lies between Latitude 7°19' and 7°29' North of the Equator and Longitude 3°47' and 3°58' East of the Greenwich Meridian. Ibadan has been the centre of administration of the old western region of Nigeria and it is also reputed to be the largest indigenous city in Africa, south of the Sahara since the days of the British colonial rule.

Out of the 33 LGAs in Oyo state, Ibadan region covers 11 LGAs consisting of five urban and six rural LGAs (see Figure 1). The rural LGAs are Akinyele, Egbeda, Ido, Lagelu, Oluyole and Ona-Ara. The urban LGAs consist of Ibadan North, Ibadan North East, Ibadan North West, Ibadan South East and Ibadan South West. Ibadan North which is the focus of this study is the most urbanised LGA in Oyo state.

Ibadan North LGA is located approximately on Longitude 8°5' East of the Greenwich Meridian and Latitude 7°23' North of Equators. The local government is bounded by Akinyele LGA in the North, Ido, Ibadan South-West, Ibadan South-East LGAs in the West and Ibadan North- East and Lagelu LGAs in the East. The headquarters of the council is located at Agodi Government Reservation Area (GRA).

The LGA comprises 12 electoral wards. According to the 2006 provisional census result, it has a population of 306,763. The male population is given as 153,039 and female population as 153,756. The LGA consists of multi-ethnic nationalities and the inhabitants are mostly traders, artisans, civil servants and students. Ibadan North enjoys modern health facilities. All the three tiers of health facilities are well represented in the Local Government area with the University College Hospital (U.C.H), Ring Road, Yemetu State Hospitals, myriad of clinics, dispensaries, maternal and child health centres.

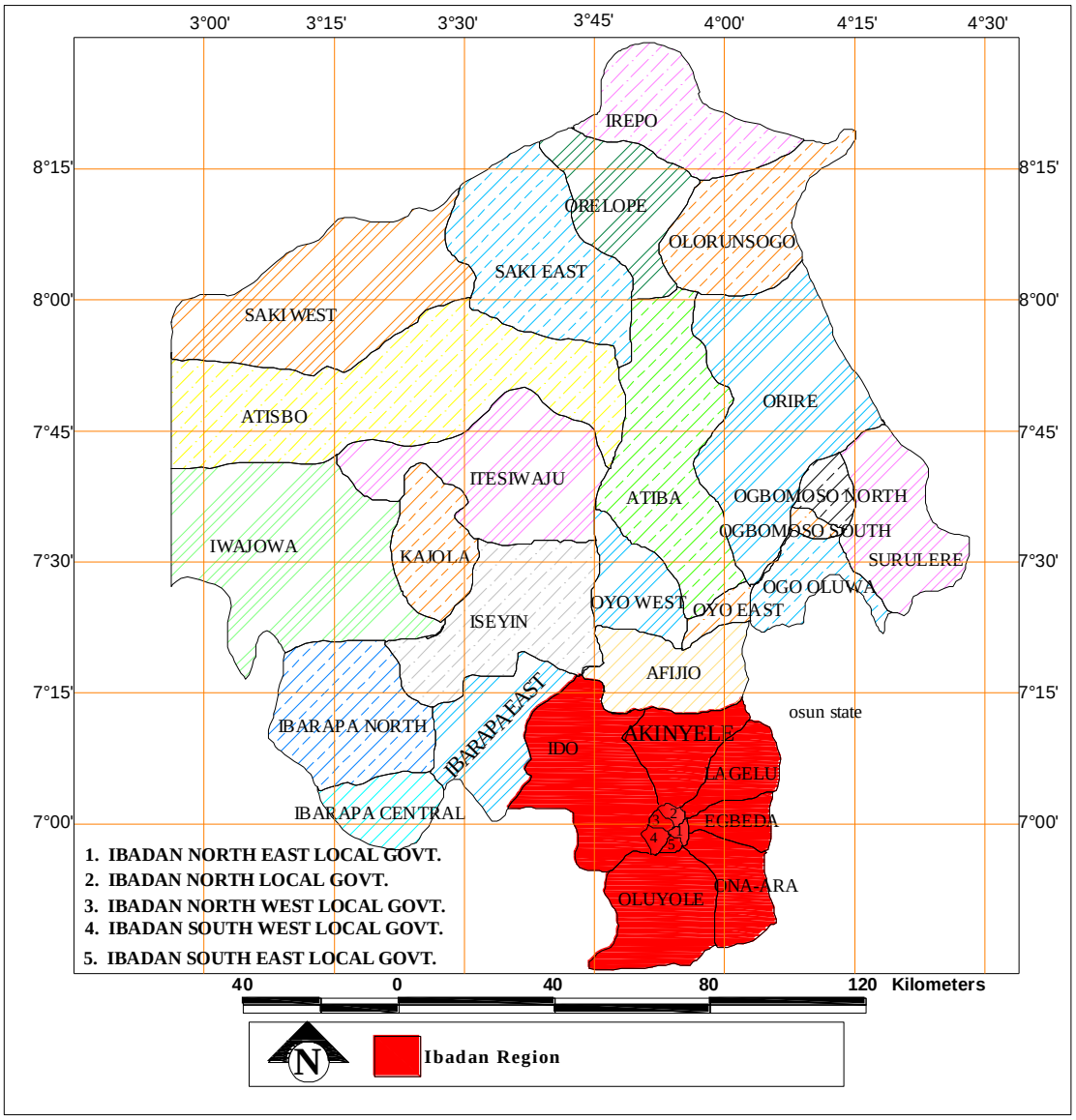


Figure 1: Ibadan Region within the Context of Oyo State
Source: Department of Geography, University of Ibadan, 2020

## 4. METHODOLOGY

Survey research design was adopted and both primary and secondary data were sourced for the study. Primary data were sourced through the use of a pre-tested questionnaire and direct observation. While formal residential neighbourhoods can be found in Wards 5, 7, 8,9,10 and 11, informal residential neighbourhoods are predominant in Wards 1, 2,3,4,6 and 12.

Multi-stage sampling technique was used to select 320 respondents from 12 informal settlements in Wards 1, 2,3,4,6 and 12. The selected settlements include Beere, Agbadagudu, Ode-Oloo, Inalende, Yemetu, Isala-Afa, Oje-Igosun, Oke Apon, Sabo, Oke-Isu, Agbowo and Barika. These settlements were purposively selected because they: combine some features of

urban slums as described by the United Nations Human Settlements Programme (UN Habitat, 2005).

In Beere and Agbadagudu (Ward 1), 72 household heads were randomly selected; Ode-Oloo and Inalende (Ward 2) (42); Yemetu and Isala-Afa (Ward 3) (50); Oje-Igosun and Oke Apon (Ward 4) (46); Sabo and Oke-Isu (Ward 6) (43); and Agbowo and Barika (Ward 12) (67). Each household head was chosen at random and entirely by chance, such that each respondent in a building has the same probability of being chosen at any stage during the sampling process (Mugenda and Mugenda, 2003). Data were analysed using descriptive and inferential statistics (Logit regression model, that is, multiple regression involving dummy variables) at $p \leq 0.05$. Likert Scale was used to determine mental illness occurrence level.

## 5. FINDINGS AND DISCUSSION

Findings, as shown in Table 1 revealed that most of the respondents were males (63.4%). This can be attributed to the fact that the targeted respondents were the household heads who in most instances were males. The age group, 36-45 years accounted for 44.0% of the respondents which was the highest, followed by the age group 46-55 years which accounted for 27.8%. Those within the age group 56 years and above accounted for 16.9% while respondents within the ages of 26-35years and 16-25 years accounted for 9.4% and 1.6% respectively. Results of the analysis showed the predominance of married households with 80.3%, widowed (15.0%), separated (2.5%) and single (2.2%).

Majority of the respondents were artisans (31.5 %), traders (24.7%), civil servants (17.2%), farmers (13.8%) and self-employed (12.8%). Income was one of the most significant socio-economic indicators that determine the type and quality of housing occupied by residents. Not less than 40% respondents (40.3%) earned below ₦18, 000 per month, 36.9% earned between ₦18, 001 and ₦48, 000, 12.2% earn between ₦78, 001 and ₦108, 000 and only 10.0% respondents earned between ₦48, 001 and ₦78, 000. Another 0.6% earned between ₦78, 001 and ₦108, 000 while the remaining 2.6% earned above #108, 000. See Table 1.

**Table 1: Socio-Economic Characteristics of the Respondents**

| Variable | No. of Respondents | % |
|---|---|---|
| **Sex** | | |
| Male | 203 | 63.4 |
| Female | 117 | 36.6 |
| **Age (in years)** | | |
| 16 – 25 | 5 | 1.6 |
| 26 – 35 | 30 | 9.4 |
| 36 – 45 | 142 | 44 |
| 46 – 55 | 89 | 27.8 |
| 56 and above | 54 | 16.9 |
| **Occupation** | | |
| Artisan | 101 | 31.5 |
| Civil Servant | 55 | 17.2 |
| Farming | 44 | 13.8 |
| Self Employed | 41 | 12.8 |
| Trading | 79 | 24.7 |
| **Income (per month)** | | |
| Below ₦ 18,000 | 129 | 40.3 |
| ₦ 18,001 - ₦ 48,000 | 118 | 36.9 |
| ₦ 48,001 - ₦ 78,000 | 32 | 10 |
| ₦ 78,001 - ₦ 108,000 | 39 | 12.2 |
| ₦ 108,000 and above | 2 | 0.6 |
| **Marital Status** | | |
| Married | 257 | 80.3 |
| Single | 7 | 2.2 |
| Widow/ Widower | 48 | 15 |
| Separated | 8 | 2 |
| **Total** | **320** | **100** |

As shown in Table 2, most of the houses (34.1%) were constructed more than 40 years ago, 30-39 years (26.9%), 20-29 years (30.9%) and 10-19 years (8.1%). Investigation further revealed that 52.8% tenement residential buildings were overcrowded and housing attributes had negative effect on mental health of 41.9% respondents. This confirms the observation made by Evans (2000) that crowding house has detrimental effects on both mental and physical health (Evans, 2000). The negative association between residential crowding and mental health appears stronger among those residing in multi-family dwellings relative to single family houses (Evans et al., 2002).

**Table 2: Age of Residential Building**

| Age (years) | No of Respondents | % |
|---|---|---|
| 10 – 19 | 26 | 8.1 |
| 20 – 29 | 99 | 30.9 |
| 30 – 39 | 86 | 26.9 |
| 40 and above | 109 | 34.1 |
| Total | **320** | **100** |

42.8% residential buildings provided accommodations for 5-6 households and average household size recorded in 46.9% residential buildings was also 5-6. What this implies is that the houses were overcrowded. Overcrowding according to Lowry (1991), is still recognized as a risk to health and has been associated with both physical and mental health risks including the spread of infectious diseases, accidental deaths and asthma, cardiovascular diseases, stress and depression.
Both male (53.1%) and female (31.9%) respondents believed that housing affected mental health. Gabe and Williams (1987) found out that women are unable to walk away from distressing situations within the home and lack the time and space to reflect on their thoughts and emotions. This distress is internalized in women resulting in depression or anxiety, but externalized in men via aggression and substance use (Riva et al., 2014).

Analysis of respondents by housing tenure showed that most of the respondents were renters (64.3%), only 20.3% respondents were owner occupiers. While 11.6% respondents lived in family houses, 3.8% respondents lived in houses they inherited from their parents. With reference to rent paid per annum, 44.4% of the respondents paid below #50,000, #50,001-#100,000 (14.4%), #100,001-#150,000 (3.8%), #150,001-#200,000 (1.3%) and more than #200,000 (0.6%).

House rents were unaffordable to 56.3% respondents. When housing is unaffordable, some respondents (46.9%) argued that it worsens mental health problems. The work of Cummins et al. (2006) also concluded that worrying over not being able to make rental payment contributes to significant damage to mental health. Also, Mason et al. (2003) stated that unaffordable housing has shown to worsen mental health when people make trade-offs in other areas such as food, transport and medical care to meet housing costs. Home ownership in its own can promote mental health through psychological benefits of greater self-esteem and stability. Individuals do not need to worry about housing tenure (Ochodo et al., 2014).

Poor relationship between the renter and landlord/estate agent may lead to forced eviction, according to 32.5% respondents. Insecurity of housing tenure characterises rental housing and this also affects mental health of residents. Fear of forced eviction which is associated with relocation and displacement affect mental health, according to 36.1% respondents. Displacement from existing housing arrangements is a source of stress and can precipitate mental illness in individuals with suboptimal mental health. Stresses from having difficulty in securing housing can worsen mental health symptoms and lead to temporary disengagement from services (Zerger et al., 2014). Forced eviction and the problem of securing suitable homes have affected mental health of 40% respondents.

About 46% renters complained of having problem with housing repair due to inadequate fund and unresponsive landlords. The frustrations from repair works add to mental stress, according to these respondents. Most of the houses (59.1%) were renovated more than ten years ago. This may probably be due to lack of fund or unresponsive landlords.

Table 3 shows quality of residential housing attributes. A glance at the Table shows that majority of the houses (54.4%) had poor roofs, 45% did not have ceiling, 49.4% lacked kitchens and 35.0% did not have toilet facilities. Only 7.5% respondents have good toilet facilities and 45.3% respondents' toilet facilities were in poor condition. Residents of buildings without toilet facilities adopted other insanitary and unhygienic methods like open defecation and usage of nearby bush, stream and unoccupied or abandoned buildings. With reference to solid waste disposal, 62.8% respondents relied on dump sites and not less than 67.8% respondents

claimed that their buildings did not have drainage facilities. All these have created a dirty, smelly and filthy ambient environment.

The housing quality of most of the respondents (70.9%) contradicts with what an ideal living environment should be. About 38% buildings and 39.1% had poor windows and doors respectively and poor/dilapidated walls characterized 47.2% residential buildings. Poor windows and doors as well as lack of window burglary have aggravated fear of crime among residents. About 74.4% residential buildings lack adequate window burglary and most of the outer doors (52.8%) and windows (51.6%) were in poor conditions. Poorly constructed windows and doors can cause anxiety from feelings of insecurity (Ochodo et al. 2014), possibly disrupting sleep quality that is vital to maintaining mental health. Turunen et al. (2010) stated that housing quality play major role in individual health status, as a wide variety of housing features have been reported to influence the physical, social, economic and the mental well-being of occupants.

**Table 3: Quality of Residential Building Attributes**

| Building Components | Roof | Ceiling | Kitchen | Wall | Door | Window | Window Burglary | Toilet |
|---|---|---|---|---|---|---|---|---|
| Not available | 2(0.6%) | 144(45.0%) | 158(49.4%) | 0(0.0%) | 0(0.0%) | 0(0.0%) | 238(74.4%) | 109(35.0%) |
| Poor | 174(54.4%) | 74(23.1%) | 61(19.1%) | 151(47.2%) | 125(39.1%) | 127(39.76%) | 12(3.8%) | 145(45.3%) |
| Fair | 112(35.0%) | 71(22.2%) | 75(23.4%) | 141(44.1%) | 169(52.8%) | 165(51.6%) | 44(13.8) | 40(12.5%) |
| Good | 30(9.4%) | 29(9.1%) | 24(7.5%) | 26(8.1%) | 24(7.5%) | 26(8.1%) | 24(7.5%) | 24(7.5%) |
| Very Good | 2(0.6%) | 2(0.6%) | 2(0.6%) | 2(0.6%) | 2(0.6%) | 2(0.6%) | 2(0.6%) | 2(0.6%) |
| **Total** | **320(100%)** | **320(100%)** | **320(100%)** | **320(100%)** | **320(100%)** | **320(100%)** | **320(100%)** | **320(100%)** |

There was significant association between socio-economic characteristics of respondents (social class and type of employment) and resident's living in low-quality residential building ($R^2$ = 0.511). What this implies is that 51% of variability in the incidence of living in poor housing by residents might be attributed to social class (low-income group) and informal employment or occupation. The F-value of 6.689 is significant at p-value of 0.000 as shown in Table 4.

**Table 4: ANOVA of the Relationship between Resident's Living in Poor Residential Building and Explanatory Variables**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 31.662 | 2 | 15.831 | 6.689 | .000[b] |
| | Residual | 30.288 | 317 | .096 | | |
| | Total | 61.950 | 319 | | | |

a. Dependent Variable: Poor Housing

Some of the respondents (30.6%) residing in old and dilapidated residential buildings revealed that they were exposed to cold which affects their mental health. Harris et al (2010) observed that people living in cold homes are more likely to have poorer mental health. It should also be noted that the older the age of dwelling, the colder (Wilkinson et al, 2001).

Almost half of the respondents (49.7%) were living in damp homes. Depression and anxiety were associated with damp housing by 56% and 45% respondents respectively. Depression and anxiety (Hopton and Hunt, 1996), particularly in women (Brown et al., 1974), have been

associated with damp housing, an attribute of poor-quality housing. Ellaway and Macintyre (1998) stated that renters are more likely to experience housing stressors, such as dampness and overcrowding. Damp homes have also been associated with a reluctance to invite friends into the home, anxiety and feelings of shame and embarrassment which may lead to social isolation (Markus, 1993).

Majority of the respondents (90.3%) complained about noise pollution, most especially during the day. According to them, noise has impact on mental health of residents. The survey also revealed that 80.0% of the respondents have difficulty in sleeping during the day as a result of noise pollution**.** Environmental noise is the leader of the exogenous causes, with traffic noise usually being the major problem followed by neighbourhood noise. As indicated by Babyish, (2000), environmental noise acts as a stressor at night by disturbing sleep and via strong annoyance (or bothering) during the day and may impair the cardiovascular and the mental health in the long run.

According to Evans (2002), housing type and quality, neighbourhood quality, noise, crowding, indoor air quality and light have all been linked to personal mental health. Loud exterior noise sources elevate psychological distress. Several studies, particularly in the field of social and environmental psychology have shown the influence of environmental factors such as pollution, level of noise and crowding on mental health, depression symptoms, and social well-being (Halpern, 1995; Gomez-Jacinto and Hombrados-Mendieta, 2002).

Table 5 reveals the occurrences of various mental illnesses. Respondents rated anxiety as the most occurring mental health issue. Next to it, is depression which is followed by stress. Sleeping problem was ranked 4$^{th}$and this was attributed to overcrowding. Substance abuse was ranked 5$^{th}$ and completed the list of mental illness with positive derivation values. This self-destructive act took place in order to suppress emotions. Poor mental health can lead to problems such as substance abuse (Richards et al., 2010). Schizopherenia, manic depression, phobias and panic disorders rarely among the respondents.

**Table 5: Mental Illness Occurrence Level Using Likert Scale**

| **Mental illness** | **Ranking** | | | | | **Impact Index** | | | | | | **Rank** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **VO** | **O** | **S** | **R** | **N** | **NR (f)** | **IV** | **IV/ NR (f)** | **X** | **D** | **$D^2$** | |
| Anxiety | 102 | 92 | 102 | 2 | 22 | 320 | 1210 | 3.78 | 2.7811 | 0.9989 | 0.9978 | 1$^{st}$ |
| Depression | 93 | 72 | 57 | 8 | 90 | 320 | 1025 | 3.20 | 2.7811 | 0.4189 | 0.1755 | 3$^{rd}$ |
| Stress | 82 | 100 | 102 | 12 | 24 | 320 | 1164 | 3.64 | 2.7811 | 0.8589 | 0.7377 | 2$^{nd}$ |
| Sleeping problem | 93 | 72 | 57 | 8 | 9 | 320 | 949 | 2.96 | 2.7811 | 0.1789 | 0.0320 | 4$^{th}$ |
| Panic disorder | 50 | 56 | 53 | 16 | 145 | 320 | 810 | 2.53 | 2.7811 | -0.2511 | 0.0631 | 9$^{th}$ |
| Phobias | 42 | 44 | 61 | 20 | 153 | 320 | 762 | 2.38 | 2.7811 | -0.4011 | 0.1601 | 8$^{th}$ |
| Schizopherenia | 26 | 22 | 42 | 17 | 213 | 320 | 591 | 1.84 | 2.7811 | -0.9411 | 0.8857 | 6th |
| Substance abuse | 36 | 105 | 10 | 6 | 258 | 320 | 900 | 2.81 | 2.7811 | 0.0289 | 0.0008 | 5$^{th}$ |
| Manic depression | 27 | 14 | 55 | 24 | 200 | 320 | 604 | 1.89 | 2.7811 | -0.8911 | 0.7941 | 7$^{th}$ |
| **Total** | | | | | | | | **25.03** | | | **3.8468** | |

(Note: VE=Very often, O=Often, S=Sometimes)
R=Rarely
N= Never

## 6. Conclusion and Recommendation

Housing attributes affected mental health of the informal settlements' residents in Ibadan North Local Government Area of Oyo State, Nigeria. In a bid to improve housing quality, home owners should either renovate or rehabilitate distressed residential buildings. Likewise, in order to improve their quality of informal settlements, urban regeneration programme should be given adequate consideration by the government, civil society, private sector and residents. Residents' participation will enable the residents to identify their needs and order their priorities.

Provision of public toilets is essential and there is the need for government intervention in the area of efficient refuse collection. This can be achieved through siting of waste recycling plants in different locations where they can be effectively used. Also, refuse tanks should be evacuated and treated on weekly basis to prevent generation of environmental nuisance in form of unpleasant odour. Efforts should be made by the communities to provide and maintain communal facilities such as drainage, health centres, police post, green areas, open spaces, amongst others. It is believed that the provision and maintenance of these facilities will stimulate the interest of property owners to improve the quality of their houses.

When green spaces are provided in the informal settlements, individuals will experience better mental health. Being in green spaces allow for restoration from psychological stressors and can promote positive feelings. Participatory approach should be adopted in the provision of green spaces. This is because attitudes towards space use and organization of space are all linked to cultural traditions, which are often best understood by the local people themselves. Local communities have valuable experience, a spatial understanding of their environment, their local building resources and the ways of making the best uses of them. Thus, green spaces that will be properly rooted in the cultural, climatic, socio-economic circumstances of the people can only emanate from the residents.

Enlightenment campaigns on how to ensure sanitary environment should be put in place. This can be done through the use of media communication from time to time. Here, emphasis should be placed on the importance of environmental sanitation and the need for the maintenance of public infrastructure in the informal settlements. The enlightenment campaigns should be based on genuine local participation in order to ensure sustainability.

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