

Gendered attitudes toward climate change among geography students at University Namibia

Rosemary N. Shikangalah⁶
University of Namibia

Abstract

Students are considered to be a key to dealing with climate change. Their knowledge influences their attitudes, which affects their actions. The degree to which students are likely to engage with climate change depends on their attitude towards climate change. This study investigated gendered attitudes towards climate change of geography students at the University of Namibia. Using a 14-item questionnaire, a total of 56 male and 64 female students from the University of Namibia were surveyed. The results show that students have a generally positive attitude towards climate change. There is, however, a slight difference in the gendered attitudes with regards to the concern over the occurrence of climate change; on how well they think they are informed; who should be responsible for fixing climate change; and whether or not the students felt personally responsible for the occurrence of the phenomenon. It is recommended that the education system be purposely designed to influence students' attitude for better future decision making in relation to climate change because a person's attitude forms a fundamental framework for a meaningful way of thinking.

Keywords: *climate change, gendered attitude, student attitude, university students, geography students.*

Climate change is a major problem that affects patterns and structures through changes of climatic variables worldwide and this has informed environmental-related policies mostly intended to cater for the necessary mitigation and adaptation strategies (Rahman, Tasmin, Uddin, Islam & Sujaddin, 2014). Decisions regarding policies, mitigation, adaptation and their implementation are largely important in arid and semi-arid environments. This holds particularly true for Namibia as the country is the most arid in Southern Africa and is second in aridity only to the Sahara Desert

⁶ Dr Rosemary N. Shikangalah is a Senior lecturer in the Department of Geography, History and Environmental Studies at the University of Namibia, Namibia. Research interest: Rural and urban socio-eco-hydrological challenges, and the influence of climate change on geo-biophysical cycles.

Correspondence concerning this article should be addressed to: Dr Rosemary N. Shikangalah, Department of Geography University of Namibia. Email: rshikangalah@unam.na

(Food and Agriculture Organization [FAO], 2005; Turpie et al., 2010). Namibian land is classified as at least ninety percent semi-arid, arid or hyper-arid (FAO, 2005).

Temperatures are increasing at the rate of three times the global mean and an increase ranging from 2 to 6°C is anticipated by the year 2100, while rainfall is expected to become more variable, with long dry periods (Angula & A Kaundjua, 2016; Reid et al., 2007; Zimmermann, Jokisch, Deffner, Brenda, & Urban, 2012). These climatic variables set the current conditions of water distress which, in turn, impacts productivity and has effects on multiple scales of biodiversity including genes, species, communities and ecosystems (Reid et al., 2007; Staudinger et al., 2012; Singer & Parmesan, 2010; Visser, Both, & Lambrechts, 2004).

Namibia is the driest country in Southern Africa and greatly depends on agriculture, fisheries and mining sectors that are extremely climate sensitive (Lange, 1998; Mendelsohn, Jarvis, Roberts & Robertson, 2002; Reid, Sahlén, Stage & MacGregor, 2007). Actions to reduce climate change are therefore urgently needed (IPCC, 2007). Although climate change has become a high priority and has been placed in the agenda of many decision makers in Namibia, studies investigating its gender dimensions are few and limited to the general public, where households are the key informants (Angula, 2010; Angula & Kaundjua, 2016; Angula and Menjono, 2014; David, Braby, Zeidler, Kandjinga, & Ndokosho, 2013; Montle, 2014).

An understanding of gendered attitudes towards climate change among university students is needed, given that the students are sooner than later going to be members of the workforce who are expected to make decisions regarding mitigation and adaptation measures. This study therefore set out to gain an understanding of the attitude of the students towards climate change with specific emphasis on analysing the differences in the gendered attitudes of the students.

Literature Review

Different observations, views and attitude towards climate change has led to major misinterpretation and gaps in actions (Leiserowitz, Smith, & Marlon, 2010). Scholars have examined people's attitudes and behaviour towards climate change (Calvo & Apilado, 2015; Harker- SuShuch & Bugge-Henriksen, 2013; Patchen, 2006; Planning Institute of Jamaica, 2012; Ojomo, Elliott, Amjad & Bartram, 2015; Skalík, 2015), but they have been concentrating mainly on the current decision makers, whose attitudes are not easily influenced at adulthood level.

Education has been identified as a fundamental tool not only to create awareness and develop adaptations (Carr, Buggy & McGlynn, 2015; Ojomo, Elliott, Amjad and Bartram, 2015), but most importantly in having the right attitude toward

climate change (Ezeudu, Ezeudu & Sampson, 2016; Skalik, 2015). There is a need to influence the attitude of people while at a younger age, that is, at school or tertiary level because having the right attitude is likely to help the society and those in position of making decisions relating to climate change. Contribution of geography as a subject in understanding climate change at tertiary level has been also been recognised (Dalelo, 2011; Hulme, 2008). However, whether or not that influences students' attitude toward climate change and to what extent that the students' gender matters is still not clear.

According to Sinatra, Kardash, Taasoobshirazi and Lombardi (2011), the degree to which students are willing to engage with a socio-scientific matter regardless of the challenges, depends on the design of the educational approach to promote high engagement and to change the students' attitude. Parant, Pascual, Jugel, Kerroume, Felonneau and Guéguen (2016), suggest that the use of tools that promote pro-environmental attitudes and behaviour, combined with excellent communication strategies (Girandola & Joule, 2012; Joule, Girandola & Bernard, 2007), is a powerful behavioural prescription for young people. A further noteworthy point is to also consider the students' gender differences in relation to their attitude towards climate change, as this is expected to affect the way they respond to environmental issues (Ofoebe, 2009).

Attitude forms a fundamental framework that affects meaningful ways of thinking and representations about climate change (Flores, 2017). It is therefore crucial to understand students' gendered attitude towards climate change at the university level to be able to positively influence and strengthen them in areas relating to both gender and dealing with climate change while at a young age.

Methods

The survey was carried out at the University of Namibia. Students in the geography course formed the population of the study. The researcher reviewed the course content to make sure that climate is covered. The survey took place in August 2017, which is the second semester of the academic year, six weeks before the end of the classes for the year. This was aimed at ensuring that there had been sufficient time for climate change issues to be covered in the course.

A convenience sampling was used for data collection. This sampling methods is a non-random sampling which only employs members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate (Etikan, Musa, & Alkassim, 2016). Criteria of availability and willingness to participate of the geography students were considerations in this study.

The study used a questionnaire for the survey, where items were purely based on the respondents' attitudes towards climate change issues. The questionnaire was adapted from Boyes, Chuckran, & Stanisstreet. (1993) and Liarakou, Athanasiadis, & Gavrilakis (2011), which linked the attitude of young people to climate change. A total of 56 male and 64 female students were assessed from a total population of 331 students. Questionnaires were handed out to students at the beginning of a lecture and collected after 20 minutes and clarification was given by the researcher where the students did not understand a certain point or question. The questionnaire consisted of 14 items, with limited structured answers (Table 1). Because the study is descriptive in nature, data were analysed using frequencies (percentages) only in line with earlier studies (Harun, Hock & Othman, 2011; Hope, 2016; Karami, Shobeiri, Jafari, & Jafari, 2017; Glasgow, Languaigne, Thomas, Harvey & Campbell, 2018; McAdams, Rehr, Kobayashi, & DeArman, 2019).

Table 1.

The list of questions and possible responses used in the questionnaires

ITEM #	QUESTIONS	POSSIBLE RESPONSES
1	What is your own view about the occurrence of climate change?	Happening, Confused, Not happening, Don't know
2	How sure are you that climate change is happening?	Extremely sure, Very sure, Somewhat sure, Not all sure.
3	How worried are you about climate change?	Very worried, Somewhat worried, Not very worried, Not at all worried
4	How well are you informed about climate variables?	Very well informed, Fairly informed, Not very well informed, Not at all informed
5	How well are you informed about factors contributing to climate change?	Very well informed, Fairly informed, Not very well informed, Not at all informed
6	How well are you informed about climate effects?	Very well informed, Fairly informed, Not very well informed, Not at all informed
7	How well are you informed about approaches to reduce the effects of climate change?	Very well informed, Fairly informed, Not very well informed, Not at all informed
8	Human variability is responsible for climate change?	Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree
9	Natural variability is responsible for climate change?	Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree

10	Do you feel personally responsible for climate change?	Yes, Slightly sure, Not at all sure
11	Is too late to do anything about /something about climate change?	Yes, No, Don't know
12	All countries should help to deal with climate change?	Yes, No, Don't know
13	Rich countries should fix climate change?	Yes, No, Don't know
14	Climate change will pass naturally?	Yes, No, Don't know

Results

The majority (60 %) of the students thought that climate change is happening and very few (less than 5 %) thought that it is not happening (see figure 1). However, about a fifth were unsure and 9 % said that they did not know. The percentage of both males and females appears to be more or less the same (9 % each) for those who felt that they just do not know whether or not climate change is happening. The number of females was higher (66 %) than that of males (61 %) for those who thought that it is happening, but lower (2 % and 20 %) than for males (4 % and 25 %) for those thinking that climate change is not happening and also for those who felt totally confused respectively.

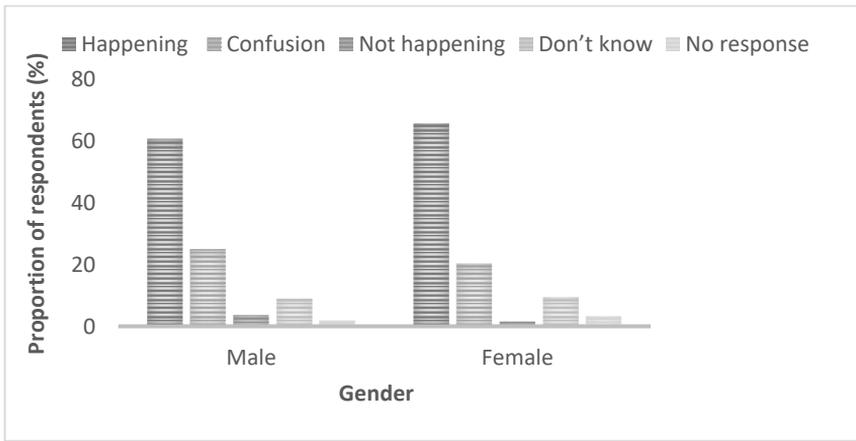


Figure 1. Climate change occurrence

A high percentage of the students were sure that climate change is taking place, with many being very sure, followed by those who felt somewhat sure and a

smaller number of those that felt extremely sure. Other than some students who were confused or did not know at all (Figure 2), no student felt that they were not sure at all that climate change is happening. The percentage of those who were extremely sure was slightly higher for males (26 %) than females (20 %), but many females (49 %) than males (30 %) felt very sure. In addition, more males (42 %) than females (25 %) also felt somewhat sure that climate change is taking place. A small percentage (6 %) of females did not answer this question.

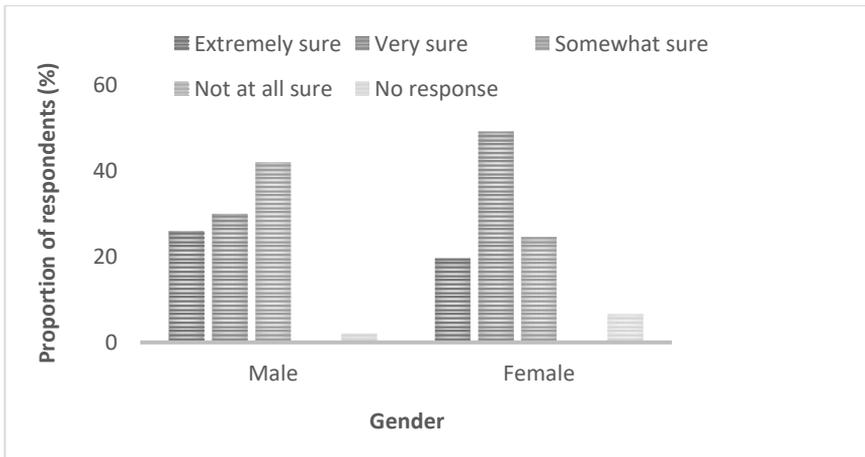


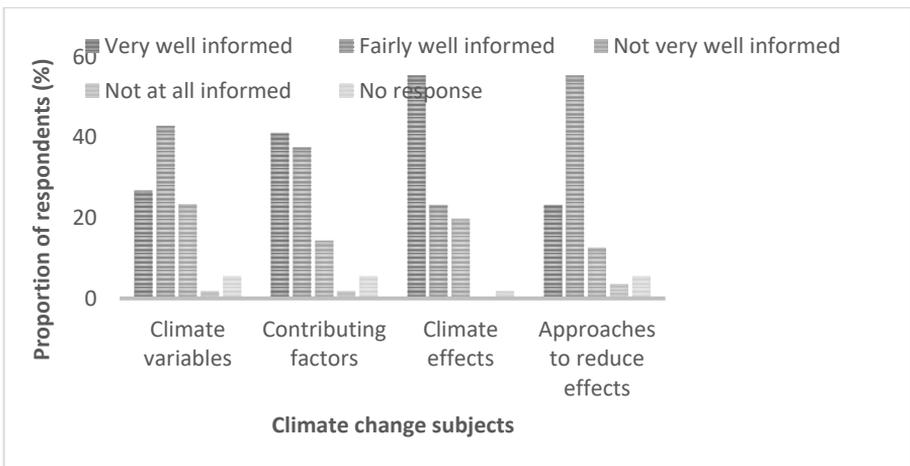
Figure 2. The extent to which the respondents are sure that climate change is happening

From figure 3 below an overwhelming majority of students are worried about the changes in the climate; about 60 % are very worried, and at least 28 % are somewhat worried and only around 10 % are not much worried. More females (63 %) than males (59 %) are very worried; but more males (29 % and 11 %) than females (28 % and 9 %) are somewhat worried and not very worried respectively. Furthermore, at least 2 % of the males are “not worried at all”, while none of the females are “not worried at all”.

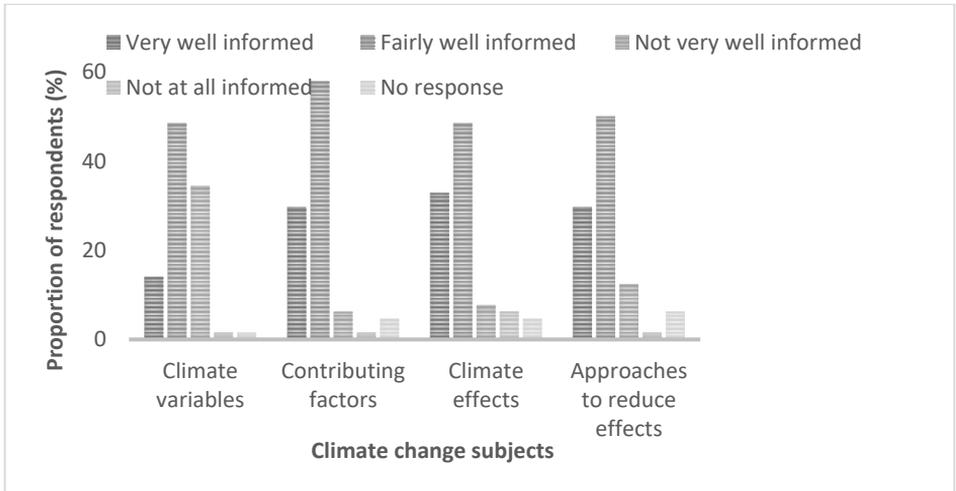


Figure 3. Worries over occurrence of the climate change.

Figure 4 below shows a self-evaluation of the students on how well they think they are well informed, when it comes to the subject of climate change. Apart from “very well informed” for climate variables, contributing factors, and climate effects, where males have a higher percentage (27, 41 & 55%) than females (14, 30 and 33%) respectively, female have higher percentages for being fairly well informed (48, 58 & 48%) than males (43, 38 & 23 %) respectively (Fig. 4a & b). This is contrary to the findings on the approaches to reducing climate change effects, where female have higher scores (30%) than males (23%) for being very well informed but male respondents have higher percentages (55%) than females (50%) on being fairly informed.



a)



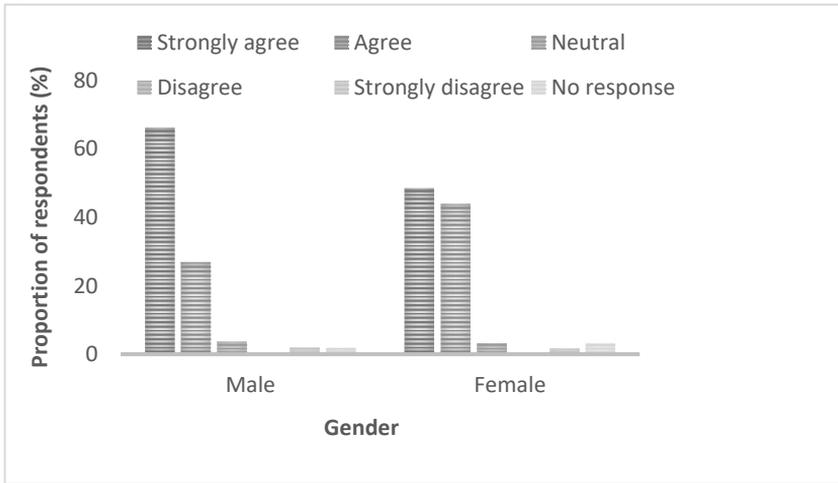
b)

Figure 4. Responses to “how well the students are informed about climate change subjects”: a) male, and b) female responses

Figure 5 shows whether the students think human activity or nature is more responsible for the increase in climate change effects. A very high percentage agreed that humans are responsible for the increase in climate change compared to nature. Of the percentages of those who strongly agreed, the majority are males (66 %), while more females (44 %) than males (27 %) “agreed” (Fig. 5a). A small percentage of the students thought that humans do not contribute to climate change, and the percentage is almost the same for males and females (4 and 3 % for neutral respectively) and equal for “strongly disagree”.

In terms of *nature* being responsible for climate change (see Figure 5b), 14 % of the males and only 5 % of the females “strongly agreed”, while 43 % of the males and 42 % of the females “agreed”. Furthermore, there are more males (20 %) than females (14 %) who are neutral and who “strongly disagreed” (9 % than 6 %). However, more females (22 %) than males (9 %) “disagree”.

a)



b)

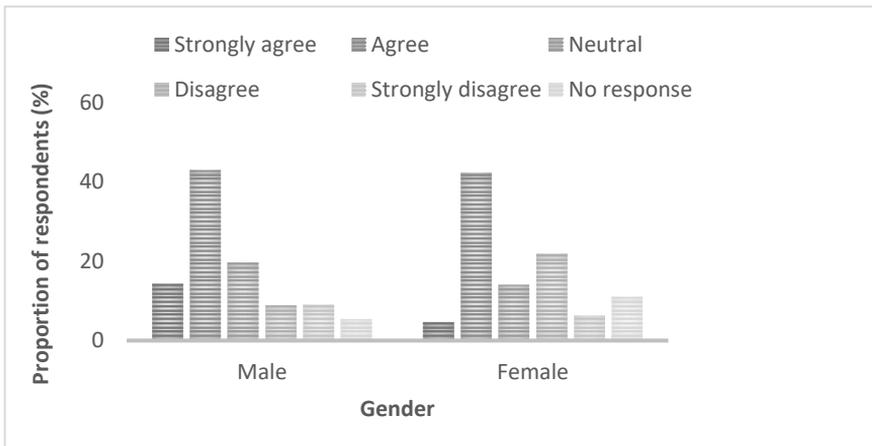


Figure 5. Opinions on cause of climate change: a) humans and b) nature

Figure 6 below shows whether or not the students feel personally responsible for the occurrence of climate change. Although overall, not a very high percentage felt personally responsible for climate change, more males (23 %) than females (17 %) felt personally responsible. A very high percentage for each gender feels slightly responsible, with 64 % for males and 66 % for females, and very few students felt that they are not responsible for climate change, as indicated by 13 % males and 12 % females.

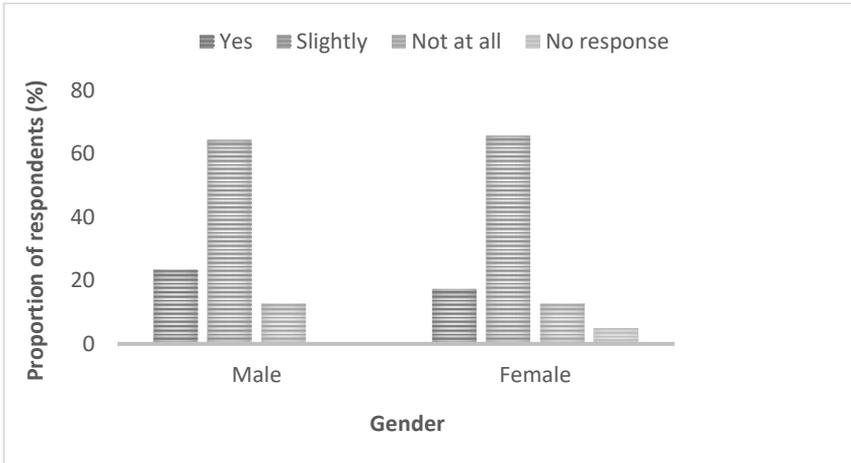
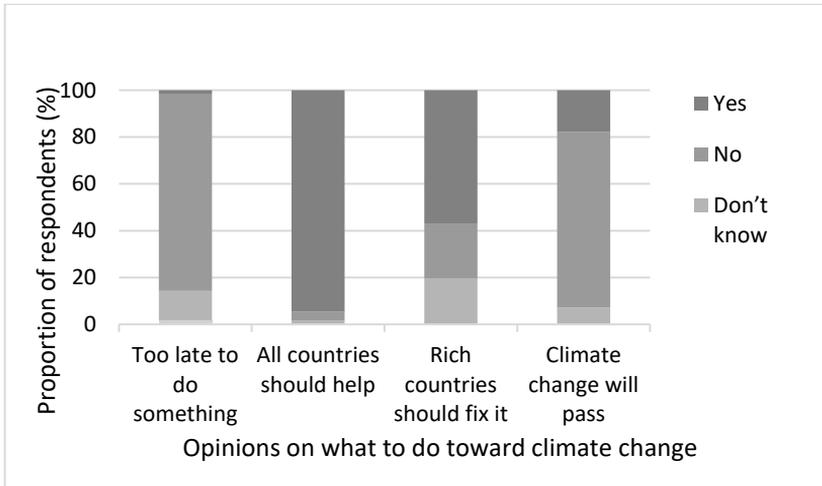
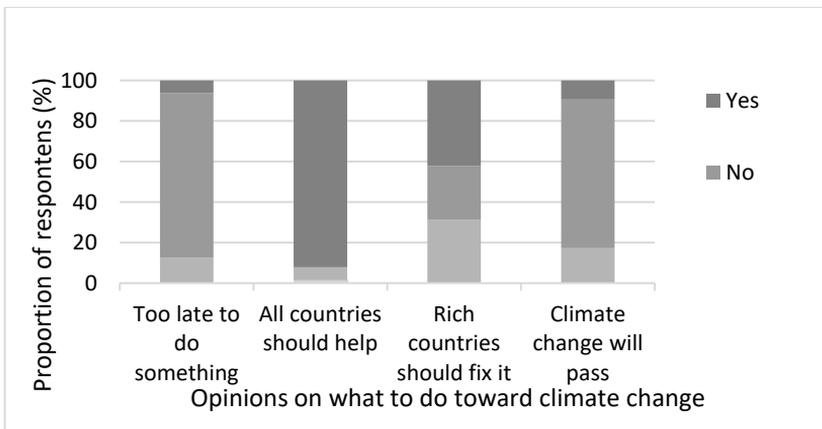


Figure 6. Feeling of personal responsibility for the occurrence of climate change

Figure 7 documents what the students felt should be done about climate change. More males than females (84 % than 81 %) think that it is too late to do something about climate change and that climate change will not pass naturally (75 % than 73 %) respectively. Furthermore, there are more males than females who thought that countries should help to deal with climate change (95 % than 92 %) and rich countries should fix the problem (57 % than 42 %) respectively. Apart from the category of “too late to do anything”, there is a higher percentage of females than males whose responses are “don’t know” in all the subjects of climate change.



a)



b)

Figure 7. Dealing with climate change: a) male, and b) female opinions

Discussion

Attitude towards Climate Change

The overall results of this study showed that students (both females and males) have an overall positive attitude towards climate change. On average, 90% are worried about climate change, more than 60% feel responsible, and around 80% thought it is not too late to do something about it. Scholars are of the view that women have more positive attitudes towards environmental issues (Christensen & Knezek, 2015) and this is reflected in the study's findings which show that a slightly higher

percentage (63%) of women than men (59%). were worried about climate change. These findings are also consistent with some previous studies which found that women express more concern than do men about environmental problems because women are more concerned with health and safety risks of their communities. (McCright, 2010; Holmberg & Hellstern, 2014). Although there was a small percentage of students with a negative attitude towards climate change, the percentage of male respondents is higher (40%) than that of female respondents (37%) for those who were somewhat worried and not worried at all about its occurrence. According to Patchen (2006), men appear to generally see environmental problems such as climate change as less serious than women do, which can be attributed to the greater tolerance of risk by men than women.

Furthermore, the study's findings showed that both genders felt that human activity was more responsible than nature for climate change. Equally (93 % men and 92 % women), strongly agreed that humanity is responsible for climate change, and both genders were also less confident with regards to nature as a responsible factor for climate change. Both genders also had slightly high percentage of feeling personally (females: 66%) responsible (males: 64%) for climate change occurrences. Noteworthy is the percentage (22 %) of females who disagreed that nature is responsible for climate change in comparison to a very low percentage (9 %) of males.

Our finding showed that in terms of being informed, male respondents had higher percentages (total of 98%, at different levels of being informed) than female respondents (total of 89%, at different levels of being informed) on climate effects. Female respondents had higher percentages (96, 94 & 93%) than men (93, 93 & 91%) for climate variables, contributing factors and approaches on dealing with the climate change effects respectively. These results suggest that the issue of which gender is more informed might depend on the specific aspect of climate change. Furthermore, their responses might not only be based on their knowledge (being informed), but are also a reflection of their experiences (at both personal and at community level), their cultural norms as well as their beliefs (Angula & Menjono, 2014; Eastin, 2018; Sinatra et al., 2011), thereby impacting their attitude.

The students who participated in this study have shown an interest in climate change. They indicated their willingness to do something about climate change with a majority (more than 70 %) expressing the view that climate change will not pass naturally and many (more than 90 %) expressing the view that all countries should work to reduce the effects of climate change. However, more male respondents than females respondents are not willing to be the ones dealing with it, as a significant percentage (57 % compared to 42 %) specified that rich countries should be the ones to fix it, while a slightly higher percentage (3 % higher) of female students than male students supported the idea that all countries should help. Although it can be concluded that taking action towards climate change is rather

specific to the individual (Ojomo et al., 2015), the difference between the gender groups (57 % and 42 %), though not extreme, is rather notable in terms of willingness to deal with climate change. Typically, promoting a change in knowledge is adequate, however promoting a willingness to change behaviour is a key step towards successful actions and intentions in dealing with global climate change (Sinatra et al., 2011). According Harun et al., (2011), knowledge increases awareness and it influences attitude positively. The use of education at the university level to promote a more positive attitude towards climate change is fundamental to dealing with the climate change phenomenon and such approach has been practised through persuasive texts (Murphy, 2001).

Conclusion

The main objective of this study was to examine gendered attitude towards climate change. Overall, a majority of the students have a positive attitude towards climate change. The study showed that there is a gendered difference in attitude towards climate change, even though the disparity is not too high. A slightly greater percentage of males were found to be more informed about the effects of climate change, yet they are not willing to deal with it rather indicating that rich countries should fix it thereby shirking personal responsibility. More women than men showed more concern about climate change, despite being slightly less knowledgeable than men on the effects of climate change. Though the students have an overall positive attitude towards climate change, there is still a need for education to maximise and improve on their knowledge as well as their willingness to deal with climate change.

Improving the attitude of students at the university level may positively influence future actions (decision making and in the implementation of policies related to climate change in Namibia). The study, therefore, recommends additional research that focuses more on the level of knowledge of the students at the University level (especially for Namibia). Since a limitation of this study is the gendered nature of the inquiry, other scholars may wish to explore other factors such as the media and religious affiliation on the students' attitudes toward climate change etc.

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