

AWARENESS, ATTITUDE AND PRACTICE TOWARDS INDOOR AIR POLLUTION (IAP) AMONGST RESIDENTS OF OKE – OYI IN ILORIN

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Citation

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Abstract

Poor air quality has impact on health, especially on the poor, the elderly and children who suffer disproportionately from its effects. Air pollution also has impact far beyond each household as pollution is found on crops and contributes to global environmental issues such as climate change. Air pollution is thus a threat to human health, the environment and the quality of life of millions of Africans. This descriptive cross sectional study was conducted to determine awareness, attitude and practices of residents of Oke – Oyi, a rural settlement in Kwara State, Nigeria towards Indoor Air Pollution (IAP). The 384 respondents interviewed were selected using a multistage sampling technique. Data collection was by both quantitative and qualitative methods specifically using an interviewer administered questionnaire and an observational checklist. The result showed that 83.9% of the respondents were aware of IAP and their major sources of information were health workers (40.2%), teachers (33%) and the mass media (23.1%) (Radio/TV). Eighty one point three percent (81.3%) of respondents were aware of the hazards associated with IAP. Commonly known indoor air pollutants include cooking in the sleeping areas (77.9%), filthy environment (73.4%), overcrowding (70.1%) and use of mosquito coils (65.6%). A significant relationship was found between age and ethnicity of respondents and their attitudes towards indoor air pollution. Respondents were also observed to have poor practices. Hence, there is need for widespread campaigns in order to raise awareness among the community members about indoor air pollution and its effects to compliment their attitude and practices.

INTRODUCTION

In developed countries, modernization has been accompanied by a shift from biomass fuels such as wood to petroleum products and electricity. In developing countries, however, even where cleaner and more sophisticated fuels are available, house holds often continue to use simple biomass fuels¹. The slow pace of development in many countries suggests that biomass fuels will continue to be used by the poor for many decades. "Biomass" or Traditional fuels of biological origin such as; wood, charcoal or leaves account for about 9.3% of the global energy consumed, according to 2004 World Energy Assessment Report². The types of fuel used become cleaner and more convenient, efficient and costly as people move up the energy ladder. Animal dung being the lowest is succeeded by crop residues, wood, charcoal, kerosene, gas and electricity. People tend to move up the ladder as socio – economic conditions improve. A complex mixture of gaseous and particulate pollutants typically contaminates

indoor air in residential and non – residential structures. The sources are diverse and include building occupants and their activities such as overcrowding, smoking, combustion; building materials and furnishings such as paints and furniture; biological agents, air contaminated with dusts such as dusts from unpaved roads, fumes and soil gas³. The air of a home might contain nitrogen dioxide (NO₂) from emissions from a gas stove, particles from cigarette smoke, cooking, outdoor air, formaldehyde from furnishings and plywood, as well as allergens from a family cat. The potential health effects are equally diverse, spanning from short-term annoyance and discomfort to permanent disability, cancer and even death³. Other sources of indoor pollution in developing countries include smoke from nearby houses⁴. Burning of forests, agricultural land, household waste; and tobacco smoke. The smoke in such circumstances poses problems, considering the fact that the houses are ill-ventilated. Many of the substances in the biomass smoke such as carbon monoxide, nitrous oxides, sulphur oxides

(principally from coal), formaldehyde and polycyclic organic matter including carcinogens such as benzo – pyrene, can damage human health³. Biomass and coal are cheap and readily available but extremely polluting. They pose serious health hazards due to acute and chronic exposure to particulates. Developing countries account for 77% of all global particulate exposure where numerous studies have found that IAP levels are many times higher than developed world standards⁵.

It can be argued that years after the dangers associated with indoor air pollution emerged, the language of indoor air pollution is still circulating among researchers, professionals and academics⁶. The message has not yet reached the intended beneficiaries; hence they continue to suffer from indoor air pollution without recognising its dangers. People cannot act unless they have knowledge. Hence if rural dwellers do not know about indoor air pollution and its dangers, they do not have an incentive to reduce or to come up with strategies that reduce it. Indoor air pollution is not accorded in terms of danger the same position as that given to malaria, cholera or tuberculosis just to mention a few. People do all they can to prevent and seek attention for the latter health conditions but not for those caused by indoor air pollution. The failure to take indoor air pollution as a serious health threat is largely a problem of policy at national level rather than at household level. Indoor air pollution has not been taken seriously as a public health issue in developing countries (Nigeria inclusive) and as a result people in rural areas do not also consider it as such⁷.

METHODOLOGY

The study was conducted at Oke Oyi, Ilorin East Local Government Area of Kwara State, Nigeria. It is located in the North Central geographical region of Nigeria with a population of about 6,042 inhabitants. The main occupations of the people are farming, poultry, dyeing, embroidery, blacksmithing, weaving and very few civil servants. Some of the buildings within the community are made of bricks while others are made of mud and crop residues. The major means of cooking within the community are firewood and charcoal. Three hundred and eighty four (384) respondents were selected using the cluster in cluster type of sampling technique⁸ and interviewed. The tools for data collection were a pre tested structured questionnaire and an observational checklist. The quantitative data obtained was analyzed using statistical package for the social sciences (SPSS) software package.

RESULTS

The respondents' age ranged from 16 to 85 years with a mean age of 41.5 + 17.3 years. About two thirds of the respondents (63.8%) were females with the males constituting 36.2% of all respondents. A little more than half (51.8%) of the respondents were traders, 15.9% were farmers while 11.5% were self employed. Most of the respondents (83.9%) were aware of indoor air pollution. Majority of the respondents (81.3%) were aware of the hazards associated with polluted indoor air. Commonly known effects of AIP include cough (79.4%), catarrh (82.6%) and eye irritation (65.6%) (Table 1).

Figure 1

Table 1: Perceived effects of IAP among respondents

Hazards	Freq (%)
Cough	305 (79.4)
Catarrh	317 (82.6)
Eye Irritation	252 (65.6)
Headache	208 (54.2)
Asthma	123 (32)
Others	21 (5.5)

Most of the respondents (78.6%) believed children and elderly are at higher risk. Awareness of sources of IAP was highest for cooking in the living areas (77.9%) and lowest for use of pesticides (43.8) (Table 2).

Figure 2

Table 2: Level of Awareness concerning sources of IAP.

Sources of Awareness	Freq (%)
Filthy Environment	282 (73.4)
Overcrowding	269 (70.1)
Mosquito Coils	252 (65.6)
Use of pesticides	168 (43.8)
Cooking in living room	299 (77.9)
Others	14 (3.6)

The respondents in this study gave their sources of information on IAP as media (radio/TV) 23.1%, Teachers (33.0%) and health workers (40.2%). A significant relationship was found between respondents' age ($p = 0.01$) and ethnicity ($p = 0.01$), and their KAP towards indoor air pollution while education ($p = 0.06$) and family type (whether polygamous or monogamous), ($p = 0.09$) did not exert significant effect on respondents' KAP towards IAP.

Figure 3

Table 3: Summary of results on environmental observation.

Distribution on where the observed person cooked.	
PLACE	PERCENTAGE
Single room (also used as living room)	12.6%(12)
Kitchen/ Verander	29.5%(28)
Outside the yard	57.9%(55)
Households where smokers were seen	
Smokers	17.9%
Non smokers	82.1%
Observation on where the observed person smoked.	
In the toilet	Nil
Outside	94.8%
In the living room	5.2%
Presence of heaps of refuse around dwelling places.	
Heaps present	71.6%
No heaps	28.4%
Ventilation pattern of houses.	
Cross ventilation present	33.75
No cross ventilation	66.3%

DISCUSSION

Although many people associate public exposure to air pollution primarily with urban outdoor settings, indoor environments are also contaminated both from pollution penetrating from outside and indoor sources which are perhaps less generally understood by the communities. However, the largest exposures to health damaging indoor pollutants occur in the developing world. As a result, much of the ill health impacts from indoor pollutants occur amongst the poorest and most vulnerable populations; largely women and their young children⁹.

The awareness status of respondents in this study revealed that although majority of the respondents were aware of indoor air pollution (83.9%), its effects and the various hazards that may result, they still engaged in acts that can lead to IAP. This may have been influenced by the fact that majority of the respondents were ignorant of alternative sources or they lack the financial wherewithal to procure them. They also claimed that they used their present various cooking device because they were cheaper and easy to operate.

The respondents in this study gave their sources of information on IAP as media, teachers and health workers. These three major sources of information to the respondents may serve as important strategies for possible future interventions as they seem to have great impact on the respondents. Respondents believed that the use of pesticides with poor ventilation and the use of mosquito coils may lead to indoor pollution but when observed, heaps of refuse were found around apartments and also tiny window frames which may not allow for adequate cross ventilation.

Also in this study, respondents believed the fact that overcrowding, use of pesticides, poor ventilation, smoke from mosquito coils and filthy environment may cause pollution but this is in contrast to the findings during environmental observation where refuse heaps were found around apartments, window frames too tiny to allow for adequate cross ventilation and number of persons per room greater than the number expected. The main reason given by respondents was because of financial difficulties. Most respondents were aware of the various problems associated with IAP such as irritation to eye, headache, catarrh and cough. However, the result of environmental observation was in contrast to what is expected as majority of the respondents still engaged in acts that could cause IAP such as cooking with devices that emit smoke like firewood,

charcoal and saw dust. This study revealed that a majority of the respondents were aware of harmful effects of polluting indoor air. Despite the fact that many of them were aware of these effects, many still indulged in high risk behaviours that may lead to indoor pollution within the community. Raising awareness on indoor air pollution remains one of the most pragmatic ways that can work effectively in preventing and mitigating the effects of indoor air pollution. Campaigns in rural areas by both the government and the local media and the health systems (for example rural community health outreaches) run by health workers can be utilized to improve the level of awareness and discourage practices that predispose to IAP as health workers, media workers and teachers were recorded to be the major sources of information on indoor air pollution. Capacity building of the community members may help to improve their economic wellbeing thereby improving access to alternative cooking methods.

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