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Environmental knowledge, behaviors and attitudes of University students in Mymensingh, Bangladesh

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Abstract

The present study was conducted among the students of Bangladesh Agricultural University to investigate the responses of university students related to environmental issues. There were 300 participants from different educational level and they were randomly selected. The data were collected through personal interview by using a pre-tested structured questionnaire during the period from July 15 to November 15 in 2017. The number of male and female participants was 200 (66.7%) and 100 (33.3%), respectively. Undergraduate, MS and PhD students were 180 (60%), 100 (33.3%) and 20 (6.7%), respectively. Majority (36.7%) of the participants family residence were town, most of the participants father's and mother's educational qualification were BA/Honours (46.4%) and below S.S.C was 36.7%, respectively. The study revealed that most (70%) of the participants had a reasonable amount of environmental knowledge and 85.3% of the participants had incorrect knowledge about the cause of global warming. Maximum (88.4%) participants said that primary sources of environmental information were television and radio, internet, magazines and newspaper. The result also revealed that most (96.3%) of the participants thought that global warming is the most serious environmental problem in the world and 79% thought that natural disaster is the most serious environmental problem in Bangladesh. Participants environmental awareness level was high and they are highly concerned about different environmental issues and problems.

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Introduction

Bangladesh is a country which is severely affected by natural disasters. A survey on responses to various issues of environment amongst students of Bangladesh Agricultural University was done. The university has a vast number of students from different parts of Bangladesh which provide a good scope to study the student's environmental knowledge and command on environmental issues.

Today's environment is totally different from the past. Urbanization, industrialization and modernization of our community are contributing to contaminate the world ambience to a greater extent. Global environment has been observed to have undergone serious changes due to blindfold human activities in the past few decades. The quality of environment has been considerably changed through deterioration in quality of air, water, soil, increased ocean pollution, loss of biodiversity and increased catastrophic natural disasters resulting in loss of lives and properties, spread and increased in cancerous diseases (Abbas, 2013).

Many environmental problems caused due to irresponsible environmental behaviour, which is highly influenced by the attitudes people possess (Meinhold and Malkus, 2005; Ramsey and Rickson, 1976). As a result of the increasing environmental problems, environmental concerns have dramatically increased among the public over the last few decades (Decamps, 2000; Thapa, 2001).

Environmental education is a must from elementary level to university for a country like Bangladesh. Environmental education is an effective way to create environmental knowledge, attitudes and awareness among individuals. The purpose of environmental education is to have environmental information and to learn attitudes and behaviors to protect the environment and to give shape suitable problem solving methods. If the people's attitude and responses toward environmental issues is enriched, it means that the people's environmental literacy rate is high. Determining what people know and feel about the environment and what actions they take that may help or harm the environment is required to establishing the sustainability of a community and to protect the environment (Anonymous, 1995; Thapa, 2001).

Responses to environmental issues by university students can represent significant results that can be used while making the necessary decisions about the education level of the students on environmental issues. Ideally, environmental education at universities would be woven into the fabric of the learning experience across many disciplines (Orr, 1992; Strauss, 1995). The purpose of environmental education is to have environmental information and to learn attitudes and behaviors to protect the environment and to give shape suitable problem solving methods. The goal of this research is to investigate the environmental knowledge, behaviors and attitudes of university students influenced by gender, education level, residence and parental education level of students.

Materials and methods

Study Area

The study was conducted at Bangladesh Agricultural University (BAU) campus. The campus is situated about 4 km south from the Mymensingh town. Bangladesh Agricultural University (BAU) is located mainly on the west bank of the Old Brhamaputra river.

Participants Selection

300 students were selected randomly as respondents. Among 300 participants, 200 male students were selected. Among male students 120 were undergraduate, 60 MS students and 20 PhD students. Among 100 female students, 60 undergraduate students and 40 MS students were selected.

Research Method

The study was conducted using the stratified random sampling technique over a period of four month, from July 15 to November 15 in 2017. In order to collect detail information a four-step questionnaire was prepared. Step 1 consists of general information about age, gender, family background, parents occupation, parents educational qualification; Step 2 consists of level of concern in different environmental issues; Step 3 consists of sources of environmental awareness;

Step 4 consists of environmental behaviors and attitudes of respondents influenced by some factors.

Analysis Procedure

In order to determine environmental knowledge and find out behavior and attitude of respondents, they were asked 10 questions. Actually 10 environmental statements were given and for each statement five options with 5 scale values were given that helps to determine participants total environmental behavior is positive or negative. Values were namely a) Totally Agree=1, b) Agree=2, c) Neutral=3, d) Disagree=4 and e) Totally Disagree=5 and for ten statements range of the total value could be 10-50. If the range of value between 10-20 that means participants behavior is positive and if the value between 21-30 that means participants behavior is neutral and lower the value higher the positivity. But if the value is above 30 that means participants answer were in the range of disagree to totally disagree, which means participants behavior is negative that means higher the value above 30 higher the negativity. The information gained from all the respondents were coded, compiled and tabulated after completion of the field survey. The responses of respondents to the questions in the interview schedule were transferred to a master sheet for tabulation to accomplish statistical analysis. To analysis, interpretation and evaluation of the data SPSS 20 (statistical package for social sciences) and Microsoft Excel software (2007) were used.

Results and discussion

Knowledge on environmental issues and problems

The respondents were asked to give their opinion on how much they feel they know about environmental issues and problems in general. The result was found that 4% claimed know a lot, 70% stated know a reasonable amount and 26% claimed know a little amount (Fig. 1). The academic curriculum and open source of information such as digital library, large collection of journals, books, magazines in central library of BAU is the reason behind having reasonable knowledge about environmental issues and problems of respondents.

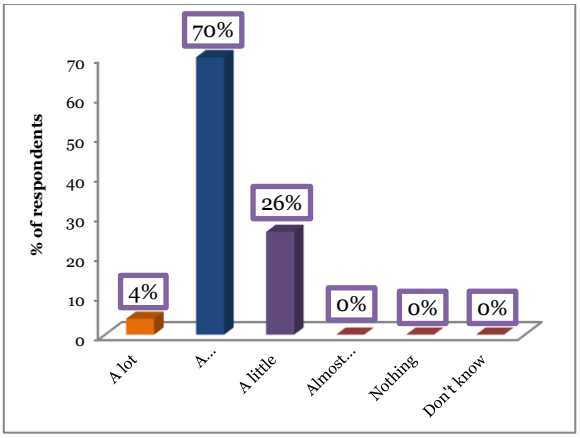


Fig. 1. Knowledge level on different environmental issues and problems.

The causes of global warming

In the questionnaire respondents were asked to put tick mark on the cause of global warming and the options was Ozone layer depletion, Fossil fuel consumption, Carbon monoxide (CO) emission, All of the above and Don't know and the result was 9%, 2%, 3.7%, 85.3% and 0% respectively (Fig. 2). All respondents were aware about causes of global warming. Most of the respondents answered confidently about global warming. Man made causes were identified as a big reason of global warming such as CO emission, fossil fuel consumption etc. Academic curriculum and open sources of environmental information influenced them to response.

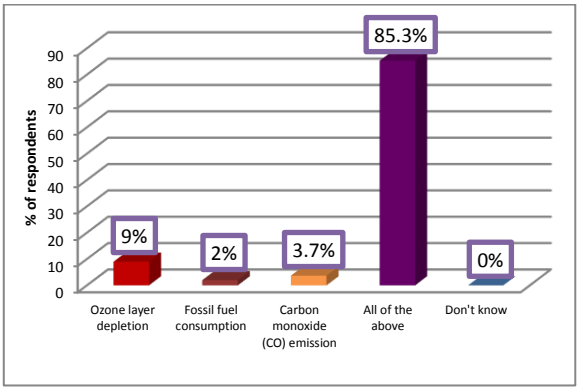


Fig. 2. The causes of global warming.

The most serious environmental problems in the world and in Bangladesh

In this part 10 frequent environmental issues were given and asked to students which of them are the most serious environmental problem in the world and in Bangladesh.

As it can be understand from the table-1 the most serious problem in the world is global warming (96.3%) and the second is biodiversity loss (2.0%). The global warming is the fifth serious problem in Bangladesh (1.7%). The first three problems in Bangladesh are Natural Disaster (79%), Biodiversity loss (10.3%) and Improper urbanization (5.3%). A study conducted by Gulgun *et al.* (2007) among Ege University students of turkey found that global warming (44.53%) is the most serious environmental problem in the world.

Table 1. The most serious environmental problems in the world and in Bangladesh.

Feature		Frequency	Percentage
In the world	Global warming	289	96.3
	Biodiversity loss	6	2.0
	Natural Disaster	5	1.7
	Total	300	100
In Bangladesh	Natural Disaster	237	79
	Biodiversity loss	31	10.3
	Improper urbanization	16	5.3
	Soil Pollution and loss of farmland	11	3.7
	Global warming	5	1.7
	Total	300	100

Sources of environmental information for respondents

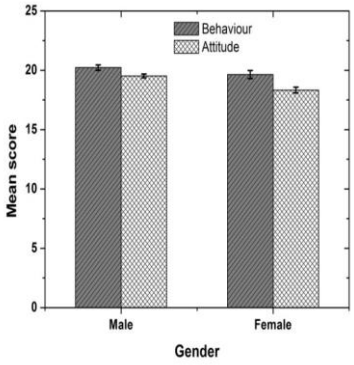
In the questionnaire respondents were asked to put tick mark on the option for what are their primary sources for environmental information, seven options were given and from those options they have to choose maximum three options. The options was TV & Radio, Internet, Magazines & Newspaper, Classes/courses, GO/NGO, Friends/ relatives and Others and the result was 93.3%, 93.6%, 78.3%, 30%, 1%, 3.3% and 0.3% respectively and highest source of information was internet 93.6% (Table 2). The easy access to internet in whole campus area and residential halls are the way to get proper knowledge about environment related issues of respondents. TV, magazine, newspaper also has considerable influence on environmental knowledge of students. A study was conducted by O'Brien (2007) found that TV is the source of environmental information most utilized (72.9% of the students). Internet and newspaper are next (69.4% and 59.9%, respectively) and 0.3% of the respondents indicated that they use "none" of the sources in the list, radio 29.2%, class and courses 45.6%, friends and relatives 51.9% and others 8.9% are found.

Table 2. Participants sources of environmental information.

No.	Categories	No. of participants	Percentage
1	TV & Radio	280	93.3%
2	Internet	281	93.6%
3	Magazines & Newspaper	235	78.3%
4	Classes/courses	90	30%
5	GO/NGO	3	1%
6	Friends/ relatives	10	3.3%
7	Others	1	0.3%

Influence of gender on environmental behaviors and attitudes of respondents

Environmental behaviors and attitudes of participants based on gender were presented on the Fig. 3(a). In the study it was found that mean value of the environmental behaviors of male and female participants were 20.225 and 19.64, respectively which means that female participants environmental behavior were more positive than male participants. The mean value of environmental attitudes of male and female participants were 19.52 and 18.33, respectively which means female participants environmental attitudes were more positive than male participants. O'Brien (2007) found that there was a significant difference between males and females students in relation to their mean of attitude scores, females obtained a significantly higher attitude score than males (T=65.22, P<.0001). Female's attitude score mean was 4.92, while male's was 4.67.



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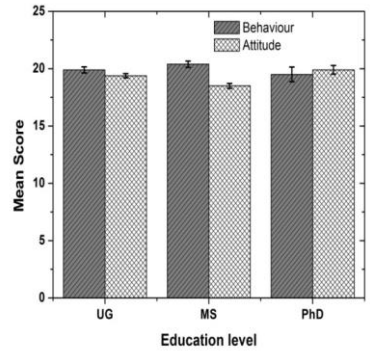

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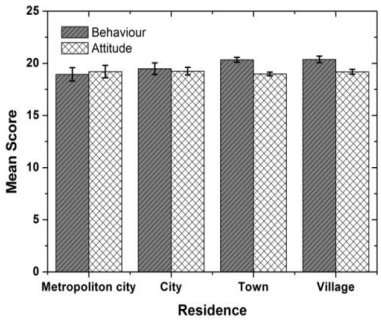

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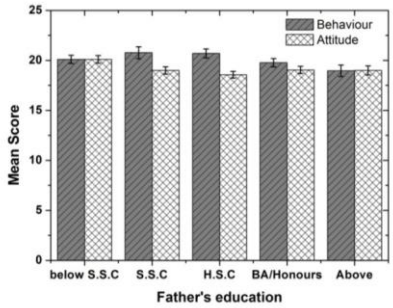

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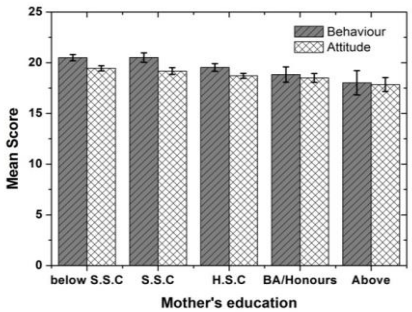

(e)

Fig. 3. Comparison between behavior and attitude of participants based on (a) Gender (b) Educational level (c) Family residence (d) Fathers education (e) Mothers education (Bar indicates standard error).

Influence of educational level on environmental behaviors and attitudes of respondents

Environmental behaviors and attitudes of participants based on educational level were presented on the Fig. 3(b). The result revealed that there was a small difference in the mean value of environmental behaviors and attitudes of different educational level. The mean value of the environmental behaviors of undergraduate, MS and PhD participants were 19.8889 (ranked second), 20.3900 (ranked third) and 19.5000 (ranked first), respectively in case of positive environmental behaviors. The mean value of environmental attitudes of undergraduate, MS and PhD participants were 19.3833 (ranked second), 18.5000 (ranked first) and 19.9000 (ranked third), in case of positive environmental attitudes. In this study the result revealed that participants with higher educational level were more positive in case of environmental behavior and attitude than lower educational level, though difference was very small. So result revealed that educational level of participants may have some influence on environmental behaviors and attitudes.

Influence of family residence on environmental behaviors and attitudes of respondents

The result revealed that there was a small difference in the mean value of environmental behaviors and attitudes based on family residence (Fig. 3(c)). In the present study it was found that mean value of the environmental behaviors of metropolitan city, city, town and village participants were 18.9412, 19.4821, 20.3364 and 20.3700, respectively were ranked as first, second, third and fourth respectively in case of positive environmental behaviors. The mean value of environmental attitudes of metropolitan city, city, town and village participants were 19.2059, 19.2500, 18.9727 and 19.1900, respectively which means that town, village, metropolitan city and city participants were ranked as first, second, third and fourth respectively in case of positive environmental attitudes. From the result it is clear that participants with metropolitan city and city family residence had little more positive environmental behaviors than participants with other family residence but in case of

environmental attitudes participants with town and village family residence had little more positive environmental attitudes. So the result revealed that family residence had little influence on environmental behaviors and attitudes of participants.

Influence of educational qualification of father and mother on environmental behaviors and attitudes of respondents

Environmental behaviors and attitudes of participants based on educational qualification of father and mother is presented on the Fig. 3(d and e). The result revealed that there was a small difference in the mean value of environmental behaviors and attitudes based on educational qualification of father of participants. In the present study it was found that mean value of the environmental behaviors of below S.S.C, S.S.C, H.S.C, BA/honours and above qualification of participants father were 20.0980, 20.7742, 20.6981, 19.7699 and 18.9615, respectively. The mean value of environmental attitudes of below S.S.C, S.S.C, H.S.C, BA/honours and above qualification of participants father were 20.0980, 19, 18.5660, 19.04445 and 19, respectively. Here S.S.C & above had the same value. From the result it is clear that participants had little more positive environmental behaviors with higher educational qualification of their father but in case of environmental attitudes participants with lower educational qualification of their father had little more positive environmental attitudes. So the result revealed that higher educational qualification of father had little influence on environmental behaviors but had no influence on environmental attitudes of participants. Gambro and Switzky (1999) noticed that the level of formal education a student's parent received was significantly related to the student's level of knowledge concerning environmental issues.

Conclusions

Bangladesh is a natural disaster prone country and one of the most vulnerable lands towards climate change. Environmental problems require fruitful solutions developed by environmentally aware, concerned and active citizens like environmentalist, researchers, university research students and concerned authority. As a conclusion it is clear in this survey that the most important fact is awareness of public. To do this, it is highly needed to have national strategies about environment and its elements. Environmental problems can't be fully prevented but its magnitude can be reduce. The causes of happening different environmental problems could be reduce by adopting proper strategies and action.

The findings of this study indicated that Bangladesh Agricultural University students environmental behaviors and attitudes are positive regarding the issues explained in our survey. Participants have reasonable amount of environmental knowledge. Participants environmental awareness level is high and they are highly concerned about different environmental issues and problems. Bangladesh Agricultural University is number one ranked university in Bangladesh, it has a large number of students from different parts of Bangladesh, many of them in future will be in leading position of country, governmental and non-governmental organization, that seems that students positive responses, environmental knowledge, awareness, behaviors, attitudes could help to raising awareness among the peoples of various parts in Bangladesh and also will help to take environmental related decision more carefully and wisely. In addition, University curriculum developers should pay more emphasis to incorporate environmental related courses. Environmental related courses should be mandatory for every students and University authority should organize seminars and workshops on environmental problems to create more interest among them about environment and to create awareness and make them informed about different environmental issues and problems.

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