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Student Research Report

UBC Students' Attitudes Toward Climate Change Since the Onset of the COVID-19 Pandemic

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**UBC Students' Attitudes Toward Climate Change Since the Onset of the COVID-19
Pandemic**

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The University of British Columbia

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Executive Summary

Since the rise of COVID-19, climate change awareness may have shifted due to stay-at-home restrictions and less contact with the outdoor world. Therefore, the research question that we chose to study was “How has the increase in the amount of time spent indoors impacted the attitudes of UBC students toward climate change?” We hypothesized that students who spent more time outdoors, would show more concern for climate change. We conducted a survey in which we asked questions based on three categories: beliefs, risk perceptions, and policy support. From the 103 participants we were able to collect our data from, we found that the amount of time spent indoors or outdoors did not have an impact on attitudes towards climate change, thus not supporting our hypothesis. A negative correlation of marginal significance was found between time spent outdoors and the level of concern of climate change. We found that more opportunity for contact with nature may not be correlated with a greater concern for climate change.

Keywords: climate, climate change, pandemic, COVID-19, nature, perception, attitudes, students, sustainability

Project Title: UBC Students' Perception of Climate Change Since the COVID-19 Pandemic

Introduction

Since the onset of the COVID-19 pandemic in March 2020, many provincial restrictions in British Columbia have been introduced to contain the disease, such as staying-at-home orders. Travel restrictions and enforced quarantine measures have produced both positive and negative effects on the environment, with the latter being greater. As stated by Bhat et al. (2021), there has been a significant increase in the amount of single-use products and personal protective equipment (PPE) being discarded as environmental waste, contributing to climate change and other environmental issues. However, a study on positive psychology by Bains & Turnbull (2019) has found that prosocial purpose, which can be facilitated by in-person social connection, can support personal growth and self-advocacy for social changes in the community, such as mitigating climate change. Considering that individuals who are stuck inside for an extended period due to the lockdown restrictions have limited social contacts and social networks, this creates the implication that they will be less motivated to engage in sustainable behaviours compared to those who regularly have in-person social interactions.

Another study of interest to us, done by the Yale Program on Climate Change Communication, examined the relationship between location and beliefs regarding climate change. More specifically, researchers Howe et al. (2015) studied risk perceptions and beliefs concerning climate change, as well as policies in response to climate change during the pandemic and pooled these responses from participants across every state within the continental United States. Using a multilevel regression and poststratification model, it was found that “63% of Americans believe [climate change] is happening, but county-level estimates range from 43 to 80%, leading to a diversity of political environments for climate policy” (Howe et al., 2015). This level of stratification, especially within counties, helped researchers to emphasize their hypothesis: that climate change awareness and support in favor of climate change policies is a much divided topic even among participants categorized within the same demographic (i.e. same county). After stumbling upon this research, we wanted to see whether or not this stratification regarding climate change exists within the demographic of students of the University of British Columbia. With the rise of the pandemic, our research project aims to investigate students' time spent indoors since the onset of the COVID-19 pandemic and its impact on their attitudes towards climate change. Since people have been spending more time indoors due to the stay-at-home restrictions, it is important that we study their implications on their emotions and beliefs, in this case, UBC students, and their current perception of climate change.

Research Question and Hypothesis

The research question for our project was “how has the increase in the amount of time spent indoors since the onset of the COVID-19 pandemic impacted the attitudes of UBC students towards climate change?”. Since individuals who are socially isolated indoors are implicated to be less motivated to engage in prosocial behaviours, we hypothesized that UBC students who spend more time outdoors during the pandemic are more likely to be concerned about climate change than those who spend less time outdoors.

Methods

Participants: Our study aimed to recruit around 100 UBC students via Qualtrics to complete our survey. The survey was distributed through emails, text messages, and various social media

platforms such as Facebook and Instagram. All participants were students from UBC. After collecting the results, 131 respondents were obtained, of which 28 responses were incomplete and 103 were valid. The participants were between the ages of 17 and 26 years old ($M = 21$). 54% of respondents were female, 24% were male, 19% preferred not to say, and 1% indicated that they identify as non-binary/third-gender.

Conditions: Since our study is correlational and not experimental, our *predictor variable* was ‘time spent outdoors’ and our *criterion variables* were ‘concern about climate change’ and ‘support for climate change education in schools.’

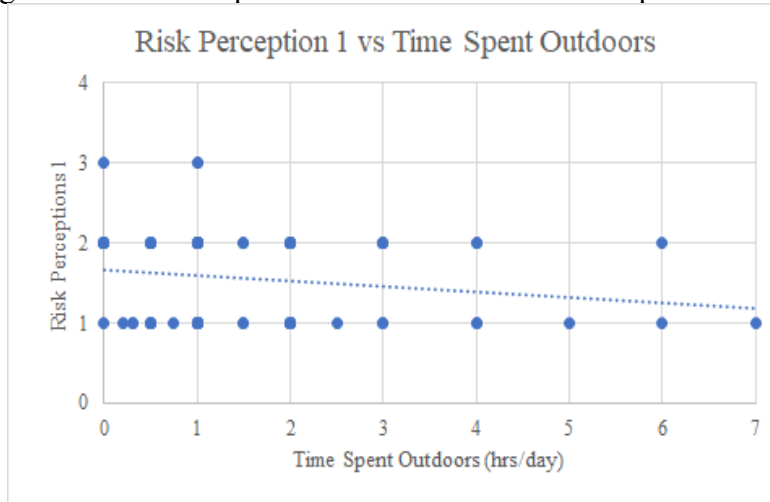
Measures: The measures for our survey were based on three domains: *beliefs*, *risk perceptions*, and *policy support*. The questions for *beliefs* served to indicate the participants’ belief in climate change and its causes. The *risk perception* records the extent to which participants are worried about the effects of climate change on themselves, plants and animal species, and future generations. Lastly, the *policy support* section was used to find the consensus for implementing climate change education programs in schools and prioritizing environmental protection over economic growth. Instead of designing our own survey questions, we used a variety of questions from Howe et al. (2015) and Mildemberger et al.’s (2016) studies on climate change opinions, as they were standardized. Although these two studies by the Yale Program on Climate Change Communication created these questions to assess and compare the public opinion on climate change across different U.S. states, we thought these questions were relevant to our study because they cover a broad range of attitudes toward climate change and. However, since our sample consisted of UBC students located in various different locations all over the world, we decided to omit or edit questions that were specific to the U.S. (i.e., the President should do more to address global warming. *Do you think the following should be doing more or less to address global warming?*). We also reworded the questions to address climate change specifically, instead of global warming or similar concepts.

Procedure: In-person data collection was impracticable due to the COVID-19 pandemic. Therefore, a survey was created on Qualtrics. Distribution of the Qualtrics survey varied from word of mouth—or personally messaging other UBC students—and posting the survey link on different Facebook groups (e.g., “UBC Class of 2021/2022”). Data collection occurred from March 2 to March 27, 2021 lasting 25 days. All participants consented to participating in the research project, and if not, were redirected to the “thank you for participating” page.

Results

While the survey questions were taken directly from the Yale Program on Climate Change studies, we were unable to emulate the multilevel regression models used to analyze the datasets. As such, we decided to use a combination of correlational and descriptive methods to analyze our data. We performed correlational analyses for the *Risk Perception 1* question (*How worried are you about climate change?*) and the *Policy Support 1* question (*How much do you agree or disagree with the following statement? “Schools should teach our children about the causes, consequences, and potential solutions to climate change.”*). In regard to the first correlation (see figure 1), we found a small negative correlation ($r = -0.165$) between the average amount of time spent outdoors (hrs/day) since the onset of the COVID-19 pandemic and amount of climate change anxiety, suggesting that participants who reported spending more time outdoors, on average, had lower levels of climate change anxiety.

Figure 1. Risk Perception 1 as a Function of Time Spent Outdoors



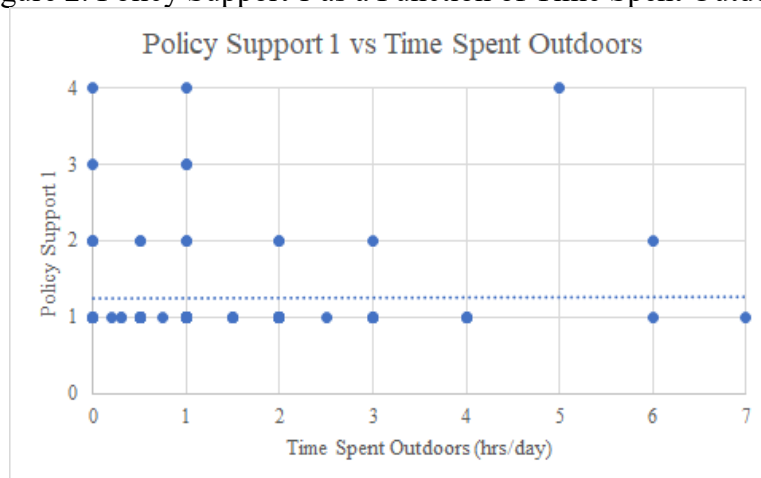
Note. Time spent outdoors is negatively correlated ($r = -0.165$) with how worried participants are regarding climate change. The y-axis shows a numeral corresponding to how much climate change anxiety the participant is experiencing (1=Very worried, 2=Somewhat worried, 3=Not very worried, 4=Not at all worried), while the x-axis indicates the average amount of time the participant has spent outdoors (hrs/day) since the onset of the COVID-19 pandemic.

Table 1. Risk Perception 1 as a Function of Time Spent Outdoors

			Pearson's r	p
Time Spent Outdoors (hrs/day)	-	Risk Perceptions 1	-0.165	0.095

Regarding our second correlational value (see figure 2), we saw little to no correlation ($r = 0.001$) between time spent outdoors and the extent to which participants agreed with the following statement: *schools should teach our children about the causes, consequences, and potential solutions to climate change.*

Figure 2. Policy Support 1 as a Function of Time Spent Outdoors



Note. On the y-axis, the numerals indicate how much the participant agrees with policy support 1: Schools should teach our children about the causes, consequences, and potential solutions to climate change (1 = strongly agree, 4 = strongly disagree).

Table 2. Policy Support 1 as a Function of Time Spent Outdoors.

			<i>Pearson's r</i>	<i>p</i>
<i>Time Spent Outdoors (hrs/day)</i>	-	<i>Policy Support 1</i>	0.001	0.989

Both findings went against our hypothesis that both climate change anxiety and the amount the participant agrees to the statement presented in the *policy support 1* question would increase as the amount of time spent outdoors increases. However, our results showed a small negative correlation (see table 1) and a non-significant correlation (see table 2) for these measures, respectively.

Discussion

Limitations: A major caveat of our study was tied to our sample size only including UBC students, who tend to be more educated and passionate about climate change and its effects on nature and future generations than the general population. If this study were to be replicated in the future, we suggest that a more diverse sample set be obtained in order to better represent the larger population. Additionally, because the majority of the participants were within the ages of 17 and 26 years old, our findings were only applicable to this age group and did not include those who were younger than 17 or older than 26. More experimental studies would need to be conducted in the future with a more representative sample. The second major limitation to our study was that we neglected to ask participants how much of their time spent outdoors per day on average was in a natural outdoor setting (e.g., Physically going out to beaches, forests, parks, etc.) or socializing with another individual(s) outside. As indicated by Bains & Turnbull (2019), in-person social connection can motivate other individuals to engage in prosocial behaviours such as targeting climate change. It is important to make this distinction, as our study does not address how much people's concern for climate change can be attributed to the amount of in-person social connection in an outdoor environment or spending more time in a natural outdoor setting. By comparing these two variables, we can determine whether the intrinsic benefits of nature or the instrumental value of socially connecting outdoors is more significant in encouraging greater awareness and concern for climate change. To conclude, future studies should determine if there is a causal relationship between the amount of time spent outdoors and concern for climate change, and if so, how much concern for climate change can be attributed to each of these factors.

Implications: When asking the question, "how worried are you about climate change?", participants were more likely to indicate that they are very worried despite spending less time outdoors ($r = -0.165$); this suggests that having more opportunity for contact with nature or in-person social connection may not be correlated with a greater concern for and being more conscious about climate change. This may be due to the notion that UBC students are well educated and have internalized beliefs about climate change that are unaffected by the amount of time they have spent outdoors; in other words, although some participants indicated spending

less time outdoors (i.e., 0-1 hrs), they reported higher amounts of climate change anxiety. Participants may have strong internalized beliefs regarding climate change, and this belief may not change depending on the participant's contact with nature (i.e., Amount of time spent outside) or opportunities for socializing outdoors.

Recommendations

Many students may be unfamiliar with UBC's initiative and stance on climate action and sustainability, suggesting that there is an ineffective and improper method of dissemination of information amongst students. In order to have a more sustainable campus after an in-person transition, it would be beneficial to create campaigns to be able to educate people on methods of living sustainably (e.g., Using recyclable bags, using public transportation, etc.). Since participants tended to have greater concern for climate change despite spending more time indoors, we suggest that online climate change education programs may be as effective as in-person ones. It is also imperative that an action plan be better marketed towards students, faculty and staff, and visitors.

Taking into account the severity and longevity of COVID-19, finding the right balance of safety for one's health and wellness and eco-friendly is imperative in reducing waste and being more mindful of the environment. Given that this pandemic has been ongoing for more than a year (as of April 2021), a smooth transition back to in-person classes and campus activities is essential. Consumption of personal protective equipment (PPE) such as disposable face masks and gloves may be increased as students and staff want to remain as safe and healthy as possible. With the rise of single use plastics (e.g., Tupperware, shopping bags), masks and gloves, it is important that sustainable behaviours and actions be disclosed in a way that is both safe for one's health and environmentally-friendly (Bhat et al. 2021). Ultimately, our goal is to reduce waste and be more sustainable in our everyday behaviours.

Although students of UBC are generally more educated on the topic of climate change, taking action towards a better world also requires a lot on their part. Sustainable behaviour and a more eco-friendly life on campus—and at home—can be achieved if these sustainable behaviours can be encouraged. For example, reducing one's carbon footprint by taking public transportation instead of driving or using recyclable bags instead of single-use plastic bags. Easy-to-understand posters could be posted around the many public places on campus and creating more well-known campaigns in-person or on social media will be beneficial to encourage both UBC students and staff. Educating people in this way, furthermore, can build awareness even to people who are already educated on the topic and aware of climate change. These infographics and presentations will nudge people to be more eco-friendly with their actions and behaviours on the daily because of these valuable reminders.

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Appendix A: Tables & Figures
Frequency and Correlation Tables for Survey Questions

Beliefs

1.

Frequencies for Do you think that climate change is happening?

Do you think that climate change is happening?	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	100	97.087	97.087	97.087
No	1	0.971	0.971	98.058
Don't know	2	1.942	1.942	100.000
Missing	0	0.000		
Total	103	100.000		

2.

Frequencies for Assuming climate change is happening, do you think it is..?

Assuming climate change is happening, do you think it is..?	Frequency	Percent	Valid Percent	Cumulative Percent
Caused mostly by human activities	98	95.146	95.146	95.146
Caused mostly by natural changes in the environment	2	1.942	1.942	97.087
Other	2	1.942	1.942	99.029
Don't know	1	0.971	0.971	100.000
Missing	0	0.000		
Total	103	100.000		

Risk Perceptions

1.

Table 1. Risk Perception 1 as a Function of Time Spent Outdoors

			Pearson's r	p
Time Spent Outdoors (hrs/day)	-	Risk Perceptions 1	-0.165	0.095

2.

Frequencies for How much do you think climate change will harm plants and animal species?

How much do you think climate change will harm plants and animal species?	Frequency	Percent	Valid Percent	Cumulative Percent
Only a little	1	0.971	0.971	0.971
A moderate amount	11	10.680	10.680	11.650
A great deal	90	87.379	87.379	99.029
Don't know	1	0.971	0.971	100.000
Missing	0	0.000		
Total	103	100.000		

3.

Frequencies for How much do you think climate change will harm future generations of people?

How much do you think climate change will harm future generations of people?	Frequency	Percent	Valid Percent	Cumulative Percent
Only a little	1	0.971	0.971	0.971
A moderate amount	12	11.650	11.650	12.621
A great deal	88	85.437	85.437	98.058
Don't know	2	1.942	1.942	100.000
Missing	0	0.000		
Total	103	100.000		

4.

Frequencies for How much do you think climate change will personally harm you?

How much do you think climate change will personally harm you?	Frequency	Percent	Valid Percent	Cumulative Percent
Not at all	4	3.883	3.883	3.883
Only a little	20	19.417	19.417	23.301
A moderate amount	59	57.282	57.282	80.583
A great deal	18	17.476	17.476	98.058
Don't know	2	1.942	1.942	100.000
Missing	0	0.000		
Total	103	100.000		

Policy Support

1.

Frequencies for What do you think is more important?

What do you think is more important?	Frequency	Percent	Valid Percent	Cumulative Percent
Protecting the environment, even if it costs jobs or economic growth	93	90.291	90.291	90.291
Economic growth, even if it leads to environmental problems	10	9.709	9.709	100.000
Missing	0	0.000		
Total	103	100.000		

2.

Table 2. Policy Support 1 as a Function of Time Spent Outdoors.

		<i>Pearson's r</i>	<i>p</i>
<i>Time Spent Outdoors (hrs/day)</i>	- <i>Policy Support 1</i>	0.001	0.989

Appendix B

Survey Questions

[Start of survey]

Since the onset of the COVID-19, how much time do you spend outdoors per day on average? Please indicate your answer below in numbers (e.g., 1=1 hour). _____

Beliefs 1

Recently, you may have noticed that climate change has been getting some attention in the news. Climate change refers to the idea that there have been long-term changes in average weather patterns, which may have been caused by increases in the world's average temperature over the past 150 years. What do you think: Do you think that climate change is happening?

- Yes (1)
- No (2)
- Don't know (3)

Beliefs 2 - *Assuming climate change is happening, do you think it is...?*

- Caused mostly by human activities (1)
- Caused mostly by natural changes in the environment (2)
- None of the above because climate change isn't happening (3)
- Other (4)
- Don't know (5)

Risk Perceptions 1 - *How worried are you about climate change?*

- Very worried (1)
- Somewhat worried (2)
- Not very worried (3)
- Not at all worried (4)

Risk Perceptions 2 - *How much do you think climate change will harm plants and animal species?*

- Not at all (1)
- Only a little (2)
- A moderate amount (3)
- A great deal (4)
- Don't know (5)

Risk Perceptions 3 - *How much do you think climate change will harm future generations of people?*

- Not at all (1)
- Only a little (2)
- A moderate amount (3)
- A great deal (4)
- Don't know (5)

Risk Perceptions 4 - *How much do you think climate change will personally harm you?*

- Not at all (1)
- Only a little (2)
- A moderate amount (3)
- A great deal (4)
- Don't know (5)

Policy Support 1 - *How much do you agree or disagree with the following statement? "Schools should teach our children about the causes, consequences, and potential solutions to climate change."*

- Strongly agree (1)
- Somewhat agree (2)
- Somewhat disagree (3)
- Strongly disagree (4)

Policy Support 2 - *Which do you think is more important?*

- Protecting the environment, even if it costs jobs or economic growth (1)
- Economic growth, even if it leads to environmental problems (2)

Demographic 1 - Age:

Please list your age below: ____

Demographic 2 - Ethnicity:

What is your ethnicity?

- White or Caucasian (1)
- Black or African American (2)
- Latino or Hispanic (3)
- Asian (4)
- Southeast Asian (5)
- West Asian (6)
- South Asian (7)
- Aboriginal (8)
- Middle Eastern (9)
- Other (please specify) (10) _____

Demographic 3 - Gender:

What is your gender?

- Male (1)
- Female (2)
- Non-binary / third gender (3)
- Prefer not to say (4)
- Other (please specify) (5) _____

[End of survey]

Appendix C

Contribution of each team member:

- Jacey Soriano
 - Contributed a fair amount to the proposal (psychological insight and methods)
 - Submitted the proposal on behalf of the group
 - Contributed to the body, formatting and design of the slides; presented some findings and results of the presentation
 - Created survey questions on Qualtrics
 - Distributed the Qualtrics survey online
 - Submitted the presentation on behalf of the group
 - Contributed to the final report—introduction, methods, procedure, discussion, limitations, recommendations for the client, and attached the survey questions to the appendix
 - Maintained consistent communication with the rest of the group and attended all of the group’s meetings
- Ece Bulut
 - Contributed a fair amount to the presentation slides (research title, hypothesis, predictions, research question)
 - Participated in presentation (presented the first 5 slides and the ‘limitations and recommendations’ slide)
 - Contributed to the final report (introduction, research question and hypothesis, some part of the methods section, some of the limitations and implications section, recommendations)
 - Created the outline of the final report
 - Contributed a fair amount to the proposal (background literature + research hypothesis + anticipated outcomes)
 - Created survey questions on Qualtrics
 - Distributed the Qualtrics survey online
 - Maintained consistent communication with the rest of the group and attended all of the group’s meetings
- Jenny Seo
 - Created survey questions on Qualtrics
 - Distributed the Qualtrics survey online
 - Performed data analysis on Qualtrics and JASP
 - Helped to make presentation slides
 - Made graphs on Excel
 - Participated in presentation (results)
 - Wrote portions of the proposal and final report (introduction, methods, results)
 - Formatted and submitted the final report
 - Maintained consistent communication with the rest of the group and attended all of the group’s meetings
- Troy Okazaki
 - Spearheaded, created and distributed the Qualtrics survey
 - Contributed a fair amount to the proposal and final report (methods, results, discussion)
 - Assisted in making presentation slides

- Made graphs on Excel
- Created survey questions on Qualtrics
- Distributed the Qualtrics survey online
- Performed data analysis on Qualtrics and JASP
- Maintained consistent communication with the rest of the group and attended all of the group's meetings
- Akash Deo
 - Wrote the executive summary section of the final report
 - Participated in presentation of the group's findings (survey questions)