

Medical students knowledge and attitude regarding the potential impacts of climate change on public health in a small island developing state: A recommendation to include planetary health education in the medical school curriculum

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ABSTRACT

Introduction

Climate change has become one of the most significant environmental health hazards faced by the world today.¹ Linkages have been made not only to many environmental disasters but research on its impact on humans mental and physical health are also now coming to the fore.² The Caribbean region, although not a significant contributor to factors creating global warming and climate change, is a major recipient of the adverse outcomes.³

The training medical professionals would benefit from including the depth of knowledge that has been gained in this area to ensure the best outcomes for the region's health. The aim of this project was to collect relevant data regarding the teaching of climate change to medical students in order to make recommendations for inclusion of the topic in the MBBS curriculum.

Methods

This project aimed to test the extent of knowledge, attitudes and practices (KAP) on the topic of climate change and its impacts on health amongst medical students at the University of the West Indies, Faculty of Medical Sciences, St. Augustine campus, Trinidad and Tobago. A validated survey instrument was distributed among the sample population, utilizing a stratified random sampling methodology. The instrument sought to elucidate from the students their understanding of the topics and to assess the extent of their learning through the medical curriculum.

Results

The results showed that the percentage of students who did not know about a single health-related climate change impact were in their first year. The percentage of students who could identify health links to climate change increased in older year groups, but this was just below statistical significance ($p=0.06$). It was also noted that 90% of recipients did not think that enough was being taught in the curriculum about climate change and its effects.

Conclusion

[Need 2-3 lines of the conclusions – what recommendations does the study make for inclusions on the MBBS curriculum?]

Keywords: Planetary Health, Climate Change, Flooding, Public Health

GJMEDPH 2022; Vol. 11, issue 3 | OPEN ACCESS

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Conflict of Interest—none | **Funding**—none

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INTRODUCTION

Public health is a science dedicated to improve health in societies by preventing disease and encouraging the sustainable promotion of healthy lifestyles and improved health services. ⁴ Planetary health is an extension of public health that recognizes the impacts of the

environment on each aspect of health, be it physical, social or mental. A core principle of planetary health is that humans must work in synchrony with natural systems to ensure the improvement of human health across the world as a whole.

Table 1 The Impact of Environmental Change on Human Health – Key Literature

Topic	Article	Authors
Respiratory Disease	Health Effects of Ozone Pollution	United States Environmental Protection Agency
Gastrointestinal Disease and Waterborne Disease	El Nino and Human Health	R. Sari Kovats
Cardiovascular and Renal Failure	The Impacts of Climate Change on Human Health in the United States, Chapter 2: Temperature-Related Death and Illness	Marcus C. Sarofim Shubhayu Saha Michelle D. Hawkins David M. Mills
Viruses from Melting Permafrost	In-depth Study of Mollivirus Sibericum, a new 30,000-y-old Giant Virus Infecting Acanthamoeba	Matthieu Legendre et al.
Zoonotic Infections Viruses	Climate change and Zoonotic Infections in the Russian Arctic	Boris Revich Nikolai Tokarevich Alan J. Parkinson
Zoonoses (Malaria)	Managing the Health Effects of Climate Change	Professor Anthony Costello et al
Zoonoses (Dengue)	Changes in Dengue Risk Potential in Hawaii, USA, due to Climate Variability and Change	Korine N. Kolivras
Zoonoses (Zika)	How La Niña Could Affect the Spread of Zika	Gulnaz Khan
Mental Health Illnesses	Flooding and Mental Health: A Systematic Mapping Review	Ana Fernandez et al.
Allergies	The Impacts of Climate Change on Human Health in the United States, Chapter 3: Air-Quality Impacts	Neal Fann
KAP	Protecting Health from Climate Change: Preparedness of Medical Interns	Jai Pal Majra and Das Acharya
KAP	Knowledge and Perceptions about the Health Impact of Climate Change among Health Sciences Students in Ethiopia: A Cross-Sectional Study	Andualem S Nigatu, Benedict O Asamoah, Helmut Kloos
KAP	Assessment of awareness regarding climate change and its health hazards among the medical students	Harshal T. Pandve and Atul Raut
KAP	Teaching About Climate Change in Medical Education: An Opportunity	Janie Maxwell and Grant Blashki
KAP	Preparing Australian medical students for climate change.	Green EI, Blashki G, Berry HL, Harley D, Horton G, Hall G.
KAP	Assessing the Level of Awareness on Climate Change and Sustainable Development Among Students of Partido State University, Camarines Sur, Philippines	Ariel B. Barreda
KAP	Knowledge of and attitudes toward climate change and its effects on health among nursing students: A multi-Arab country study	Rhea Faye D. et al
KAP	Nurses' perceptions of climate and environmental issues: a qualitative study	Anna Anåker RN, Maria Nilsson PhD, Åsa Holmner PhD, Marie Elf PhD, RN
KAP	Perceptions of climate change and its impact on human health: an integrated quantitative and qualitative approach	Do Thi Thanh Toan, Vu Duy Kien, Kim Bao Giang, Hoang Van Minh & Pamela Wright



Climate change is a core aspect of planetary health. It refers to any change that occurs in the general long-term weather pattern of a region or to the Earth's climate overall.⁶ According to a report by *The Lancet* and University College London's Institute for Global Health Commission,⁷ climate change is considered to be the "biggest global health threat of the 21st century" and links both directly and indirectly to health. Some of its impacts include "changing patterns of disease" water and food insecurity, vulnerable shelter and human settlements [and] extreme climatic event. Table 1 lays out examples of the literature linking environmental change to human health challenges.

The healthcare system of Trinidad and Tobago is affected by the ongoing effects of climate change [CITATION], including [please give examples, with citations]. However, the link between climate change and health is not fully understood amongst the country's medical professionals and medical students [CITATION] [why do you think this?].

In order to encourage the implementation of planetary health principles in the healthcare system in Trinidad and Tobago, it is first important to understand the extent of knowledge on, and attitudes towards this topic amongst current medical students, who will be crucial to the future health of the region as they are its future medical practitioners. We surveyed this demographic group to determine whether or not there is a need to include of planetary health principles in the academic curriculum of the country's sole medical school.

Planetary health is a concept that explores the relationship between impacts of human activity on the Earth's ecosystems and the resulting effects on those impacts on public health.⁸ Climate change is a prominent aspect of planetary health and poses perhaps the greatest and most varied threat to public health. Global warming, a direct consequence of climate change, leads to a rise in sea levels, which causes floods and thus exacerbates disease and ill-health: diarrhoea, malaria and waterborne diseases become more prevalent during flood events. There are also physical injuries associated with floods, due to landslides or accidents.

The rise in temperature associated with climate change has a direct effect on health as humans experience difficulty in regulating internal biological systems in higher temperatures than they are used to, and in temperatures that approach or exceed normal human body temperature of 37°C [CITATION NEEDED]. Consequences of this include hyperthermia, dehydration, electrolyte imbalances and heat-stroke. Incidences of cardiovascular, respiratory and renal failure also increase amongst patients under heat stress and are exacerbated amongst those with existing respiratory and cardiovascular conditions. Studies in the U.S. have revealed that the incidence of premature deaths increases during periods of unusually increased temperatures across certain regions of the country.⁹

CLIMATE CHANGE AND EI NINO

El Nino is a phenomenon associated with a natural climate variation towards warmer weather in certain regions of the Pacific Ocean that happens on average once every 2-7 years, affecting countries in and around the Pacific Basin [including Trinidad and Tobago in particular? Needs more detail on relevance to the region of study, and citations to existing studies]. During this occurrence, there are changes in weather patterns that increase risks of droughts, flooding and tropical cyclones. These weather patterns have profound effects, especially on developing countries. One major repercussion is the increase in transmission of malaria due to the raised temperatures. Droughts lead to the drying out of rivers, leaving stagnant pools that increase the amount of vector breeding sites and thus the probability of humans contracting the disease. Droughts also lead to raised surface water temperatures, encouraging the proliferation of pathogens responsible for gastrointestinal diseases. Flooding associated with El Nino causes contamination of ground water and introduces waterborne pathogens such as those responsible for cholera, typhoid and shigellosis into drinking water. Sea surface temperatures also raise and increase the likelihood of cholera outbreaks as *Vibrio cholerae* bacteria are able to thrive for longer periods in coastal waters where people swim and bathe.



Previous investigations conducted in Trinidad and Tobago also indicate a definite correlation between the increase in cases of dengue fever and the temperature rises caused by El Nino.¹¹ The opposing phenomenon to El Nino is termed La Nina. This involves the cooling of sea surface waters and a dramatic increase in the volume and frequency of rainfall around the Pacific.¹² It has been found that La Nina events result in a wider range of habitats for *Aedes aegypti* mosquitos to breed, more favourable conditions for the survival of the mosquitos and an increase in the number of humans at risk of contracting the dengue virus.¹³ In an article published by *National Geographic*, a similar concern was expressed with relevance to La Nina and the spread of the *Zika virus*, which is transmitted by the same mosquito vector.¹²

FLOODING AND MENTAL HEALTH

Flooding is another aspect of climate change that impacts health, specifically mental health. From the analysis of 83 research papers on this topic, Fernandez et al concluded that there are significant increases in cases of Post-traumatic Stress Disorder (PTSD), depression, anxiety, suicide, psychosocial distress and an elevated amount of psychotropic drug prescription in the weeks following floods in many areas of the world.¹⁴ In many cases, the incidences of PTSD and depression remain elevated in affected areas for up to four years after the incidence of the floods. This aspect of flooding has not been sufficiently investigated in Trinidad, even after three floods occurred during a six-month period in 2017.¹⁵

CLIMATE CHANGE AND RESPIRATORY HEALTH

According to an investigation conducted by Bloomer et al, increasing global temperatures as a result of climate change leads to increasing amounts of ground level ozone present on Earth.¹⁶ Ozone inhalation can exacerbate respiratory diseases, as contraction of the airways can occur and air becomes trapped in alveoli. This especially affects patients with asthma.¹⁷ The concentrations of airborne allergens such as pollen and ragweed also increase with increased carbon dioxide emissions, stimulating the growth of the plants producing the allergens. This encourages incidences of allergic rhinitis, conjunctivitis and life-threatening anaphylaxis.

¹⁸There exists an evident, direct links between climate change and planetary health. To combat the effects of the health hazards associated with climate change, medical professionals must be sufficiently educated on climate change and its impacts. It is anticipated that climate change will alter the emphasis on special-ties within the healthcare system, redirecting to base-line and emergency services. Further stress on healthcare human resources may require doctors, apart from those specialized in public health, to participate in epidemiology and community education,²⁷ for example. Maxwell and Blashki²⁶ discuss the benefits of including climate change in the medical education curriculum on the basis of three principal outcomes: improving the competency of doctors, with respect to treating climate-related physical and mental illnesses and creating a sustainable healthcare system; broadening educational horizons specific to public health and eco-health, in order to strengthen the population in withstanding the negative impacts of climate change; and advancing general knowledge in medical school graduates.

There have been few studies conducted previously on knowledge and understanding of climate change amongst healthcare professionals. A KAP (Knowledge, Attitudes and Practices) study entitled Knowledge, Attitudes and Practices of Global Environmental Change and Health: Toward Sustainable Behaviour Change? conducted in 2011 by Francesca Cardwell explored the attitudes of the general public towards climate change on health.²¹ The results determined that although members of the public saw environmental changes such as air pollution as having adverse health effects, they did not view climate change as a direct inhibitor of health.

A 2012 KAP conducted by the University of the West Indies entitled Report on Climate Change Knowledge, Attitude And Behavioural Practice Survey involved members of the Jamaican public. Although this study did not specifically investigate understandings of the link between climate change and health, it is still relevant because although the participants had considerable knowledge of climate change, when asked about their perceptions of the risks, impact on health was not mentioned as potential risk.



This highlights a definite need for education on the implications of climate change, particularly amongst medical practitioners, who are at least partially responsible for the maintenance of public health and propagation of public health information. If they are well informed on this issue, they will be better able to educate the public about it.²² Current studies suggest that medical students around the world are not sufficiently equipped with the relevant knowledge to effectively address the implications of climate change.²³ A study conducted in eastern Ethiopia in 20XX showed that while the majority of medical students were acquainted with the phenomenon of climate change, they were unaware of the correlation between climate change and detrimental effects on human health, especially concerning mental health – an impact which often goes unnoticed. Medical students with a general understanding of climate change issues were found in older age groups; younger groups were less familiar with the topic. From this study, 87.9% of students felt they lacked the necessary information to deal with the consequences of climate change on population health.²⁴

An observational study conducted by Pandve and Raut [in which country, in what year?] demonstrated 250 medical students' knowledge about the specific health hazards of climate change.²⁵ Medical students were not fully knowledgeable of the impacts of climate change on health, but most did appear to have a basic understanding of the factors which contributed to it. Respondents specified human activities such as deforestation, industrialization, increases in international trade and travel, and the increasing dependence on carbon-based energy, such as fossil fuels as key drivers of environmental change.²⁵ Their questionnaire offered a limited set of health conditions which focused solely on physical implications, completely omitting mental health, however. In 20XX, Anåker et al. conducted a study amongst 18 nurses in Sweden using individual in-depth interviews and focus group discussions, gaining a detailed understanding of nurses' perceptions of climate and environmental issues, which included Wright et al. collected data on the perceptions of climate change and its health-related impacts in Hanoi,³¹ and found that this

found that this knowledge can serve as a foundation on which to build further understanding of the topic and engage students in efforts to mitigate climate change impacts and thus prevent impacts on health but further integration of climate change into the MBBS curriculum, with relevance to each country's specific setting, is essential to raising awareness and prepare nations to successfully manage and prevent the negative impacts on human health.

METHODS AND MATERIALS

In order to assess the knowledge, attitudes and practices of medical professionals towards this topic, we undertook a KAP (Knowledge, Attitudes and Practices) survey. A KAP survey is an effective method of collecting data from a specific group that allows researchers to determine how much is known or understood about a particular topic. Such surveys allow researchers to obtain both qualitative and quantitative data. KAP surveys can reveal common attitudes and behaviours influencing certain practices, in our case, the attitudes of medical students towards climate change and health; one of the advantages of this is that barriers associated with putting knowledge into practice can be identified and relevant solutions can be suggested. By highlighting where such barriers exist, we hoped to eventually lead to an improved understanding of the importance of knowledge of climate change and its effects on health and thus champion the inclusion of education on climate change and its impacts in the medical school curriculum, as recommended by the World Health Organization.²⁰ This KAP study was conducted amongst undergraduate students reading for the Bachelor of Medicine; Bachelor of Surgery (MBBS) degree, enrolled at The University of the West Indies, St. Augustine, Trinidad and Tobago. The study sample was selected according to a stratified random sample, stratified by year of study. Two hundred and eighty-eight (288) students were sampled for a 95% confidence interval calculated from The UWI annual report figures. Proportionate sampling was employed, allowing the determination of the sample size for each year group. Random number tables were then utilized to select the samples within the respective year group.



The study collected data using a self-completed questionnaire, administered to the selected participants via email. The questionnaire consisted of 13 questions, including a mixture of both close-ended and open-ended questions, based on a similar questionnaire developed by Pin Yaun et al., and revised by the research team based on relevance to the Caribbean setting and the existing literature concerning climate change and public health. After pilot testing, the questions were re-worded as to avoid ambiguity, complexity and double questions. The survey instrument was further revised after face validation by Professor GourSaha of the Arthur Lok Jack Graduate School of Business, University of the West Indies.

Data collected was stored on a password protected personal computer at the School of Pharmacy, belonging to the Principal Investigator, for a period of two years. Exclusively the Principal Investigator and Co-investigators had complete access to the data. The aims of the study were twofold: to determine the knowledge and attitudes of medical students concerning climate change and its effects on health, and to assess the understanding of medical students' knowledge of their role in addressing health-related impacts of climate change in Trinidad and Tobago.

The study was undertaken with three objectives: to analyze the extent of medical students' understanding of the relationship between climate Change and health; to critically assess the effectiveness of the current medical school curriculum in educating medical students of the importance of the effects of climate change in health; and to recommend, if deemed necessary, the inclusion of knowledge of climate change and its effects on health in the medical school curriculum. Three hypotheses were tested: that older medical students (Yr4 +5) are more familiar with the topic of global warming and climate change in comparison with the younger medical students. (Yr1-3); that students do think human health will be affected by climate change and global warming; and that the current MBBS curriculum is not well integrated with climate change related health knowledge.

Data analysis

Data collected was analyzed using SPSS Statistics. Descriptive and inferential analyses were performed on three questions namely Question 2, 9 and 13, for which the mean and standard deviations were calculated for each respective year (See Fig.1, Appendix). Analysis of variance was conducted at a 5% significance level. If the p value calculated was found to be less than the significance level, the null hypothesis would be rejected, hence concluding there were significant differences amongst comparative groups. One sample T-tests were conducted on data collected regarding Question 9 and Question 13 respectively at a 5% significance level (See Tables 4 and 6). The null hypothesis would be rejected if the p value was found to be less than the significance level (0.05) in the case of Question 9 and if the test statistic was found to be more than critical value in Question 13.

Limitations of the study

The study contained only one open ended question in the questionnaire, hence limiting the quantity of qualitative data obtained. There were no face-to-face interactions with participants as questionnaires were disseminated via email and Facebook. This may have prevented us from clarifying any misconceptions the participants might have had. The survey was conducted during exam period for Year 4 and 5 students and some students may not have answered the open-ended question as they thought it too time consuming. The study would need to be repeated across different cohorts from different medical schools to determine if the results are generalizable to medical schools across the region or globally.

RESULTS

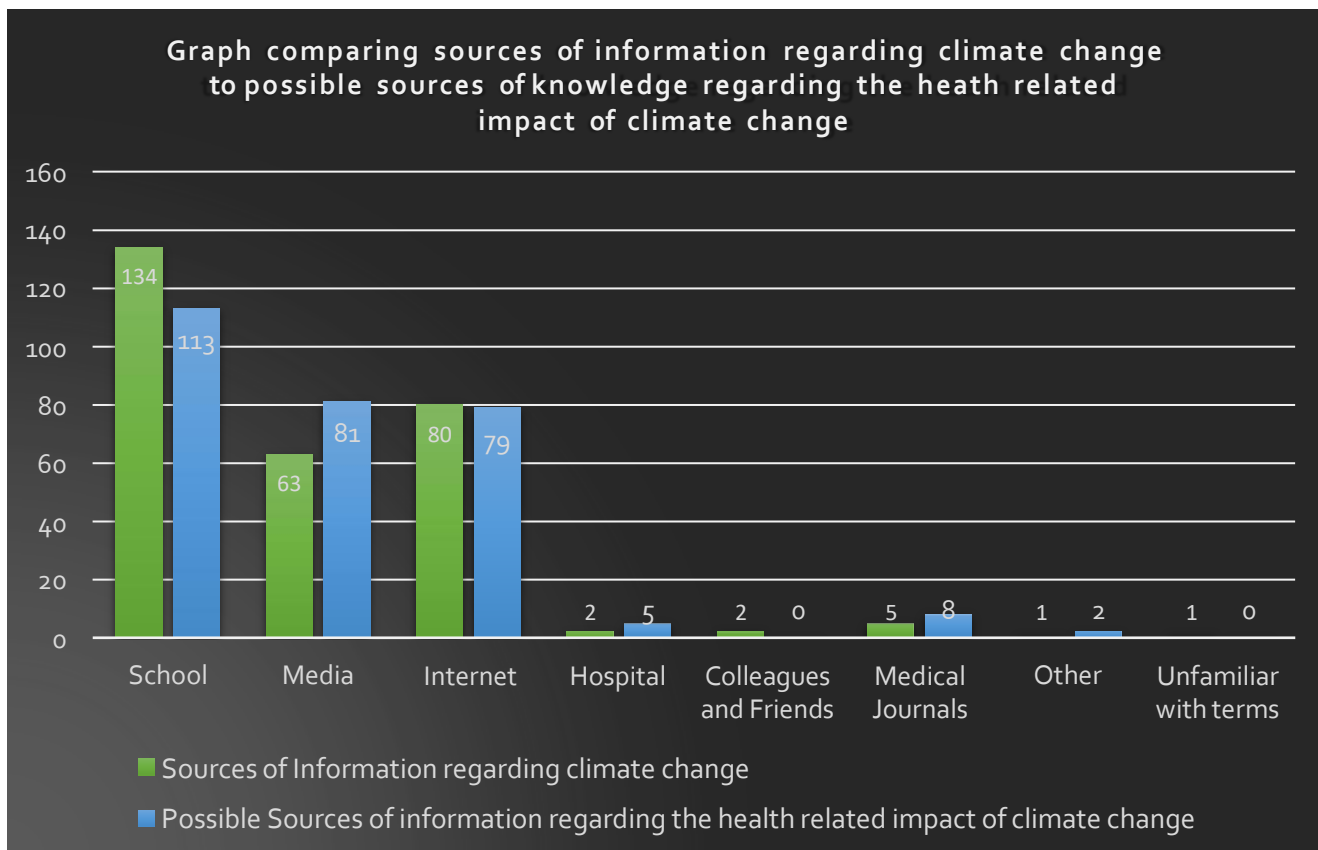
Our sample consisted of 19.8% Year 1 students, 21.9% Year 2 students, 20.5% Year 3 students, 18.8% Year 4 students and 19.1% Year 5 students. The mean response to how familiar respondents were with the topic of global warming and climate change obtained a score of 3.34, a value greater than 3 indicating the sample population was generally familiar with the concept.



Analysis of variance at a 5% significance level indicates that there are no significant differences amongst year groups with respect to familiarity with the topic of climate change. Respondents were asked to then identify the source of their knowledge regarding climate change and global warming [and the result was?]. Subsequently, they were asked to select a route by which they would like to learn more about the

impact of climate change on health: school (46.5% of respondents) appeared to be the most popular means of obtaining information regarding climate change and global warming with internet (27.8%) and media (21.9%) being the 2nd and 3rd most popular means of obtaining information, as shown on the bar graph below (Fig 1).

Fig 1 Graph Comparing Sources of Information Regarding Climate Change to Potential Sources of Knowledge Regarding the Health-Related Impacts of Climate Change

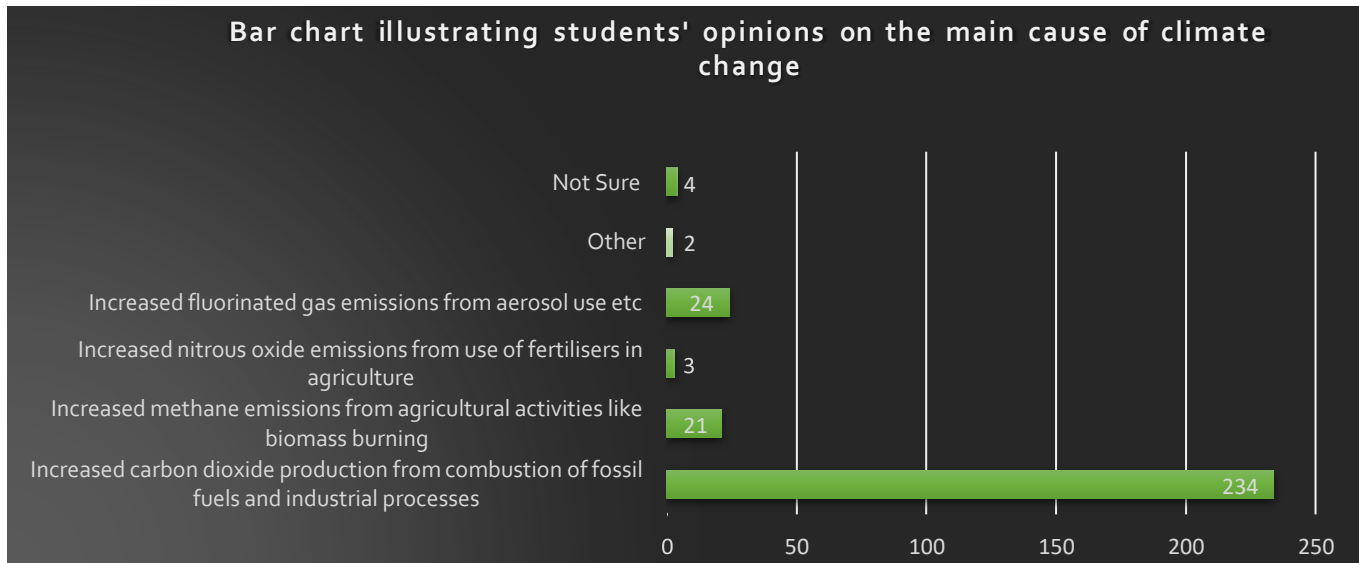


School (39.2%) was also the top suggestion for method of obtaining further information regarding the impact of climate change on health, with media (28.1%) and Internet (27.4%) were the 2nd and the 3rd. Students were then asked to select the major con

tributor to climate change from a list provided. The majority of students (81.25%) agreed that increased carbon dioxide production from combustion of fossil fuels and industrial processes was the major cause of climate change. Only 1.4% of students stated they were unsure of the main cause of climate change (see Fig 2).



Fig 2 Bar Chart Illustrating Students' Opinions on the Main Causes of Climate Change



When asked if climate change and global warming have an impact on their daily lives, 262 students (X%) gave positive responses. Fewer students (201; X%) gave positive responses when questioned regarding the possible impact of climate change and global warming on future work, with xxx (23.3%) being

unsure of its likely impact on healthcare, xxx (31.6%) of Year 1 students stating that climate change would have an impact on their future work and 85.7% of Year 2 students believing climate change would impact on their future work (see Fig 3).

Fig 3 Bar Chart Comparing Participant Responses When Questioned on the Impacts of Global Warming and Climate Change on Daily Life and Future Work

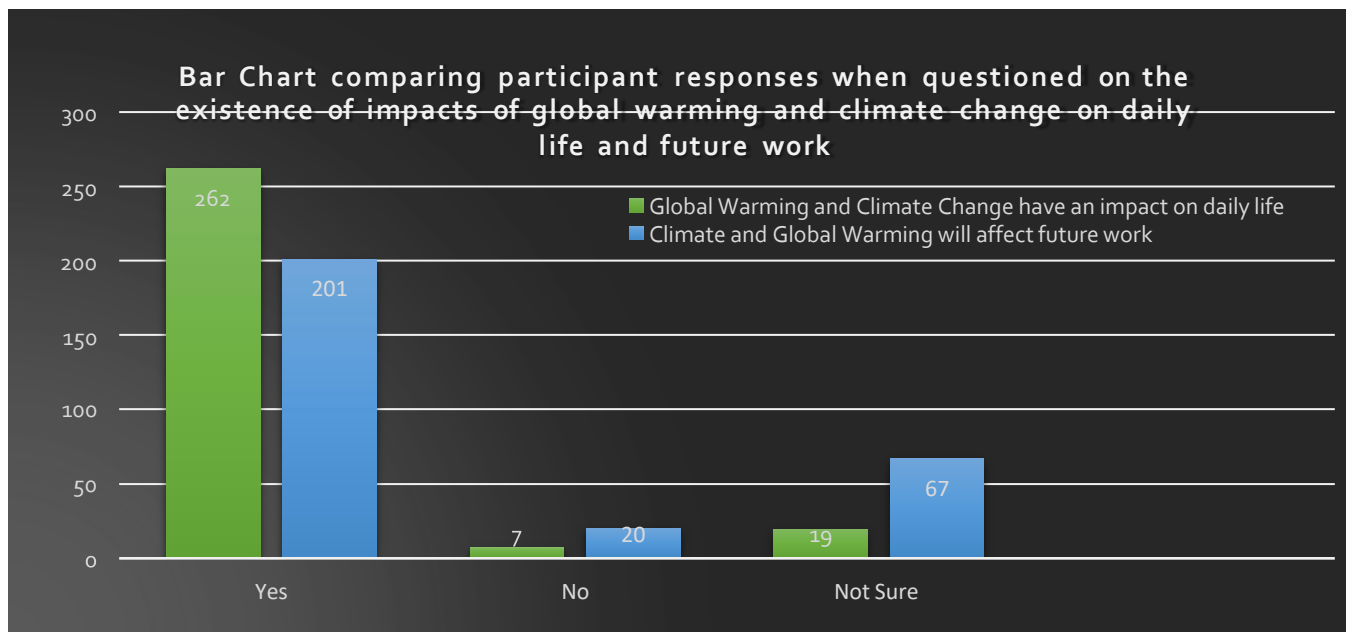


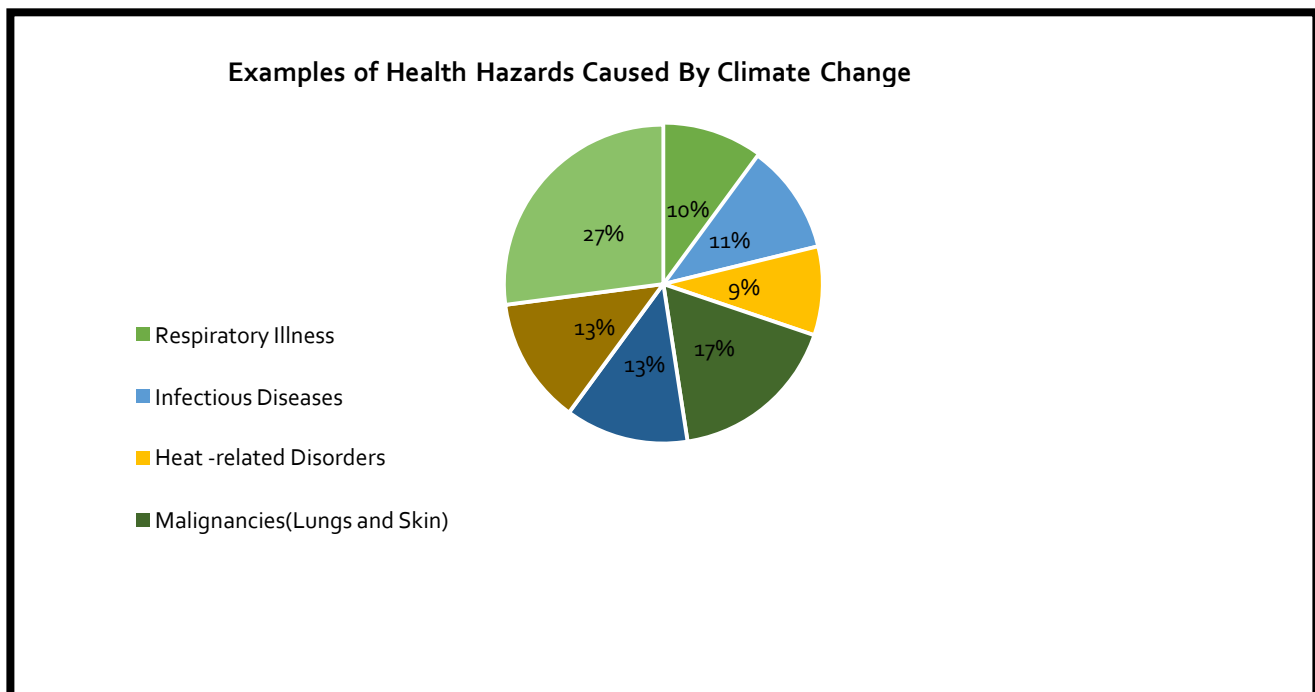
Table 2 Responses to the Question Regarding Perceived Impact of Global Warming and Climate Change on Daily Life and Future Work by Year of Study

Year of Graduation	Number of Participants Responding Yes	Total Number of Respondents	%
2022	18	57	31.6
2021	54	63	85.7
2020	42	59	71.2
2019	43	54	79.6
2018	44	55	80

Students were further questioned regarding their desire to learn more about the health-related impacts of climate change. When students were presented with the only open-ended question, 27% were unable to identify a single health hazard resulting from climate change. Amongst students who could identify likely health impacts,

malignancies of skin and lungs (mentioned by 17% of respondents) and evolution of microorganisms (13%) constituted the two most common responses. Year 1 students constituted the majority (46%) of students unable to provide an impact whilst only 8% of Year 5 students questioned were unable to do so.

Fig 4 Examples of Health Hazards Believed to be Caused by Climate Change Identified by Study Respondents



In response to the question regarding the degree to which students believe climate change impacts health, the mean answer obtained was 3.64 with a standard deviation of 0.927, indicating medical students agreed climate change had an impact on health.

A one sample T-test was performed on data collected where the p value was found to be less than 0.05. The null hypothesis was rejected, proving students believed climate change does impact on health.



The sample was then asked to state whether or not they were interested in learning more about the health-related impacts of climate change and were further asked to specify whether they believed that education could reduce climate related health issues.

The majority of students (94%) stated they were interested in learning more about the impact of climate change on health and 78.8% also agreed that further education could reduce climate change related health issues

Table 3 Interest in Further Education on Climate Change and its Impact on Reducing Health-Related Impacts of Climate Change

Question	Are you interested in learning more about the health-related impact of climate change?	Do you believe further education can stunt the health-related impact of climate change?
Response		
Yes	271	227
No	17	17
Not Sure	N/A	44

Finally, students were asked to state the degree to which they believe the health-related impact of climate change is currently integrated into the MBBS curriculum. The mean response received was 1.11 with a standard deviation of 0.911, indicating students believe the health-related impact of climate change is currently incorporated poorly into the MBBS curriculum. The one sample T test at the 5% significance level showed a test statistic less than the critical T value of 1.645, indicating the null hypothesis should not be rejected. This indicates that the MBBS curriculum does not contain sufficient information on the health-related impact of climate change.

DISCUSSION

The majority of the 288 (X%) medical students included in this study were familiar with climate change and global warming; only xxx (14%) stated they were unfamiliar with the concepts. Whilst previous studies have indicated older students have a better generalized knowledge of climate change and global warming, this study showed there was no significant difference amongst year groups regarding familiarity with the concepts at a 5% significance level (though the significance level for the first year was only just below the 5% significance level at $p=0.06$).

A 2011 study, Assessment of awareness regarding climate change and its health hazards among the medical students [CITATION?], found media to be the most common source of information regarding climate change and global warming, while participants in this study indicated school to be the most common source of their knowledge (46.5%) followed by the internet (27.8%) as the second most common source of knowledge. This may indicate that in the last 10 years, since the original study was conducted, school curriculums have begun to incorporate more information regarding climate change, even if this is not yet enough.

Increased carbon dioxide concentration resulting from increased industrial activity was understood to be the most popular choice as the main contributor to climate change, similar to findings of previous studies [CITATIONS?]. An overwhelming majority of students (90.9%) stated that they believed climate change and global warming would impact on their daily lives in future, following similar trends seen in previous studies [CITATIONS?]. 69.8% of students were felt that climate changes would impact on future work but this differed significantly between year groups.



31.6% of Year 1 medical students felt that climate change would impact on future work whilst for the upper years this increased to 70% and 85%. When asked to specify the degree of impact climate change has on health, students did believe that human health will be affected by climate change, with 56.9% agreeing climate change has some or a significant effect on human health. This result is comparable to that of an Ethiopian study [Citation?] where 52.3% of medical students believed that climate change impacts on health. When asked to explain health hazards resulting from climate change, students provided various examples with skin and lung malignancies (17%), evolution of microbial organisms and changes in disease pattern (13%), infectious diseases (11%) and respiratory illnesses (10%) as common impacts. A few students also mentioned cardiovascular diseases, physical hazards caused by natural disasters, overcrowding of hospitals, mental stress and behavioural changes.

Whilst physical hazards constituted the majority of responses to a similar question in a previous study (Pandve and Raut's 2011 study) only few participants in our study offered this response. Four respondents (1.4%) discussed mental health and behavioural changes, similar to the 2014 Ethiopian study (CITATION?) in which 4 participants out of 306 (1.3%) listed mental health as a possible health hazard. Of our sample, 27% were unable to offer any climate change-related health hazard, again broadly similar to the 2014 Ethiopian study, which showed just less than 25% of the sample was unable to identify a related health hazard. Of the students in our study who were unable to identify a related health hazard, 46% were first year medical students, suggesting that knowledge does increase as students' progress through the course. Year 1 students largely did not think climate change would impact their work and daily lives in future and this group also constituted the majority of students who were unable to identify a climate change related health hazard, thus indicating Year 1 students may be less knowledgeable than their older peers regarding the health-related impacts of climate change.

The Year 5 students were most able to identify at least one climate change-related health hazards, (93%) followed by the Year 2 students (87%). The majority of students (94%) expressed a desire to learn more about the health-related impact of climate change and school was the most popular route of dissemination for information regarding the topic. School had been previously selected as the most common source of information regarding climate change and global warming, so it is perhaps unsurprising that the respondents felt they would be most comfortable utilizing this route for specialized information on health and climate change via a one sample t-test ($p < 0.05$), it was determined that students felt climate change and its health-related impacts were not highly integrated into our medical school curriculum. The mean response of participants was 1.11 indicating that the aforementioned information was largely not at all integrated into our MBBS curriculum. These findings resemble those of Nigatu and Kloos' 2014 Ethiopian study (Citation to study) where more than 87% of students felt they were not well equipped to understand the health-related impacts of climate change.

CONCLUSION

Most medical students at the UWI, St. Augustine, Trinidad and Tobago, exhibited some awareness of the health-related implications of climate change, though first year medical students' knowledge of the topic was notably lower than that of the higher years. The majority of students in all year groups expressed a desire to learn more about the health implications of climate change, and a majority also voiced their dissatisfaction with the lack of emphasis placed on the subject by their academic curricula. It is suggested that the academic curricula for the MBBS degree should be updated to impart such information in greater detail and with much more emphasis being placed on the importance of these health-related implications.



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