



**BSc in Psychology**  
**Department of Psychology**

Climate change and the well-being of  
compulsory school students

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## Foreword

Submitted in partial fulfillment of the requirements of the BSc Psychology degree, Reykjavik University, this thesis is presented in the style of an article for submission to a peer-reviewed journal. This thesis was completed in the spring of 2021 and may therefore have been significantly impacted by the COVID-19 pandemic. The thesis and its findings should be viewed in light of that.

### Abstract

The aim of the study was to examine students' beliefs and interests in climate change and whether there is a connection between climate change and the mental well-being of students in compulsory school. Students in the 10<sup>th</sup> grade in the compulsory Icelandic school system were invited to participate in the study. The participants in the study were 61 in total, 28 girls (45.9%), 29 boys (47.5%) and 3 students (4.9%) who identified as another gender. One student (1.6%) did not define their gender. A questionnaire was used that included questions about students' beliefs and interests in climate change, as well as their mental well-being in relation to climate change. The results showed that there was no significant difference between gender and belief in climate change. It was found that most participants did not suffer from climate anxiety, as only one participant scored above the average score on the climate change anxiety scale (CCAS). Finally, the results showed that there was a significant difference between the genders when it came to having climate anxiety. This study is intended as a preliminary study and preparation for further research in this area as it is important to further investigate whether the Icelandic youth experience climate anxiety.

*Keywords:* climate change, climate change anxiety, students

### Útdráttur

Markmið rannsóknarinnar var að skoða trú og áhuga nemenda á loftlagsbreytingum og hvort tengsl séu milli loftlagsbreytinga og líðan grunnskólanemenda. Kannað var hvort nemendur finndu fyrir svokölluðum loftslagskvíða sem nær yfir tilfinningar sem tengjast umhverfismálum og mögulegar ógnir sem loftslagsbreytingar geta haft í för með sér. Nemendum í 10. bekk í einum grunnskóla á höfuðborgarsvæðinu var boðið að taka þátt í rannsókninni. Þátttakendur rannsóknarinnar voru 61 talsins, 28 stelpur (45.9%), 29 strákar (47.5%), 3 nemendur (4.9%) merktu við annað og einn (1.6%) skilgreindi ekki kyn sitt. Notast var við spurningalista sem innihélt spurningar sem sneru að trú og áhuga nemenda á loftslagsmálum sem og líðan þeirra í tengslum við loftslagsbreytingar. Niðurstöður sýndu að ekki var marktækur munur á milli kynja og þess að trúa á loftslagsbreytingar. Ennfremur kom fram að almennt þjáðust þátttakendurnir ekki af loftslagskvíða en þó sýndu niðurstöðurnar að marktækur munur var á loftslagskvíða eftir kyni og báru fleiri stelpur merki um loftslagskvíða en strákar. Þessi rannsókn er hugsuð sem forrannsókn og undirbúningur fyrir frekari rannsóknir á þessu sviði. Því er mikilvægt að kanna loftslagskvíða meðal stærra úrtaks íslenskra ungmenna.

*Lykilorð:* loftslagsbreytingar, loftslagskvíði, nemendur

### **Climate change and students' well-being**

Over the past 100 years, humanity has had a negative impact on the world, mainly due to population growth and the increased use of natural resources worldwide (Swim et al., 2011). All over the world, people are experiencing changes in weather, as well as a lack of water and food supply due to climate change, and these changes are likely to affect people's health and well-being (Wilcox et al., 2013). Therefore, we must no longer ignore climate change and its effects (Özdem et al., 2014).

Discussion of climate change and the environment has increased significantly in the media between the years 2017 and 2019. Even though more media coverage is helpful to raise awareness, the negative information related to climate change can increase worries and concerns among people (Pihkala, 2019). Studies have shown evidence between negative emotions and climate change. In 2018, research was conducted in the United States by the American Psychological Association (APA) looking to understand what was causing stress in American citizens (American Psychological Association, 2018). The survey was conducted online, and around 3500 people aged 18 and over participated. APA also wanted to take the opportunity to examine the level of stress among Generation Z, who are the individuals born from 1997 onwards. The results indicated that 58% of Gen Z and 51% of adults felt stressed by climate change and global warming because of national news (American Psychological Association, 2018).

Further research was conducted in France, Germany, Norway and the United Kingdom where a researcher wanted to gain more insight into public perceptions of climate change (Steentjes et al., 2017). The results indicated that French residents were most worried about climate change compared to other nations as around 41% indicated that they were worried, while only 5% indicated no worries whatsoever. Participants in United Kingdom

seemed to be least worried about climate change. Only 20% said that they were very worried and 38% said that they were not worried at all (Steentjes et al., 2017).

To examine gender differences in climate change knowledge and environmental concerns, data from Gallup within the United States general public was used (McCright, 2010). The data was gathered from 2001 to 2008 and the participants were 18 years or older. The results indicated that 59% of women believed that climate change was happening now, but only 54% of men believed this was the case. Women were more worried than men regarding climate change (35% to 28%), and they believed that climate change would threaten their way of life (37% to 28%). Also, the results indicated that women believed that climate change was underestimated by the media (McCright, 2010).

However, young people rather than adults, seem to find climate change more of an issue (Brügger et al., 2020). Research carried out in the United Kingdom in 2019 showed that 63% of children aged 11 to 18 years old felt that climate change and environmental issues are one of the top problems that the United Kingdom is facing, but only 27% of people aged 18 and older felt that climate change was an issue (YouGov, 2019). Thus, it seems that young people have similar or even more concerns about climate change compared to adults. This could be the result of young people being more likely to learn about climate change in school and are therefore more aware of the negative effects. Young people seem to believe that climate change is a threat to the human race and, therefore, feel that this places them more at risk of experiencing serious problems (Brügger et al., 2020).

To summarize the emotional responses people experience regarding climate change, the term *climate anxiety* is used (Clayton & Karazsia, 2020). Anxiety includes feelings of excessive fear, worry, and behavioral disturbance (American Psychological Association, 2013). Climate anxiety represents emotions that people experience due to the environment and climate change and the potential threats that such changes pose, which, in turn, can affect

our health. Climate change is complex and can be a sensitive issue, so the serious anxiety symptoms that individuals may experience in this regard have often been underestimated (Pihkala, 2019). Symptoms of climate anxiety can range from mild to severe, but it should be noted that even if individuals experience mild symptoms, it could affect both their ability in daily life and their mental well-being. Climate anxiety can affect so many things in an individual's behavior but, at the same time, it is very vague and undefined. Therefore, there is a belief that climate anxiety can sometimes be hidden behind other anxiety disorders. To date, climate anxiety has been little studied, so it is important to study it systematically and monitor the causes and consequences associated with it (Wu et al., 2020).

As addressed above, adolescents are more likely than adults to experience climate anxiety and its effects on their well-being. They are at an important point in their physical and psychological development and are, therefore, vulnerable to daily stress that could increase the risk of depression, generalized anxiety disorder or other mental illnesses (Wu et al., 2020). This means it is extremely important to examine if this age group is suffering from climate anxiety. In the above-mentioned research of McCright (2010), the results indicated that compared to men, women have more concerns and underestimate their knowledge regarding climate change. The author stressed, that future research should examine the climate change beliefs and attitudes of primary and secondary school students, which is indeed the aim of the current study. As Brügger et al. (2020) indicated, compared to older people, young people are more aware of the risk and negative effects of climate change and the current research explored these issues among young people. As there is little information regarding climate anxiety among young people in Iceland, this pilot study will provide a knowledge base for further studies among compulsory school students. Thus, in the current study, three hypotheses are put forth to explore climate anxiety among young people:

Hypothesis 1: Do students in the 10<sup>th</sup> grade experience climate change anxiety?

Hypothesis 2: Is there a difference in climate change anxiety between genders?

Hypothesis 3: Is there a correlation between climate change anxiety and general anxiety?

## **Method**

### **Study design**

The research was a cross-sectional study. Participation in the research involved answering an online questionnaire. The questionnaire was submitted during school hours to students in the 10<sup>th</sup> grade in one compulsory school in the Reykjavik district. The questions concerned students' knowledge and interest in climate change problems, as well as their well-being in relation to climate change. During the study, the data was stored on locked websites that were only accessible by the researchers. The study received permission from the National Bioethics Committee and the Data Protection Authority (VSN–21–078).

### **Participants**

Participants in the study were 10<sup>th</sup> grade students in an Icelandic compulsory school. A total of 61 out of 65 16-year old students participated in the study, with 28 females (45.9%) and 29 males (47.5%). Three students (4.9%) indicated belonging to another gender and one student did not identify with any gender (1.6%). Two students did not want to participate in the study and two students were absent from school due to sickness at the time of the research. The compulsory school was contacted via e-mail where the aim of the research was explained and asked if the school had any interest in participating. When the compulsory school agreed to participate, they received another e-mail with instructions, an information letter, information consent, and a link to the online questionnaire. The school sent out an information letter along with an informed consent to the students and their parents and legal

guardians. To be able to participate in the study, both students and their guardians had to sign the informed consent.

## Measures

Data for this research was gathered using an online questionnaire that was set up using Google docs. The questionnaire consisted of background questions and scales that assessed the well-being and emotions associated with climate change, belief in climate change, behavior towards climate change, the well-being of individuals, and their sleeping habits. The background questions were about the gender of the participants, living arrangements, parental education, and social support. Genders were divided into three answers, which were female, male and other. The living arrangement background variable was combined into two groups, students that lived with both parents and other arrangements. The scales were all available in Icelandic, except one (*Climate Change Anxiety Scale*), which was translated from English to Icelandic by the researchers.

*Climate anxiety:* To assess well-being in relation to climate change, the questionnaire *Climate Change Anxiety Scale* (CCAS) from Clayton and Karazsia (2020) was used. The questionnaire contains 13 questions that were evaluated on a 5-point Likert scale. Responses to the CCAS were added and averaged to obtain a total climate change anxiety score with a possible range of 1 to 5. Cut-offs or indicators have yet to be established, but scores over the midpoint (3) were considered to be a sign of climate anxiety (Clayton & Karazsia, 2020). The results of a study by Clayton and Karazsia indicated the satisfactory internal reliability of the CCAS with Cronbach's  $\alpha \Rightarrow 0.80$ . The questionnaire was translated by researchers for the study and, therefore, the validity and reliability of the questionnaire in an Icelandic translation has not yet been demonstrated. The Cronbach's  $\alpha$  for the current study was  $\Rightarrow 0.90$ .



*Belief in climate change*: was assessed with seven statements from Bain and colleagues (2016) in an Icelandic translation by Soffía Svanhildur Felixdóttir (2017). The items measure peoples' general beliefs about climate change and the reasons for this. Answers were evaluated on a seven-point Likert scale from 1=I totally disagree to 7=I totally agree. According to the factor analysis, the list consists of only one element. Three items were recoded because of reverse wording. The mean scale scores were calculated in such way that higher the score the more favorable climate change beliefs and less climate change denial. The results of the study indicated a satisfactory internal reliability of the list with Cronbach's  $\alpha = 0.70$  (Soffía Svanhildur Felixdóttir, 2017). The average score was calculated for every participant, as a higher score indicates a more positive attitude to climate change and less denial of climate change. The Cronbach's  $\alpha$  for the current study was  $\Rightarrow 0.83$ .

*The Depression Anxiety Stress Scale 21 (DASS-21)*: is a self-assessment scale that contains 21 statements and is used to assess participants' mental well-being. DASS-21 consists of three sub-scales that assess depression, anxiety, and stress. For this current study, 7 questions in relation to anxiety were used. The original list consists of 42 items but was shortened. High convergence of legitimacy and high reliability between sub-scales were demonstrated. The results of a study indicated a good internal reliability of the list with Cronbach's alpha  $\alpha = 0.88$  (Henry & Crawford, 2005). An expert analysis has been made of a longer version of the list in the Icelandic population, which has shown comparable results (Björgvin Ingimarsson, 2010). However, no Icelandic study has been conducted on the shorter version. The Cronbach's  $\alpha$  for the current study was  $\Rightarrow 0.86$ .

*The Recurring Pro-environmental Behavior Scale*: contains 14 items that evaluate environmentally-friendly behavior on a 5-point Likert scale. The responses were scored on the range 1 to 5 (Brick & Lewis, 2014). As descriptive statistics for recurring pro-environmental behavior, the responses were combined into three groups: never and rarely

were scored as one, sometimes was scored as two, and the last group scored as three was frequently and always. Thus, a higher score is equal to more pro-environmental behavior. The list includes items that have been shown to be effective in reducing greenhouse gases. The results of Brick and Lewis (2016) showed satisfactory internal reliability where Cronbach's was  $\alpha = 0.76$ . The list was translated by Daðey Albertsdóttir in 2020, but its legitimacy and reliability have not been demonstrated in an Icelandic translation. The Cronbach's  $\alpha$  for the current study was  $\Rightarrow 0.56$ .

*The Environmental Action Scale (EAS)*: contains 18 items that assess public participation in behavior that has the purpose of having a positive impact on the environment (Alisat & Riemer, 2015). The researchers shortened the list to 11 items that were considered relevant to the study and the age of the participants. The original scale was rated on a 5-point Likert scale from 0 (never) through to 2 (sometimes) and 4 (frequently). The current study rated the list on 4-point Likert scale from 1 (never), 2 (rarely), 3 (sometimes), and 4 (frequently). The responses were combined into two group. The responses 'never' and 'rarely' were scored as one and 'sometimes' and 'frequently' were scored as two. The reliability of the list has been demonstrated as Cronbach's was  $\alpha = 0.86$  and has proven to be a valid measure of participation in environmental activities (Alisat & Riemer, 2015). The list was translated by Daðey Albertsdóttir in 2020, but its legitimacy and reliability have not been demonstrated in an Icelandic translation. The Cronbach's  $\alpha$  for the current study was  $\Rightarrow 0.86$ .

## **Procedure**

After obtaining approval from the National Bioethics Committee and the Data Protection Authority, the compulsory school sent home an information letter and an informed consent to parents of children in the schools' 10th grade to sign. When all the consent for participation was signed and delivered to the teacher, the questionnaire was sent to the teacher. The questionnaire was on Google Docs and was administered during school hours to

the students. When participants opened the link to the questionnaire, information was displayed where the participants were asked to answer the questions truthfully and thanks from the researcher for their participation was expressed. Also, if participants experienced any discomfort during the response to the questionnaire, they were informed that they could quit at any time. It was estimated that it would take approximately 10-15 minutes to answer the questionnaire. The participants took the survey on an iPad, which they had access to at the school. After all participants had returned their answers, the researcher started to analyze the data. All data was treated as confidential and no personally identifiable information was requested. Thus, no names or ID numbers were requested, and it was stated that no attempt would be made to trace answers to individual participants. Participants' answers would, therefore, be anonymous and stored on research numbers. During the study, the data was stored on a locked website that only researchers had access to. The statistical program, SPSS, was used for data processing, where appropriate statistical methods were used to seek answers to the research questions.

### **Statistical Analyses**

To analyze gender, only answers described as female, and male were used as only four participants described their gender as other ( $n = 3$ ) or did not answer ( $n = 1$ ). Independent sample t-tests were used to assess gender difference in all study variables. Correlation was used on all the study variables to assess if there was a correlation between climate change anxiety and general anxiety. The Statistical Package for the Social Sciences (IBM SPSS statistics 27) was used to analyze the data and perform the statistical testing. To design the chart, Microsoft Word and Excel were used.

## Results

Descriptive statistics was made for the participants' background variables. The majority of the participants lived with both of their parents or 65.6%, and a total of 27.9% participants lived under another arrangement.

Table 1 shows descriptive statistics for the pro-environmental behavior. There were 4.9% students that did not answer all questions. The results shows that 91.8% of students sort garbage in their home. Students never or rarely saved water when they were showering or washing dishes, which equals 75.4%. Independent sample t-test was used to see the gender difference in the pro-environmental behavior. The results indicated that there was not a significant difference between gender, female ( $M = 2.30$ ,  $SD = 0.25$ ) and male ( $M = 2.16$ ,  $SD = 0.06$ ),  $t(52) = 1.83$ ,  $p = 0.07$ .

Table 1. *Descriptive statistic for the pro-environmental behavior.*

Item	Never/Rarely % (n)	Sometimes % (n)	Frequently/Always % (n)
Multi-purpose bag	14.8% (9)	21.3% (13)	63.9% (39)
Walk/cycle	18% (11)	6.6% (4)	75.4% (46)
Use the bus	47.5% (29)	29.5% (18)	23% (14)
Shuttle by private car	37.7% (23)	23% (14)	39.3% (24)
Sort garbage in the home	4.9% (3)	3.3% (2)	91.8% (56)
Eat meat	16.4% (10)	26.2% (16)	57.4% (35)
Eat animal products	11.5% (7)	14.8% (9)	73.8% (45)
Eat organic food	4.9% (3)	31.1% (19)	62.3% (38)
Turn off electronics	44.3% (27)	16.4% (10)	39.3% (24)
Save water	75.4% (46)	9.8% (6)	14.8% (9)
Sort garbage in public	16.4% (10)	9.8% (6)	70.5% (43)
Buy used clothes	63.9% (39)	23% (14)	13.1% (8)
Try to fix faulty items/clothes	24.6% (15)	23% (14)	50.8% (31)
Buy fewer quality items	27.9% (17)	37.7% (23)	31.1% (19)

*Note:* n = number of participants, % = percent.

Table 2 shows descriptive statistics for the environmental action. All students answered the scale. The results indicate that the majority of participants (96.7%) never or rarely organized a protest, circumvent companies or organized events to raise awareness of environmental issues. An independent sample t-test was also used to test if there was a difference between genders in environmental action. The results indicated that there was a significant difference between genders in relation to environmental action, female ( $M = 1.76$ ,  $SD = 0.48$ ), male ( $M = 1.32$ ,  $SD = 0.31$ ),  $t(55) = 4.08$ ,  $p = < .001$ , and thus, females used more environmental actions than males.

Table 2. *Descriptive statistics for environmental action.*

Item	Never/Rarely % (n)	Sometimes/Frequently % (n)
Gained knowledge of climate issues	37.7% (38)	62.3% (23)
Looked for education about environment	88.5% (54)	11.5% (7)
Discussed environmental issues	70.5% (43)	29.5% (18)
Used social media to raise awareness	78.7% (48)	19.7% (12)
Participated in a protest	95.1% (58)	4.9% (3)
Increased environmental awareness	93.4% (57)	6.6% (4)
Collected signatures	93.4% (57)	6.6% (4)
Organized a protest	96.7% (59)	3.3% (2)
Circumvented companies	96.7% (59)	3.3% (2)
Organized events to raise awareness	96.7% (59)	3.3% (2)
Protected the environment	78.7% (48)	21.3% (13)

Note: n = number of participants, % = percent.

Figure 1 shows the mean score for belief in climate change. As seen in the results, 78.7% of the participants scored highly on the scale, which indicates that the students have more positive attitudes to climate change and less denial of this issue. Only one participant (1.6%) scored low on the scale, which indicates that they are more in denial of climate change and have a less positive attitude. An independent sample t-test was used to see if there

was a gender difference in relation of believing in climate change. The average of climate change belief for females was 5.66 (SD = 1.16) and for males was 5.48 (SD = 0.73). The results showed there was not a difference between genders in believing in climate change,  $t(55) = 0.69, p = 0.493$ .

**Figure 1**

*Responses on climate change belief*

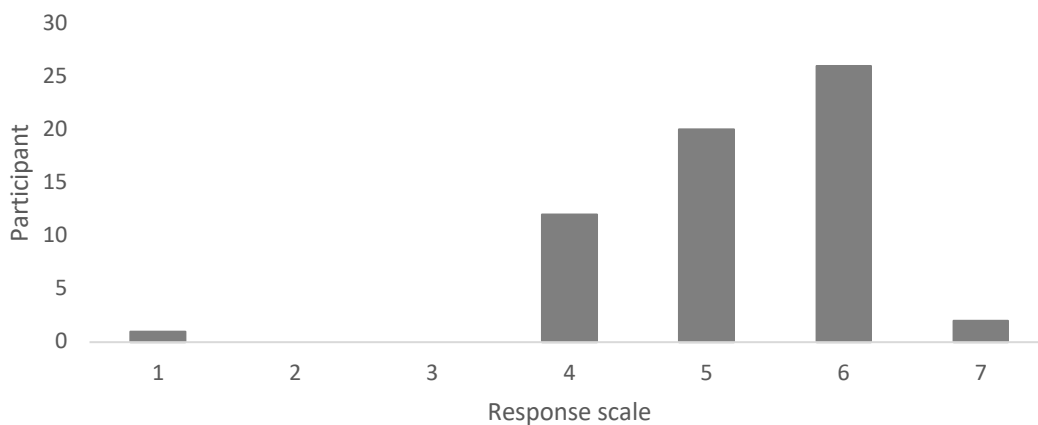


Table 3 shows the descriptive statistic for emotions in relation to climate change. The results indicate that 90.2% experience very or rather a little loneliness regarding climate change and 19.7% feel very fearful or rather a great deal of fear in relation to climate change. The average of emotions for females was 1.58 (SD = 0.57) and for males, 1.17 (SD = 0.33). The results from an independent sample t-test showed that there was a significant difference between genders in emotions, females (M = 1.58, SD = 0.57), male (M = 1.17, SD = 0.33),  $t(51) = 3.18, p = 0.003$ . Showing that, compared to males, females experienced more emotions in relation to climate change.

Table 3. *Descriptive statistics for emotions in relation to climate change*

	Very/Rather little % (n)	Neutral % (n)	Very/rather much % (n)
Depression	83.6% (51)	13.1% (8)	3.3% (2)
Fear	63.9% (39)	16.4% (10)	19.7% (12)
Loneliness	90.2% (55)	4.9% (3)	3.3% (2)
Anger	73.8% (45)	11.5% (7)	14.8% (9)
Pessimism	67.2% (41)	14.8% (9)	18% (11)
Guilt-free	70.5% (43)	18% (11)	11.5% (7)
Helplessness	62.3% (38)	21.3% (13)	14.8% (9)
Despair	65.6% (40)	18% (11)	16.4% (10)
Isolation	86.9% (53)	8.2% (5)	4.9% (3)
Irritability	70.5% (43)	18% (11)	9.8% (6)
Submission	78.7% (48)	9.8% (6)	9.8% (6)

*Note:* n = number of participants, % = percent.

Table 4 shows descriptive statistic of anxiety in the Depression Anxiety Stress Scale (DASS-21). The results indicated that a majority of the participants experienced normal symptoms of anxiety or 67.8% and 5.1% experienced serious symptoms of anxiety. An independent sample t-test was used to see if there was a gender difference in relation to general anxiety. The results indicated that there was a significant difference between genders, with females (M = 7.96, SD = 4.84), and males (M = 3.28, SD = 3.98),  $t(53) = 3.94$ ,  $p = < .001$ . Females scored significantly higher than males so, therefore, the results indicate that female feel more general anxiety than males.

Table 4. *Descriptive statistic of anxiety on the Depression Anxiety Stress Scale (DASS-21)*

	Frequency	Percent
Normal	40	67.8%
Mild	5	8.5%
Medium	11	18.6%
Serious	3	5.1%

Table 5 shows frequency of the mean score on the total climate change anxiety scale. To examine hypothesis 1, which asked if students in the 10<sup>th</sup> grade suffer from climate anxiety, the total mean score of the climate change anxiety scale was used to examine how many participants scored over the midpoint. The results indicated 98.4% scored under the midpoint, which shows that majority of the students did not suffer from climate change anxiety.

Table 5. *Descriptive frequency of the mean score for climate change anxiety scale.*

Score	Frequency	Percent
1.00 – 1.99	52	85.2 %
2.00 – 2.99	8	13.1 %
3 and over	1	1.6 %

Hypothesis 2 stated if there was a difference in climate anxiety between genders. The average of climate change anxiety scale for females was 1.62 (SD = 0.53) and for males, 1.15 (SD = 0.34). An independent sample t-test was used to analyze the second hypothesis. The results indicated that there was a significant difference between genders regarding climate change anxiety  $t(55) = 3.92, p = < .001$ . Females scored significantly higher than males on the CCAS.

Table 6 shows correlation between study variables. The results indicate there were seven significant correlations. The strongest correlation was between climate change anxiety and emotions ( $r = .721, p = < .001$ ), which indicates that if you experience climate anxiety you are likely to have negative emotions in relation to climate change. The lowest significant correlation was between environmental action and pro-environmental behavior ( $r = .294, p = .026$ ), which indicates that if a participant shows any behaviour to help the environment, they are less likely to participate in climate change action.



Table 6. *Correlation between study variables.*

	1	2	3	4	5
1. Pro-environmental behavior	1				
2. Environmental action	.294*	1			
3. Emotion	.008	.475**	1		
4. Climate change anxiety	.059	.641**	.721**	1	
5. Anxiety DASS-21	.007	.416**	.608*	.477**	1

Note: \* Correlation is significant at the 0.05 level (2 – tailed). \*\* Correlation is significant at the 0.01 level (2 – tailed).

Hypothesis 3 states if there is a correlation between the CCAS and general anxiety in DASS-21. As seen in the table 6 above, the results indicate that there is a positive and significant correlation between climate change anxiety and general anxiety ( $r = .477, p = <.001$ ). Therefore, the results show that as general anxiety increases, so does climate anxiety.

### Discussion

The current research study aimed to examine if students in the 10<sup>th</sup> grade in compulsory school experienced climate change anxiety. The first hypothesis examined if students in the 10<sup>th</sup> grade experience climate change anxiety. The current study indicated that only one student scored over the midpoint on the climate change anxiety scale, which indicated that this sample group does not suffer from climate change anxiety. Therefore, the first hypothesis was not supported. The second hypothesis was whether there was a difference in climate change anxiety between genders. There was a gender difference in relation to climate change anxiety, and the average score for females was higher than males so the result indicated that females feel more symptoms of climate anxiety than males. Therefore, the second hypothesis was supported. The final hypothesis examined if there was a correlation between general anxiety and climate change anxiety. There was positive correlation between general anxiety and climate change anxiety, which indicated that if a person has increasing general anxiety, their climate anxiety would increase as well. Therefore, the third hypothesis

was supported.

Prior studies indicated that young people are more aware of climate change and its effect on people (Brügger et al., 2020). As result of the current study, young people seem to believe that climate change exists and has an effect on people, both mentally and physically. Young females in this study had more symptoms of climate change anxiety than males, which is similar to results in McCright's (2010) research where he stated that women have more concerns regarding climate change. This current study explained that it is likely that someone will experience climate change anxiety if they have general anxiety which Wu et al. (2020) stated in their research and that climate change anxiety can sometimes be hidden behind other anxiety disorders. Climate change anxiety is a mental health problem that will only grow over time, so psychologists, teachers and others need to familiarize themselves with it.

This thesis was completed during the COVID – 19 pandemic. Due of the pandemic, some changes to the study were required. In the beginning, the study was supposed to have two or three schools to study climate change anxiety in children. Unfortunately, due to COVID – 19 restrictions and other obstacles, only one school participated. The advantages of the current study were that it provides further knowledge of climate change anxiety in 10<sup>th</sup> grade students. Few studies have been carried out in Iceland in relation to climate change anxiety, and therefore, the current study is intended as a preliminary study and preparation for further research in this area as it is important to further investigate whether the Icelandic youth experience climate anxiety. Previous research data has indicated that young people have knowledge of the negative effect that climate change can have on their mental and physical health. Therefore, it is important to research climate change anxiety among students.

This study had some limitations. Firstly, the sample was small which could have affected the results. Secondly, no questions in this study were directly related to participants' knowledge on climate change but it is important to examine young people's knowledge about climate change and adapt the school system and teaching accordingly.

In summary, the current study revealed that, in general, students in the 10<sup>th</sup> grade did not suffer from climate change anxiety and it can be considered as good that the participants are not experiencing climate anxiety. However, the study revealed that there was a gender difference in relation to climate change anxiety as females experienced more climate change anxiety compared to males. Finally, there was a positive correlation between general anxiety and climate change anxiety, which indicates that if someone experience general anxiety, they are likely to experience climate change anxiety as well. Future research should investigate climate change anxiety further with a bigger sample. It would also be interesting to conduct a similar research among college and university students.

Children and young people need to be educated and informed about climate change anxiety so that they are better aware of its possible symptoms (Pihkala, 2019). Today's young people are the future leaders of mankind in the field of environmental issues and therefore it is important to improve their mental health and well-being now because it will be worth it in the future (Wu et al., 2020).

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