PAPER NAME

Assessment of Undergraduate Students' Environmental Health Knowledge and Practices

AUTHOR

-

WORD COUNT

3253 Words

CHARACTER COUNT

18192 Characters

PAGE COUNT

15 Pages

FILE SIZE

49.3KB

SUBMISSION DATE

Sep 3, 2023 8:24 AM GMT+1

REPORT DATE

Sep 3, 2023 8:27 AM GMT+1

8% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

- 7% Internet database
- Crossref database
- 0% Submitted Works database
- 3% Publications database
- Crossref Posted Content database

Assessment of Undergraduate Students' Environmental Health Knowledge and Practices

ABSTRACT

The knowledge of anyone about the environment will be the basic in determining how he/she acts regarding environmental hazards. With environmental health been promoted, threats subsist mainly because of individual's behavior and practices in reaction to likely health hazards. This study aims at assessing University of Abuja undergraduate students' (those living outside the school hostel) level of knowledge and associated practices of environmental health with their day-to-day activities**.** The data for the study was collected using 3 sections (demographic attribute, Knowledge of the Students about the Environment and Environment Practices by the Students) well-structured questionnaire. The findings shows that participants lack general knowledge concerning environmental health-related challenges. The male gender scores (M=69.91, SD=9.9) and Female (M=70.31, SD=10.3) were found not to be significant, $t(238) = -0.309$, $p > 0.05$ with their environmental health knowledge. The interconnection between environment knowledge and practices shares a positive correlation between them ($r = 0.206$, $n = 240$, $p = 0.05$) and statistically significant. It could be submitted that the undergraduate students in this study do not have much knowledge about the environment. Since knowledge influence an individual's style and practice, persisting efforts and dedication in environmental health education ought to be more pronounce and refined.

Keywords: environmental health, knowledge, practice, students, Abuja

INTRODUCTION

People are exposed to numerous health risks such as contaminated water, air pollution, heavy metals toxicity etc. in the environment where they live. The manner at which exposure to pollutants impact on the well-being of human is what Environmental health evaluate in addition to determination of ways in which the pollutants and associated hazard are controlled or eliminated (Ratnapradipa *et al.,* 2011a). The environmental risk perception does affect a person's attitude in an environment, but all these are highly influenced by individual knowledge regarding health risks. It has been reported that six

important factors influence perception of individuals about hazards in relation to environmental health (Fischhoff, and Morgan, 2005). The effect of ecological challenges on human health is one of them, with a prospect of mitigating the challenges, the benefits or disadvantage linked to the risk, mode of influence on an individual, the level of knowledge possessed on the challenges by the individual, and the impacts on aesthetic values.

The health behaviors inculcate at early stage of life have been reported not to likely change as an individual progress in life (Centers for Disease Control and Prevention (CDC), 2001). In an attempt to develop an environmental health act by adulthood which is positive in nature, it will be good to work with groups which are younger in age in order to increase the awareness of individual's health behaviors improvement (Gutter, 2009). The youth potential to make and abide by good and productive environmental decisions and involvement in pro-environmental attitudes needs to be encouraged and improved (McBeth and Volk, 2010). In schools, the apparatus of Environmental education had faced some criticisms to be biased, emotional and unscientific (McCrea and deBettencourt, 2000). The removal of environmental health in the movement responsible for national educational standards will lead to propagation of literacy in the environmental health sector (Ratnapradipa *et al.*, 2011b).

Environmental health (EH) deals with human's life quality that can be influence by biological, physical, psychological and social variables that are present in the environment

(Lvovsky, 2001; Zsoka *et al*., 2013). In addition, EH allude to the theory and practice of appraising, unerring, donating and averting those variables in the environment that can resentfully impac the health of the populace (Udofia, 2005). Environmental amiability behaviour and knowledge are very interconnected and mutually strengthen mainly in exploring of data on environmental challenges (Sarkawi et al., 2017). The interconnection between health and the environment is quite multiplex. Various environments impact health in various manners. Environmental epidemiology studies were carried out in order to determine interconnection between pollutants and health related problem (Udofia and Etukudo, 2003).

Augmenting knowledge is vital in ameliorating challenges associated with the environment. Awareness can assist in reducing size of population (Ehrlich and Ehrlich, 1990), transpose excess consumption patterns (Ehrlich *et al*., 1999), and generate additional technologies that are environmentally congenial (Kane 1996).

Gronhoj and Thogersen (2012) opined that despite the youth having agreeable environmental behaviour, they are unenthusiastic to pro-environmental attitudes that are majorly impacted by their background. It is not enough to roll out facts, figures, goals and objectives into available curriculum on behavioral patterns changes (Ajzen *et al*., 2011; Gifford and Nelson, 2014; Stern, 2011). This study aimed to assess undergraduate students'(those living outside the school hostel) level of knowledge and interconnected practices with respect to environmental health regarding their day-to-day activities.

METHODOLOGY

Study Area

The main campus of University of Abuja is situated in federal capital territory (FCT), Abuja, Nigeria. It is within latitude 8°58′N and longitude 7°10′E. Anagada village bordered the campus at the north, Giri bounded it on the west, Kuje bounded it on the east, and Gwagwalada town bounded it on the south-west (Enumah et al., 2020). The study focused on undergraduate students across the University of Abuja, major campus who lives in various hostels outside the school.

Population and Sample Size

The population under study is made up of 800 undergraduates and for the sample size ascertainment, 5% significance level was used. The Yamane formular as used by Olu and Iyere (2020) was used in calculating the sample size.

$$n = N/1 + N(e)^2$$

Where

n = sample size
N = studied population
e = Error estimate at 5%
1 = Constant

$$n = \frac{800}{1 + 800(0.05)^2}$$

$$n = \frac{800}{1 + 800(0.0025)}$$

$$n = \frac{800}{1 + 2.0}$$

$$n = \frac{800}{3} = 266.6$$

$$= 267$$

Reliability of the Instrument

The instrument used (questionnaire) for this study with the response obtained was subjected to reliability test with Cronbach's Alpha using SPSS (version 24).

Data Analysis

Both descriptive and inferential statistics using SPSS (version 24) were used in analyzing the data gathered in the course of this study. Outliers were screened for after cleaning of the data. Knowledge and practice items total score were computed. In evaluating the interconnection between gender and the responses obtained with the knowledge of environmental health independent T-test was utilized at $p < 0.05$. Pearson's product moment correlation coefficient was utilized to examine the association between environment knowledge and environmental practices.

RESULTS AND DISCUSSION

A total of 267 questionnaires were produced and self-administered to participants. Unfortunately, 17 of the questionnaires were never returned and 10 questionnaires were not completely filled and this situation left the authors with 240 questionnaires to analyze.

Demographic Characteristics of Respondents

The result from Table 1 shows male respondents constituent 57.1%, while the female were 42.9% of the respondents, 82.8% of them were single, 78.3% of the respondents were

tenants in the houses where they resides and 64.2% of the respondents claimed to be cleaning their environment every day.

Table 1: Respondents Demographic Attribute

Variables	Frequency	Percentage
Gender		
Male	137	57.1
Female	103	42.9
Age(years)		
15-25	177	73.8
26-35	36	15.0
36 and above	27	11.2
Marital Status		
Single	199	82.9
Married	41	17.1
Religion		
Christianity	128	53.3
Islam	108	45
Traditional	4	1.7
Academic Level		
100	47	19.6
200	51	21.3
300	63	26.3
400	79	32.9
Housing Status		
Owner	52	21.7
Tenant	188	78.3
Cleanliness		
Everyday	154	64.2
Weekly	70	29.2
Monthly	8	3.3
I don't know	8	3.3

Participant Demographic Characteristics by Gender

From Table 2, 20.4% of the male students were in their first year in the university, 21.9% were in second year, 26.3% were in their third year while 31.4% were in their final year. On

the other hand, 35.0% of the female students were in their final year, 18.4% of them were in their first year, 20.4% and 25.2% were in their second and third year respectively in the university.

Table 2: Participants Academic Level by Gender

Variables	Gender	
	Male	**Female**
Academic level		
100L	28(20.4%)	19(18.4%)
200L	30(21.9%)	21(20.4%)
300L	36(26.3%)	27(25.2%)
400L	43(31.4%)	36(35.0%)

Male *(N* = 137). Female *(N* = 103, Total= 240

Knowledge of the Students about the Environment

The findings in this study from Table 3 indicate that the assessment of knowledge of the respondents about environmental health revealed that majority of them had reasonable understanding on environmental practices. As stated by Yusuf *et al.* (2022) reliability test in Cronbach alpha if at a value >0.9, > 0.8, > 0.7, >0.6, > 0.5 and < 0.5, is said to be excellent, good, acceptable, questionable, poor, and unacceptable respectively. The environmental knowledge was found to be highly reliable (18 items; α =0 .846). The environmental knowledge items total score mean was 70.08 (SD=10.04). From Table 3, 63.8% of the respondents strongly agreed that it should be unlawful to engage in smoking activities around children. Overwhelming majority of the participants (74.6%) in this study opined that it should be unlawful to engage in smoking activities around children. This is

not certainly astonishing considering the set of participants in this study. A similar observation was made in a study by Ratnapradipa *et al*. (2011b), indicate that majority of respondents (85.1%) were of the opinion that it should be unlawful to engage in smoking activities around children.

Also, from Table 3, 2.1% of the respondents strongly disagree that exhaust from car added to greenhouse gas impacts while 46% strongly agreed that exhaust from car added to greenhouse gas impacts. With the more attention channel towards climate change and global warming, it would envisage that university students would intensely concur to the item that "Car exhaust contribute to greenhouse gas effect". In this study, 76.8% of the students indicate that they agreed with this assertion, but in another study by Msengi and Doe (2017), 25% of the respondents were indifferent with the only item on green house with extra 9% specified that "Car exhaust do not contribute to greenhouse gas effect". From Table 3, 18.8% of the respondents were not sure if recycling has health benefits., 30.8% of the respondents agreed that tap water is safe to drink and 11.3% of the respondents disagreed that living in a rural area is less risky than living in a suburban area.

Table 3: Knowledge of the Students about the Environment

Item	SD n(%)	D n(%)	NS n(%)	A n(%)	SA n(%)
It should be illegal to smoke around children	48(20)	4(1.7)	9(3.8)	26(10.8)	153(63.8)
Waste resources are preserved by sewage treatment	10(3.3)	8(12.1)	29(38.8)	93(38.8)	100(41.7)
Blockage in pipelines conveying sewage is best removed by sewage treatment	8(3.3)	6(2.5)	33(13.8)	104(43.3)	89(37.1)
Frequent usage of water and soap in washing the hand makes it easier to prevent ailment	6(2.5)	8(3.3)	26(10.8)	101(42.1)	99(41.3)
Car exhaust contribute to greenhouse gas effects	5(2.1)	4(1.7)	49(20.4)	74(30.8)	108(46.0)
Improper sewage treatment can cause diseases outbreak	11(4.7)	4(1.6)	11(4.7)	86(35.8)	128(53.3)
Potential source of radiation exposure consists computer, smoke detectors, TV and ultraviolet light	9(3.8)	13(5.4)	48(20.0)	102(42.5)	68(28.3)
Environmental health issues affect me and/or my family.	9(3.8)	25(10.4)	46(19.2)	102(42.5)	58(24.2)
Carbon dioxide (CO_2) causes global climate change	7(2.9)	9(3.8)	49(20.4)	102(42.5)	73(30.4)
Lead paint is not a major health concern	33(13.8)	29(12.1)	116(48.3)	46(19.2)	16(6.7)
Radiation emitting from recurrent usage of cell phone and its impact get me worried	7(2.9)	25(10.4)	56(23.3)	99(41.3)	53(22.1)
Recycling has health benefits	9(3.8)	9(3.8)	45(18.8)	83(34.6)	94(38.2)
Noise pollution is a problem	9(3.8)	8(3.3)	20(8.3)	86(35.8)	117(48.8)
Every family should have an emergency plan	5(2.1)	6(2.5)	23(9/6)	98(40.8)	108(45.0)
Human activities are responsible for major global warming.	7(2.9)	7(2.9)	42(17.5)	83(34.6)	100(41.7)
It is less risky residing in a rural area than do the same in a suburban area	23(9.6)	27(11.3)	69(28.8)	67(27.9)	53(22.1)
Tap water is safe to drink	15(6.3)	46(19.2)	67(27.9)	74(30.8)	38(15.8)
Bottled water is safe to drink	8(3.3)	16(6.7)	41(17.1)	109(45.4)	66(27.5)

SA- Strongly Agree, A - Agree, NS- Not Sure, D - Disagree, SD - Strongly Disagree

The Environmental Practices Engage on by the students

Cronbach's alphas for the 14 environmental practices items were 0.637. The environmental practices items total score mean was 33.85 (SD=5.87). 46.7% of the respondents sometimes use hands-free listening devices when using a cellular phone. 58.8% of the respondents almost always see that windows are kept open for good ventilation of their room while 2.5% almost never. 20% of the respondents often listen to musical sound at a high-volume level. 30.4% almost always guide against flooding of their surroundings.

Rawool and Colligon-Wayne (2008) declared that lots of local adults of college-age are not bothered with the risks connected with exposure to deafening noises. So, these set of people are unlikely to put on hearing protection even while mowing the lawn with the mowers or any other device that can generate booming noise. In this study, when queried about listening to musical sound at a high-volume level, the overall findings revealed that 61.7% of the participants do not make use of ear protection device as indicated in Table 4. Besides, individuals that make use of protection on their ears when around booming noises rather put them on occasionally. One clarification could be that individuals who put on protective hearing device most time will not be finding it difficult or strange to do same when their work requires such, notwithstanding this study did not explore such. It was examined if more male put on protective hearing device than their female counterpart. Nevertheless, these two groups were not significantly different when an independent t-test was conducted for their knowledge in environmental health. Also,

from Table 4, 80% of the students do wash fruits and/or vegetables before eating in this study.

Table 4: Environment Practices by the Students

Item	AN n(%)	S n(%)	O n(%)	AA n(%)
How often do you use hands-free listening devices when using a cellular phone?	45(18.8)	112(46.7)	49(20.4)	30(12.5)
How often do you use "natural" (compost, manure) fertilizer instead of "chemical" fertilizers?	118(49.2)	61(25.4)	40(16.7)	14(5.8)
How often do you wash fruits and/or vegetables before eating?	11(4.6)	35(14.6)	70(29.2)	122(50.8)
How often do you recycle your newspapers and other paper products?	135(56.3)	63(26.3)	24(10.0)	14(5.8)
How often do you recycle your batteries?	137(57.1)	41(17.1)	40(16.7)	16(6.7)
How often do you dispose your solid waste?	22(9.2)	23(9.6)	89(37.1)	96(40.0)
How often do you guide against flooding of your surrounding?	26(10.8)	71(29.6)	68(28.3)	73(30.4)
How often do you dispose your sewer when filled up?	26(10.8)	71(29.6)	68(28.3)	92(38.3)
How often do you contact the waste management when waste litter your surroundings?	53(22.1)	67(27.9)	65(27.1)	51(21.3)
How often do you listen to musical sound at a high volume level?	52(21.7)	90(37.5)	48(20.0)	44(18.3)
How often do you clean your toilets and closet to prevent germ spread by some insects	9(3.8)	26(10.8)	71(29.6)	133(55.4)
How often do you see that windows are kept open for good ventilation of your room	6(2.5)	25(10.4)	66(27.5)	141(58.8)
How often do you pass urine and faeces in the open?	155(64.6)	47(19.5)	29(12.1)	8(3.3)
How often do you throw refuse on the streets and roads	142(59.2)	62(25.8)	19(7.9)	16(6.7)

AN = Almost Never, S = Sometimes, O = Often, AA = Almost Always, n= respondents

Test of hypothesis 1

H_0: There is no significant difference between the environmental health knowledge and the gender of the students.

An independent-samples t-test was conducted to compare the total score for knowledge of the environment in male and female students. From table 5, results showed the male gender scores (M=69.91, SD=9.9) and Female (M=70.31, SD=10.3) and an independent t-test found this pattern not to be significant, t(238) = -0.309, p > 0.05. Therefore, the Ho hypothesis which adduce that there is no significant difference between the environmental health knowledge and the gender of the students is accepted and reject Hi hypothesis which adduce that there is significant difference between the environmental health knowledge and the gender of the students.

Table 5: Hypothesis 1independent-samples t-test

	Sex	Mean (M)	Standard Deviation (S.D)	T	Df	Significant
Total Knowledge	Male	69.91	9.885	-0.309	238	0.758
	Female	70.31	10.293			

This study shows that environmental knowledge has nothing to do with gender unlike some studies that were of contrary view. Sarkawi *et al.* (2017) reported that gender variances give significant impacts on eco-friendly materials purchases and environmental knowledge. In addition, Tikka et al. (2000) discovered that nature awareness and the

environment appear to depend on gender since the par knowledge value owned by men appear to be more than women's own. In addition, Briggs et al. (2003) discovered that awareness of the environment is lower with women in contrast to men. Furthermore, Mostafa (2007) likewise discovered significant differences when it comes to knowledge about the environment between men and women.

Test of hypothesis 2

H_0: There is no significant difference between the behavior/practices engaged by a person in reducing or eliminating the risk associated with environmental health issues with respect to their environmental knowledge.

In examining the interconnection between environment knowledge and practices in this study, Pearson product-moment correlation was used and a positive correlation between the two variables ($r = 0.206$, $n = 240$, $p = 0.05$) was statistically significant which made us reject the null hypothesis that adduced that there is no significant difference between the behavior/practices engaged by a person in reducing or eliminating the risk associated with environmental health issues with respect to their environmental knowledge.

Table 6: Hypothesis 2 Pearson's product moment correlation coefficient (*r*)

		Total score for knowledge	Total score for Practice
Total score for knowledge	Pearson Correlation	1	.206**
	Sig. (2-tailed)		.001
	N	240	240
Total score for Practice	Pearson Correlation	.206**	1
	Sig. (2-tailed)	.001	
	N	240	240

**. Correlation is significant at the 0.05 level (2-tailed).

Information around us is that anthropogenic engagement continuously augments warming of the globe, although there appear to be different school of thoughts to this narrative politically which left only the media and some conspiracy theorist to be propagating sure believes, which simply imply that one needs to know more than the environmental health practices. Tempte and McCall (2001) indicate that how an individual sees that some environmental practices are dangerous really matters. Looking at the knowledge of the students about environmental health and their various actions, it is clear that there was significant difference between these variables and it is possible that the knowledge of the participants in this study may be low which subsequently hampered their decisions about environmental health challenges. Another instant could be that participants answered based on their believed to how environmental health problems impact on them just to please the researchers. Moreover, knowledge does not certainly

forecast practice, in this study, environmental health and environmental practice share a statistically significant correlation.

CONCLUSION

With the findings in this study, it could be submitted that the undergraduate students in University of Abuja does not have much knowledge about the environment. And this ugly fact transmutes into exhibition of reckless attitudes and practices relating to self-protection from hazards emanating from the environment. Since responsible practice is what is desired, it then befalls on the government agencies and non-governmental bodies that have concerns about making the environment habitable to step up education in environmental health area that are linked to current environmental issues and practices. This study provides discernment into areas that need further refinement and investigation:

• Examination of the effectiveness of programs put together to educate students on changes in environmental health practice.

• Subscales expansion in order to link them to health sections with some environmental elements.

• Expand the research to collate how different populations (graduates and freshmen) will do among the citadel of learning when it comes to environmental knowledge and practices.

8% Overall Similarity

Top sources found in the following databases:

- 7% Internet database
- Crossref database
- 0% Submitted Works database
- 3% Publications database
- Crossref Posted Content database

TOP SOURCES

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

1	opensiuc.lib.siu.edu Internet	2%
2	gtu.ge Internet	<1%
3	researchgate.net Internet	<1%
4	scholar.mzumbe.ac.tz Internet	<1%
5	elibrary.pu.ac.ke Internet	<1%
6	core.ac.uk Internet	<1%
7	ecophytopic.fr Internet	<1%
8	ir.canterbury.ac.nz Internet	<1%

9	sciencescholar.us Internet	<1%
10	mafiadoc.com Internet	<1%
11	"Handbook of Climate Change Resilience", Springer Science and Busin... Crossref	<1%
12	scirp.org Internet	<1%
13	Joshua OLU, Hajara Oyiza YUSUF, Fatima DANTANKO, Elizabeth O. OJ... Crossref	<1%
14	ikesra.kra.go.ke Internet	<1%
15	stclements.edu Internet	<1%
16	Belinda Owusu Mintah, Isaac Owusu-Darko, Henry Apoenchir. "The Per... Crossref	<1%
17	srdc.org Internet	<1%