



THE EFFECT OF SOME SELECTED SOCIO- DEMOGRAPHIC FACTORS ON PERSONAL HYGIENE

BEHAVIOURS USING OPTIMAL SCALING REGRESSION.

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Abstract

Hygiene refers to practices associated with ensuring good health and cleanliness and it is a science that deals with the promotion and preservation of health. This research investigated the knowledge, attitude and practice towards personal hygiene of people living in Boripe Local Government area. The target age group of respondents is of minimum of 18 years. Sample size was 192, arrived at through stratified random sampling. Descriptive and inferential statistics of bar charts, Optimal scaling regression tools are employed. The results showed that the knowledge and attitude of the dwellers toward personal hygiene is good, but their

perspectives are not encouraging. It was established that number of people living in an household, level of

KEYWORDS:

*Personal hygiene,
Hand washing,
Knowledge,
Attitude, Practice,
Household.*

education and type of residence are of importance in that order to the knowledge, attitude and practice of personal hygiene. It is recommended that there is a need to use different strategies and approaches to translate people's knowledge into practice and positive behaviours.

Introduction

Hygiene refers to the set of practice of keeping oneself and ones living and working area clean in order to prevent illness and disease to maintain one's freshness and health (Scott, Curtis &

Rabie 2007). In term of hygiene, it may refer to a practice which is either personal or domestic. Personal hygiene refers to the use of water for cleaning part of the body and domestic hygiene refer to water used to clean items in the home such as food utensils and floors (WHO, 2014). This set of practices associated with the preservation of health living. Loperz-Quintero, Freeman & Neumark (2009) reviewed in their study that hygiene practice was usually considered as part of water and sanitation research. This is because all three components (water, sanitation and hygiene) commonly impact human health. In medicine, hygiene practices are employed as preventative measures to reduce the incidence and spreading of disease (Liebetrau, 1983). Other uses of the term appear in phrases including body hygiene, mental hygiene, domestic hygiene, dental hygiene and occupational hygiene used in connection with public health.

Hygiene practices vary, and what is considered acceptable in one culture might not be acceptable in another (WHO, 2015). Personal hygiene involves those practice performed by an individual to care for one's bodily health and well-being, through cleanliness (UN, 2015). Motivations for personal hygiene practice include reduction of personal illness, healing from personal illness, optimal health and sense of well- being social acceptance and prevention of spread of illness to others. Personal hygiene can be cultural –specific and many change over times (Noi, 2014).

Other practices that are generally considered proper hygiene include bathing regularly, wash hand regularly and especially before handling food, washing scalp hair, keeping hair short or removing hair, wearing clean clothing, brushing teeth, cutting finger nails besides other practices (WHO, 2015). Some practices are gender specifies such as by a woman during her menstrual cycle. People tend to develop a routine for attending to their personal hygiene needs (Scott et al, 2007). Other personal hygiene practice would include covering one's mouth when coughing, disposal of solid tissue appropriately, making sure toilets are clean, and making sure food handling area are clean, besides other. Some cultures do not kiss or shake hands to reduce transmission of bacteria by contact.

- Washing of hands thoroughly before touching any food or materials.

- Washing of hands after touching uncooked food when preparing meals.
- Not using the same utensils to prepare different foods.
- Not sharing cutlery when eating.
- Not licking fingers or hands while or eating.
- Proper disposal of uneaten food and packaging.

Factors affecting personal hygiene:

- Physical factor: Paraplegics and amputees usually require some assistance with hygiene tasks from family, mentors or caregiver. Hygiene expert notes that temporary physical humectation on performing, self-care such as post-operative incision or plaster casts – may follow an illness, injury or hospital stay.
- Psychological factor: Poor hygiene problem can arise in later stages of Alzheimer’s disease with apathy, fearfulness, depression, inability to plan or remember and inability to perform tasks in sequence all reducing the person ability to practice good hygiene.
- Social and economic factors: Financial hardship such as inability to pay a water bill or producing sufficient soap and towels can also play a role.

Al-Medhani (2005) highlighted hygiene practices as key compliment to improve water and sanitation programs. He claimed that if the hygiene component was not included, some of the environmental health benefits would be lost.

This paper will however, dwell into the knowledge attitude and practice of people in Boripe local government of Osun state, Nigeria using statistical tools of descriptive statistics as well as Catereg multiple regression for categorical data analysis.

Boripe local government area in Osun state, Nigeria, headquarters is in Iragbiji town. It has an area of 132km and a population of 191,358 (Ospoly Iree commuity inclusive) at the 2006 census. The local government covers approximately one hundred and five (105) square kms bounded in North-West by Boluwaduro local government, Ifelodu local government in the North-East. The council is blessed with five (5) principal town of Iragbji, Iree, Ada, Aagba and Ororuwo inhabited by the

Yoruba people. The people of Boripe local government are mainly farmers, majority of them engages in subsistence farming. Notwithstanding, some other people in local government engage in business activities at home and in the neighboring countries like Togo, Benin Republic, Ghana etc.

Educationally, Boripe local government has nine (9) public secondary schools, thirty-four (34) public primary schools and various private nursery/ primary schools secondary schools the local government also has a state government Polytechnic.

Aim and objectives

The purpose of the study is to analyse how socio-demographic factors influence personal hygiene behaviours among the people of Boripe Local Government of Osun State using Catreg Multiple Regression. The objectives are:

- (i) to obtain information on socio-economic and demographic characteristics of the communities in the study area.
- (ii) to analyse how socio-demographic factors influence personal hygiene behaviours using CATREG multiple regression.

Research hypotheses

H₀₁: Educational level has positive significant influence on personal hygiene.

H₁₁: Educational level has no positive significant influence on personal hygiene.

H₀₂: Number of people living in the house has significant effect on personal hygiene.

H₁₂: Number of people living in the house n significant effect on personal hygiene.

H₀: Type of residence has significant effects on personal hygiene.

H₁₃: Type of residence has no significant effects on personal hygiene.

Methodology

The methodology for this research was geared at obtaining primary data. The research was conducted in all areas of Boripe Local Government in Osun State Nigeria. Household head is the potential respondent, in the

absence of household head any adult in the house are considered respondent. A survey questionnaire was developed covering specific concerns on access to water and hygiene facilities including health and hygiene practices.

The sampling size was generated using the solving formula of $n = \frac{N}{1+N \times e}$. Where n = sample size, N = Universal population of the coverage area). The formula was used considering the population of 191,358; the sample size was calculated to be 192 based on 5% margin error. The study used stratified sampling method in its selection after which Boripe LGA was divided into five major towns (Strata): Iragbiji, Ada, Iree, Ororuwo and Aagba districts.

Table 1: List of towns and villages in Boripe L.G.A

| Iragbiji District | Aagba/Ororuwo District | Ada District | Iree District |
|--------------------------|-------------------------------|---------------------|----------------------|
| Aromadu | Aagba | Ada | Egbejoda |
| Banji Elegun | Amola | Alomi | Iloko |
| Egbeda | Aru | Aweda | Imuleke |
| Elemo | Aweda | Erinwo | Iree |
| Esa | Elere | Loba | Koko |
| Goregun | Fadeke | Okelgbo | Gaa Fulani |
| Idiosan | Obada | | Aisin |
| Inurin | Ororuwa | | Eleye |
| Iragbiji | Otake | | |
| Morifin | | | |
| Odebudo | | | |
| Olukosin | | | |

Data was summarized using simple statistic visually through the following methods; Bar chart. Inferential statistics of Optimal scaling regression analysis for categorical data was also employed in which Standard error, R-square, ANOVA and level of importance were used in the analysis and testing of hypotheses.

Optimal scaling regression analysis for categorical data

Categorical regression quantifies categorical data by assigning numerical values to the categories, resulting in an optimal linear regression equation for the transformed variables (Agresti, 1996).

Optimal Scaling Model

For the regression, the model is $Y = \beta_0 + \beta_1 X_1 + \dots + \beta_n X_n + e_i$ for all $i = 0, 1, 2, \dots, n$.

Where Y is the dependent variable: Personal hygiene Proxied as Washing of Hands,

β_i = Coefficients X_i = predictors (Socio-demography variables). e_i = Random error.

Data presentation and analysis

Demographic profile of the respondents

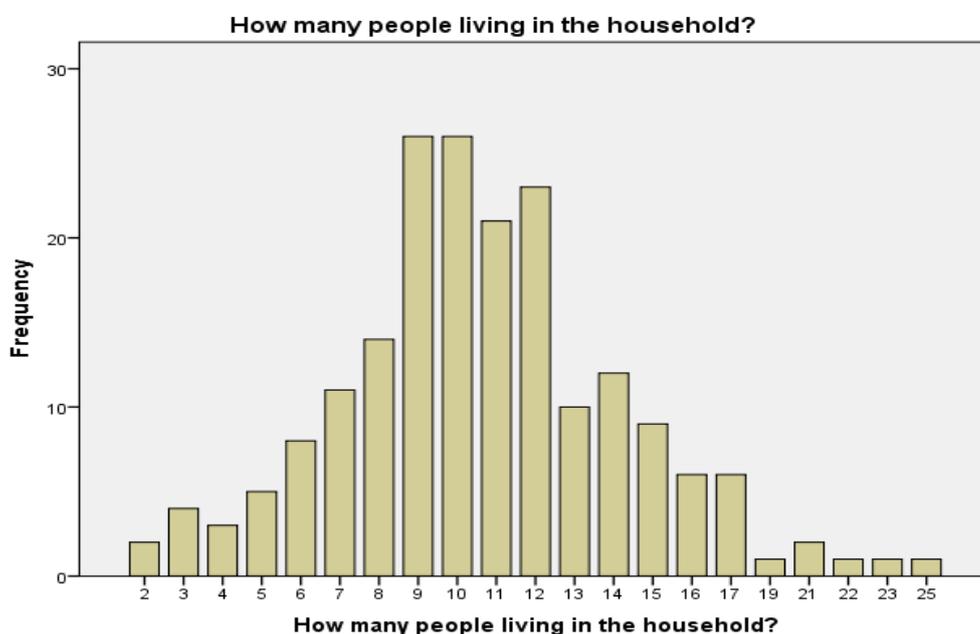


Fig. 1: Number of people in the household. Source: Field observation: February, 2017

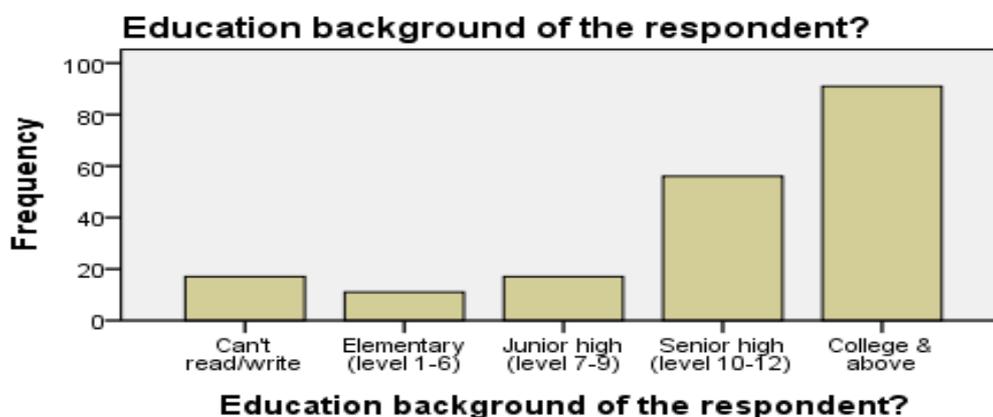


Fig. 2: Educational Background of respondents in urban area.

Source: Field observation: February, 2017

There is a spread of respondents by educational background as shown in Figure 2. A majority of the respondents (47.4%) has college and above school education. They are followed by senior high school leavers at 29.2%, junior high level (8.9%) and elementary level (5.7%). However, 17 (8.9%) of the respondents can neither read nor write.

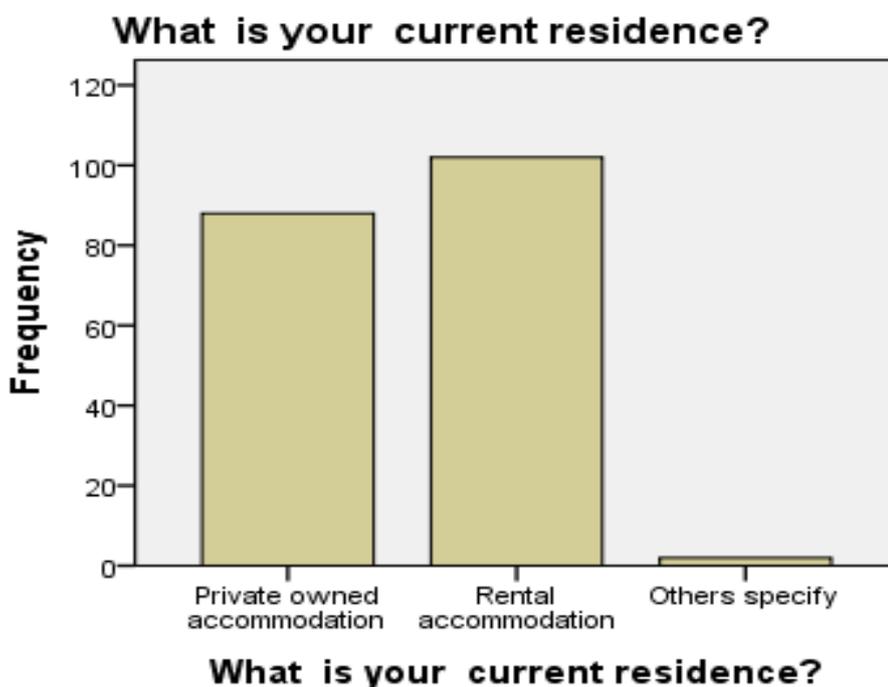


Fig.3: Respondent’s residence Source: Field observation: February, 2017
Figure 3 shows the housing situation of respondents. 45.8% owns their homes. 53.1% is renting while only 2 (1.0%) are living with their families and relatives.

Test of hypothesis

Objective: To analyse how socio-demographic factors influence personal hygiene behaviours.

Hypotheses

H₀₁: Educational level has positive significant influence on Personal Hygiene.

H₁₁: Educational level has no positive significant influence on Personal Hygiene.

H₀₂: Number of people living in the house has significant effect on Personal Hygiene.

H₁₂: Number of people living in the house n significant effect on Personal Hygiene.

H₀₃: Type of residence has significant effects on Personal Hygiene.

H₁₃: Type of residence has no significant effects on Personal Hygiene..

The output from SPSS

| Table 2 Model Summary | | | |
|--|----------|-------------------|---------------------------|
| Multiple R | R Square | Adjusted R Square | Apparent Prediction Error |
| .480 | .230 | .109 | .770 |
| Dependent Variable: Do you wash hands? | | | |

| Table 3 ANOVA | | | | | |
|--|----------------|-----|-------------|-------|------|
| | Sum of Squares | Df | Mean Square | F | Sig. |
| Regression | 44.177 | 26 | 1.699 | 1.897 | .009 |
| Residual | 147.823 | 165 | .896 | | |
| Total | 192.000 | 191 | | | |
| Dependent Variable: Do you wash hands? | | | | | |

| Table 4 Coefficients | | | | | |
|---|---------------------------|---|----|--------|------|
| | Standardized Coefficients | | df | F | Sig. |
| | Beta | Bootstrap (1000) Estimate of Std. Error | | | |
| Constant | .324 | .020 | 2 | 18.432 | .000 |
| Education background of the respondent? (X1) | .226 | .060 | 4 | 14.332 | .000 |
| How many people living in the household? (X2) | .436 | .061 | 20 | 51.312 | .000 |

| | | | | | |
|---|------|------|---|-------|------|
| What is your current residence? (X ₃) | .111 | .083 | 2 | 1.785 | .171 |
|---|------|------|---|-------|------|

Dependent Variable: Do you wash hands?

$$Y = 0.324 + 0.226X_1 + 0.436X_2 + 0.111X_3$$

| | Correlations | | | Importance | Tolerance | |
|--|--------------|---------|------|------------|----------------------|-----------------------|
| | Zero-Order | Partial | Part | | After Transformation | Before Transformation |
| Education background of the respondent? | .172 | .247 | .223 | .169 | .974 | .992 |
| How many people living in the household? | .417 | .444 | .434 | .790 | .992 | .931 |
| What is your current residence? | .085 | .125 | .110 | .041 | .982 | .929 |

Dependent Variable: Do you wash hands?

Result and comments

The value of R² (Table 2) show that 23.0% of the explanatory variables i.e. level of education, number of people living in the household and current residence explained the dependent variable (Hand washing/Personal Hygiene) which means that about 77.0% of other variables are indeed account for reasons of washing hands. However, as depicted in the ANOVA session (Table 3), the p-value is 0.000, meaning that the model is reliable, has a good predictive power and as well shown that variable considered are important in washing hands habit/ personal hygiene.

Table 4 shows that H₁₁ and H₁₂ are accepted, P-values are 0.000 each. Which means that education and number of people living in a household are significant to the personal hygiene. However, type of residence is not significant as revealed by the p-value = 0.171 at α=0.05.

On the level of importance (Table 5) to the washing hands practice, it was established that number of people living in an household (0.790), level of education and type of residence are of importance in that order to the knowledge, attitude and practice of personal hygiene.

Conclusion

This study employed the use of Catreg multiple regression for categorical data to achieve the identified aim and objectives.

The following objectives are achieved:

- i. Information on socio-economic and demographic characteristics of the communities in the study area.

- ii. Analysed how socio-demographic factors influence personal hygiene behaviours using CATREG multiple regression.

Number of people in a household is significant to the washing hands behaviour. However, type of residence is not significant. On the level of importance to the washing hands practice, it was established that number of people living in an household, level of education and type of residence are of importance in that order to the knowledge, attitude and practice of personal hygiene.

Recommendations

- i. There is need to advocate for sustainability of water and sanitation facilities.
- ii. A campaign on hand washing with soap can be done not just during the Global Hand washing Day but can be integrated into the regular activities like the use of hash (#) tag campaign.
- iii. There is a need to use different strategies and approaches to translate peoples' knowledge into practices and positive behaviours.
- iv. House visits, training, focus group discussions and sessions also highly recommended by the respondents.
- v. Consultations with relevant stakeholders such as the communities, government line agencies and other organisations to make the activity more relevant and responsive to the needs is required.

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APPENDIX 1

Acknowledgement

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QUESTIONNAIRE ON KNOWLEDGE ATTITUDE AND PRACTICE (KAP) ON PERSONAL HYGIENE

INFORMED CONSENT

Hello, my name is _____ and I am working on KAP on Personal hygiene We are conducting a survey and would appreciate your participation. You have been asked to participate in

this study because your personal views and experience as community member is important to us. Whatever information you provide will be kept strictly and confidential.

| RESPONDENT'S PROFILE | | | |
|---|-----------------|--|--------|
| 1. Gender of the respondent: | | 1 <input type="checkbox"/> Female 2 <input type="checkbox"/> Male | |
| 2. Respondent Marital Status: | | 1 <input type="checkbox"/> Single 2 <input type="checkbox"/> Married 3 <input type="checkbox"/> Separated / Divorced 4 <input type="checkbox"/> Widow/er | |
| 3. How old are you now? _____ | | | |
| 4. Age bracket of the respondent | | 1 <input type="checkbox"/> 12-17yrs 2. <input type="checkbox"/> 18-40yrs 3. <input type="checkbox"/> 41-40yrs 4 <input type="checkbox"/> 60yrs and above. | |
| 5. Who is the respondent? | | 1 <input type="checkbox"/> Wife 2 <input type="checkbox"/> Husband 3 <input type="checkbox"/> Brother/ sister of the husband / wife 4 <input type="checkbox"/> Daughter 5 <input type="checkbox"/> Son 6 <input type="checkbox"/> Grandparent 7 <input type="checkbox"/> Others | |
| 6. What is the gender / sex of the head of the household? | | 1 <input type="checkbox"/> Female 2 <input type="checkbox"/> Male | |
| 7. How many people living in the household? _____ | | | |
| | Age Bracket | Male | Female |
| 8. | 0-5 years old | | |
| 9. | 6-17 years old | | |
| 10. | 18-59 years old | | |
| 11. | 60+ years old | | |
| 12. Educational background of the respondent. | | | |
| 1 <input type="checkbox"/> Can't read/ write | | 3 <input type="checkbox"/> Junior High (level 7-9) | |
| 2 <input type="checkbox"/> Elementary (level 1-6) | | 4 <input type="checkbox"/> Senior High (Level10-12) | |
| 5 <input type="checkbox"/> College and a above | | | |

| | |
|--|---|
| 13. What is your current residence? | 1 [<input type="checkbox"/>] Privately owned accommodation 3 [<input type="checkbox"/>] Rental accommodation 4 [<input type="checkbox"/>] Others, specify. |
| 14. Do you wash your hands as form of personal hygiene? | Yes [<input type="checkbox"/>] No [<input type="checkbox"/>] |
| 15. Kindly give me the key times you usually wash your hands? Tick what the respondent mentions. | 1 [<input type="checkbox"/>] Before eating 4 [<input type="checkbox"/>] after latrine use 2 [<input type="checkbox"/>] After eating 5 [<input type="checkbox"/>] Before feeding child 3 [<input type="checkbox"/>] After defecation 6 [<input type="checkbox"/>] After handling rubbish 7 [<input type="checkbox"/>] After handling baby's diaper/feces 8 [<input type="checkbox"/>] Before food preparation 9 [<input type="checkbox"/>] After handling animals 10 [<input type="checkbox"/>] Others. |