JHER Vol. 18, September, 2013, pp. 112-122

Common Sources of Accidents in Kitchen Areas of Urban Households in Plateau State

Keswet, L.M. A.
Department of Science and Technology Education
University of Jos

and
Anyakoha, E.U.
Department of Vocational Teacher Education
University of Nigeria, Nsukka

Abstract

The study was designed to investigate the common sources of accident in the kitchen area of urban households in Plateau State, based on four types of housing units. Four specific purposes guided the research work. The study adopted a descriptive survey design. The population for the study was made up of 490,643 households. The sample for the study was 1,008 homemakers drawn from the population of study through a multi-stage sampling technique. A structured questionnaire was used as the instrument for data collection. Mean was used for data analysis. The findings revealed 16 common sources of accidents in houses on a separate stand, 20 common sources of accidents in flat in block of flats, 20 common sources in detached houses and 22 common sources in let-in houses. The study recommends safety awareness creation campaign on common sources of accidents among urban households in Plateau State based on all the functional areas of the home.

Key words: Households, Social unit, Functional areas, housing units, Accidents.

Introduction

A household is a communal unit which allows for interaction among its members young and old, male and female. They also interact with their immediate environment while making a common provision for their food, shelter and other necessities for living. According to the United Nations organization (2004), a household is a group of two or more people who dwell together and usually purchase and prepare their food jointly. Olson and Defrain (2004), Anyakoha and Eluwa (2009) further explained that these household members could be related or unrelated by blood; in which case, their relationship is based on mutual understanding.

A typical home-stead, in which the household dwells, is often made up of functional areas wherein the specific activities of each member and the entire household takes place. Functional areas in a home are designated places where a particular kind of work is discharged on a daily basis. These areas are furnished to serve specific purposes such as; the

kitchen for the production and processing of food items for household consumption, dining area for food consumption, the store for storage of household tools, equipment and materials, the bathroom for cleaning of self, the living room for interaction and socialization, the garage for parking of vehicles and other household materials and the laundry area for washing of clothes (Chilton, 2001; Fermie, Keech, and Shepherd, 2005; Royal Society for the prevention of Accidents, 2010).

The kitchen is an indispensable functional area for all households. These kitchens are of different types, shapes, sizes and finishes. All members of the household interact in these kitchens as they use the various tools, equipment, material and substances in performing their daily activities. Households live and interact in different types of housing units such as; traditional house, farm house, wooden house, underground house, nomad dome, bungalow, duplex, semi-detached or detached houses (National Bureau of Statistics, 2008; Pandit, 2011).

The classification of these houses and their activity areas differ around the world as well as in both rural and urban areas. Urban houses are generally those types of dwelling places found in cities or towns. They are often characterized by a high population density with the availability of some essential household facilities and amenities (Reynells, 2000). The Plateau State Housing population Commission (2006) listed four common types of urban housing units, which are: houses on a separate stand, flat in block of flats, semi-detached or detached and let-in houses respectively. These urban housing units are often characterized by large population size and the availability of some modern facilities like electricity, pipe born water supply and use of modern gadgets like generators and other appliances (National Bureau of Statistics, 2008) which could cause various types of home related accidents.

Home accidents are those types of accidents which occur among household members as they perform their normal household chores (Chilton, 2002; Amoka, 2007). Many types of accidents could occur to workers; such as: falls, cuts, burns, electrocution, suffocation, bites and stings (Fermie, Keech and Shepherd, 2004; Bhenderi and Choudhary; 2008). In Plateau State, there are many existing types of household related accidents which have not been formally documented in reports. There is no known documented information on the sources of accidents in functional areas and specifically the kitchen area, as well as in different types of urban housing units in the State. Hence, this has created a gap in information and knowledge which needs to be filled. It is for this reason that this study sort to determine the common sources of accidents in the kitchens of the four types of housing units. The study will be of enormous benefit to households, Home Economists; health related workers, Government, non-Governmental Agencies, as well as educationists and researchers who may be interested in household studies. The geographical

scope of the study was limited to urban areas in Plateau State.

Purpose of the study

The major purpose of this study was to identify the common sources of accidents in the kitchens of four types of urban housing units in Plateau State. Specifically the study identified common sources of accidents in the kitchens (1) in houses on a separate stand, (2) within flats in block of flats (3) in detached housing units and (4) identified common sources of accidents in the kitchens of let-in housing units.

Methodology

***Design of the Study*:** This study adopted a descriptive survey research design to obtain the responses of the respondents on the common sources of home accidents in activity areas based on four common types of kitchens in urban housing units (Plateau State National Population Commission, 2008).

Area of the Study: The area of the study was Plateau State which is *located* in North-West geopolitical zone of Nigeria. The State is made up of seventeen (17) administrative Local Government Areas (LGAs) across the existing three senatorial zones in the State (National Population Commission, 2008). Plateau State is also characterized by a large household population with seven main types of housing units, out of which four are majorly urban housing units. These housing units are often equipped with modern amenities, facilities and home appliances (Plateau State Population and Housing Tables, 2006). Plateau State was chosen for this study due to frequent cases of various forms of home accidents in the State (Report of Fire Brigade of Nigeria, 2009; Jos University Teaching Hospital, 2009).

***Population of the Study*:** The population consists of 490,643 households dwelling in four major types of urban housing units. A homemaker from each of the households constituted the respondents for the study.

*S**ample for the Study:*** The sample for the study was 1,008 homemakers drawn from the population. A multi-stage sampling technique was adopted for the study. According to Eboh (2007), the multi-stage technique is used where the selection of units into the sample is organized into stages. The study was therefore organized into six stages as follows: (1) All the three Senatorial Zones were selected. (2) Local Government Areas (LGA) that was predominantly urban were purposively selected. (3) Two urban towns were purposively selected from each of the three LGAs, which are: Jos North and South in the Northern senatorial zone, Pankshin and Mangu in the central senatorial zone and Qua'anpan and Shendam in the Southern senatorial zone respectively. (4) A total of six communities (Anguwa) were purposively selected within the urban towns based on the availability of the four types of urban housing units. (5) Seven households were purposively selected for the study, making 28 households from 36 communities. (6) Finally, from each household, one homemaker was selected. Hence, an overall sample size of 1,008

homemakers constituted the respondents for the study.

***Instrument for data collection*:** The instrument for data collection was a questionnaire. This instrument was developed based on the purpose of the study and extensive review of related literature. It was structured to answer the research questions for the study. The instrument was structured into five Likert – type response options and were assigned values as: Strongly Agreed (SA) = 5; Agreed (A) = 4; Not Sure (NS) = 3; Disagree (D) = 2 and Strongly Disagree (SD) = 1. Any item whose mean value is 3.0 and above was regarded as agreed while those items whose means are below 3.00 was regarded as disagree. The instrument was face validated by three Lecturers from the Institute of Education and the Departments of Vocational Teacher Education and Health and Physical Education respectively, from the University of Nigeria, Nsukka. 20 copies of the instrument were administered to homemakers in Bauchi State in order to determine the internal consistency of the instrument. Cronbach Alpha reliability method was used and reliability coefficient of 0.92 was obtained.

Method of data collection and Analysis techniques: Three trained research assistants from each of the three zones administered and retrieved 112 questionnaires. This gave a total of 1,008 questionnaires (100%). The researcher collated the retrieved questionnaires after administration for the purpose of data analysis. The data were analyzed using Mean (X) and Standard deviation (SD) to answer the four research questions.

Findings of the study

The following findings were made:

(1) Sixteen (16) common sources of accidents in the kitchen area of houses on a separate stand.
(2) Twenty (20) common sources of accidents in the kitchen area of flat in block of flats.
(3) Twenty (20) common sources of accidents in the kitchen area of detached housing units.
(4) Twenty-two (22) common sources of accidents in the kitchen area of let-in houses.

Table 1: Mean Responses and Standard deviation of homemakers on the common sources of accidents in the kitchen area for houses on a separate stand

S/ No	Common Sources of Accidents	$\overline{X}$	SD	Remarks
	Work Place Related Sources			
1	Poor floor layout/arrangement	3.0	.86	AG
2	Inadequate work spaces and walkways	2.9	.97	DA
3	Rough or uneven work surfaces	3.3	1.0	AG
4	Lack of water supply	3.4	1.0	AG
5	Poor grouping of tools, equipment & appliances in work spaces	3.4	1.0	AG
6	Faulty electrical or gas operated appliances	3.5	.95	AG
7	Dilapidated sink or wash basins	2.3	.98	DA

8	Cooking pots & sauce pans with broken handles	3.2	1.0	AG
	Worker Related Sources			
9	Improper clothing during food handling, preparation & production	2.2	1.1	DA
10	Wrong footwear	2.6	1.1	DA
11	Physical disability and ill health e.g. catarrh	3.4	1.0	AG
12	Not using hand gloves & kitchen cloth when handling hot pots,etc.	3.3	1.0	AG
13	Lack of skills in operating equipment.	3.4	.97	DA
14	Spills and peels on floors e.g. water, oil, vegetable & fruit peels	3.5	.91	AG
	Work Related Sources			
15	Careless or poor handling of sharp utensils like knife, scissors, & graters.	3.5	.91	AG
16	Lifting of heavy equipment & sacks of foodstuff.	2.5	1.0	AG
17	Grinding, blending, pounding and mixing of food items.	3.2	.99	AG
18	Cutting, slicing, and shredding of food items like vegetables.	3.1	1.0	AG
19	Boiling, frying, baking and roasting of food.	3.7	1.1	AG
20	Poor routine or scheduling of work.	3.0	1.2	AG
21	Choking from bleached oil & smoke from burnt food while cooking.	3.3	1.0	AG
22	Mistaken ingestion of chemicals e.g. kerosene, liquid soap & others.	2.7	.92	DA

Key: AG: Agreed, DA= Disagreed, $\overline{X}$ = Mean, SD = Standard Deviation.

Table 1 shows the various mean scores of homemakers on the common sources of accidents in the kitchen areas of houses on a separate stand based on work place; worker and work. 22 items were listed and the respondents agreed with 16 as common sources of accidents in the functional area with their mean scores from 2.2 to 3.7 and a corresponding SD scores from .86 to 1.2. The range of the SD indicated similar ratings among all the respondents. They however disagreed with 6 items as common sources of accidents in this functional area with mean scores below 3.0.

Table 2: Mean Responses and Standard deviation of homemakers on the common sources of accidents in the kitchen area for flats in block flats

S/N	**Common Sources of Accidents**	$\overline{X}$	**SD**	Remarks
	Work Place Related Sources			
1	Poor floor layout/arrangement	3.1	.95	AG
2	Inadequate work spaces and walkways	3.3	.96	AG
3	Rough or uneven work surfaces	3.3	1.0	AG
4	Lack of water supply	3.3	1.1	AG
5	Poor grouping of tools, equipment & appliances in	3.3	1.1	AG

	work spaces			
6	Faulty electrical or gas operated appliances	3.4	.89	AG
7	Dilapidated sink or wash basins	2.4	1.0	DA
8	Cooking pots & sauce pans with broken handles	2.7	1.0	DA
	Worker Related Sources			
9	Improper clothing during food handling, preparation & production	3.5	1.1	AG
10	Wrong footwear	3.0	1.1	AG
11	Physical disability and ill health e.g. catarrh	3.3	1.1	AG
12	Not using hand gloves & kitchen cloth when handling hot pots,etc.	3.3	1.1	AG
13	Lack of skills in operating equipment.	3.0	.97	AG
14	Spills and peels on floors e.g. water, oil, vegetable & fruit peels	3.1	.89	AG
	Work Related Sources			
15	Careless or poor handling of sharp utensils like knife, scissors, & graters.	3.5	.89	AG
16	Lifting of heavy equipment & sacks of foodstuff.	3.1	1.0	AG
17	Grinding, blending, pounding and mixing of food items.	3.1	1.0	AG
18	Cutting, slicing, and shredding of food items like vegetables.	3.2	.95	AG
19	Boiling, frying, baking and roasting of food.	3.0	1.1	AG
20	Poor routine or scheduling of work.	3.4	1.2	AG
21	Choking from bleached oil & smoke from burnt food while cooking.	3.3	1.0	AG
22	Mistaken ingestion of chemicals e.g. kerosene, liquid soap & others.	2.5	.94	AG

Key: AG: Agreed, DA= Disagreed, $\overline{X}$ = Mean, SD = Standard Deviation.

Table 2 shows the various mean scores of respondents on the common sources of accidents in the kitchen areas of flats in block of flats based on work place; worker and work. Out of the 22 items listed, the respondents agreed with 20 as common sources of accidents in the functional area with their mean scores from 2.4 to 3.5 and a corresponding SD scores from .89 to 1.2. The range of the SD indicated comparable ratings among the respondents. Respondents disagreed with 6 items as common sources of accidents in this functional area with mean scores below 3.0.

Table 3: Mean Responses and Standard deviation of homemakers on the common sources of accidents in the kitchen area for detached housing unit

S/N	**Common Sources of Accidents**	$\overline{X}$	**SD**	Remark
	Work Place Related Sources			
1	Poor floor layout/arrangement	3.7	.73	AG
2	Inadequate work spaces and walkways	2.8	.95	DA

3	Rough or uneven work surfaces	3.4	.96	AG
4	Lack of water supply	3.4	.96	AG
5	Poor grouping of tools, equipment & appliances in work spaces	3.5	.90	AG
6	Faulty electrical or gas operated appliances	4.1	.78	AG
7	Dilapidated sink or wash basins	3.4	.82	AG
8	Cooking pots & sauce pans with broken handles	4.2	.82	AG
	Worker Related Sources			
9	Improper clothing during food handling, preparation & production	4.2	1.1	AG
10	Wrong footwear	4.0	1.2	AG
11	Physical disability and ill health e.g. catarrh	4.2	1.0	AG
12	Not using hand gloves & kitchen cloth when handling hot pots, etc.	3.9	.98	AG
13	Lack of skills in operating equipment.	2.9	.97	DA
14	Spills and peels on floors e.g. water, oil, vegetable & fruit peels	3.7	.63	AG
	Work Related Sources			
15	Careless or poor handling of sharp utensils like knife, scissors, & graters.	4.0	.76	AG
16	Lifting of heavy equipment & sacks of foodstuff.	3.2	.99	AG
17	Grinding, blending, pounding and mixing of food items.	3.3	.95	AG
18	Cutting, slicing, and shredding of food items like vegetables.	4.0	1.0	AG
19	Boiling, frying, baking and roasting of food.	4.1	1.1	AG
20	Poor routine or scheduling of work.	3.9	1.2	AG
21	Choking from bleached oil & smoke from burnt food while cooking.	3.8	.95	AG
22	Mistaken ingestion of chemicals e.g. kerosene, liquid soap & others.	4.2	.76	AG

Key: AG: Agreed, DA= Disagreed, $\overline{X}$ = Mean, SD = Standard Deviation.

Table 3 shows the various mean scores of respondents on the common sources of accidents in the kitchen areas of detached houses based on work place; worker and work. From 22 items listed, respondents agreed with 20 of the items as common sources of accidents in the functional area with their mean scores from 2.8 to 4.7 and a corresponding SD scores from .63 to 1.2. The variances among respondents were not too close. This means that the respondents varied in their opinions for some of the items rated. They disagreed with 2 items as common sources of accidents in this functional area with mean scores below 3.0.

Table 4: Mean Responses and Standard deviation of homemakers on the common sources of accidents in the kitchen area for let-in houses

S/N	Common Sources of Accidents	$\overline{X}$	SD	Remarks
	Work Place Related Sources			
1	Poor floor layout/arrangement	4.6	.76	AG
2	Inadequate work spaces and walkways	4.3	.87	AG
3	Rough or uneven work surfaces	3.5	.89	AG
4	Lack of water supply	3.6	.88	AG
5	Poor grouping of tools, equipment & appliances in work spaces.	3.4	.89	AG
6	Faulty electrical or gas operated appliances	4.5	.96	AG
7	Dilapidated sink or wash basins	3.5	.87	AG
8	Cooking pots & sauce pans with broken handles	4.5	.87	AG
	Worker Related Sources			
9	Improper clothing during food handling, preparation & production	4.2	.88	AG
10	Wrong footwear	4.2	.95	AG
11	Physical disability and ill health e.g. catarrh	4.5	.87	AG
12	Not using hand gloves & kitchen cloth when handling hot pots, etc.	4.5	.95	AG
13	Lack of skills in operating equipment.	4.6	.96	AG
14	Spills and peels on floors e.g. water, oil, vegetable & fruit peels	4.7	.82	AG
	Work Related Sources			
15	Careless or poor handling of sharp utensils like knife, scissors, & graters.	4.6	.78	AG
16	Lifting of heavy equipment & sacks of foodstuff.	3.3	.97	AG
17	Grinding, blending, pounding and mixing of food items.	4.1	.94	AG
18	Cutting, slicing, and shredding of food items like vegetables.	4.2	.91	AG
19	Boiling, frying, baking and roasting of food.	4.2	.78	AG
20	Poor routine or scheduling of work.	3.1	.94	AG
21	Choking from bleached oil & smoke from burnt food while cooking.	4.4	.95	AG
22	Mistaken ingestion of chemicals e.g. kerosene, liquid soap & others.	4.8	.81	AG

Key: $\overline{X}$ = Mean, SD = Standard Deviation.

Table 4 indicates the various mean scores of the respondents on the common sources of accidents in the kitchen areas of let- in housing units based on work place; worker and work. 22 items were listed and the respondents agreed with all the items listed as common sources of accidents in this functional area with their mean scores from 3.1 to 4.7 and a corresponding SD scores from .76 to .98. The range of the SD indicated very

similar ratings among all the respondents. They agreed with all the various items in this functional area with mean scores above 3.0.

Discussion of findings

Generally, the study of the four types of kitchens in the urban housing units in Plateau State revealed that accidents are common in all housing units, irrespective of type. The kitchen is a unique area because of the number of activities that takes place there. Some of the important activities include: food preparation, production and processing of food items for household consumption and as such, some unique types of facilities, equipment and materials are used in performing these major activities. Fermie, Keech and Shephard (2005) and Royal Society for the Prevention of Accident (2010), pointed out that accidents like falls, cuts, scalds, burns and suffocations occurred very often in the kitchen because of individual's involvement with items like cookers, cupboards, knives, chopping boards. Similarly, this study has revealed sources of accidents such as: (1) Poor floor layout or arrangement, (2) Faulty electrical or gas operated appliances, (3) Over grown grasses and lawns, (4) Mistaken ingestion of chemicals e.g. kerosene, liquid soap and others. This agrees with other studies done in some developed countries of the World (Haggarty, 1996; Park, 2005; Bhanderi, & Choudhary 2008).

From the study, the results on sources of accidents in houses on a separate stand where more of work related and then workplace related. In flats in block of flats, the accidents were more of work related activities (8 items), in detached houses, more accidents occurred as a result of work place (7 items) and work related (8 items) source, while in let- in- houses, accidents occurred from all the three source. This may be because of the fact that let-in houses contain more number of people who are lower income earners than the other three types of housing units. In Plateau State, many household chores are performed by young home makers who are both boys and girls of mostly primary and junior secondary school age and this could lead to accidents due to inexperience in the use of some of the tools and materials like chopping boards, sharp knives and use of gas or electrically operated household equipment.

Chilton (2002), Bhanderi and Choudhary (2008) and Stormy (2010) also highlighted some of the sources of these home accidents in relation to spills, peels, chemicals, smoke and other fuel sources used, which they explained are common to the kitchen area. Also because these young homemakers have no knowledge of the factors that can lead to accidents, they may fall victims. According to theorists of accident causation (Goetsch, 2002; Leveson, 2008; Harry, 2011), accidents are usually caused by action of preceding factors as such, the removal of the central factor will normally negate the action of the preceding factors which will also prevent accidents and injuries from occurring. This confirms that home accident in the kitchen area has to do with interaction between the worker, the

work place and the work performed as such, the sources of home accident in the kitchen area is a combination of the environment of work, the person involved in the work and the nature of the work involved in, hence, three forces are involved.

Conclusion

There are many prevalent sources of home accidents in the various kitchens of urban housing units in Plateau State. These accident sources come about as a result of the use of some household facilities, tools, equipment, material and substances while working in the functional area. The accidents also happen to all categories of household members, young or old, male or female.

Recommendations

The following recommendations were made:

- Intensification of research activities and documentation of findings on sources, types and victims of home accident in both urban and rural areas of Plateau State based on LGAs.
- There should be more intensive studies on home accident sources in the different types of housing units and functional areas, which should be conducted based on population, gender, age, sizes of housing unit and social status of household heads and homemakers.
- Training programs and curriculum material should be developed based on researches to update knowledge of all categories of household members on the various sources of accidents.

References

Anyakoha, E & Eluwa M. (2009). *Home management for schools and colleges.* Africana First Publishers Limited, Onitsha, Nigeria

Bhanderi, D.J. & Choudhary (2008). *A study of occurrence of domestic accident in semi-urban community.* Indian Journal of Community Medicine. 33(2)104-106.

Chilton, G. (2001). *Home basics: The complete guide to running today's home.* MQ Publications Limited, The Ivories, Islington, London.

Eboh, E.C. (2009). "*Social and economic research: principles and methods."* African Institute for Applied Economics, Enugu: Nigeria.

Fermie P., Keech P.,and Shepherd S.(2005). *The illustrated practical book of first aid and family health.* Retrieved from www.lorenzbooks.com;info@anness.com

Fire Brigade of Nigeria (2009). Quarterly/A Fire Brigade of Nigeria (2009). Quarterly/Annual Reports. 10 (1-3), Jan. – Dec. Fire Brigade Head Office, Jos Nigeria

Goetsch, D.L. (2002). Occupation safety and health for technologist, engineers and managers, (5th ed.). Upper Saddle River, NJ, Prentice - Hall.

Haggerty, R.J.C. (1996). Home accidents in childhood. injury prevention. *PubMed Central* (2)290-298. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/pmc1067737

Harry F. D (2011). Clinical application of the theory of accident prevention in childhood. *American Journal of Public Health.* 42(2)849-855. Retrieved from http://www.ncbi.nih.gov/pmc/articles/pmc 1526257/

Independent National Electoral Commission (2010). A Directory of Polling Units, Plateau State, Nigeria.

Jos University Teaching Hospital, JUTH, (2009). Quarterly/Annual Reports. Jan.-Dec, JUTH Record Office, Jos Nigeria.

Leveson N. (2008). A new accident model for engineering safer systems aeronautics and astronautics department. Massachusetts Institute of Technology Cambridge, Massachusetts, USA. Retrieved from http://sunnyday .mit.edu/accidents

National Bureau of Statistics Annual Abstract of Statistics (2008) Produced under auspices of Federal Government Economic Reform and Governance Project (ERGP)

National Population Commission (2008), Housing Characteristics and Amenities Priority Tables (LGA) Vol. 11. Abuja, Nigeria.

Olson D.H.L & Derfrain J.D. (2000). *Marriage and the family diversity and strength*, Mayfield publishing Company U.S.A.

Pandit, S (2011). Different Types of Houses. Hagga Library and Development, 26th Sept. Cairo, 1-13 September. New York,

Park, K. (2005). Environment and health: textbook of preventive and social medicine (18th ed.). Banarsidas Hhanot Publishers: India.

Plateau State National Population Commission (2008), Housing Characteristics and Amenities Priority Tables, Nigeria.

Reynnells L. (2000) what is rural? United States Department of Agriculture, Rural Information Center, National Agricultural Library. U.S.A. retrieved from http://www.nal.usda.gov/ric/ricpubs/what_is_rural.shtml

Royal Society for the Prevention of Accident (2010). Can Children Ever Be Safe? Accidents to Children. Home Safety Factsheet. ROSPA: Home Safety: Advice and Information. Retrieved from www.rospa.Co.UK on 23/10/2010

Stormy Brain, (2010). Preventing accidents in your home. *Medical Alert Review* retrieved from http:/www.webcrawler.com

United Nations Organization, (2004). Report of the International Conference on Population. Washington DC.