

Preserving the world for future generations:

Children and young
people's perspectives
on how to tackle
climate change

October 2023

Contents

1. Forewords	4
2. Background and introduction	6
3. Context - Literature review	8
3.1 CYP's worries about the future	9
3.2 Government influence and action	9
3.3 CYP's perceptions on how to combat climate change	10
3.4 Engaging and empowering CYP	11
3.5 Climate change and inequalities	13
3.6 Climate change and education	14
3.7 Barriers to improving climate change	15
3.8 Climate change and negative emotions	16
3.9 Other themes	16
4. Methodology	17
4.1 Model of CYP Engagement	17
4.2 RCPCH Roadshows	17
5. Results – Data analysis from RCPCH roadshows	20
5.1 Themes from activities 1 and 2	20
5.2 Themes from activity 3	21
5.3 Themes from activity 4	23
5.4 Themes from activity 5	24
5.5 Themes from activity 6	24
5.6 Themes from activity 7	26
5.7 Themes from activity 8	28
6. Discussion	30
6.1 Stopping climate change overall	30
6.2 Extreme weather changes	31
6.3 Climate change, mental health, and future generations	34
6.4 Climate change and health	35
6.5 Environmental impact	38
6.6 Indifference to climate change	41
6.7 CYP's ideas for improving climate change	42
6.8 CYP's perspective on the role of doctors and nurses	43
6.9 Doctors and nurses' perspective	45
6.10 CYP's own analysis of the data	46
6.11 Limitations	47
7. Conclusion and calls to action	49
7.1 Calls to action – what CYP want to see	50
7.2 Role of paediatricians and healthcare services	51
8. Authorship and contributions	52
9. References	53

Contents of figures

Figure 1:	Themes from activity 3 question 1	30
Figure 2:	Themes from activity 3 question 2	31
Figure 3:	Themes from activity 3 question 3	32
Figure 4:	Themes from activity 6 question 1	35
Figure 5:	Themes from activity 6 question 2	36
Figure 6:	Themes from activity 7 (RCPCH &Us Climate Changers News Round)	37
Figure 7:	Themes from activity 7 (RCPCH &Us Climate Changers Project Ideas)	38
Figure 8:	Themes from activity 8	40

Contents of Images

Image 1:	Group of CYP from Cornwall (Activity 1)	41
Image 2:	Group of CYP from Cornwall (Activity 2)	42
Image 3:	Group of CYP from Cornwall (Activity 1)	43
Image 4:	Group of CYP from Cornwall (Activity 1)	43
Image 5:	Group of CYP from Hartlepool (Activity 3)	44
Image 6:	CYP from Caerphilly (Activity 3)	46
Image 7:	CYP from Caerphilly (Activity 3)	47
Image 8:	Group of CYP from Cornwall (Activity 1)	48
Image 9:	CYP from Glasgow (Activity 3)	49
Image 10:	CYP from Glasgow (Activity 3)	50
Image 11:	Group of CYP from Hartlepool (Activity 3)	51
Image 12:	Group of CYP from Hartlepool (Activity 3)	52
Image 13:	Group of CYP from Hartlepool (Activity 3)	52
Image 14:	Group of CYP from Cornwall (Activity 1)	53
Image 15:	Group of CYP from Rhyl (Activity 1)	53
Image 16:	Group of CYP from Hartlepool (Activity 3)	55
Image 17:	Group of CYP from Hartlepool (Activity 3)	56
Image 18:	Session from Drs and Nurses (Activity 8)	62

Contents of Tables

Table 1:	Description of RCPCH roadshow activities	26
Table 2:	Themes for activities 1 and 2	29

1. Forewords

We are excited to share this report, which includes the thoughts and concerns of children and young people like us regarding climate change. It is amazing to see such a wide range of ideas from other young people. The amount of information we got from so many different children and young people was so inspiring. There were a lot of similarities across the themes but also many unique and different perspectives that we can learn from. This report not only highlights our concerns regarding climate change and the future but also key topics that everyone can use to start conversations.

One aspect of the report that stood out to us was how much we all care about the impact climate change is having on both our physical and mental health. We want to help find ways to address this with politicians, healthcare professionals, and other adults.

We want to thank all of the children and young people who took part in the RCPCH roadshows across the UK as well as the other children and young people who were involved in the external studies and activities. Your voices have made this report even more impactful, showcasing your enthusiasm and dedication of our generation in these discussions.

We strongly believe in the importance of educating and informing ourselves about climate action. We want to learn and take meaningful action to contribute positively to our environment and future. This knowledge will empower us to make informed decisions and advocate for a sustainable future.

We hope this report can be an inspiration for us all, and will help people to come together in order to end the climate crisis.

**Thank you,
RCPCH & Us Climate Changers**

I find myself profoundly moved by the contents of this report. It sheds light on a topic of immense significance - how children and young people in the UK and across the world perceive climate change.

Our mission, characterised by its dual focus on supporting paediatricians and advancing child health globally, has always been ambitious. However, this report underscores the unique and vital role we play in addressing one of the most pressing challenges of our time – climate change. It vividly showcases the breadth of our work across policy and advocacy, education and training, research, and our global initiatives, all with the central aim of safeguarding the health and well-being of children and young people.

The urgency of this mission cannot be overstated. As we explore the perspectives of children and young people on climate change, we uncover not just their concerns but their aspirations, their dreams, and their determination to shape a sustainable future. We delve into topics that resonate deeply with our core values: engaging children and young people in policy discussions, prioritising their mental health in the face of climate-related anxieties, and enhancing education and awareness about climate change and its profound impact on health. We examine the tangible consequences of extreme weather changes on the wellbeing of our children and young people, and we reaffirm the critical role of paediatricians and healthcare professionals in providing the support and guidance they need.

In this report, you will find a compelling narrative of our commitment to creating a brighter and healthier world for the next generation. We are unwavering in our dedication to ensure that the changes we advocate for are sustained and far-reaching, transcending the boundaries of time and geography.

I encourage you to draw inspiration from the voices chronicled in this report. The challenges posed by climate change are formidable, but so is our resolve. Our journey continues, and together, we can magnify our efforts to make an indelible impact on the lives of children and young people, not only in the UK but around the world. Together, we can craft a sustainable future that future generations will inherit with gratitude and optimism.

**With my best wishes,
Dr Camilla Kingdon
RCPCH President**

2. Background and introduction

The climate crisis is a child rights crisis that requires global urgent action^{1,2}. Its prolonged impacts on the mental and physical health, as well as the general welfare of children and young people (CYP), stem from shifts in the environment like wildfires, droughts, and heightened exposure to air pollutants. These environmental shifts can lead to respiratory ailments and other health issues among CYP^{1, 3, 4}. For instance, in the UK and globally, approximately 42 million children lack access to the basic determinants of health, such as clean air, safe water, sanitation, affordable and nutritious food, and proper shelter⁵. This predicament will only worsen as the climate crisis escalates. The right to these determinants of health is a fundamental entitlement for children, as outlined in the [United Nations Convention on the Rights of the Child](#)⁶. This principle of child rights is acknowledged within the Paris Agreement and the United Nations Framework Convention on Climate Change⁷.

The Royal College of Paediatrics and Child Health (RCPCH) responded to a request from paediatricians during the 2020 Annual General Meeting (AGM) by officially declaring a climate emergency. This declaration aligns with the ongoing [RCPCH strategy](#)⁸ from September 2021 to August 2024, reflecting the RCPCH's dedication to addressing climate change. We acknowledge the threat that today's CYP face due to the climate crisis, as well as the risks posed to future generations, given that nearly all children (>99%) globally are already exposed to one or more environmental health hazards⁷.

To tackle climate change and effectively advocate on behalf of CYP, the RCPCH has set up several programmes such as the Climate Change Working Group (CCWG) and the RCPCH &Us Climate Changers. The CCWG is comprised of five working groups being led by paediatricians – Advocating for Change, Research and Evidence, Our College, Support for Paediatricians and International⁹. These groups meet regularly to discuss issues related to climate change and children and young people and drive forward work and agendas. For example, paediatricians highlighted the negative impact that air pollution has on CYPs health which has driven the College to embark on a partnership with the Clean Air Fund to improve air quality for children and young people in the UK and across the world.

In 2021, the RCPCH CYP Engagement team held sessions with 34 CYP across the four nations in the UK asking them to think about what healthcare services are linked to climate change as well as brainstorming ideas for how the CCWG could embed climate change issues in their work¹⁰. CYP highlighted that healthcare services should reduce their plastic and food waste, utilise electric vehicles, embark on energy saving campaigns, increase education and advocacy about climate change as well as the impact it has on individual health, and work to reduce their carbon footprint. In relation to the RCPCH, similar discussions were held such as ensuring that the College is working to reduce their carbon footprint and that we are actively participating in education and campaigns about climate change both internally and externally. The insights from these sessions were previously utilised to influence the work of the CCWG as well as the RCPCH &Us Climate Changers.

The RCPCH &Us Climate Changers are a group of 12 young people with an interest in climate change who meet regularly to turn ideas into action¹¹. Since 2020, this group of young people has embarked on several projects and actions to amplify the voice of CYP based in the UK in climate change discussions as well as help set priority areas for the College. Some of their projects include:

- Sending youth workers to conduct roadshows across the four nations in the UK to understand how CYP view climate change.

- Speaking to health care professionals and paediatricians to understand their perspectives and actions taken regarding the climate crisis and the impact it has on the health of CYP.
- Developed a game with other CYP about climate change and how to be plastic free.
- Speaking at conferences across the UK and helping other CYP advocates to raise awareness about climate change and its intersectionality with child health¹¹.

In addition to these projects, the RCPCH &Us Climate Changers sent evidence to the Association for Young People's Health (AYPH) inquiry about the impact that climate change has had on their lives as well as other young people across the UK¹². Their evidence included the following:

- Heatwaves causing an increase in risk of seizures for CYP with epilepsy without adequate care plans being put in place
- Higher prevalence of allergic asthma due to the pollen season being longer
- Increase in anxiety surrounding climate change and extreme weather changes
- CYP facing difficult decisions regarding their care due to medical supplies, such as feeding tubes, being single-use plastic
- Increasing education and engagement opportunities for CYP to combat climate change
- Listening and involving CYP in decisions about climate change¹²

The inquiry identified key priority areas that both the RCPCH &Us Climate Changers and CYP across the UK believe are important to address and improve in order to reduce the effects that climate change has on their daily lives. These insights were also published on the RCPCH website, enabling a wider audience of paediatricians and the public to gain a better understanding of why climate change is important to CYP and why it urgently needs to be addressed¹¹. This work, along with other projects, driven by the RCPCH &Us Climate Changers enables the RCPCH to ensure that the voices of CYP are embedded and accurately reflected throughout College projects and initiatives relating to climate change. As a young person part of the RCPCH &Us Climate Changers group stated:

“The RCPCH understands that young people can help fix the climate change emergency and they have committed to help us along the way. The fact that [the] College is also taking a note of the ideas and perspectives of young people is great as it allows our voices and opinions to be heard and it makes children and young people feel like they are truly making a change¹³.”

The purpose of this report is to build upon the climate change work at the College to date by providing a holistic view of how CYP both in the UK and internationally perceive and understand climate change. A literature review was conducted to obtain a comprehensive scope of the perceptions and priorities from CYP globally as well as to identify where any gaps in future research may exist. The findings from the literature review were grouped and discussed using thematic analysis.

Through the RCPCH roadshows and RCPCH &Us Climate Changers work, there was a substantive amount of voicebank evidence from CYP based in the four nations in the UK where climate change was asked about directly or where discussions addressing climate change were prevalent. This data remained unanalysed until this report and has been used to support the findings of existing studies as well as to drive forward recommendations for both UK and international governments to stop the climate crisis and ensure the rights of CYP are protected.

3. Context - Literature review

A literature review was conducted using academic papers and grey literature to obtain a full scope as to how CYP based both in the UK and internationally perceive climate change and its impact on their health, environment, and the planet as a whole. Reviewed articles were included for analysis if they met the following criteria:

- Included views from children, young people, and young adults aged 0 to 25,
- In English language,
- Published from 2021,
- Methodologies used were appropriate to CYP.

Sources were deemed excluded from analysis if they had any of the following criteria:

- Include views from adults (over 25 years) where the data for children/young people/young adults aged 0 to 25 years cannot be extracted,
- Include fewer than 25 responses from children/young people/young adults,
- Did not include primary responses, participation, or engagement from children, young people, or young adults.

To randomly select sources for the literature review, search terms included:

- Youth forum air pollution,
- Air pollution engagement work with CYP,
- Engaging children and young people in discussions on “climate change” in the UK,
- Youth projects addressing climate change UK,
- Climate change youth councils UK,
- Children and young people’s perceptions on climate change and health inequalities,
- Youth engagement climate change United Kingdom,
- Vulnerable children and climate change United Kingdom,
- Long term conditions in children and climate change,
- Children and young people climate change advocacy groups United Kingdom,
- Participatory methods with children and young people on climate change,
- Climate change and child and young people’s perspective.

Out of 50 sources randomly selected to be included in the literature review, 35 sources met the inclusion criteria. There were three sources that were included that did not meet the inclusion criteria, however they were included, because they either 1) included a group of CYP who are experiencing unique challenges from climate change which was not discussed in other sources or 2) provided a different and unique perspective on climate change that was not included in other sources; thus 38 sources were included in the literature review. Across the 38 sources, the voices and perspectives of approximately **94,400 CYP** were captured from across the world.

Several reoccurring themes were identified with the most prominent being CYPs worries about the future; governmental influence and CYPs perceptions on government action to combat climate change; ideas from CYP to combat climate change; importance of engaging and empowering CYP; climate change and inequalities; impacts of climate change; climate change education and how education is embedded within schools; barriers to improving climate change; and climate change and the rise of negative emotions associated with it.

3.1 CYP's worries about the future

It was evident that CYP both in the UK and internationally expressed their worries about the future in the form of 'eco anxiety' or 'eco distress' as well their fears about our planet becoming uninhabitable for future generations. The Royal College of Psychiatrists defined eco distress as the "wide range of thoughts and emotions people may experience when they hear bad news about our planet and the environment¹⁴."

In several studies, CYP stated that they felt worried or concerned about climate change. A large-scale survey of 10,000 young people aged 16 to 25 across 10 countries conducted by Hickman et al.^{1 (p.e866)} reported that out of 1,000 participants from the UK, 20% stated that they were extremely worried about climate change and 29% stated they were very worried. A survey conducted by InterClimate Network¹⁵ which asked CYP aged 11 to 18 in the UK about their views on climate change also found that 30% of 3,800 respondents were very concerned about climate change and 54% were somewhat concerned. Other academics noted that amongst CYP who view themselves as activists, they were more likely to describe an increase in anxiety resulting from the climate crisis^{1, 16, 17, 18}.

As eco distress and anxiety is rising amongst CYP, there was a growing fear about the future they will inherit and the impact it will have on their future. Out of the 10,000 participants described above, 75% of young people stated that they think the future is frightening and 83% of them believe that humans have failed to take care of the planet^{1 (p.e863)}. Hickman et al.¹ also reported that 55.7% of young people think that humanity is doomed and 54.9% believe that they will not have the same opportunities that their parents had due to the impact and effects of climate change. Similar findings were also reported by Save the Children¹⁹ who surveyed 3,000 CYP aged 12 to 18 in the UK about climate change and 70% of them were worried about the world they will inherit.

From the literature, it was increasingly evident that CYP felt distressed about climate change and the impact it will have on their future. Many CYP fear that the speed at which the negative effects of climate change are impacting our planet are increasing and thus may limit opportunities for them later in life. Alongside this theme, other topics were explored such as human's failure to take care of the planet and global burden being placed on CYP to reverse current and future damage to the planet. This has an adverse effect on CYP which could increase their experiences of eco distress and anxiety.

3.2 Government influence and action

CYP frequently expressed their perspectives on government inaction to combat climate change and how governments are neglecting to listen, responded to, and considered the voices of CYP. CYP based both in the UK and internationally stated that they do not think their governments are taking enough action to combat climate change and indirectly governments are not protecting CYP, their futures, their human rights, or the environment^{1, 15, 20}. In the UK, Save the Children¹⁹ highlighted that 75% of CYP surveyed wanted the government to take stronger action and Hickman et al.¹ noted that only 30.8% out of 10,000 respondents stated that they believe their government was doing enough to avoid a climate catastrophe.

When CYP were asked about who they believe had the most power and responsibility to improve the outcomes of climate change, the government was listed first by the majority of CYP. Out of 3,800 respondents in the UK aged 11 to 18, 75% of CYP stated that the government has the most power to improve the course of climate change followed by every individual (56%) and businesses and corporations (53%)^{15 (p14)}. Similar findings were also reported by Vote for Schools and UNICEF²¹ who conducted a survey asking 46,045 CYP aged 5 to 18 about how they think climate change will

affect the rights of children. Within the survey, there were 24,223 responses to the question 'Who has the biggest responsibility to tackle climate change?' where CYP could select their top three choices; 34.84% of CYP stated that decision-making bodies such as governments hold the most responsibility followed by the public (25.55%) and then individuals (14.23%)^{21 (p11)}.

CYP strongly believe that their governments hold the most authority and responsibility to help combat climate change and its associated impact, however, it was evident that there is a gap in the action's governments are taking versus the actions CYP believe they should be enacting. In an article published by The Guardian UK, young people from Portugal were suing 33 countries within the European Court of human rights for not taking adequate action to reduce carbon emissions and fight climate change¹⁷. Young people from other countries including Peru, the United States, and China were also taking actions such as filing complaints against their state, suing the state for denying young people of basic rights including life and liberty, and protesting carbon emissions¹⁷.

CYP demand more initiative and change from governments and businesses alike to help combat climate change and reduce the effects that it will have on them in the future. The perceived lack of action from such organisations can increase the mistrust CYP have in government as reported by Global Action Plan²² in their survey which asked 916 young people from Turkey and the UK about how they perceive their values and how they relate to the natural environment. There is a generational cry from CYP for governments (and businesses) to preserve life and the environment over profits to ensure the sustainability of the planet as well as the mental wellbeing of today's CYP.

3.3 CYP's perceptions on how to combat climate change

Participatory methods involving CYP were utilised in several studies in the literature review including CYP creating projects to improve their local environment, CYP discussing ways in which they can improve their community, environment, and public services, and CYP's involvement in art projects on how they view a healthy planet^{23, 24, 25, 26}. CYP listed several ideas that could improve their cities and environments and it is imperative that governments and decision-makers engage with CYP to understand their ideas and to develop and implement solutions based upon them. These included^{21, 24, 25}:

- Greater access to green spaces,
- Protecting water sources,
- Improving public transport and infrastructure,
- Reducing carbon emissions by promoting electric cars and making charging points more easily available,
- Investing in eco-friendly energy sources such as solar panels and windmills,
- Making cities flood resilient,
- Improving access to affordable housing, health services, education, and waste management services,
- Ensuring the safety of cities.

It is imperative that the voices of CYP are heard and listened to by decision-making authorities as the future planet will be inherited by today's young people. CYP perceived it as unfair that they must fix the mistakes of adults if adults both in society and in positions to make lasting, sustainable change choose not to^{21, 27}.

Despite the negative perceptions surrounding climate change and the future, many CYP were making changes in their daily life to help combat climate change and reduce their exposure to the effects of it. Out of 3,800 CYP surveyed by InterClimate Network¹⁵, 57% of respondents were

already taking some climate action. Of those who acted, 97% supported action at home, 72% made a conscious effort to purchase environmentally friendly products, 50% made environmentally friendly changes to their diet, 36% supported action at school, 27% took part in climate strikes or campaigns, and 23% supported action within their community¹⁵. Similar findings were reported in a survey and focus group discussions with 500 UK young people aged 16 to 25 conducted by Groundwork which revealed that 92% of young people said climate change was personally important to them and they were interested in taking or learning more about how to change their lifestyle, volunteer with local green projects, conserve water or energy, engaging with green social action, and influencing local businesses²⁸.

In 2022, the UK Government conducted the Children's People and Nature Survey²⁷ which provided information on how 2,047 CYP aged 8 to 15 living in England experienced and perceived the natural environment. Within the survey, CYP were asked if they knew what actions they could take to combat climate and which actions they were currently taking; 76% of CYP reported that they knew what they could do to care for the environment and the most common actions taken were recycling, turning off taps and water, picking up litter, reducing transportation in a private vehicle, and helping wildlife by cleaning gardens²⁷. However, it was evident that social actions such as talking to friends and family, raising awareness, and engaging in demonstrations and petitions were less common amongst young people living in England²⁷. As previously highlighted by Holland²⁸, CYP have an interest in such topics, but they may lack the support or motivation from family, friends, and peers to undertake such action. It is important that CYP are engaged in climate change discussions, education, and interventions so they can actively participate in the fight to combat climate change alongside the adults and decision-making authorities within their lives.

3.4 Engaging and empowering CYP

A common theme that arose throughout the literature review was how to better engage CYP in climate change discussions and decisions, interventions/projects, and their education and learning. In the previous section, it was evident that CYP had extensive ideas on how to improve their local community and city. Individuals in decision-making positions need to engage with and consult young people on such policies before they are implemented. Hayes stated, "Young people should be involved at every stage from planning, through the budget and delivery of sustainability initiatives, not just brought in at consulting stages or asked to promote the end result²⁹." However, in the study conducted by Sloam, Henn, and Huebner²⁰ which examined how young people engage in environmental issues in Nottingham, UK and London, UK, they reported that "young people lack confidence that their voices count for much in conversations about how best to address the climate emergency while policy makers seem unsure regarding how best to engage young people in such matters."

Furthermore, Hickman et al.^{1 (p.e869)} noted that 63.8% of young people who responded to their survey stated that they do not think their government is taking their concerns seriously enough regarding climate change and 60.1% of young people feel that the government is dismissing their concerns. There is a discrepancy globally between the actions CYP want governments to take and the actions that governments are taking, and this could be because policy makers are unsure how to effectively engage young people in the policy making process. Likewise, it is equally important that CYP feel supported by individuals in their life to make their voice heard and seen by the people they want to see change from. From the literature review, several organisations and interventions noted the importance of engaging CYP in such topics as well as how they maintained high engagement levels throughout their programme, project, or intervention, such as:

- **Natural Neighbourhoods** – A targeted programme in England in the Eastern, Midlands, and Northern regions that helps young people gain employment or interest in environmental topics to support access and protection of local parks and greenspaces²⁹.
- **North Wales Wildlife Trust** – A Welsh organisation that helps young people be more engaged with their local environment and teaches them how to conserve and protect the environment. The organisation also empowers young people by putting them in leadership positions and allows them to develop and lead on activities³⁰.
- **Restless Development** – The Youth Climate Action Lab is a project ran by Restless Development which aims to address climate change issues in Urban Bengaluru. It was a 36-month project which began in November 2021 which aimed to train and support youth climate champions and enable youth researchers to collect data, develop solutions, and collaborate with policy makers to enable sustainable change³¹.
- **The Resilience Project** – This global organisation created 'Resilience Circles' which are eight-week programmes in the UK (Manchester, Bristol, Cambridge, and London) that enable young people aged 18 to 25 to discuss climate change and build knowledge, support, and experience about how to deal with eco anxiety. Feedback following the programme was positive with 100% participants stating that their "Resilience Circle gave them the tools and approaches to process climate emotions like eco-anxiety" and it "gave them the tools and approaches to better understand and mitigate burnout³²".
- **Varaden et al.³³** – This study examined air pollution exposure during CYPs journey to and from school as well as during school across five London primary schools. There were 258 participants who were given backpacks with air-quality sensors to measure the level of pollution. CYP remained highly engaged throughout the study because they had a desire to identify the level of pollutants they were being exposed to. In addition, over half of the CYP who participated reported telling their families about the project and the impacts of air pollution and over 30% of CYP changed their route to and from school because of the project³³.

It was evident that there are many existing interventions, projects, and programmes available to engage CYP about the environment and topics associated with climate change. However, it is important to acknowledge that engagement also includes how CYP engaged with climate change issues in social media, with family and friends, and in an educational setting.

- **Social Media** – Parry, McCarthy, and Clark³⁴ conducted a study in the UK which explored how 51 young people aged 16 to 25 perceived reporting on climate change on social media platforms. They reported that many young people felt an increase in climate change anxiety due to the increase in media coverage and young people highlighted that they would like to see more positive climate change engagement such as how they can help make a difference and the importance of reducing blame on CYP. Parry, McCarthy, and Clark³⁴ also highlighted other important themes from their qualitative survey including engagement, motivation, agency, and access to reliable and accurate information.
- **Family and Friends** – Engaging in discussions about climate change with family and friends influences how children perceive and react to it. Dayton et al.³⁵ explored reasons why 214 parents in the USA engaged (or did not engage) in climate change discussions with their children. Despite many CYP having an interest in climate change, 68% of parents reported they were interested in discussing climate change with their children however, of those, only 46% reported recent communication³⁵. This study uncovered that parents would benefit from increased training and resources about climate change to have age-appropriate discussions with their children.

- **Education** - The Jack Petchey Foundation³⁶ surveyed 4,000 young people in the UK for their perspectives on environmental issues and how they and their schools can help to build a more sustainable future. The findings reported that many young people do not feel they are getting enough education in school on the environment and only 38% said that they receive dedicated lessons on the environment. In addition, 2/3 of respondents stated they wanted more environmental education in school and 55% of young people would like to have more school trips where they engage with nature and the environment.

From the examples above, there is a need for greater climate change engagement with CYP in a variety of different settings including social media, the home, and in school. Furthermore, a shift in how climate change and environmental issues are presented needs to occur to promote empowerment, advocacy, and agency rather than focussing on the negative impacts of climate change. All individuals within a CYP's life would benefit from increased education and resources in this subject area to enable CYP to have meaningful discussions about climate change allowing them to form their own opinions and any subsequent action they decide to take.

As evident from the literature discussed thus far, CYP have ideas for increasing engagement between themselves and climate and environmental issues. Prominent ideas include increasing education and resources, shifting the perspective to be more positive, implementing programmes, projects, and interventions that focus on climate change, and signposting CYP to advocacy organisations where they can get more involved. The Gloucestershire Youth Climate Group²⁵ also came up with several other ideas to improve engagement with CYP including increased use of public libraries, finding easier ways to share information, making targeted campaigns for demographic groups, and ensuring that actions to combat climate change are widespread across society.

3.5 Climate change and inequalities

CYP also discussed how climate change is an interdisciplinary topic that must be reviewed in the context of individuals' ethnicity, geographical location, and socioeconomic status. Kurup, Levinson, and Li³⁷ reported that in their intervention to strengthen climate change knowledge amongst Year 9 students living in the UK, CYP viewed issues relating to the economy and poverty as more important than climate change because inequalities exacerbated by climate change are most likely to impact individuals from low-income households. Young people based in London who founded 'Choked Up', an advocacy group for clean air and a clean environment, stated, "It is not just as simple as 'solving or fixing' climate change – there is a whole system, a whole multitude of other issues around racial and social justice that are intertwined with the climate crisis¹⁷."

CYP recognised the importance of climate change policies and issues being coupled with other social justice issues to make lasting and sustainable change. They noted that it is not enough for governments to promote individual change such as recycling, rather there needs to be international, systematic changes as climate change is likely to increase existing inequalities within society^{17, 38}. This is evident within many communities, particularly those in low- and middle-income countries (LMICs) as CYP, specifically adolescent girls, are being disproportionately impacted by climate change in these areas³⁸. Climate change has negatively impacted food growth in LMICs due to droughts meaning that individuals are unable to feed their families and have less income to do so. Because of this, adolescent girls are often given away for marriages at an earlier age meaning that they have children younger and are unable to pursue an education due to the responsibility of managing their new household³. Whilst such impacts may not be present in the UK, it is important to recognise and consider the impact climate change has on the wellbeing of individuals as it increases inequalities regarding access to education and other social services between individuals living in high- and lower-income countries.

CYP also noted additional impacts climate change has that increase existing inequalities in society. These included forced migration, civil conflict, loss of homes, and reduced access to essential services such as healthcare³⁸. Furthermore, CYP with a disability or medical condition were more likely to report that their lives have changed due to the impacts from climate change compared to CYP without a disability or medical condition³⁹.

To help combat the widening of inequalities resulting from climate change, it is imperative that CYP are made aware of and understand their rights in political engagement and lobbying governments. However, as previously discussed, it can be challenging to do this because CYP may not feel confident enough to do so or politicians may not adequately listen to the voices and concerns of CYP. There needs to be climate change education embedded within education systems to enable CYP to make informed decisions and actions regarding climate change and the negative impacts associated with it.

3.6 Climate change and education

In several studies and surveys, CYP reported having a lack of access to climate change education, particularly in schools. Findings from The Jack Petchey Environmental Youth Survey³⁶ (n=4,000) reported that in the UK, only 38% of respondents received dedicated lessons on the environment and 66% of young people wanted environmental education further embedded in the curriculum. Similar findings were also reported by Groundwork in 2021 in their focus groups and survey which explored how young people in UK perceived climate change and the environment²⁸. Out of 500 respondents, 66% of young people who partook in the study reported that they did not learn enough about climate change in school, despite 92% of respondents stating that they had a personal interest in climate change²⁸. In addition, in a study commissioned by Sky Kids which asked 2,000 children aged seven to 14 about their views on climate change, 81% stated that they wanted to learn more about climate change in school as over half of children reported that school is their top source of information⁴⁰.

CYP stated several solutions to increasing environmental and climate change education in schools and many studies reported that CYP want climate change education to be included in school curriculum^{16, 36, 38}. CYP stated that they would like more school day trips where they can directly engage with the environment and that schools should engage with science in the real world to enable CYP to work on projects or interventions to learn more about issues that will impact their future^{36, 37}. Several studies both in the UK and internationally have already taken such an approach to increase CYPs knowledge and understanding of climate change through educational interventions in school such as Castell et al.⁴, Varaden et al.³³, Kurup, Levinson, and Li³⁷, Davies and Hugel⁴¹, and Williams and McEwen⁴².

Dayton et al.³⁵ also noted that discussions about climate change and the environment need to be occurring at home in addition to school as “family discussions about climate change are a critical factor influencing children's climate change perceptions and behaviours.” In their study which asked 214 parents based in the USA about their 336 children, Dayton et al.³⁵ reported that 68% of parents had an interest in discussing climate change with their children, however of that 68%, only 46% stated that they had recently discussed such topics. Several parents in the study noted that their lack of communication was attributed to their own anxiety about climate change and not wanting to instil such fears in their children³⁵. This study suggested that resources and tools should also be developed for parents to enable them to have age-appropriate conversations with their children about climate change. This would allow parents to better support their children regarding their education, knowledge, and experiences of how they perceive the natural environment and planet.

3.7 Barriers to improving climate change

Whilst CYP stated many ways that they can engage with and work to prevent climate change, they also identified several barriers and obstacles. Sloam, Henn, and Huebner^{20 (p28)} stated that the confidence of young people may be a barrier to them engaging in climate change discussions and activism because they are unsure how to best participate and they are worried that their voices will not be listened to by adults, policymakers, and other decision-makers. In their report which examined over 7,000 CYP's views on a variety of social issues and access to information, the United Nations General Comment No. 26 Children's Advisory Team^{39 (p19)} reported that 42% of CYP agreed to the statement 'When I try to talk about environmental protection and climate change other people have dismissed or ignored me.' Similar findings were also reported by Holland²⁸ and Vote for Schools and UNICEF²¹. When the voices of CYP are dismissed and not taken seriously, they may lose the confidence to continue to voice their opinions and concerns regarding climate change. This exacerbates several other issues already discussed such as CYP not being engaged in political discussions or policies regarding climate change despite the fact that they will be inheriting the planet from previous generations.

Furthermore, in their survey of 916 young people aged seven to 18 across the UK and Turkey, Global Action Plan UK²² reported that 52% of CYP thought caring about the environment was not important for politicians and 41% thought it was not important to adults in their country. This impacts how CYP view climate change and action because if older generations are not working to reverse damage to the planet, there is little incentive for CYP to do so as well. InterClimate Network also asked 3,800 CYP aged 11 to 18 if they participated in action to stop climate change and 43% of respondents said that they are not taking part in action¹⁵. The reasons for not engaging in action included:

- CYP feeling powerless to make a difference,
- Believing that individual actions will not make a difference,
- The responsibility to solve climate change lies with governments and large corporations,
- CYP were unsure where to start,
- Some CYP did not believe that climate change existed¹⁵.

In addition, CYP also noted structural and societal barriers which need to be addressed prior or in conjunction to climate change to help reduce the impact and rapidness of climate change. In qualitative focus group discussions, 92 young people stated that the general culture of the UK, the lack of ambition from the government, the prioritisation of corporate interests, and the lack of climate change education are barriers that need to be addressed to encourage youth engagement and activism⁴³. As previously discussed, the interdisciplinary links between climate change and inequalities also need to be addressed because without doing so, solutions to improve climate change will not be sustainable²⁴.

It was evident that to encourage action and activism amongst young people, change needs to occur at a political, local, and familial level. CYP need their voices to be heard by politicians and involved in decision making regarding the environment and climate change. Such involvement must occur at all levels in policy making and must consider diversity and inequality when discussing climate change in a local context. In addition, CYP need to see adults in their lives or in their local communities actively caring about the environment either through events and protesting or by having discussions with CYP where they can get reliable education on the subject. Schools can also help promote climate change discussions by embedding it in their curriculum and having materials for signposting available providing CYP with information about how to get involved with climate action.

3.8 Climate change and negative emotions

In several studies and surveys, CYP expressed their sadness regarding climate change, their future, and the planet they will inherit. Hickman et al.^{1 (p.e863)} discovered in their survey of 10,000 young people, more than 50% reported experiencing all of the following emotions about climate change and the environment: sad, anxious, angry, powerless, helpless, and guilty. In addition, over 45% of respondents stated that the feelings they experienced about climate change “negatively impacted their daily lives and functioning¹.” In their study which examined how CYP in France and the USA perceived climate change and climate action, Thomas et al.¹⁶ reported that the majority of the respondents (n=65) “described experiencing anger, hopelessness, guilt, and sadness in response to climate change.” Such findings were also reported by Trott¹⁸, Sloam, Henn, and Huebner²⁰, United Nations General Comment No. 26 Children’s Advisory Team³⁹, and Lawrence et al.⁴⁴.

CYP are increasingly becoming more negatively impacted by climate change both in terms of their feelings but also the impact it has on their daily lives, which may be a contributing factor to the prevalence of eco distress and eco anxiety that some CYP experience. To reduce the impact of climate change on CYP both mentally and physically, an increase in climate action is required by adults, governments, and larger corporations. Additionally, it is important that CYP have discussions about climate change and action with peers and adults to increase the likelihood that they will engage in climate action themselves. This can also be useful for CYP to have access to reliable resources and education about changes they can make in their lives as well as be signposted to organisations who engage in climate action. A societal shift and collective effort are needed to make sustainable change and reduce the increasing impact climate change has on the environment, planet, and the wellbeing of CYP.

3.9 Other themes

Additional themes were also present throughout the literature reviewed including:

- CYP’s knowledge and concerns regarding air pollution, water pollution, and waste management^{4, 17, 20, 23, 25, 33, 45}
- Climate change as a human rights issue and human failure^{1, 17, 21, 39, 44}
- Climate change and CYP interpretations of it through art projects^{23, 26, 46, 47}
- CYP being indifferent about climate change^{1, 15, 22, 39}
- Transportation, carbon emissions, and the impact this has on CYP^{16, 25, 33}

4. Methodology

4.1 Model of CYP Engagement

The RCPCH CYP Engagement team conducted roadshows and other engagement activities which provided the voicebank data for this report. The team consistently utilised a set model of engagement that has proven to work well with CYP and which they have received positive feedback on from CYP following engagement sessions. The approach incorporates a mixed methods model, from:

- **RCPCH &Us Roadshows** – across the UK to find out what CYP from all ages and backgrounds think about child health topics.
- **RCPCH &Us Challenges** – bringing together groups of CYP for the day to work together on a topic, review the roadshow information and come up with ideas and solutions.
- **RCPCH &Us Projects** – where CYP get involved over a time to work on turning ideas into products and developing new solutions to challenges.

In all of the CYP Engagement team's work, they ensure that one third is fun for the CYP involved, one third supports project development meeting their needs and wishes in line with article 12/24 of the UNCRC and one third of the interaction is based on the needs of RCPCH. This approach helps to stay focused on creating engaging activities for unpaid volunteers which provides a range of experiences and does not become exploitative, or adult led.

The CYP Engagement team also strive to involve and engage with diverse CYP from across the UK by working with different cohorts:

- **Universal Voice** – They work with universal groups accessed through open access settings such as youth centres, mainstream schools, community events or outreach.
- **Specific Experience Voice** – The CYP team will also do work with CYP who are facing inequalities or have specific experiences that will bring enhanced insight to the programme, e.g., young carers, children in care or visiting special schools.
- **Specialist Voice** – Finally, they will work with specialist voices with current or recent experience in paediatrics, meeting them through condition-based forums, in outpatient clinic chats or in patient engagement activities.

This balance is approximately 50% universal/ 25% specific experience/ 25% specialist ensuring that the CYP Engagement team remain open to all experiences, provide opportunities for CYP to meet others from different backgrounds, with different skills and to prevent institutionalised thinking or experience bias. This approach is used when working on consultations, in one off workshops, and/ or through their project model.

4.2 RCPCH Roadshows

The RCPCH CYP Engagement team conducted roadshows across the UK where groups of CYP were asked to respond to one or multiple of the following activities:

1. Write or draw all of the things that help to keep children and young people happy (mental health), healthy (physical health), and well (enjoying life)
 - Think of all the things that might stop all children and young people from being able to have, use or do your ideas from the first question

2. Draw a gingerbread person on your paper, leaving enough room to write on the inside and outside. Top left draw a star and write in the goal for your year group (zero hunger, water/sanitation, equality)
 - On the inside, write down the impact on children if the goal is not achieved (e.g., what happens if you are hungry, what happens if you do not have clean water, what happens if things are not equal for everyone). On the outside, write down what people can do to help (who/how).
 - Now think about the NHS – what could or should doctors, nurses, hospitals, GPs do to help
3. The next topic is all about climate change and health. We know that lots of people are looking at how to be environmentally friendly, how to protect nature and all those living on this planet. Thinking back to healthy, happy, and well, we need to think about how to health the planet and heal our health too.
 - On hand one: write down on each finger/palm what climate change means to you
 - In the ball, write down how climate change can make our health better or worse
 - On hand two: imagine you have a magic wand what would be your idea linked to climate change and staying healthy, happy, and well?
4. What youth social actions projects should the RCPCH take forward linked to climate change?
5. Create your version of a plastic free NHS board game where:
 - Each group has a side of the board to come up with
 - 1 activity cards (like the community chest)
 - 1 penalty cards (like the chance cards)
 - 3 locations (like a colour row)
 - 1 plastic free swap in the NHS (like the utilities)
 - Create a plastic free icon to use as the player token
6. The following subjects will be discussed in this roadshow (NB this was primarily with College-age students):
 - Impact of climate change on health
 - The role of the NHS and doctors in supporting CYP during the climate crisis

In addition to the roadshows there were a further two activities:

7. In the RCPCH &Us Climate Changers meetings (which happened regularly from 2020 to 2023), they discussed the following topics which were relevant to this report:
 - What current events related to climate change are important to discuss?
 - What ideas do you have for improving climate change?
8. Young people through RCPCH &Us spoke with doctors and nurses to get their opinions on the following questions:
 - How can you have a positive impact on CYPs health during climate change?
 - How does climate change impact CYPs health?

The description of the location, date, ages of CYP, and number of participants for each activity are as follows:

Overview of RCPCH Roadshow Activities and Events

Session name	Activity #	Date	Location	Ages	Participant Numbers
Drs/Nurses	8	June 2022	RCPCH Conference Liverpool		
Climate Changers	7	2020 to 2023	RCPCH (online and face to face)		12
Plastic Free	4	July 2022	RCPCH - representative of UK wide	13 to 23 (parents/carers and paediatricians were also present)	15
Rhyl Roadshow	1 and 2	June 2022	Rhyl - 2 schools and 1 youth club	7 to 19	320
Young Person Speech	4	June 2022	RCPCH Conference Liverpool	Speech was given by a young person from Northern Ireland	1
Hartlepool	3	June 2022	Hartlepool - primary school	7 to 11	120
Caerphilly Roadshow	3	June 2022	Youth group	13 to 19	7
Glasgow Roadshow	3	July 2022	Youth group	13 to 19	12
Bedford Roadshow	6	Sept 2022	FE/HE college	16 to 25	151
Northamptonshire Roadshow (#1)	6	Sept 2022	FE/HE college	16 to 25	73
Northamptonshire Roadshow (#2)	6	Sept 2022	FE/HE college	16 to 25	177
Northamptonshire Roadshow (#3)	6	Sept 2022	FE/HE college	16 to 25	60
Derry Roadshow	1 and 6	Oct 2022	Derry - school	11 to 16	50
Girvan Roadshow	1 and 6	Oct 2022	Girvan - school	11 to 16	96
Cornwall Roadshow	1, 2, and 3	April 2023	Cornwall - school	7 to 11	180

Table 1: Description of RCPCH roadshow activities

All of the activities listed above were thematically analysed and data was logged on either Microsoft Excel or NVivo. Approximately 310 documents were analysed across the eight activities which represents the voices of **1,274 CYP** across the UK. There were 42 items in activities 1 and 2 across 20 documents coded as 'Unable to code' due to them being illegible and thus these words and drawings were not included in the analysis. However, it is unlikely that the themes were related to climate change as this was not the main focus of the question/prompt CYP were asked to respond to for activities 1 and 2.

Themes were grouped based on the activity as well as the interpretation and meaning of what CYP wrote or drew. A single qualitative data analyst at the RCPCH was responsible for coding all the documentation to ensure consistency of the coding. For the purpose of this report, the main areas of interest were activities 3 to 7 however, themes relating climate change emerged in activities 1 and 2. The views expressed by doctors and nurses from activity 8 will also be discussed in this report.

5. Results – Data analysis from RCPCH roadshows

Qualitative thematic analysis was utilised when examining the voicebank data and documentation. A thematic analysis is “a method of identifying, analysing, and reporting patterns (themes) within data⁴⁸”. Thematic analysis was deemed the most appropriate for this research as it consisted largely of documents written and drawn by CYP which enabled the researcher to closely examine the images and draw out themes regarding CYPs perceptions and understanding of climate change and associated topics. In several activities, CYP were placed in groups to respond to the prompts and due to the nature of the documentation presented, the data analyst was unable to determine how many CYP contributed to an individual document thus the themes were quantified by their occurrence across the documentation and activity, not by the number of CYP who stated a certain theme. The total number of CYP who participated in each roadshow or engagement activity can be found in [Table 1](#).

5.1 Themes from activities 1 and 2

It is important to note that in activities 1 and 2 CYP were not asked directly about climate change or to associate their answers in context to climate change. CYP who wrote or drew pictures of climate change in their answers did so because they believed that it is a barrier to remaining happy, healthy, and well or they believed it was a barrier to achieving the goals of zero hunger or access to clean water and sanitation. Over the different locations where this activity was held, CYP from Cornwall referenced themes relating to climate change the most compared to CYP based in Rhyl (who referenced climate change themes the least). Themes relating to climate change were not discussed at all in the groups based in Derry or Girvan. Across these two activities, themes relating to climate change and the frequency they appeared in the different groups are as follows:

Themes related to climate change from roadshow activities 1 and 2

Theme	Enables or barrier to HHW/goals	Frequency of Theme
Clean air	Enables	5
Climate change	Barrier	13
Deforestation	Barrier	6
Eco-friendly buildings	Enables	1
Extreme weather changes (such as floods, droughts, ice melting, etc.)	Barrier	15
Pollution	Barrier	10
Protecting the environment and working to improve it	Enables	6

Table 2: Themes for activities 1 and 2

5.2 Themes from activity 3

In activity 3, CYP from the UK located in Hartlepool, Caerphilly, Glasgow, and Cornwall were asked to respond to the prompt which was directly associated with climate change. CYP completed the task in groups and thematic analysis was conducted per question across the given documentation. The results are as seen below:

Question 1: What does climate change mean to you?

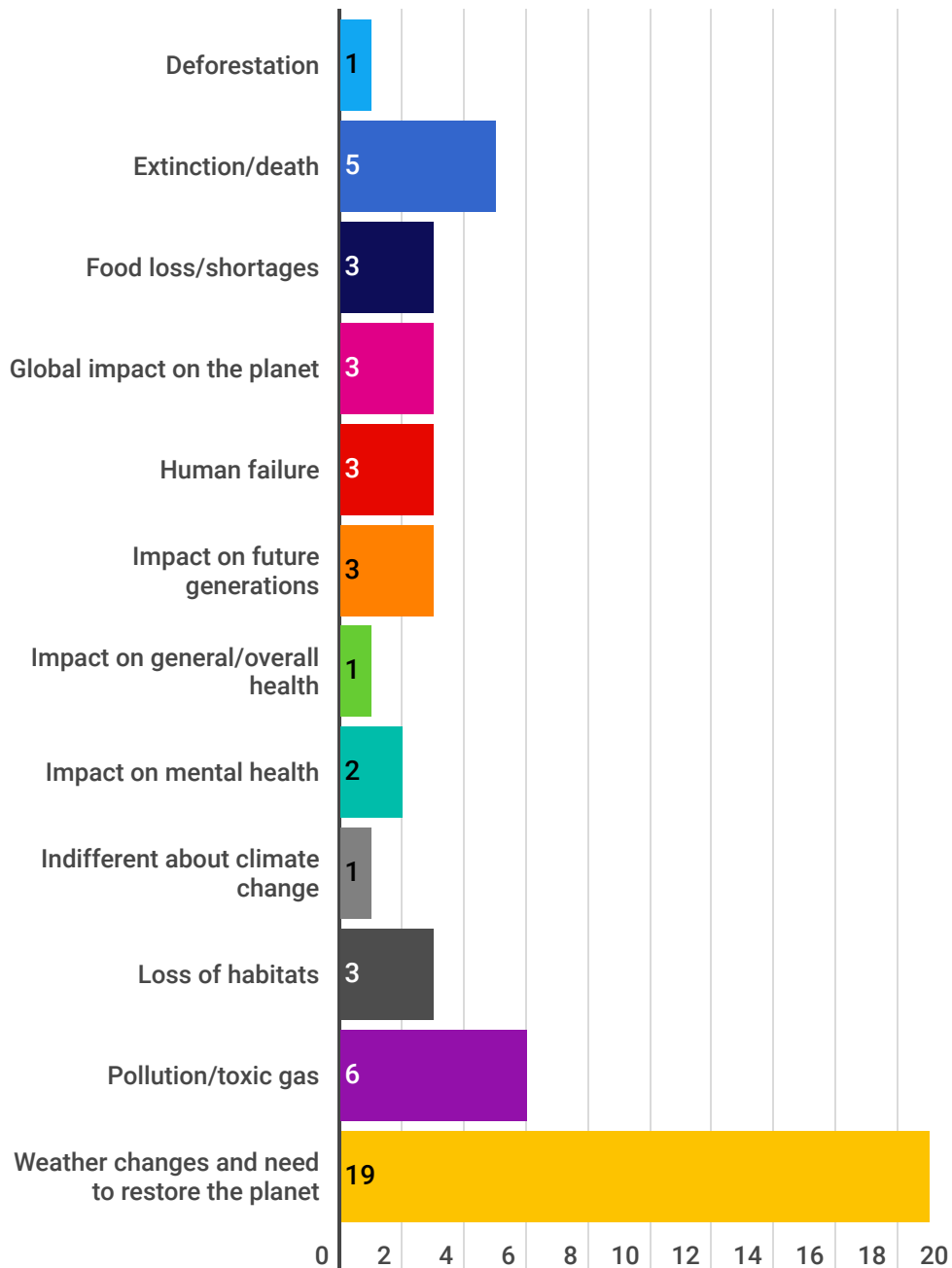


Figure 1: Themes from activity 3 question 1

Question 2: How can climate change make our health better or worse?

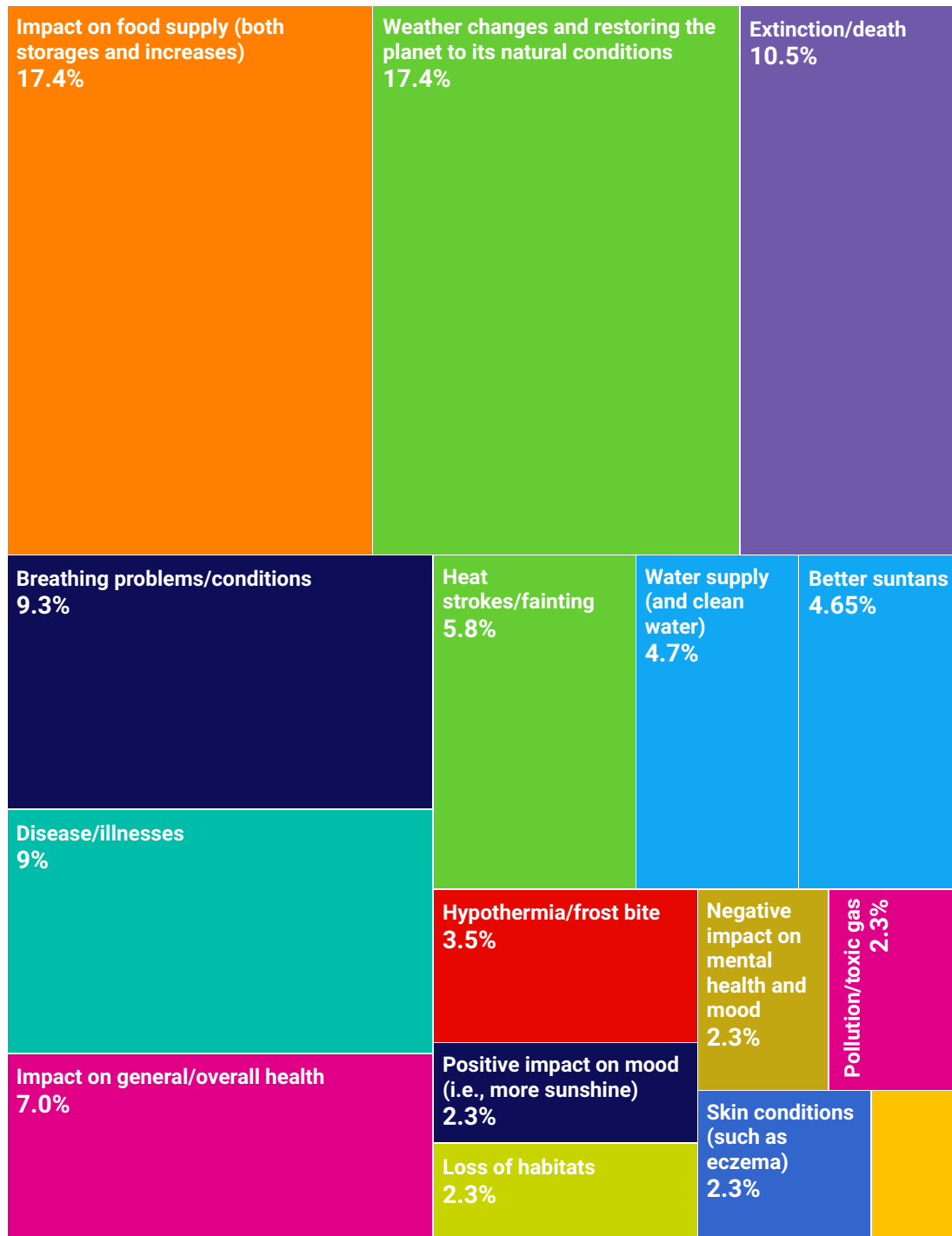


Figure 2: Themes from activity 3 question 2

Question 3: Imagine you have a magic wand, what would be your idea linked to climate change and staying happy, healthy, and well?



Figure 3: Themes from activity 3 question 3

5.3 Themes from activity 4

In activity 4, a young person from Northern Ireland gave a speech at the 2023 RCPCH Annual Conference in Liverpool and identified campaigns and social projects that the NHS should take forward in relation to climate change and health. These included:

- Reducing the amount of plastic packaging in medicines and information leaflets,
- Utilising electric ambulances,
- Supporting more cycle lanes near hospitals,
- Implementing social media campaigns encouraging and educating individuals about climate change and health,
- Using energy saving lightbulbs,
- Encouraging staff to turn off lights and computer equipment when not in use,
- Launching a national plant-based diet week to help raise awareness.

In addition, they also identified areas and departments in the NHS where recycling could be improved:

- More recycling bins across the NHS,
- Opticians could recycle old glasses and cases,
- Dentists could recycle used toothbrushes,
- Recycling and reusing crutches and wheelchairs,
- Improve asthma inhaler pumps by reusing the plastic casing and having a refill of just the medication.

5.4 Themes from activity 5

During this activity, a group of 15 CYP were asked to identify opportunities where the NHS could make improvements regarding their plastic usage as well as carbon footprint by writing their ideas on a board game. CYP identified the following areas where the NHS could make such improvements:

- Toothbrushes,
- Cups,
- Carpooling,
- Public transportation,
- Snacks,
- Recycling,
- Purchasing supplies and resources locally,
- Implementing meat free meals,
- Medication packaging,
- Sustainable energy usage and resource saving.

To make improvement in those areas, CYP also brainstormed ideas the NHS could implement to do so, such as:

- Creating recycling centres,
- Having a plastic free ambassador,
- Making public statements about climate change to raise awareness,
- Helping to improve public transport to and from facilities,
- Implementing electric charging ports,
- Using sustainable energy sources,
- Using electric vehicles in NHS transport,
- Reducing medication packaging,
- Implementing community recycling projects,
- Implementing 'Meat Free Mondays,'
- Changing PPE materials,
- Turning off light switches and water taps when not in use,
- Using bamboo toothbrushes,
- Reusable cups.

5.5 Themes from activity 6

The college/school roadshows were held in Girvan, Derry, Bedfordshire, and Northamptonshire. CYP were asked a variety of different questions and topics in these sessions however, for the purpose of this report, only the questions relating to climate change were included in the thematic

analysis. CYP were placed into groups for the activities and their responses were recorded; thus, the responses represent a total of 697 individuals. The two questions included in the analysis and the grouped themed responses along with their frequency are as follows:

How do you think climate change is affecting or will affect CYPs health?

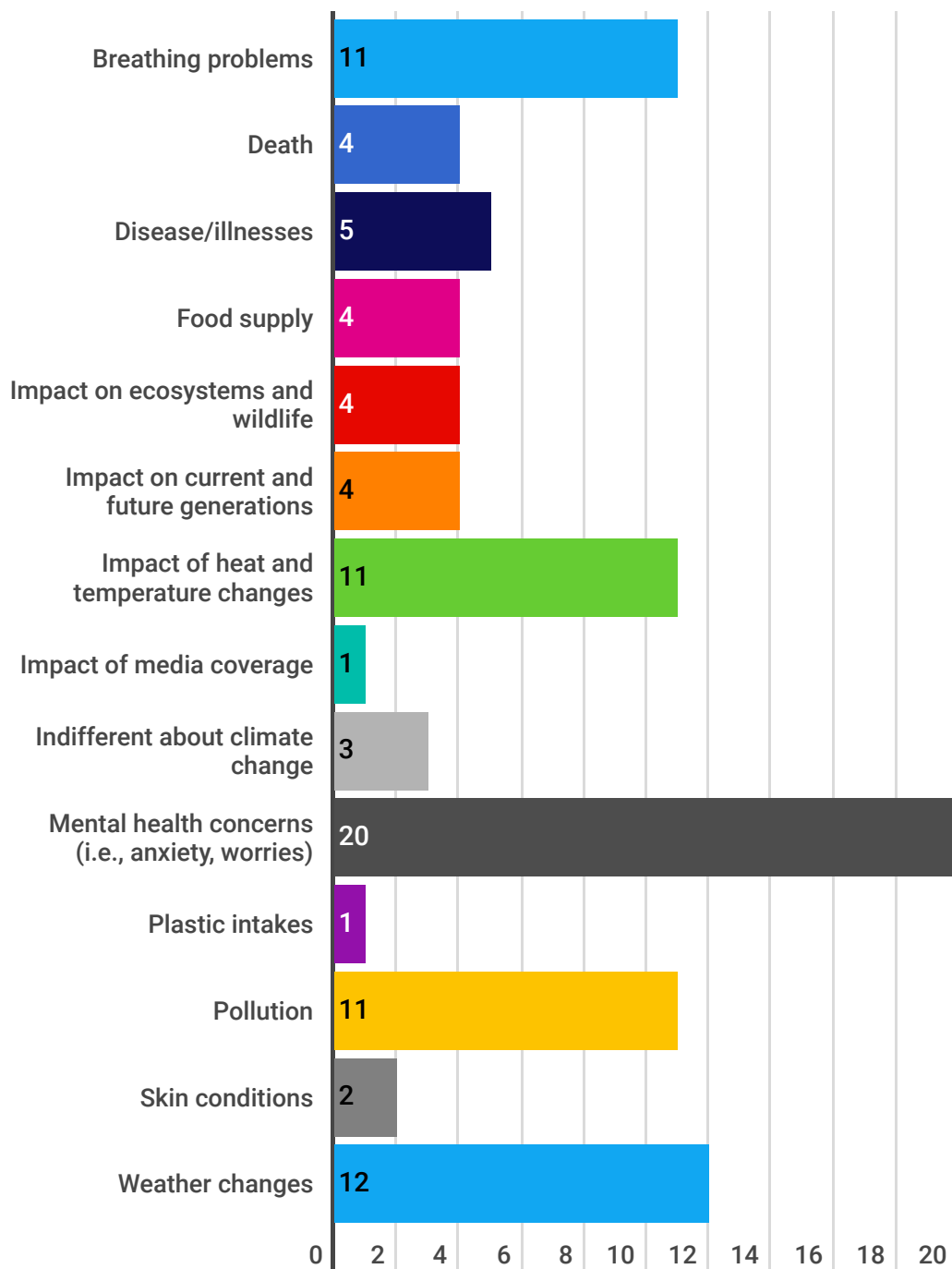


Figure 4: Themes from activity 6 question 1

What can doctors and the NHS do to help CYP in relation to climate change?

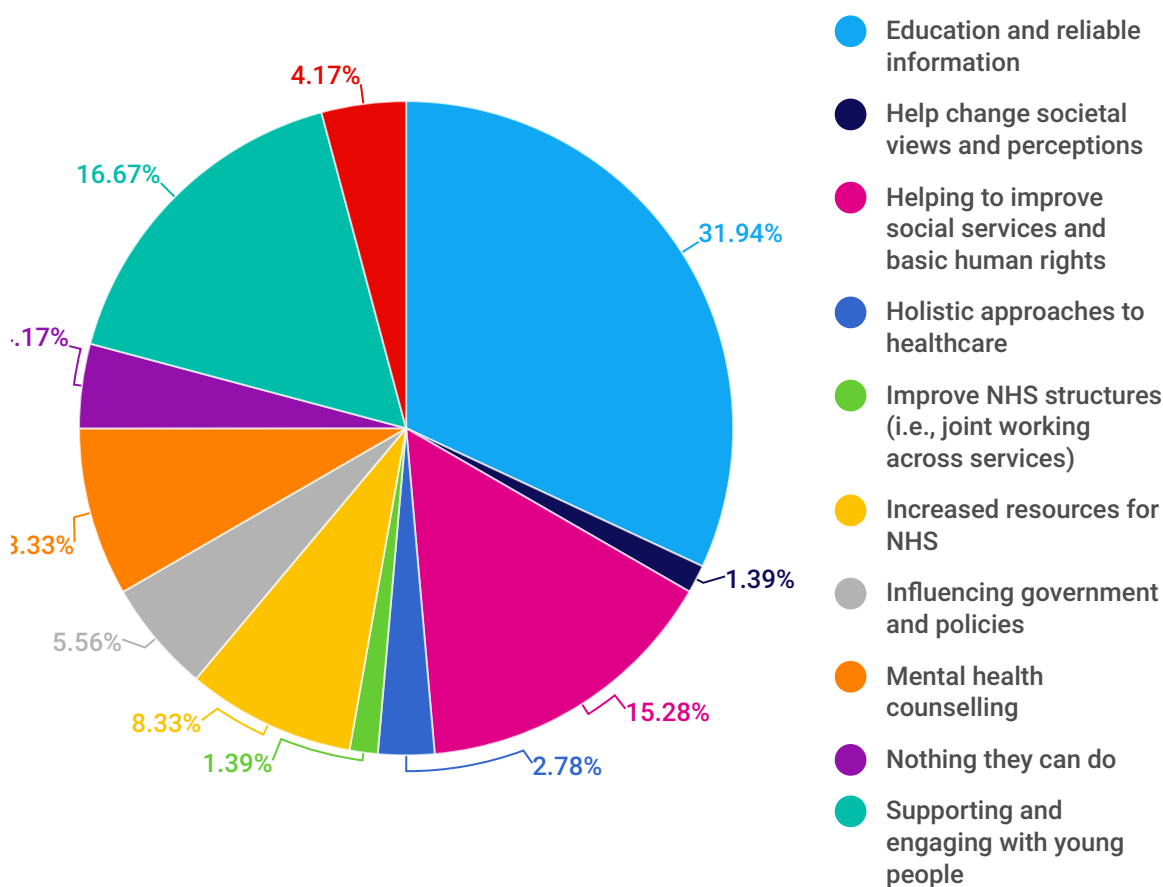


Figure 5: Themes from activity 6 question 2

5.6 Themes from activity 7

In 2020, the RCPCH &Us Climate Changers group was created. There are 12 young people part of this group, and they meet regularly to discuss climate change topics, priority areas, and projects. As part of their sessions, the RCPCH &Us Climate Changers have a news round section where they discuss current events and hot topics related to climate change, providing insights into the areas of climate change that CYP are interested in. Figure 6 reflects the topics discussed from the sessions spanning from 2022 to present day (August 2023).

RCPCH &Us Climate Changers Sessions - News Round Topics

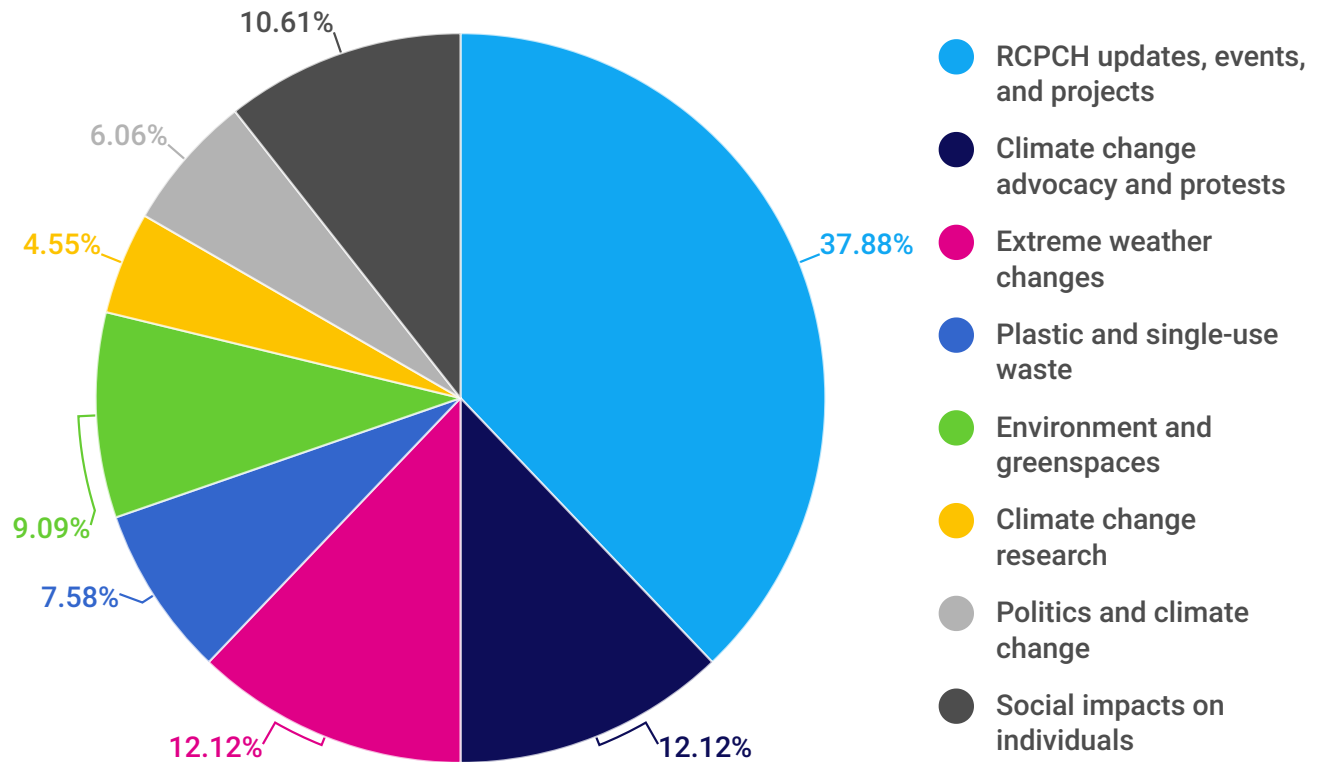


Figure 6: Themes from activity 7 (RCPCH &Us Climate Changers News Round)

Furthermore, throughout the sessions and projects that the RCPCH &Us Climate Changers were involved in from 2020 to present day (August 2023), they generated and developed a multitude of ideas for projects to combat climate change, spread awareness, and amplify the voice of CYP. The project ideas came from the sessions prepping for the AYPH inquiry as well as the general RCPCH &Us Climate Changers meetings. The ideas were grouped into themes and will be thoroughly explored in following sections of the report.

RCPCH &Us Climate Changers - Climate Change Project Ideas

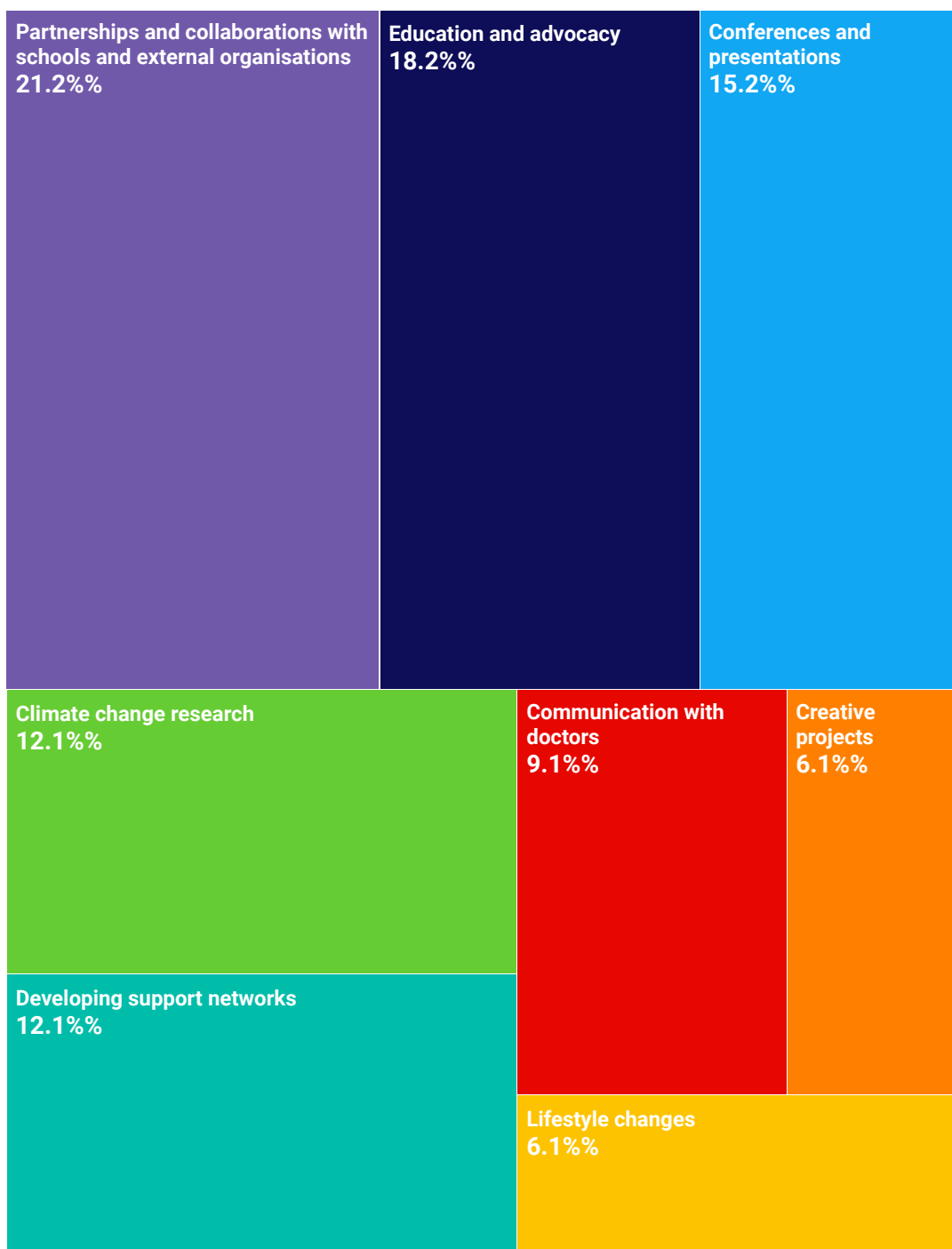


Figure 7: Themes from activity 7 (RCPCH &Us Climate Changers Project Ideas)

5.7 Themes from activity 8

In addition to collecting the viewpoints and perspectives of CYP, the RCPCH CYP Engagement team facilitated discussions between CYP and doctors and nurses. This helped create a holistic picture of how CYP in the UK view climate change and what health services and charities can do better to support them. NHS staff were asked several questions as well as completing activities regarding the subject. When participating NHS staff were asked how they can have a positive impact on CYPs health during climate change, responses included:

- Talking to and educating young people about climate change and solutions to help combat it,
- Removing barriers that would enable people to make changes,
- Lobbying governments for policy changes,
- Restructuring the whole NHS system to be carbon neutral,
- Using more sustainable energy sources,
- Teaching CYP how to dispose of medical supplies, such as inhalers,
- Being a voice for CYP,
- Improving transport systems and encouraging safe bike routes,
- Raising awareness about carbon footprints and plastic use,
- Implementing recycling programmes.

Figure 8 below states the responses from doctors and nurses when asked their view on how climate change impacts CYPs health.

How does climate change impact CYPs health?

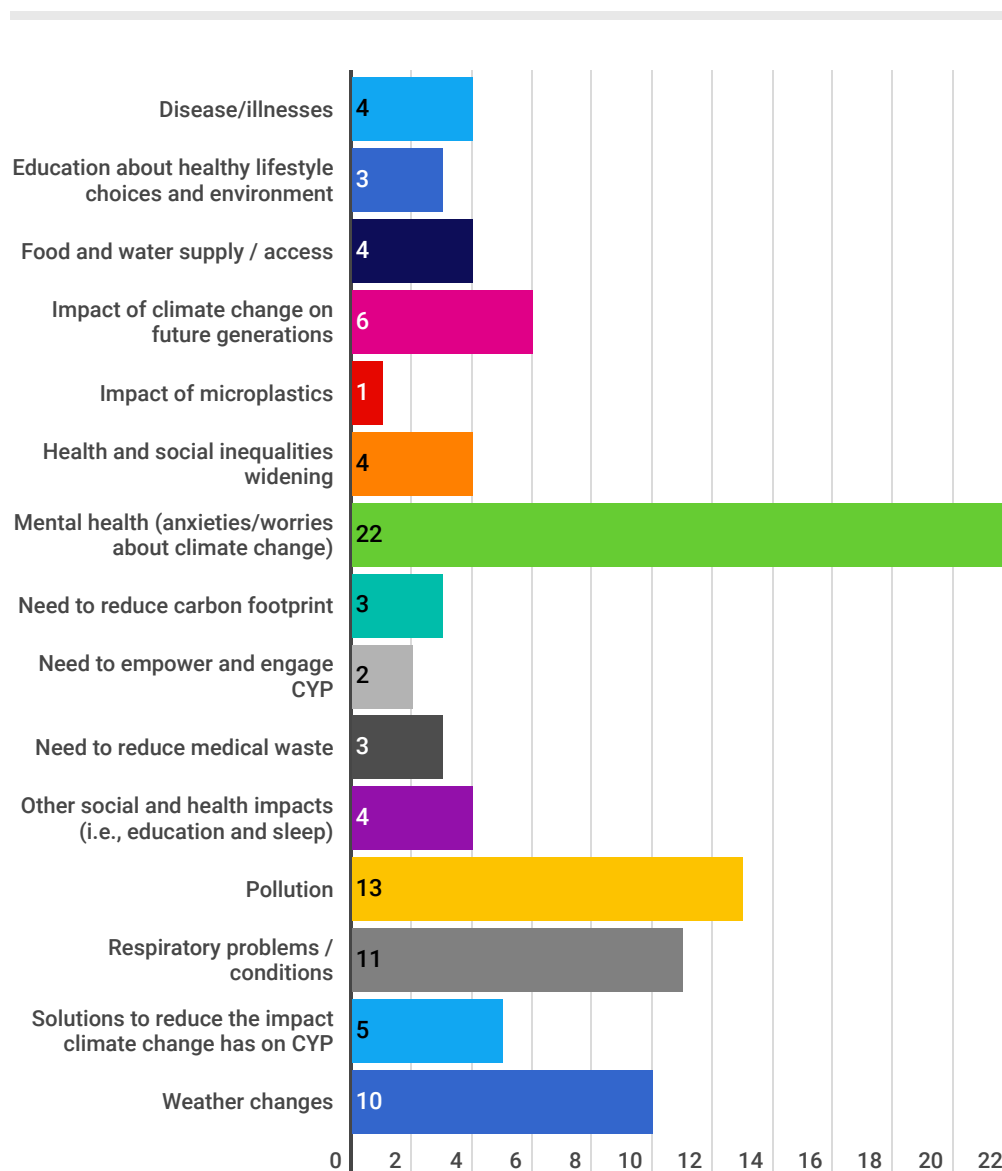


Figure 8: Themes from activity 8

6. Discussion

According to the roadshows and engagement activities conducted with CYP based in the UK by the RCPCH CYP Engagement team, CYP reported similar concerns about the planet, environment, and their wellbeing to other studies and sources included in the literature review. However, themes relating to the impact and influence that governments have to reduce the effects of climate change and the relationship between climate change and inequalities were less prominent in the CYP that participated in roadshows conducted by the RCPCH. This is because CYP were not directly asked about what governments can do to support climate change during the roadshows, the activities mainly focused on the role of healthcare professionals. It must also be acknowledged that the roadshows were conducted across the four nations in the UK so the results may not be representative of CYP internationally.

6.1 Stopping climate change overall

Across activities 1, 2, and 3, CYP wrote or drew images depicting climate change and the need to stop the increasing effects of it and restore the planet to its natural conditions. In activities 1 and 2, 13 groups of CYP in Cornwall discussed this theme as part of their response to the prompts. When depicting this theme, CYP wrote various phrases such as “stop climate change” and others drew pictures showing how climate change is detrimental to the earth and the environment (as seen in Image 1).



Image 1: Group of CYP from Cornwall (Activity 1)

CYP highlighted the harmful effects that climate change has on the environment around them as well as the knock-on effects it has on weather patterns, ecosystems, and individual wellbeing. In activity 2, CYP also acknowledged that climate change is a barrier to achieving basic human rights for individuals such as having access to clean water and sanitation (see Image 2 below). It was evident that CYP recognised the interdisciplinary nature of climate change and the impact it has on other social, health, and environmental issues.

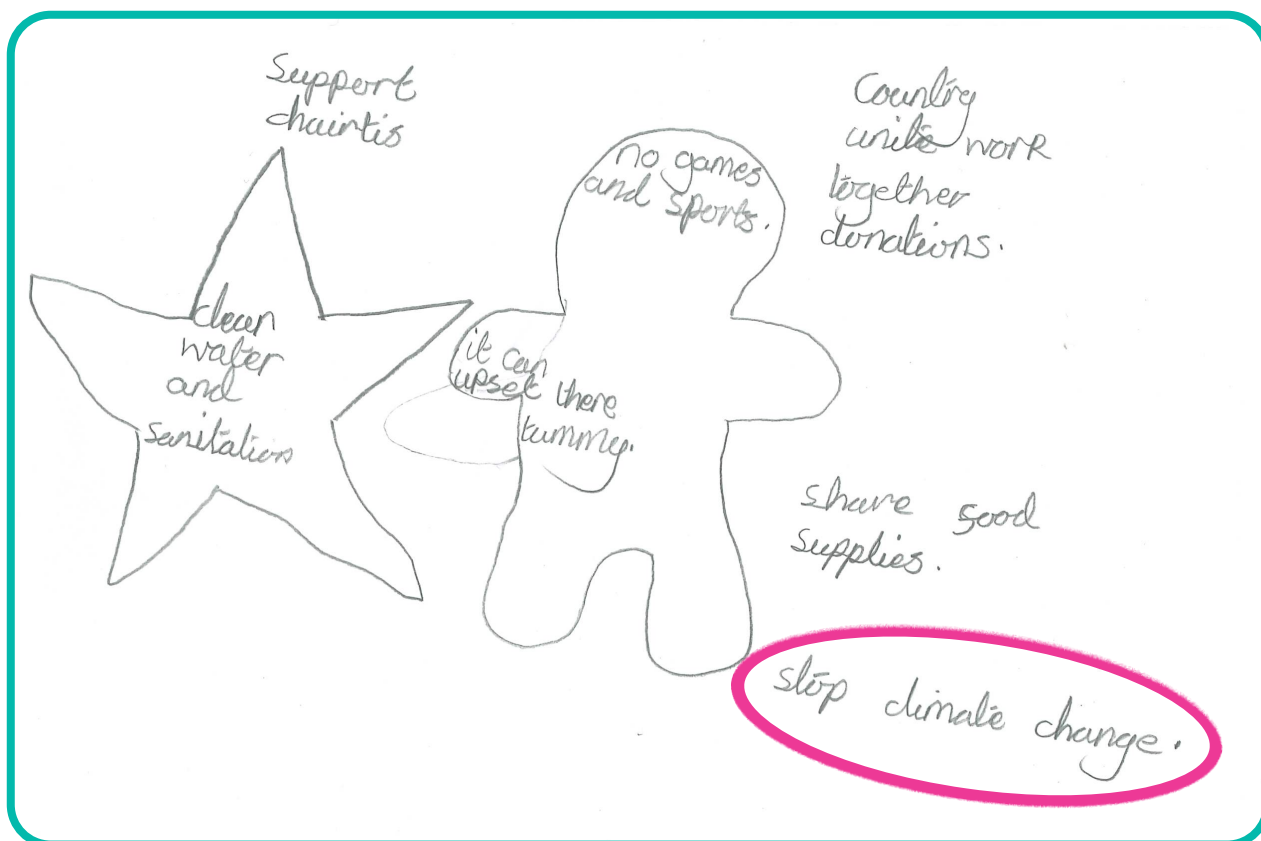


Image 2: Group of CYP from Cornwall (Activity 2)

In activity 3, CYP related the need to stop climate change to the final question they were asked to respond to, "Imagine you have a magic wand what would be your idea linked to climate change and staying healthy, happy and well?" This theme (i.e., the need to stop climate change) was the second most prominent in the responses to this question, with it being referenced 11 times (20%) out of the 55 coded themes. CYP described that their ideas would be to "restore climate conditions," "make the world livable," and "eliminate climate change."

This theme was more explicitly discussed and drawn by the CYP who participated in the RCPCH roadshow activities compared to the findings from studies included in the literature review. This could be due to the fact that the majority of the CYP who responded to the prompts in activities 1 to 3 were aged between seven and 11. They recognised the issue of climate change but did not consider authorities who could be responsible for helping to stop climate change such as governments and large corporations. However, the findings from these activities build upon the evidence identified in the literature review; CYP have an increasing desire to see the impact and effects of climate change being mitigated to enable individuals to be happy, healthy, and well and have access to basic human rights.

6.2 Extreme weather changes

In activities 1 and 2, the most common responses from CYP regarding the barriers to remaining happy, healthy, and well included extreme weather changes such as floods, droughts, and ice melting (as seen in Images 3 and 4 on the next page).

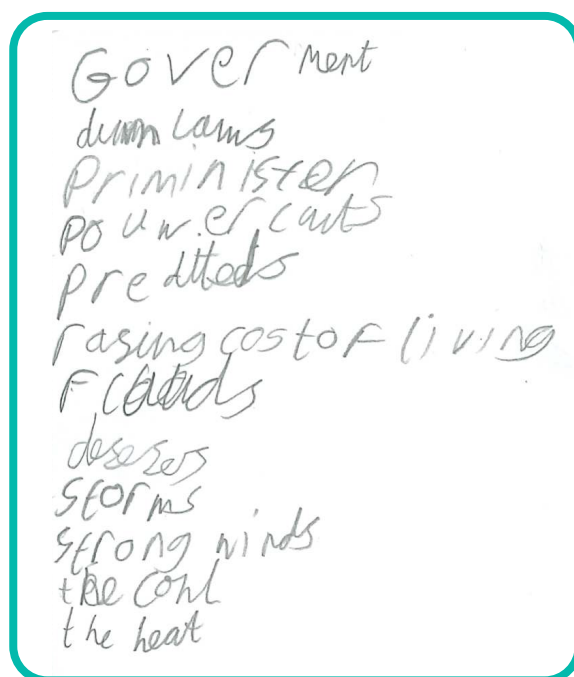
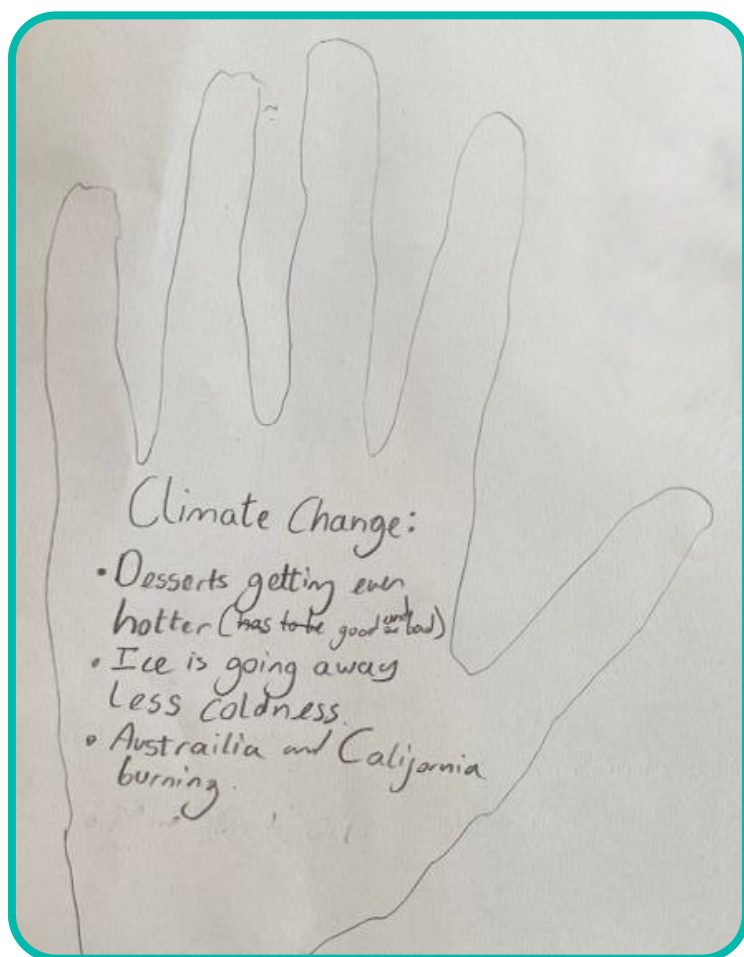


Image 3: Group of CYP from Cornwall (Activity 1)



Image 4: Group of CYP from Cornwall (Activity 1)

CYP recognised the impact that extreme weather changes can have on their wellbeing as it can reduce CYPs right to play, access to outdoor and green spaces, and access to basic human rights such as food, water, and shelter. In addition, in activity 6 CYP from Derry stated that “the fear of floods cause anxiety” and the “arctic melting causes worries about the future.” This theme will be explored further in the following section, but it is important to note that CYP highlighted the intersectionality between extreme weather changes and the impact it can have on their mental wellbeing.



In activity 3, CYP interpreted extreme weather changes in two contexts; the first being what climate change means to them and the second being how climate change impacts health. In question 1, weather changes were discussed 19 times (38%) across the themes. In question 2, this theme was tied for the most frequent, with themes occurring 15 times across the documentation. When CYP were asked what climate change means to them, responses relating to this theme included: earthquakes, floods, fires, global temperatures increasing or decreasing, wildfire, and pollution. An example of this is seen in Image 5 where a group of CYP from Hartlepool described general extreme weather changes in the world and also more specific instances of the wildfires in Australia and California which received high media attention.

Image 5: Group of CYP from Hartlepool (Activity 3)

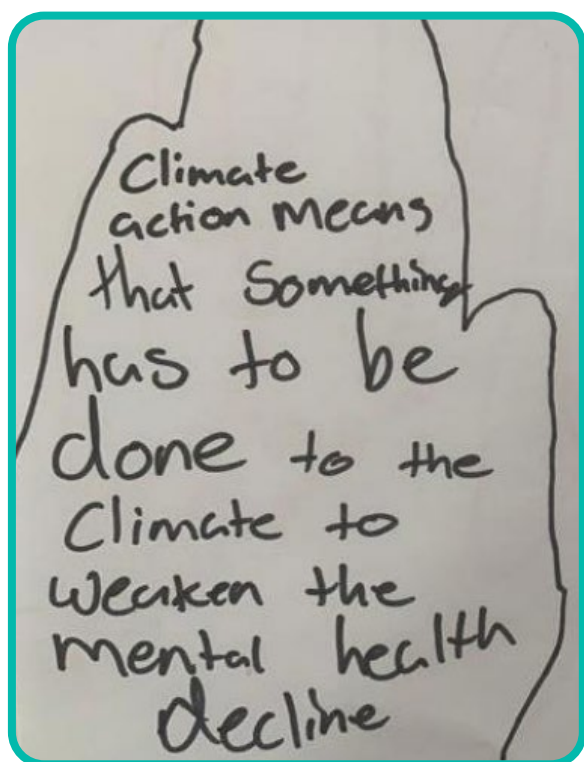
In activity 6, CYP were also asked how they think climate change impacts health. Responses relating to the impact of weather changes were the second most discussed theme, with the relationship between climate change and mental health being more widely discussed. Similarly, to CYP in other parts of the UK who participated in RCPCH roadshows, CYP who participated in activity 6 noted that weather changes such as floods, droughts, changes in temperatures, etc. negatively impact the health of CYP.

The high prevalence of themes relating to extreme weather changes may be attributed to the significant level of media attention that such events receive. As shown in activity 7, the RCPCH & Us Climate Changers discussed news topics relating to extreme weather changes frequently in their meetings, with headlines including the storms in South Africa, bush fires in Scotland, temperature changes across the UK, and the Norwegian sea floor and Antarctic melting. The consistent reporting of such events in media could cause an unconscious bias for how CYP view climate change when responding to the prompts and questions in the roadshow activities. On the other hand, it also signifies that CYP recognise the threat that extreme weather changes have on the planet as well as their own wellbeing.

Other engagement studies and activities with CYP also reported similar findings. Sloam, Henn, and Huebner conducted a case study with 35 young people who live in Nottingham, UK, and discovered that most participants showed concern for the environment and discussed topics associated with weather changes resulting from climate change such as rising sea levels and

polar icecaps²⁰. In the global children's questionnaire conducted by the United Nations General Comment No. 26 Children's Advisory Team, children often associated the effects of climate change in relation to weather changes such as extreme temperatures, heavy rain and storms, droughts, and floods³⁹. As evidenced by both the findings from the RCPCH roadshows and existing studies, CYP globally reported that they are witnessing and experiencing the impact of climate change first hand by enduring new and extreme weather changes and the consequences of them. This can impact CYP's ability to access essential services, their food supply, and physical wellbeing due to the infrastructure of their current environment not being suitable for such extreme weather conditions.

6.3 Climate change, mental health, and future generations



CYP also discussed the intersectionality between climate change and the negative impact it can have on their mental health as well as on future generations. In activity 3, the impact on mental health resulting from climate change was discussed by several CYP in Hartlepool and Caerphilly, with one individual stating that it is "worrying" and another, as shown in Image 6, highlighting that climate change is leading to a mental health decline and action needs to be taken to address this. During the news round discussions in activity 7, the RCPCH &Us Climate Changers also noted that political decisions to use more fossil fuels can not only have a negative impact on the physical health of CYP due to pollution, but it can also increase eco-anxiety for some individuals.

Image 6: CYP from Caerphilly (Activity 3)

Themes of mental health concerns in relation to climate change were the most prominent in activity 6, highlighting the importance of supporting and prioritising mental health in climate change discussions. Over 20% of the themes identified related to mental health when participants were asked how climate change affects or will affect the health of CYP. Responses from CYP included:

- Climate change impacts mental health and eco anxiety,
- Adults put pressure on CYP to fix climate change and the impact this has on mental health,
- Climate change increases worries and negative feelings,
- Thoughts and feelings of anxiety, stress, anger, hopelessness, and a lack of motivation as a result of climate change,
- Fear of losing homes and lives because of climate change.

As evident in the findings from the RCPCH roadshows, CYP are becoming increasingly worried about climate change, and this results in a negative impact on their mental health as well as the emotions they may experience on a daily basis. These findings are further supported by other

studies including Hickman et al.¹, Thomas et al.¹⁶, Trott¹⁸, Sloam, Henn, and Huebner²⁰, United Nations General Comment No. 26 Children's Advisory Team³⁹, and Lawrence et al.⁴⁴

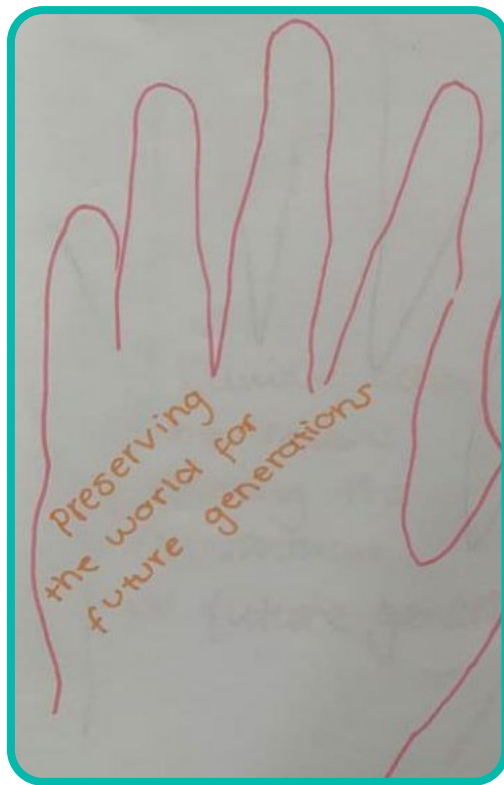


Image 7: CYP from Caerphilly (Activity 3)

CYP also emphasised that they were worried about the state of the planet and environment for future generations. When asked what climate change means to them in activity 3, CYP from Hartlepool and Caerphilly stated that climate change means future generations will be impacted and that there is a need to preserve the world for future generations (see Image 7).

Furthermore, CYP who participated in activity 6 also highlighted the impact climate change has on future generations and the importance of caring for today's young people. Young people from Northamptonshire noted that "climate change is affecting the next generation" and that there is a "lack of caring about climate change." Other young people from Northamptonshire stated that "climate change has been normalised" and "not enough people are worried about climate change." The perceptions CYP have on climate change from a mental health perspective are worrying as they recognise the impact it has on them currently and the continued impact it will have on future generations. In addition, if today's CYP believe that there is a lack of caring or willingness to improve the situation of climate change, this could lead to an increase in eco distress or eco anxiety.

From the data collected during the RCPCH roadshows, it was evident that CYP are worried and concerned about the impact climate change has on their mental health as well as on future generations. As discussed in the literature review, these findings were present in several other studies highlighting the need for decision-making bodies, healthcare services, and adults to support CYP and take climate action that will begin to reverse the damage.

6.4 Climate change and health

Throughout activities 1, 2, 3, and 6, CYP described or drew the various impacts that climate change can have or will have on the health of CYP. This theme was grouped into three different subthemes:

1. Pollution and breathing conditions,
2. Diseases, illnesses, and other medical conditions (i.e., skin conditions),
3. Impact on food supply and health.

6.4.1 Pollution, clean air, and breathing conditions



Out of the themes identified relating to climate change across activities 1 and 2, pollution and clean air were referenced in over 25% of the total themes. As reflected in Image 8, CYP wrote “stop pollution” when asked about the barriers to being happy, healthy, and well. On the other hand, having access to clean and fresh air was identified as an enabler to being happy, healthy, and well.

Image 8: Group of CYP from Cornwall (Activity 1)

In activity 3, CYP expanded upon the impact of pollution in their responses to all three questions. When asked what climate change means to them, several groups of CYP from Hartlepool stated that they associate climate change with pollution and poisonous gases that are released in the air which impacts both living things as well as the weather. CYP from Glasgow (as seen in Images 9 and 10 below) also reported that climate change can result in breathing problems, highlighting the negative impact that pollution can have on health.

This supports other research conducted regarding pollution and the impact it has on CYP; Varaden et al.^{33 (p2)} stated that “children are particularly vulnerable to air pollution because of their immature and developing immune system and lungs, lower body weight, and relatively high inhalation rate.” Varaden et al.³³ also highlighted the importance of engaging with CYP in air pollution interventions so they can learn about the specific impact it can have on their health as well as ways to minimise exposure to air pollution in daily life. Education about air pollution is important for CYP who participated in the RCPCH roadshows as many CYP stated that difficulty breathing or developing breathing conditions such as asthma were negative ways in which climate change and pollution impacts their health. Involving CYP in clean air initiatives could provide them with the knowledge and tools to try to mitigate some of their exposure to pollution.

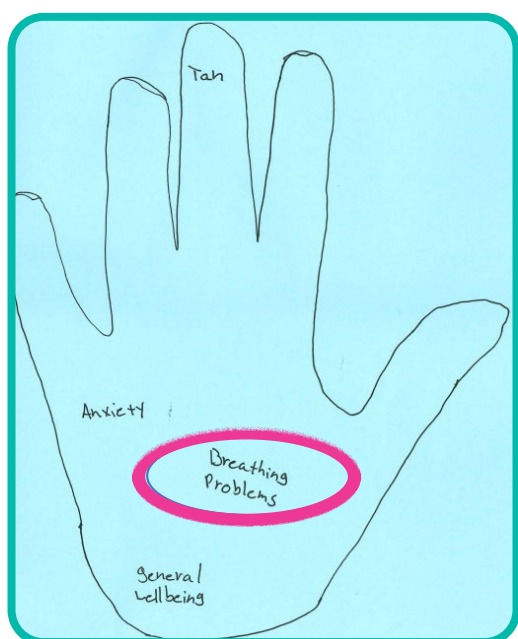


Image 9: CYP from Glasgow (Activity 3)

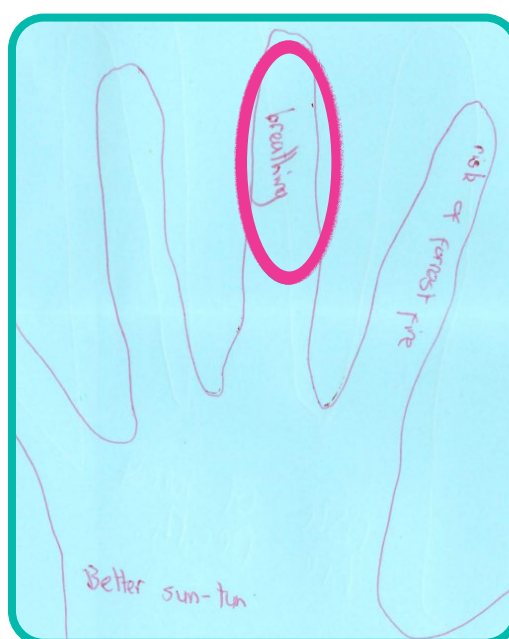


Image 10: CYP from Glasgow (Activity 3)

When CYP were asked about their magic wand idea in activity 3, ideas and statements about improving air quality were the most prominent (21%) across the documentation. Responses included:

- People putting less chemicals in the air,
- Making the world a cleaner place,
- Erasing poisonous gas,
- Reducing carbon emissions,
- Banning pollution.

In the news round discussions (activity 7), the RCPCH &Us Climate Changers highlighted how geographical location can influence individuals' exposure to air pollution and access to clean air. For example, in the UK, an individual's postcode can negatively impact their exposure to pollution and all local authorities must have a plan to ensure access to clean air is universal across the UK. Other climate change studies, youth groups, and youth engagement activities in the UK also identified the importance of implementing air quality projects^{20, 23, 25}, highlighting the widespread concern that CYP have about the impact of air pollution on their health and the environment and the urgent action that needs to be taken to ensure CYP can access clean air.

6.4.2 Diseases, illnesses, and other medical conditions (i.e., skin conditions)

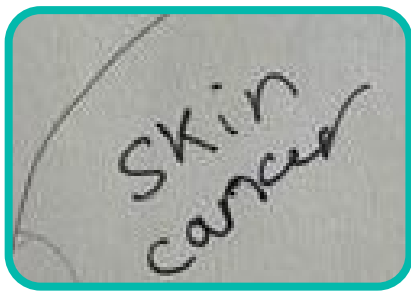


Image 11: Group of CYP from Hartlepool (Activity 3)

In addition to air pollution and its impact on health, CYP also stated that climate change can cause diseases, illnesses, and other medical conditions such as eczema. CYP from Northamptonshire noted that climate change in general is making CYP more ill but also that long-term effects of air pollution could cause lung cancer. Other CYP from Northamptonshire, Hartlepool, and Caerphilly highlighted that climate change could also increase the incidence of skin cancer. In addition, four groups of CYP from Hartlepool, Cornwall, Girvan, and Derry wrote that climate change could make skin conditions such as eczema worse because of extreme weather changes. However, several CYP from Glasgow who participated in activity 3 stated that climate change could allow individuals to have better tans in the summer due to higher UV and sun exposure.

Themes regarding diseases and illness from climate change were more widely discussed from CYP who participated in RCPCH roadshows compared to the studies included in the literature review. This could be attributed to the fact that the RCPCH is a child health charity and CYP were asked questions directly about how climate change impacts their health, whereas other studies may have had more open-ended questions that were not health focused. However, it is important for research involving CYP to recognise and include how climate change impacts health as Dayton et al.³⁵ noted "88% of the burden of disease [from] climate change exists in children." As previously discussed, because CYP are still developing physically, they are more susceptible to illnesses and diseases compared to adults. This theme emerging from CYP based in the UK is evidence that they are concerned about their current and future health and the impact climate change will have on it.

6.4.3 Impact on food supply and health

In addition to physical health, CYP also discussed the impact climate change has on food supplies in the responses to activities 3 and 6. There were differing viewpoints regarding this theme; many

CYP believed that climate change allows individuals to grow more crops since the weather is hotter whereas others noted that extreme weather changes such as an increase in floods could destroy food (see Images 12 and 13 below). A group of CYP from Cornwall also stated that it is important for crops to get enough water in order to grow healthy food. As previously discussed, CYP often associated climate change with extreme weather changes and in their responses to the question 'how does climate change impact health,' it was evident that food security is a main concern.



Image 12: Group of CYP from Hartlepool (Activity 3)



Image 13: Group of CYP from Hartlepool (Activity 3)

CYP from Girvan and Derry who participated in activity 6 highlighted the individual and global effects of climate change in relation to food access. For example, CYP from Derry noted that plants and animals are dying from climate change so people will also die if there is no food. Furthermore, CYP from Girvan highlighted that a famine could occur.

Access to food was a widespread concern for CYP who participated in RCPCH roadshows and also of CYP internationally as evidenced from findings of other studies. In the survey conducted by Votes for Schools and UNICEF²¹, 73.3% of CYP surveyed said that climate change will affect children's rights and one of the main reasons for CYP agreeing to this statement was the impact that climate change has on food and water. Taylor et al.¹⁷ also highlighted that one of the reasons CYP were taking legal action against their governments was because of the impact that climate change has had on water shortages, food production, and wildfires, such as in Portugal.

6.5 Environmental impact

The impact climate change has on the environment was also an emerging theme from the RCPCH roadshows, particularly in activities 1, 2, 3, and 6. Several subthemes will be discussed including deforestation, displacement of humans and animals, and extinction.

6.5.1 Deforestation

In activities 1 and 2, deforestation was discussed in over 10% of the themes identified that related to climate change. CYP recognised the negative impact that deforestation has on climate change (see Image 14 below) and one group also stated that individuals should not cut down

trees because it impacts the oxygen available for CYP (see Image 15 below). Positive sentiments regarding environmental protection were identified in activity 7 by the RCPCH &Us Climate Changers in their news round discussions. For example, they highlighted that there are urban biodiversity projects occurring in central London to protect greenspaces, the Royal Geographical Society was monitoring trees to ensure they are growing and not being cut down, and farmers are being paid to protect the environment in their food production by not using pesticides.

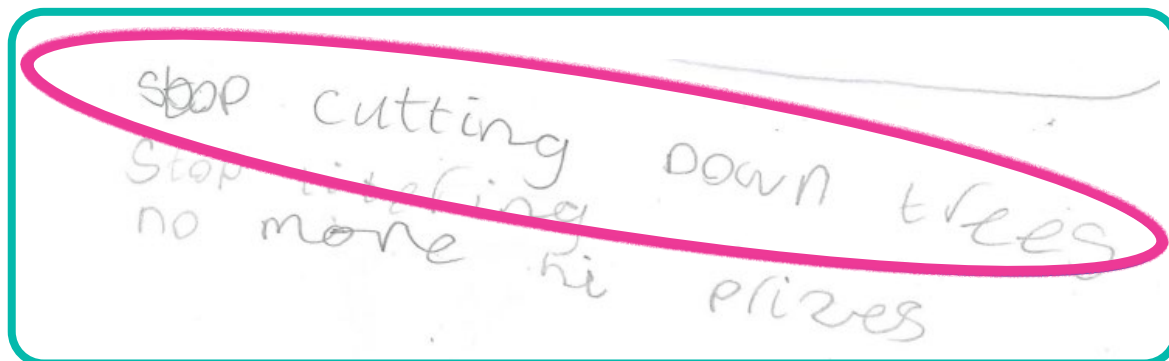


Image 14: Group of CYP from Cornwall (Activity 1)

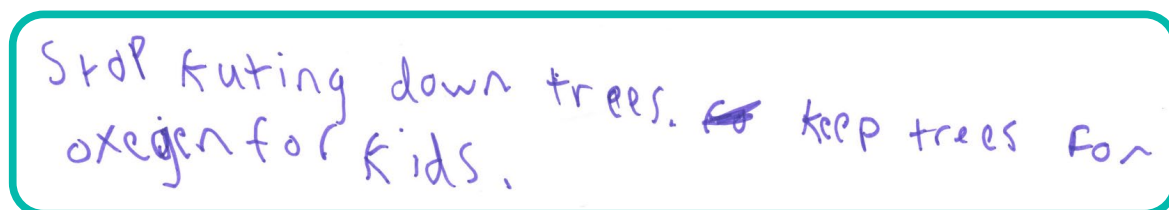


Image 15: Group of CYP from Rhyl (Activity 1)

Deforestation was also discussed in other studies conducted by Taylor et al.¹⁷, Sloam, Henn, and Huebner²⁰, and United Nations General Comment No. 26 Children's Advisory Team³⁹. In the survey conducted by United Nations General Comment No. 26 Children's Advisory Team, CYP were asked about situations of environmental damage that impact children's lives and 17.3% of CYP stated deforestation was one of them³⁹. These findings alongside the results from the RCPCH roadshows are evidence that deforestation is an important issue for CYP because they are experiencing or learning about the impact it has on their health, livelihood, and on the environment.

6.5.2 Displacement of humans and animals

Loss of habitats and migration was also discussed in activities 3 and 6. Groups of CYP from Hartlepool stated that climate change can cause destruction of homes and migration. One group of CYP from Hartlepool stated that their magic wand solution to mitigate against such effects would be to evacuate people and send them to different countries. Furthermore, young people from Bedfordshire noted that climate change would mean that there would be less insects in the environment. Young people from Northamptonshire expanded upon this topic and stated that climate change will cause biodiversity loss and could also reduce access to adequate nutrition.

It is important to acknowledge that more vulnerable populations and those already experiencing inequalities will be more greatly impacted by the effects of habitat loss and migration. Whilst CYP who participated in RCPCH roadshows did not discuss this topic in depth, it was included in the news round during one of the RCPCH &Us Climate Changers sessions. They discussed that

individuals from ethnic minority backgrounds, such as Black and African Caribbean, may feel more disconnected to climate change topics and issues, however, they are also the groups that are more affected by extreme weather changes.

Furthermore, Partnerships for Maternal and Child Health³⁸ noted that forced migration and loss of homes could also reduce access to essential services such as education and healthcare, therefore widening societal inequalities and inequities. Increased education both in the UK and internationally about climate change and the impact it has on health and social inequalities should occur to increase awareness about the issue. This is particularly important because when CYP are provided with accurate and reliable information, they can form their own opinions about a topic and make informed decisions about climate action.

6.5.3 Extinction of the planet, humans, and animals

Climate change and the negative impact it has on life was a widely discussed topic in activities 3 and 6. Responses from CYP included:

- Areas will sink and people will drown,
- Animals will die,
- People could die,
- Things may go extinct (see Image 16 below),
- Climate change takes people away from each other.

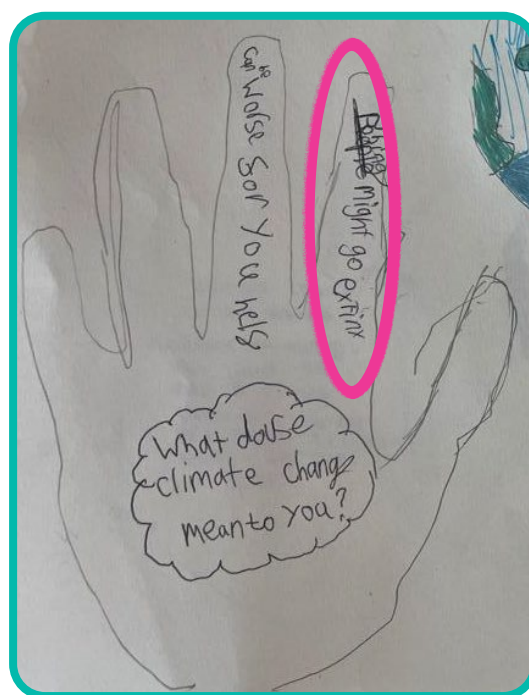


Image 16: Group of CYP from Hartlepool (Activity 3)

Votes for Schools and UNICEF^{21 (p10)} also reported 25.8% of CYP they surveyed were concerned about animals and planets becoming extinct globally and 15% were concerned about this happening where they lived. It was evident that CYP perceive the effects of climate change in a negative way which can impact their mental wellbeing as incidences of eco distress and eco anxiety could increase. It is imperative that CYP are receiving support from adults and services where they can voice their concerns about climate change should they need to. Despite the negativity surrounding this topic, one group of CYP from Hartlepool stated that their magic wand solution would be to send all animals and crude oil to space (see Image 17 below).

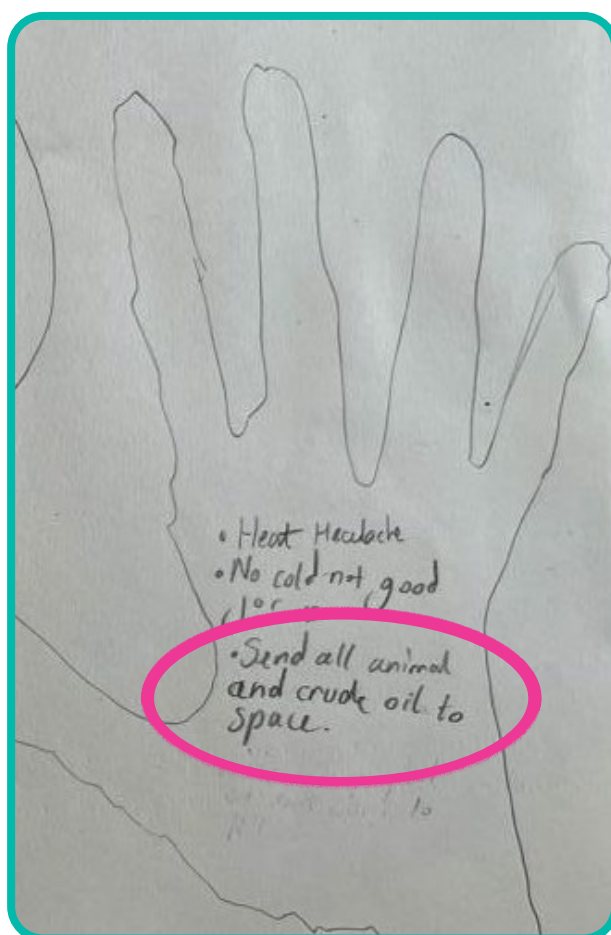


Image 17: Group of CYP from Hartlepool (Activity 3)

6.6 Indifference to climate change

Some CYP who participated in activities 3 and 6 highlighted their indifference about climate change and climate action. One participant from Glasgow wrote that they were “not bothered” by climate change and some young people who participated in the college roadshows said that they “do not think about climate change” or they “do not engage with climate change.” Whilst a large proportion of CYP who participated in RCPCH roadshows and also those included in studies from the literature review were concerned about climate change and its impact on the planet, it is important to acknowledge that this is a topic that not all CYP want to engage with for a variety of reasons. For example, Sloam, Henn, and Huebner^{20 (p13)} discovered that some young people in the UK did not engage with climate change discussions because they did not know how to, or they felt it would not make a difference. Hickman et al.^{1 (p.e868)} also noted that in their study, 29% of CYP surveyed internationally said they felt indifferent about climate change, highlighting that this feeling can be amongst young people globally and is not isolated to those living in the UK.

Whilst a proportion of CYP who participated in activities 1 and 2 wrote or drew themes related to climate change, it cannot be assumed that those who did not are indifferent to climate change. CYP who related their answers in activities 1 and 2 back to climate change could be greater activists or have peers, parents, or other adults in their lives that are more engaged with climate change discussions and actions. This is also supported by Dayton et al. who stated, “Family discussions about climate change are a critical factor influencing children’s climate change perceptions and behaviours³⁵.”

6.7 CYP's ideas for improving climate change

Throughout the roadshows and activities, CYP discussed several ideas and priorities areas in order to improve climate change. During the news round discussions in the RCPCH &Us Climate Changers meetings (activity 7), they highlighted that increasing advocacy and protesting is an effective way to spread awareness about climate change whilst also working to protect the planet. For example, they discussed the protests by 'Just Stop Oil' and the activist work conducted by Greta Thunberg, noting the inspiring effect that could have on other CYP to act.

In other engagement activities, CYP were asked to brainstorm solutions to stopping climate change. For example, in activity 3, CYP were asked to provide a 'magic wand' solution for stopping climate change and their responses included:

- Restoring the climate and normal weather conditions,
- Improving air quality and stopping pollution,
- Utilising sustainable energy sources and electric cars,
- Improving social services such as housing and healthcare,
- Stopping human harm,
- Reducing plastic waste.

Such ideas were also discussed throughout the literature review, showing that CYP understand what is harming the planet and ways to reduce the effects of climate change. In the studies included in the literature review, CYP often related their answers back to governmental bodies or decision-makers who could influence change and enact programmes or policies based on the solutions they produced. However, CYP in activity 3 were not asked to consider how or who could be involved to achieve the solution they wrote or drew.

Other activities in the roadshows asked CYP to consider how the NHS could implement sustainable changes in their day-to-day operations. In a speech conducted by a young person from Northern Ireland, they identified many areas where the NHS could implement eco-friendly campaigns including shifting to electric ambulances, promoting energy saving amongst NHS staff, launching a plant-based diet awareness week, and educating patients and the public about climate change and its impact on health. As part of their speech, this young person also discussed areas where the NHS could improve their recycling opportunities which included putting more recycling bins across NHS services, recycling glasses cases and old toothbrushes, and restructuring how CYP refill their asthma inhalers by keeping the plastic case and only refilling the medication.

In activity 5, a group of 15 CYP from across the UK were also asked to participate in a plastic free activity where they discussed areas they thought the NHS could make improvements. They identified that the NHS has problems with plastic and food waste, resource use, and their carbon footprint. As previously stated (in the data section), CYP had many ideas for how the NHS could become more sustainable such as implementing recycling centres, utilising sustainable energy sources, switching to electric vehicles, ensuring staff are being energy conscious, and increasing public awareness about climate change and how individual actions can make a difference.

During the RCPCH &Us Climate Changers meetings ([see Figure 7 p28](#)), new themes and ideas emerged to prevent climate change that were not discussed in the other roadshow sessions. The RCPCH &Us Climate Changers frequently discussed the importance of the RCPCH establishing partnerships and collaborations across the organisation as well as externally. For example, they highlighted it would be useful for the [RCPCH Ambassadors Project](#)⁴⁹ to link with schools as well as look at previous projects, such as the school transport project which partnered with Transport

for London, as ideas for future work. These could also include individuals internationally as climate change is not an issue isolated within the UK. Other ideas focused strongly on increasing education and advocacy through implementing more school-based sessions, providing resources about ways to improve climate change through recycling, and raising awareness about how climate change impacts the health of CYP.

Additional ideas from the RCPCH &Us Climate Changers included hosting conferences and events specifically for climate change. For example, they suggested that all of the Royal Colleges could hold a climate change conference which explores how climate change impacts different areas within healthcare as well as hosting a CYP conference where climate change is the main priority. Young people also highlighted that the College and wider social services should work to develop support networks between CYP, healthcare services, and between generations. This would help enable CYP to have knowledge about what support services in relation to climate change are available to them as well as what is accessible within their local community. Furthermore, it was noted that it is imperative that a sense of unity is fostered between generations to ensure that there is a widespread goal of restoring the planet.

Across these different activities, the outcomes were relatively similar amongst the participants. It was evident that CYP based in the UK strongly believe that utilising sustainable energy resources and reducing plastic waste is a key driver to combatting climate change. Similar findings were also reported by CYP both in the UK and internationally in several other sources including Juel et al.²⁴, Gloucestershire Youth Climate Group²⁵, Holland²⁸, and Partnerships for Maternal Health³⁸. In order to make such changes in society, CYP need to have their voices heard within political agendas and policy making. However, as previously discussed, this does not always happen because some CYP do not know how to or lack the confidence to engage with politicians and likewise politicians do not know how to effectively engage CYP.

It is imperative that the voices of CYP are heard when considering policies and programmes regarding climate change because they are the next generation that will be impacted by the decisions of governments and adults today. For example, CYP with long-term health conditions who visit healthcare services are more aware of ideas of how they could make more sustainable choices because they are a frequent service user. CYP who participated in the RCPCH plastic free activity noted that NHS services could implement meat free Mondays to reduce their carbon footprint, provide bamboo toothbrushes instead of plastic ones, and also implement reusable cups for patients. Furthermore, CYP often bring a new perspective when developing ideas to combat climate change because they have a unique lived experience of growing up in a world during a climate crisis, therefore their voices need to be heard, considered, and acted upon.

6.8 CYP's perspective on the role of doctors and nurses

In addition to brainstorming ideas about how to combat climate change, CYP who participated in activity 6 were also asked to consider how doctors and nurses could help CYP during the climate crisis. The most prominent response was about doctors and nurses providing CYP with education and reliable information about climate change, with 31.9% of responses relating to this theme. Young people from Northamptonshire stated that doctors and nurses should “teach children and young people about climate change, how to address it, and be part of solutions” and that they should also help reduce the spread of misinformation. CYP from Girvan also stated that the NHS should “spread awareness on how people can protect themselves” and “tell us what is actually happening in the world.” Participants from Derry took a more specific approach in how the NHS should educate CYP by stating that they should help them find ways to cope with the heat, give tips on how to sleep with the heat, and also provide education on climate change and its effects on mental health.

CYP also highlighted that doctors and nurses could better support and engage with CYP in climate change discussions. Responses from CYP included:

- More support for CYP,
- Create a community,
- Find new ways to engage CYP with this issue,
- Reach out to more people,
- Ensure that staff listen and care about CYP,
- Improve engagement and how CYP can help,
- Support and counselling for families affected by climate change issues,
- Send people from the NHS to talk to CYP,
- Help create a national panel of CYP voice.

As discussed in the literature review section, there is a need for greater climate change engagement with CYP that also expands to healthcare providers and services. In other RCPCH roadshow activities, CYP identified various areas where healthcare services could improve their sustainability, however this must be a two-way discussion; healthcare services should also be engaging with CYP about how they can make individual lifestyle changes and exploring with them the impact that climate change may have on their life. From activity 6, CYP listed a variety of ways that doctors and nurses could improve their engagement with CYP regarding climate change and it is important that their voices are listened to and acknowledged. From the findings, healthcare providers could develop a climate change education programme that addresses the areas CYP wish to learn more about and also ensures that engagement with them is meaningful by discussing topics that are a priority and of interest to them.

In addition to increased education and engagement, CYP also highlighted that doctors and nurses should help to improve social services and access to basic necessities for individuals who are impacted by climate change issues. This theme was only present in the responses of CYP from Girvan and Derry, with the majority of responses coming from those based in Derry. CYP stated that doctors and nurses should:

- Signpost individuals to receive free help with mould and dangerous housing issues that impact health,
- Provide care for people who become sick due to climate issues,
- Help protect CYP and their homes,
- Provide fans for those who cannot afford them,
- Demand better ventilation in schools,
- Help homeless families find shelter,
- Help make flood plans for families,
- Give out essential hampers full of food, toys, and clothing.

Whilst CYP strongly believe that doctors and nurses play an essential role in helping CYP improve and cope with the effects of climate change, it must also be acknowledged that there are resource constraints which may hinder their ability to achieve all the ideas from CYP. Some CYP recognised this in their response to the question in activity 6 noting that the NHS needs an increased budget, more staffing, and more opportunities for research. In addition, the ideas from CYP likely cannot be achieved without policies and programmes being implemented by the government which requires both healthcare staff advocating for CYP and CYP having meaningful discussions with key stakeholders.

It must be acknowledged that how CYP view the role of healthcare services and providers will

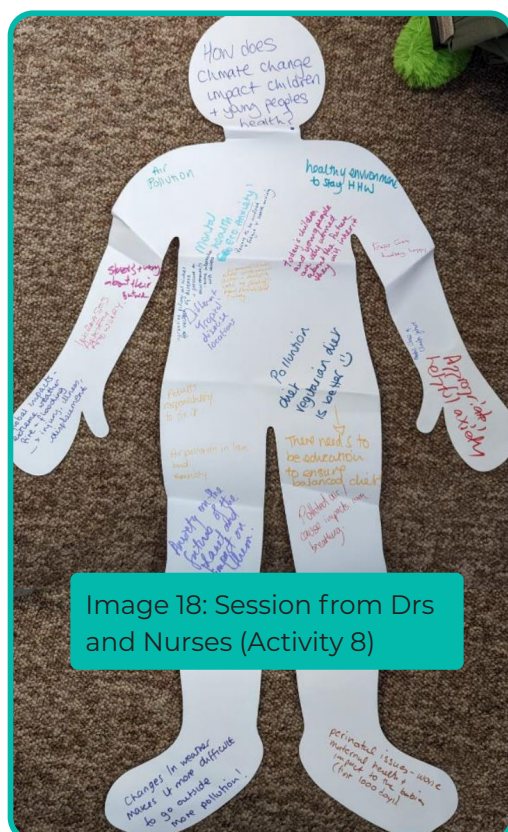
likely be different internationally and that some of these perspectives will only apply to CYP based in the UK who have access to the NHS. Since the NHS is a public body, CYP who live in countries with more privatised systems may have different views about the role healthcare providers play in response to supporting CYP during the climate crisis. However, other studies and sources included in the literature review did not discuss views from CYP about their healthcare services, indicating that more research needs to be done on this topic to ensure that healthcare services globally are responding and catering to the needs of CYP in relation to climate change and the effects it has on their health.

6.9 Doctors and nurses' perspective

In addition to holding roadshows with CYP, the RCPCH &Us Climate Changers also met with NHS doctors and nurses to ask them the following questions:

1. How can you have a positive impact on CYPs health during climate change?
2. How does climate change impact CYPs health?

For question 1, doctors and nurses had several responses that aligned with CYPs ideas for combating climate change and also the role that doctors and nurses have in supporting CYP. Doctors and nurses highlighted that they need to educate, speak to and engage CYP, lobby the government for policy change, listen to and be a voice for CYP, help implement sustainable changes and energy solutions, and raise awareness nationally about climate change, carbon footprints, and plastic use. Based upon their responses, it was evident that doctors and nurses were already aware of how they can help CYP and how CYP think they should be supporting them, but the challenge lies in implementing such changes. As previously discussed, resource constraints such as staffing, and time may inhibit NHS staff from adequately addressing the concerns and needs of CYP. Climate change is not a small issue to tackle and requires the support of a variety of external stakeholders including governments, corporations, as well as the willingness of CYP to be engaged in climate change discussions and activities if NHS staff are prioritising developing resources for them.



Doctors and nurses were also asked how they think climate change impacts CYPs health (see Image 18). It was important to receive the feedback from doctors and nurses regarding this question for several reasons 1) a similar question was asked to CYP and 2) doctors and nurses bring a medical background and perspective that CYP and RCPCH staff do not have and therefore may highlight areas that would have otherwise been missed. Out of the themes identified, 23.2% of responses related to the increasing mental health concerns that doctors and nurses have for CYP as a result of climate change. Participants stated that:

- Climate change will cause an increase in eco anxiety,
- It will increase worries and negative emotions,
- Climate change will make life more difficult for CYP due to increased mental health concerns,
- Climate change will increase stress amongst CYP.

These findings support those discussed in the literature review and also from CYP who participated in the RCPCH roadshows. There is an increasing awareness that climate

change will negatively impact the mental health of CYP due to them experiencing the negative impacts it has on the planet and also on their wellbeing and livelihood. Mental health amongst CYP must be prioritised in healthcare settings to ensure that CYP can receive adequate support and be able to express their concerns and worries about climate change.

Similar to CYP, doctors and nurses also frequently stated that air pollution impacts CYPs health. This was the second most common theme with 13.7% of responses relating to this theme. Many responses pertaining to this theme just included the phrase “air pollution” but some participants also related their answer to the impact air pollution has on breathing. The effects climate change has on breathing conditions was also a frequent theme, with participants stating that climate change can cause respiratory issues and will likely increase the incidence of asthma. This relates back to the importance of implementing air quality programmes as well as educating CYP about air pollution. As reported in the study by Varaden et al.³³, when CYP were educated about the impact air pollution had on their health and ways to mitigate it, 30% of CYP who participated in the study changed their route to school to reduce their exposure to air pollution.

Participants in this activity also highlighted how extreme weather changes impact the health of CYP. Like the responses from CYP, doctors and nurses discussed how floods, droughts, fires, and rising sea levels impact CYPs health and also how weather changes could displace families, making it more difficult to access essential services. This further supports the notion that doctors and nurses should work with families to create plans of resilience in the event of such extreme weather changes, such as floods, occurring and causing detrimental effects to the livelihoods and health of CYP. Such discussions do not need to be led by NHS staff as other social services should be included in these conversations, but it is essential that a medical perspective is present as the impacts of extreme weather changes may negatively impact the physical and mental health of CYP.

Doctors and nurses discussed several themes that were less prominent in other RCPCH roadshow activities. For example, some doctors and nurses related their answers back to health and social inequalities noting that the cost-of-living crisis, food poverty, and poorer living conditions may worsen due to climate change. One individual also stated that climate change will “increase inequalities globally” highlighting that this is not a phenomenon only present within the UK. To mitigate against inequalities worsening globally, there must be a responsibility placed on decision-making authorities and adults to help combat climate change. Doctors and nurses highlighted that CYP will inherit a planet damaged by older generations and CYP are more impacted by the effects of climate change than adults so there is a duty to implement policies and programmes that promote climate action.

6.10 CYP’s own analysis of the data

In addition to the roadshows that were conducted by the CYP Engagement team, sessions were held with CYP involved in the RCPCH climate change youth social action group to get their feedback and perspectives on the results of the roadshow activities that related to climate change. In one discussion preparing to present findings to the AYPH Climate Action Youth Inquiry in December 2022, three CYP reviewed some of the voicebank materials. Their takeaways and findings were similar to those discussed within the data analysis and discussion sections of this report. The three CYP analysed that there were four overarching categories that voicebank answers drew upon, which were:

- The mental health effects of climate change,
- The physical health effects of climate change,
- Physical and environmental effects of climate change,
- Other feelings and opinions about climate change⁵⁰.

Within these categories, CYP noted themes such as physical health, mental health and anxiety, air pollution and asthma, food supply, and weather changes such as heat, floods, and droughts. In relation to mental health, the three CYP noted that weather changes can negatively impact their mental health as they were not able to go outside as often during extreme heat waves in the UK. Furthermore, they highlighted that services were and still are not doing enough to support CYP who experience eco anxiety.

In a broader context, CYP in this group also discussed that the majority of the roadshow responses focused on problems rather than solutions to climate change. It was apparent that the negative impacts of climate change were affecting CYP who participated in these activities and CYP in general should not have to worry about such heavy topics. The RCPCH &Us Climate Changers highlighted that the responses from participants across the UK were relatively similar, noting that the impacts of climate change were being felt and experienced across the country.

The RCPCH &Us Climate Changers reviewed the responses from CYP who participated in activity 6, regarding the actions doctors and nurses could take to support CYP amidst the climate crisis. The priority areas that the RCPCH &Us Climate Changers identified were about increasing education and support for CYP, developing community programmes, increasing NHS resources and research, and engaging with CYP about how they can help combat the climate crisis. In this meeting, the RCPCH &Us Climate Changers also discussed solutions based upon the evidence they reviewed. Their main takeaways included:

- The need to start planning ahead and acting now to tackle climate change,
- Supporting a law alongside doctors and nurses regarding heat and cold and the impact it has in classrooms,
- Increased research about medicines needed in the future linked to the impact of climate change,
- Doctors supporting young people with health needs right now before health conditions worsen,
- Doctors to support sustainable changes such as how asthma pumps are packaged and refilled⁵⁰.

Developing solutions to combat climate change that are adapted and implemented is important for the RCPCH &Us Climate Changers as they are a passionate group of CYP who want to inherit a better and sustainable planet. In one session, the RCPCH &Us Climate Changers were asked why being part of this group is important to them, with CYP stating that it is “vital to have our voice heard in the management of the climate crisis” and it is imperative to “continue to speak to doctors, share valuable insights, and make young people feel that they have people in their corner.” The RCPCH &Us Climate Changers prompted the RCPCH to conduct valuable qualitative research to capture the insights of CYP perceptions on climate change within the UK, which uncovered priority areas and key agenda setting initiatives for future research. It is imperative that CYP are and remain meaningfully engaged within climate change discussions and that they see the outputs of their work being implemented⁵¹.

6.11 Limitations

There are several limitations of this report that must be addressed. Whilst the RCPCH roadshows were conducted in various locations across the UK, it is important to recognise that the sample of participants may not be fully representative of the different socioeconomic, ethnic, religious, etc., groups across the UK. Furthermore, the findings from the voicebank data analysis may also not be applicable to CYP internationally. It is important to recognise this as climate change is an international issue and sources in the literature review included CYP voice from both the UK and internationally, however, the voicebank data was limited to the four nations across the UK. However, some of the viewpoints from CYP discussed in the literature review were similar to the findings from CYP who participated in RCPCH roadshows, demonstrating that many of the

concerns CYP have regarding climate change and its impact on their mental, physical, and overall wellbeing are universal experiences even if they are not homogenous.

In addition, the findings from the RCPCH voicebank data were more health focused compared to other qualitative studies in this subject area. At the beginning of the RCPCH engagement activities, CYP were given an overview of the RCPCH and how the organisation advocates for better child health outcomes. This could cause an unconscious bias from CYP to ensure that they include health topics when responding to certain prompts, specifically those about climate change. Furthermore, CYP were directly asked how they think climate change impacts their health rather than being asked more broad questions about climate change and its impact. Thus, other qualitative studies asking CYP about their perceptions of climate change could report themes that are less focused on health topics.

There were also resource and time constraints within the RCPCH that need to be addressed. Due to resource constraints, thematic analysis was not quality assured by another qualitative data analyst externally or within the organisation. In addition, potential misinterpretations of CYP writings and drawings must also be acknowledged. Whilst there was one data analyst thematically coding and analysing the documentation to ensure consistency of coding, human errors may have occurred. However, the RCPCH &Us Climate Changers group and the qualitative data analyst reported similar findings in their analysis of the evidence from several of the roadshow activities.

7. Conclusion and calls to action

Based upon the literature review and evidence from the RCPCH roadshows, CYP both in the UK and internationally are worried and concerned about climate change impacting the planet, their local environment, and physical and mental health. Overall, the main conclusions from this report are as follows:

- CYP are passionate advocates for the urgent need to combat climate change, recognising its far-reaching repercussions on various fronts, including social, health, and environmental aspects.
- The growing prevalence of eco distress and eco anxiety among CYP is closely tied to their heightened apprehension about the consequences of climate change. During RCPCH roadshows, CYP voiced the pressing need for climate action to curb the mental health deterioration affecting their age group. They also expressed deep concern for the planet's condition that future generations will inherit, emphasising the importance of intergenerational equity in tackling climate change.
- CYP are acutely aware of the profound impact that extreme weather changes can have on their wellbeing. These changes not only curtail their ability to engage in outdoor activities and access green spaces but also jeopardise their access to basic necessities such as food, water, and shelter. Furthermore, the geographic location and exposure to the adverse effects of climate change can intensify eco distress and eco anxiety among them.
- CYP acknowledge that climate change acts as a formidable barrier to securing fundamental human rights for some individuals. It obstructs their ability to access clean water, sanitation facilities, and an adequate food supply.
- A recurring concern among CYP is the detrimental impact of climate change on their health. They fear that increased pollution levels will lead to respiratory problems like asthma becoming more widespread. Importantly, this issue transcends national boundaries, as young people from various regions, including the four nations in the UK and internationally, underscored the global nature of this crisis, which requires joint support from governments worldwide.
- CYP also drew attention to the unequal and unjust impacts of climate change on individuals. They highlighted how climate change contributes to illnesses, deforestation, displacement, migration, and even species extinction. For instance, some participants discussed how climate change can forcibly separate families or trigger mass displacements due to events like flooding. These impacts are not evenly distributed and depend on an individual's geographical location and socioeconomic status, emphasising the need to ensure that shelter and resources can withstand the increasingly frequent and severe weather changes.

In addition, CYP must be engaged in discussions with decision-making bodies such as governments and other authorities to share their perspectives on climate change and inform policy based upon the needs and priorities of CYP. In the studies included in the literature review, CYP often stated that they want their governments to take more action to combat climate change and to listen and respond to the needs of CYP better. Whilst this was less discussed in the RCPCH roadshows, CYP highlighted how healthcare services and staff can support CYP during the climate crisis by providing education, support, lobbying governments, and acting as a voice for CYP.

Various findings and solutions can be drawn from this report as it includes an in-depth analysis

of other sources and studies that engaged with CYP about climate change topics as well as primary evidence from engagement sessions conducted by the RCPCH CYP Engagement team. Based off of this report, there is an overarching call to action for governments both in the UK and internationally to ensure that policies and programmes are being implemented that will create a sustainable and lasting future for CYP.

7.1 Calls to action – what CYP want to see

A session was held with the RCPCH &Us Climate Changers in August 2023 where they reviewed the data and findings from this report. In the session, CYP were asked to identify which themes within the report were the most important to them in order to develop recommendations that reflect their needs. During the discussion, they highlighted that it is important to increase knowledge about climate change and the effect it has on other issues because by increasing knowledge, awareness increases which can lead to a call to action. The recommendations informed and developed by children and young people are as follows:

- We must be meaningfully engaged in discussions on climate change with decision-making bodies such as governments and other authorities to share our perspectives and inform policy based upon the needs and priorities of us as children and young people.
- We need governments and healthcare services to recognise and act upon the mental health challenges posed by the climate crisis, particularly the rise in eco distress and/or eco anxiety amongst children and young people. There must be accessible mental health services which address climate-related stress and anxiety so that children and young people, are supported to cope with these challenges.
- We strongly believe that local authorities should implement comprehensive climate change education programmes in schools, including climate resilience education to raise awareness and prepare us for extreme weather events linked to climate change. These programmes must empower children and young people by providing us with reliable information and knowledge as well as the skills to manage our health in changing environmental conditions.
- We are calling on our governments, local authorities, and healthcare services to develop and regularly update comprehensive climate resilience plans at all levels, ensuring the specific needs of children and young people are addressed, fostering a safe environment for us during emergencies.
- We strongly believe that everyone deserves the world, and that the world should be fair and equal for all. We believe that for some children and young people, the effects of climate change will be far worse because of other inequalities that they face. We need plans and policies that prioritise communities more at risk of health inequalities, so that children and young people are not adversely affected. This includes improving healthcare access, air quality, and supporting young people to be ready if there is a climate or weather emergency.
- We demand our governments, businesses, and other authorities to take decisive actions to reduce the wider health impacts of climate change, such as by working to decrease air pollution. We need cleaner energy alternatives, sustainable transport, and planning for green spaces in urban areas to create healthier environments for children and young people and reduce our exposure to pollutants.
- We need governments, healthcare services, and other research bodies in the UK and abroad to prioritise research to understand how we, as children and young people, perceive healthcare

services and their role in supporting us during the climate crisis, benefiting both UK-specific healthcare policies and international collaboration efforts. As part of this, we want to see more done to look into creating sustainable medicines that help us and help the planet too such as moving to powdered inhalers, feeding tubes that are made from more climate conscious materials and reducing single use plastics.

7.2 Role of paediatricians and healthcare services

Based upon the findings from the literature review as well as the voicebank data, several recommendations aimed at paediatricians and healthcare staff were identified in order to better support children and young people during the climate crisis. These recommendations were also informed by CYP, and include:

- We need mental health support services for us and our families that are accessible and provide us with the tools to manage climate-related stress effectively as the prevalence of eco anxiety and eco distress is increasing.
- We need paediatricians and healthcare professionals to act as advocates for our voices and rights in climate change discussions, both within healthcare systems and at broader policy levels, by working with policy makers and other stakeholders to address climate change issues affecting children and young people.
- We want healthcare professionals and services to develop and share resources that help spread awareness and knowledge about climate change and its impact on health, specifically for children and young people with long term conditions. For example, developing resources and information about the increased prevalence of seizures for CYP with epilepsy during heatwaves. Education and resources should be targeted both at CYP with long-term conditions as well as their friends and family in order to provide extra support.
- We are recommending that healthcare services collaborate with local organisations and charities to develop and strengthen support networks and community programmes aimed at helping us and our families navigate the climate crisis. This would help promote initiatives that foster resilience, community engagement, and mutual support during climate-related events.
- We need healthcare staff that actively listen to us and our families, valuing our input and concerns related to climate change. Healthcare staff must also tailor health plans and interventions to meet the specific needs and vulnerabilities of children and young people and ensure that discussions about climate change, awareness and medicines that protect us and the planet are fully understood by children and young people.
- We require additional resources and support for families who are most subject to inequalities exacerbated by climate change, such as those in marginalised communities or low-income areas. This could include increasing their access to healthcare services and signposting them to community programmes and services.

8. Authorship and contributions

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Preserving the world for future generations:

Children and young people's perspectives
on how to tackle climate change

October 2023

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