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Deeble Institute for Health Policy Research

# **Issues Brief**

no: 51 19 July 2023

Promoting mental health in a changing climate: children and young people as a priority population group

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Sponsored by the Healthy Environment and Lives (HEAL) Network









# **Acknowledgements**

I would like to acknowledge the Healthy Environment and Lives (HEAL) Network for supporting my scholarship as part of the Deeble Institute for Health Policy Research placement, to develop this policy brief.

I convey my sincere gratitude to A/Prof Rebecca Haddock (Executive Director, Knowledge Exchange Australian Healthcare and Hospitals Association) for her advice and feedback on the policy brief and her support throughout the placement. I would also like to acknowledge the staff at the Australian Hospital and Healthcare Association (AHHA) for their ongoing professional support. A special thank you to those stakeholders who met with me and contributed to this brief.

I thank my PhD supervisors, Dr Rebecca Patrick (University of Melbourne) and A/Prof Claire Henderson-Wilson (Deakin University) for encouraging and supporting me to undertake this placement.



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# **Key Messages**

Children and young people are among the priority population groups that are disproportionately affected by mental health impacts of climate change. 75% of the lifetime cases of mental health problems start by age 24 years.

There is a limited number of studies exploring the impact of climate change on children's and young people's mental health. Lack of knowledge and awareness on mental health impacts of climate change has been a major policy barrier in managing this issue and developing early intervention aimed at children and young people.

Poor consultation of young people by government and a lack of inclusion in decision making processes, specific strategies or actions targeted towards children and young people suggest that current policies are unlikely to meet priority population needs. The impacts of climate change on the mental health of children and young people must be considered when developing and implementing the national strategy on health and climate change.

Mental health services in Australia are not well-equipped to address climate change related mental health issues. Government should incentivise and adequately resource climate change specific mental health services for this priority population to meet the growing demand.

Climate change related concerns in children and young people are amplified by climate change related misinformation on social media. Therefore, programs that promote children's and young people's mental wellbeing, including appropriate resourcing for schools, and national evidence-based guidelines on climate change misinformation must be developed.

Recognition of the impact of climate change on the mental health of children must be included in the national education curriculum, with a focus on climate resilience, active citizenship, and media literacy.

There are a limited number of safe spaces for children and young people to come together and discuss their concerns about climate change. Community level strategies to support children and young people to cope with climate change have yet to be developed and programs that promote coping strategies for children and young people in community settings should be prioritised.



# Recommendations

#### Recommendation 1

Resource a comprehensive evidence base around the impact of climate change on the mental health of children and young people.

#### **Recommendation 2**

Provide training for mental health professionals to address climate change related mental health issues.

#### **Recommendation 3**

Develop national guidelines on social media and misinformation including climate change misinformation.

#### **Recommendation 4**

Provide support for safe spaces for children and young people to discuss climate change related concerns.

#### **Recommendation 5**

Implement a focus on climate resilience, active citizenship, and media literacy in the education curriculum.

#### **Recommendation 6**

Children and young people must be included/represented in decision making around health and climate change.





# **Executive Summary**

Climate change related mental health impacts are a growing concern to children and young people in Australia. The lack of knowledge and awareness on this issue makes it difficult for the government and the health promotion sector to implement effective mental health promotion strategies.

Not including children and young people in the decision-making process regarding climate change and health/mental health exacerbates feelings of hopelessness and powerlessness. Social media misinformation on climate change impacts increases mental health issues among children and young people.

Mental health services in response to impacts of climate change on mental health have yet to be established. The need for a systematic change in mental health services and education curriculum to promote children's and young people's mental health is highlighted in this brief.

Understanding how children's and young people's mental health is affected by climate change is vital for reasons including:

 As a population, they will have to bear the consequences of climate change impacts throughout their lifetimes, and therefore, it is important to recognise strategies to reduce these impacts and promote their mental health;

- 75% of the lifetime cases of mental health problems start by age 24 years, therefore early intervention aimed at children and young people may have lasting impacts on the rest of their lifespans;
- they are emerging leaders of society and how they are responding psychologically now is critical for their current and future decision-making processes.

This Issues Brief uses the Ottawa Charter for Health Promotion Framework to guide recommendations that promote children's and young people's mental health in the face of climate change.

The importance of implementing early interventions, adaptation strategies, and actions to promote children's and young people's mental health in a climate impacted Australia.



# **Background**

Globally, mental health issues represent a significant public health burden. Yet, there is a large gap between mental health demands and the resources and systems needed to address them. According to the World Health Organisation (WHO) (2022), most people with mental health conditions do not receive any care.

Extreme climate events have a range of impacts on humans' physical and mental health. This includes significant short-term health impacts including physical injury, respiratory illness, and cardiovascular issues (Whitmee et al., 2015); as well as long-term outcomes such as eco-anxiety and mental health trauma (Usher et al. 2019; CSIRO 2020).

In Australia, 54% of people report having directly experienced climate change related extreme weather events (Patrick et al. 2022); and it has been found that one in four people with direct experience of a climate change related event meet post-traumatic stress disorder (PTSD) criteria. Among those people who have not had a direct experience of a climate related event, symptoms of pretrauma could be seen, particularly in younger age groups (Patrick et al. 2022).

Children's and young people's mental health issues related to climate change

Nearly half of the world's 2.2 billion children are at "extreme high risk" from climate change impacts (UN Children's Fund 2021).

Children and young people are at a higher risk of developing climate change related mental health issues than adults (Burke et al. 2018; Patrick et al. 2022). In 2021, a survey of 10,000

young people from 10 countries including Australia (Marks et al. 2021), found that:

- 84% of the young people were at least 'moderately' worried, including 59% who were 'very' or 'extremely' worried about climate change and the government's response to climate change.
- Over 50% of respondents reported feeling sad, anxious, angry, powerless, helpless, and guilty about climate change.
- More than 45% of respondents expressed that climate change-related feelings negatively affected their daily life and functioning.

Participants recorded a range of negative thoughts about climate change directly. It has also been found that the experience specifically of drought by adolescents is associated with emotional distress, resulting in greater intellectual engagement with climate change, for example taking climate action (National Workforce Centre for Child Mental Health 2023; Edwards, Gary, & Hunter 2015; Dean & Stain 2010).

The 2022 Mission Australia Youth Survey (Mission Australia 2022) of 18,800 participants (15-19 years of age) identified climate change and mental health as two of the most important issues in Australia. According to the 2022 Climate Council survey (Bradshaw et al. 2023) on mental health impacts of climate change, 45% of parents/carers/guardians surveyed stated that their children had experienced mental health issues following climate change related extreme weather events.



Pathways leading to increased mental health risk in children and young people

Mental health issues are a socio-ecological determinant of health and climate change impacts mental health through two pathways, directly and indirectly (Clemens et al. 2022; Charlson et al. 2021).

#### Direct pathways

Direct impacts of climate change on children include physical traumas associated with extreme weather events. For example, these may include physical injury and fatality, or respiratory and heat related illness that are a consequence of floods and bushfires (Whitmee et al. 2015).

A survey conducted by the Australian National University on the health impacts of prolonged exposure to bushfire smoke, due to the 2019-20 bushfires in and around the Australian Capital Territory, reported that out of 2084 adult participants, 97% experienced at least one physical health symptom linked to smoke. Over 55% of participants reported feelings of anxiety and depression (Heffernan et al. 2022).

Mental health trauma in children can stem from climate change related extreme weather events and include psychological disorders such as PTSD (Charlson et al. 2021); as well as depression and anxiety, sleep issues, cognitive deficits, higher rates of social phobia, and separation anxiety (Lawrence et al. 2015).

Children are also known to struggle with emotional regulation linked to climate change exposure, including distress, grief, and anger; loss of identity; feelings of helplessness and hopelessness; higher rates of suicide; and increased aggression and violence (Clayton et al. 2017). Together, mental health trauma and emotional dysregulation related to climate change events, can predispose children to adverse mental health outcomes in adulthood (Burke et al. 2018). Australia's average annualised temperature has increased by 1.4°C since 1960 (IPCC 2021) and the direct effects of temperature can also exacerbate or cause a relapse of existing mental health issues (Felix et al. 2011).

#### Mental health impact of climate change related extreme weather events in Australia

Black Summer Bushfires A preliminary report from the Australian National Bushfire Health and Wellbeing Survey (Heffernan et al. 2022) of 8000 households found widespread and lasting impacts on the mental health of those affected by the Black Summer Bushfires of 2019-20. The survey noted two in five Australians under 18 were personally affected the bushfires; and that directly affected parents perceived their children as having greater emotional and behavioural challenges than non-affected children. The report recommended prioritising children's mental health needs after bushfires, to meet their unique requirements.

Flooding A survey of residents following the Northern Rivers (NSW) floods in 2022 found that of 800 respondents, only 20% agreed or strongly agreed with the statement "I am coping well with the associated stresses and challenges of recovering from these floods" (Birch & Luke 2022). Of survey respondents, approximately 21% agreed or strongly agreed with the statement "I am satisfied with the mental health support that has been offered". The report highlights the significant and ongoing mental and material challenges facing Australians in the face of recent, unprecedented flooding.



#### **Indirect Pathways**

Indirect impacts occur longer term and are mediated by social and economic disruptions relating to climate change (Charlson et al. 2021). Children are more susceptible to those

consequences related to food and water insecurity, loss of land, flight and migration, overpopulation in cities and increased air pollution, and infectious diseases (Clemens et al. 2022).

#### Water insecurity in Western Australia

Water insecurity, a risk factor for poor health, is already impacting of some Aboriginal communities in rural and remote Australia. In 2021, the Western Australian Auditor General (2021) reported 37 communities with unfit drinking water supplies due to microbial and nitrates or uranium contaminations. This lack of access to safe drinking water has been linked to high levels of diabetes and renal disease among this population (Moggridge, Beal & Lansbury 2022; Knibbs & Sly 2014).

Both direct and indirect pathways are multidimensional, unpredictable, and can influence mental health and psychosocial wellbeing in a variety of ways that are yet to be fully understood (Hayes et al. 2018).

Eco-emotions and mental health issues Mental health and psychological distress relating to climate change in children and young people consists of a range of ecoemotions, including:

- Eco-anxiety: anxiety and distress linked to climatic changes and one's knowledge of them (Hayes et al. 2018; Usher et al. 2019).
- Solastalgia: emotional or existential distress caused by caused by climate change including, the loss of, or incapacity to derive solace from, familiar environments (Albrecht et al. 2007).
- Pre-trauma: occurs in anticipation of future threats due to climate change (Kaplan, 2020).
- PTSD: intrusive and disturbing recollections of a traumatic event (Cianconi et al. 2020).

Other emotions including stress, anxiety, hopelessness, powerlessness, and worry about the impact of climate change on their future are also experienced by children and young people (Burke, Sanson & Van Hoon 2018; Gunasiri et al. 2022a; Gunasiri et al. 2022b).

The 2020 Australian National Survey on Climate Change and Mental Mealth, conducted by researchers at Deakin and Monash universities (Patrick et al. 2022), included responses from nearly 5,500 respondents aged 18 years and over.

Results from the survey found that young people (18-24 years) and young adults (25-34 years) are experiencing higher rates of ecoanxiety than the older age groups (>35 years). Specifically, 18-24 year old young people reported:

- 24 % eco-anxiety rates compared to 13% (35-44 years), and 7% (45-54 years);
- 29 % pre-trauma symptom rates compared to 21% (35-44 years) and 14% (45-54 years); and
- 32% post trauma symptom rates compared to 25% (35-44 years) and 22% (45-54 years).





Data suggests that younger age groups are at a higher risk of developing climate change related mental health issues compared to older age groups.

75% of lifetime cases of mental health problems start by age 24 years (Kessler 2005). In order to decrease the future burden of disease and related healthcare costs, mental health interventions aimed at children and young people and that consider climate change must be identified, developed and implemented. This will require the understanding of how children's and young people's mental health is affected by climate change, particularly as this age group will bear the consequences of climate change impacts throughout their lifetime.

Programs must be aimed at both reducing the impacts of climate on mental health and promoting mental health in the face of climate change. The identification, development and implementation of those strategies required to reduce the impacts of climate change on mental health, and promote mental health, will need to be supported.

# The Ottawa Charter for Health Promotion Framework

The Ottawa Charter for Health Promotion (WHO 1986) is a framework that can be used to understand issues related to health. It considers personal and social development through education for health, increases alternatives to encourage people to gain control over their health and wellbeing, and

provides pathways to improve life skills (WHO 1986).

The Framework (Figure 1) identifies five key action areas in health promotion;

- building healthy public policy,
- reorienting health services,
- creating supportive environments,
- developing personal skills, and
- strengthening community action.

The framework aims to reduce differences in current health status, enable equality, and provide resources for people to reach their desired health potential and have been used in this brief to guide the recommendations to promote children's and young people's mental health.

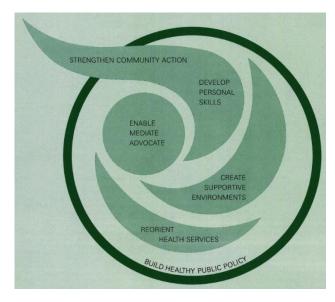


Figure 1. The Ottawa Charter for Health Promotion Framework (WHO 1987).



# Gaps in knowledge to inform policy development

There is limited information on the relationship between climate change and children's and young people's mental health. Consequently, the extent of this health crisis is not yet fully understood, making it difficult for governments to plan strategies to address it. This gap in knowledge is further is exacerbated by the novelty of research in this area and the lack of diagnostic tools available to clinicians to be able to capture the impact of climate change on mental health.

For example, while the determinants of children's and young people's mental health in a climate change context (e.g., government inaction, intergenerational dissonance, social media) are known (Gunasiri et al. 2022a, Gunasiri et al. 2022b), there is an absence of in-depth analysis to understand and conceptualise the relationship between the range of determinants and how they impact mental health (Table 1).

Type of study	Gap	Reference
Scoping review on eco-anxiety in children using studies published between 2000 and 2021, globally.	Absence of inferential statistics / unable to sample randomly and draw conclusion about population.	Léger-Goodes et al. (2022)
Scoping review on climate change impacts on the mental health and wellbeing of young people.	Lack of evidence on mental health impacts of climate change in general.	Ma, Moore & Cleary (2022)
Scoping review on climate change related mental health.	No recognition of children and young people as a priority population group.	Hayes et al. (2018)
A systematic descriptive review on the impact of climate change on mental health.	Absence of evidence on the causal pathways, and differential impacts of climate change on children's and young people's mental health.	Cianconi, Betrò & Janir (2020)

Table 1. Climate change-mental health related studies and knowledge gaps.

The lack of studies on children and young people acts as a barrier in understanding and conceptualising this issue and identifying effective solutions. To inform policy development, government should support

research that considers the inclusion of children and young people as a priority population group when exploring the mental health impacts of climate change (Léger-Goodes 2022).



Systems dynamics approach to mental health interventions for children and young people in a climate change context

Australian health policies around mental health promotion have failed to include children's and young people's own perspectives and suggestions. As a result, effective interventions targeted at this population group have yet to be implemented.

Regarding climate related impacts on mental health, understanding policy actions that are acceptable to children and young people will be necessary and a systems dynamics approach that incorporates participatory research will be required to facilitate a mapping process and discussion that will enable the youth perspective to be incorporated into government approaches (Sayal et al. 2016).

Understanding the issue at different levels and recognising the relationships between different components of the system is critical for promoting mental health and reducing inequities in health (Charlson et al. 2021; Currie, Smith & Jagals 2018; Durch, Bailey & Stoto 1997).

A systems dynamics approach can be used to demonstrate how children and young people identify mental health determinants that they think are affected by climate change.

#### Systems dynamics

Implementing policies which do not take into consideration the complexity of the context within which they will be operating will lead to poorer outcomes for recipients of the mental health system.

Systems dynamics (SD) is an approach to understanding the nonlinear behaviour of complex systems over time. As a method, it is currently being used in different sectors to provide direct and indirect decision support for policies and decision-making processes (Currie, Smith & Jagals 2018). SD examines the system at different levels, from an individual to society, and focuses on the relationships between factors that drive a problem rather than focusing on separate factors in isolation (Currie, Smith & Jagals 2018).

To date, however, this approach is not widely used in global environmental health policy. This is likely due to the design of governance and decision-making structures which are unable to incorporate the multi-sectoral policy advice provided through systems dynamics.



# Keeping the future in mind: A systems understanding of climate-related mental wellbeing among young people in Australia

Using a systems dynamics approach known as Group Model Building, the 'Keeping the Future in Mind' project has been developed by Deakin University to assist map the drivers of climate-related mental wellbeing, build consensus between experts from different fields (psychologists, health promoters, youth workers etc.) and to support the identification of appropriate solutions to improve the mental wellbeing of young people aged 18-24 years in Australia.

The project included a series of group discussion activities which were simultaneously translated into a visual "map" or a causal loop diagram of the key issue (Figure 2). This was followed by the identification of key action areas and strategies to promote young people's mental health in a changing climate.

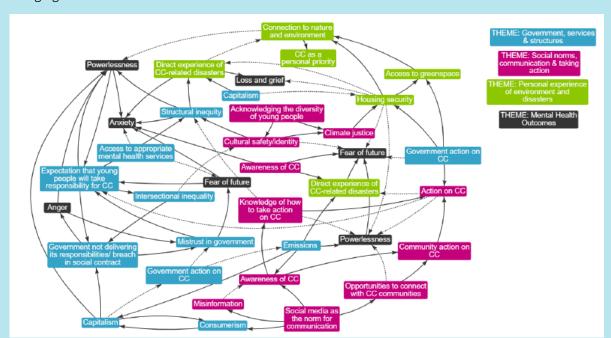


Figure 2. Causal Loop Diagram identifying key factors affecting climate-related mental wellbeing in young people (Noy et al. 2022).

Four main themes consisting of factors affecting this relationship were identified. They are, government, services, and structure (blue); social norms, communications and taking action (pink); personal experience of environment and disasters (green); and mental health outcomes (black).

Solid arrows represent positive relationships (when one factor increases/decreases the other factor also increases/decreases) and dotted arrows represent negative relationships (when one factor increases the other factor decreases and vice versa).

For example, "government not delivering its responsibilities/breach in social contract" can increase feelings of "anger" in young people. On the other hand, "government action on climate change" can decrease the generation of "emissions" which could then decrease feelings of "powerlessness".



Co-designing studies with children and young people

To improve decision making related to children and young people, the development of health research, policies, and interventions should be co-designed in collaboration with those directly impacted. In this regard, government must recognise that young people are experts in their own lives with valuable insights into their own needs; and that the use of co-design, as a process for policy development in Australia, will be essential for implementing better mental health interventions for children and young people. In particular, those with lived experiences of climate related mental health issues, and the service providers that support them (Vichealth 2019).

The importance of applying a climate lens to policy, strategy, and programs has been long recognised (OECD 2009). However, there are limitations around enforcing policy decisions related to the impacts of climate on health and the effectiveness of strategy implementation when conducted in real settings.

In the United States, a climate lens is applied to the assessment of climate change related health risks and their subsequent integration into policies that promote public health (Salas et al. 2020). In this regard, Australia will release its first national health and climate strategy in 2023, in which consideration will be given to increasing connections between climate policy and public health policy (Department of Health and Aged Care 2023).

However, for the translation of policy decisions into action, approaches that are codesigned must also be implemented (Nous Group 2021).

The use of co-design approaches in a climate change-mental health context recognises a range of stakeholders central to the implementation of programs and approaches in this field. This includes:

- people with lived experience of mental illness,
- vulnerable communities in the face of mental health impacts of climate change,
- healthcare professionals, and
- decision makers (Charlson et al. 2022).

In Australia, while co-design has been used in the design and implementation of mental health services, such approaches in climate change-mental health settings are limited, and the involvement of children and young people has largely been absent.



#### Adapting a co-design approach to design an acute mental health inpatient unit in Victoria

Under the Royal Commission into Victoria's mental health system, a co-design team in Victoria has designed and developed the operational model of care for an acute mental health care unit under. They came across a range of opportunities, challenges, and strategies when designing and implementing the co-design project (Figure 3). Understanding and addressing barriers to co-designing can help improve the use of co-design approaches in mental health services.

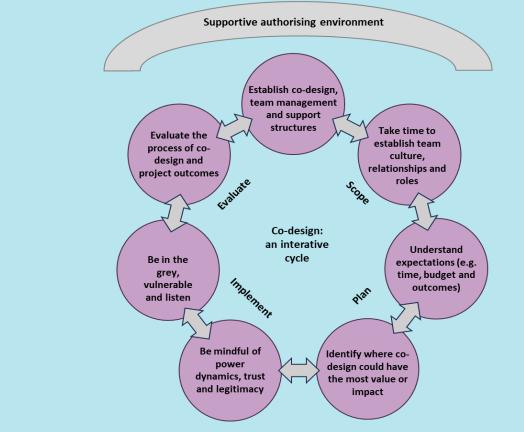


Figure 3. Co-design approach (adapted from Tindall et al. 2021).

To gain an in-depth understanding of the issues children and young people face, a codesign approach is critical to ensuring that children and young people are part of the solution to effective mental health promotion.

This will require the establishment of codesign teams, in which remunerated roles are established and time is allocated to foster team culture, relationships, and roles (Tindall et al. 2021). Consideration must also be given to the impact of power imbalances, the drive

to make fast-paced decisions, and feelings of distrust due to previous experiences or projects (Tindall et al. 2021).

In Australia, co-design approaches should be standard when implementing programs, research, and quality improvement that involve climate related mental health of children and young people.



# Measuring the differential impact of climate change

Health, social, and structural vulnerabilities can all be influenced by pre-existing mental health conditions, socio-economic status, sexuality, disability, ethnicity, and/or gender. Those who experience these vulnerabilities are more prone to mental health issues, experience difficulty in coping, and have challenges with managing emotions, compared to the general population (Schneiderman, Ironson & Siegel 2005).

The impact of climate change on mental health can also differ according to

demographics (Patrick et al. 2023). For example, in Canada, a survey of 3000 respondents (18+ years) has examined the impact of health, and social, and structural inequities on mental health following the COVID-19 pandemic. It was found that the Canadian population, in general, experienced a deterioration in mental health and coping which varied according to demographics (Jenkins et al. 2021).

In Australia, studies on how demographics impact climate related mental health of Australian children and young people (<18 years) have been lacking.

#### Impact of demographics on eco-anxiety rates in Australian adults

In people aged 18 years and above eco-anxiety, pre-trauma, and PTSD differ between different age groups, gender, location, and socio-economic status.

An Australia-wide survey (conducted by Deakin and Monash Universities) of 5483 respondents (5370 completed the eco-anxiety scale) reported on levels of eco-anxiety among the following subgroups (Patrick et al. 2023):

- Age group: 23.53% (18-24 years) vs 7.32% (45-54 years) and 3.45% (65-74 years)
- *Sex:* women 9.8% vs men 8.27%
- Respondents by state: NSW 10.15% vs Victoria 9.81% and Queensland 9.01%
- Area disadvantage (IRSD quintiles): Area 1- 11.48% and Area 2 11.05%
- Experience of climate change: 10.98% vs 7.55% (none)

While the mental health impacts of climate change varied between the subgroups being examined, the greatest levels of eco-anxiety were recorded among young adults, aged 18-24 and 25-34 years.

Programs of work that focus on demographic issues pertaining to adults may not be applicable to children and young people in different communities and contexts; and without a clear understanding of the differential impacts of climate change on health, it will not be possible to target interventions that meet the requirements of a particular population group. Developing an understanding of the differential impact of climate on young people is a necessary step to

reducing mental health inequalities for this priority population. This will require government leadership that recognises and supports developing an evidence base for policy design and implementation around climate change impacts on children's and young people's mental health. This will also require consideration of support for children and young people experiencing these impacts (Martin et al. 2022).



# Young people's engagement in government decision making processes

Children and young people have limited political agency to influence the decision-making process. This is especially true for those under 18 years as a consequence of their ineligibility to vote (Martin et al. 2022). This lack of agency has been found to create feelings of disempowerment among this age group, which in turn leads to negative impacts on mental health as a consequence of increasing feelings of frustration, powerlessness, hopelessness, and anxiety (Gunasiri et al. 2022; Marks et al. 2021).

Understanding the impact of climate change on children's and young people's mental health is critical to providing this priority population a voice for action and advocacy, including through the facilitation of children and young people's involvement in government decision making process.

For example, a study conducted by the Council of Europe's Youth Department has explored innovative forms of youth participation in the decision-making processes at local, regional, national levels (Crowley & Moxon 2017); finding co-management, co-production, and digital participation as effective at improving youth participation. However, to be successful, it was also found that new approaches should have clear objectives and be systematically evaluated (Crowley & Moxon 2017).

In Australia, young people must also be involved in the decision-making process. This could occur through co-design and systems approaches and through youth advisory groups. In Australia, a youth advisory group

has been established by the Australian Youth Affairs Coalition (2023), which aims to provide young people with opportunities to work with federal departments on a number of issues, including mental health and wellbeing.

As part of a priority population group in a climate change context, youth advocacy groups, including the Australian Youth Affairs Coalition, can provide effective and feasible strategies to promote children's and young people's mental health, by building on their own lived experiences.

In order to achieve positive health outcomes, the direct involvement of young people in the decision-making process, including in the context of climate change, must be viewed as analogous to the co-design process for policies and programs.

# Climate change and mental health policy

UNICEF (2021) identifies climate change as a pressing child-rights challenge. As a priority population group in a climate change context, children and young people have a right to participate in climate change related decision-making processes at local and global levels. They play a vital role in climate change adaptation strategies and disaster risk reduction by utilising their energy, hope, and optimism to work for a greener future (Berry 2021; Seddighi et al. 2020).

To date, Australia's climate change mitigation policies have been inconsistent, and a national strategy for health and climate is under





development (Department of Health and Aged Care 2023). However, for the strategy to have a meaningful impact, it is critical that it will be comprehensive and considered in its approach to the needs of vulnerable and priority populations, including children and young people.

To ensure that the strategy takes into consideration the impact of climate on children's health, including mental health, this priority demographic must be considered in the consultation and implementation phases.



# Mental health service response to climate change

In Australia, mental health services that are specifically designed to manage the impacts of climate change on mental health have yet to be broadly established. Where they exist, services responding to climate-related extreme weather events have been shown to be vital in responding to indirect and longterm mental health impacts of climate change (Palinkas et al. 2020). These include, for example, individual and community resilience programs, risk communication interventions, mental health interventions to prevent and treat mental health issues related to traumatic events (Hayes et al. 2018; Bourque & Willox 2014). Without targeted mental health services, addressing the direct and indirect impacts of climate change on children's and young people's mental health is challenging (Ma, Moore & Cleary 2022; Vergunst & Berry 2022).

To address the increase in climate related mental health issues across the population more broadly, solutions need to come from policies that both aim to mitigate the impact of climate change and also promote mental health. As of 2023, there are no climate change specific counselling services targeting children and young people in Australia.

A number of barriers prevent the widespread implementation of climate change specific mental health services. These include:

- lack of training of mental health professionals to address climate change related mental health issues,
- insufficient consultation times,

- inflexible service provision,
- service capacity, and
- funding (Orygen 2018).

To meet the increase in demand for mental health services due to traumatic events, including climate related extreme weather events, additional support will be needed. Mental health professionals must be equipped and upskilled to respond to growing demand in this area. Professional colleges must support the development of training programs, in collaboration with mental health professionals.

People not receiving the treatment or support they need can experience preventable mental distress, stigma, and loss of life satisfaction. These issues can be addressed by patientcentred care in mental health services (Australian Commission on Safety and Quality in Health Care 2023; CHF 2020).

Government must develop a children and young people centred comprehensive mental health system that includes both child and family support (Boardman & Dave 2020; CHF 2020) This mental health system should be equipped to undertake prevention strategies, early intervention, crisis responses and therapeutic interventions for children and young people with serious mental health conditions.

In 2015, around one third of Australian adolescents with a mental disorder had not accessed formal support (Lawrence et al. 2015). Contemporary data on this issue is lacking.





Not seeking professional mental health support or the reluctance to seek support is a

major barrier to the provision of appropriate and timely care (Rickwood et al. 2007).

# Adolescent help seeking behaviours – 2017 LSAC Annual Statistical Report (Gray and Daraganova 2018)

The longitudinal study of Australian Children (LSAC) measured 'help seeking' (from a parent, friends, and teachers) when children were at 10-11 years, 12-13 years, and 14-15 years of age. At age 14-15, mental health help seeking from mental health professionals was measured.

- Only 9% (14 years) and 6% (15 years) of adolescents reported seeking help from mental health professionals
- 37% of adolescents reported seeking help from any formal source (e.g., teacher, other school staff, GP, mental health professional)
- 95% reported seeking help and 89% reported seeking help from an informal source (e.g., parent, friend, siblings, other relative/family member, other adult)

These findings show that while adolescents commonly seek help for mental health help through informal channels such as friends or family, adolescents were far less likely to seek help from mental health professionals. Higher levels of social support from peers and parents were associated with willingness to seek help in the future. This was evident in both formal and informal help seeking behaviours.

### Children and young people

Children and young people access mental health services less frequently compared to the overall population (Orygen 2018). While contemporary data is lacking, 2007 Australian Bureau of Statistics national survey found that only 23% of young people aged 16-24 years with a mental disorder had accessed mental health services.

In a 2014 survey, it was found that 39.3% of adolescents (13–17 years) with a mental disorder were not sure where to get help (Lawrence et al. 2015). In 2015, it was found that more than 3 in 10 adolescents with a mental health disorder could not afford to access mental health services (Lawrence et al. 2015). Evidence suggests that these issues have not improved in recent years (ACT Health 2020).

These barriers to access are compounded by the poor availability of mental health services for young people in general (Orygen 2018); and further complicated by the fact that access to services in isolation (when available) does not ensure that interventions aimed at children and young people are effective (Mitchell, McMillan & Hagan 2017; Lawrence et al. 2015).

The lack of appropriate services has further created a reluctance by this population to access to mental health services (Mitchell, McMillan & Hagan 2017), particularly when they believe it will not fit their mental health needs (Mitchell, McMillan & Hagan 2017). However, information on what constitutes an effective mental health service from the point of view children and young people is lacking.



Climate related mental health services

Limited awareness of climate change related mental health issues, along with a lack of awareness of available services, has been found to discourage children and young people from seeking mental health support in a climate change context (Noy et al. 2022; Mitchell, McMillan & Hagan 2017). In turn, issues of accessibility impact children and young people's confidence in seeking help (Salaheddin & Mason 2016).

These issues could be, in part, mitigated through government support for the development of climate related mental health literacy programs to increase awareness among children and young people. This should include training of mental health professionals to be able to address climate change related mental health issues (Orygen 2018).

#### Wait times

Long waiting times for accessing mental health services has a significant impact on young people (Orygen 2018). The Australian Psychological Society's survey of psychologists nationwide (APS 2022) found that:

- 73.5% of psychologists in metropolitan areas have a waiting list.
- Clients normally have a waiting period of up to 3 months. For some it may take longer than 6 months

Long waiting lists negatively affect young people's health and treatment, and are linked to treatment discontinuation, symptom deterioration, and decreased likelihood of seeking support in the future (Reichert & Jacobs 2018; Westin, Barksdale & Stephan 2014). Flexible, convenient (e.g., weekends and evenings), or extended hours should be introduced to encourage young people,

children, and their support people to attend mental health services.

#### Stigma

Stigma, as a consequence of personal experience (e.g., misconceptions about mental health issues and services), is a known barrier to children and young people seeking climate related mental health support (Mitchell, McMillan & Hagan 2017; Salaheddin & Mason 2016).

Children and young people experience demographic-based stigma, such as stigma related to their sexuality, low socio-economic status, or homelessness (Brown et al. 2016; Cummings & Kang 2012). While there is no evidence that programs specifically directed at helping children and young people combat stigma related to mental health help seeking exist, programs such as SANE Australia's StigmaWatch aim to reduce stigma related to harmful media portrayals of mental illness and suicide. Evaluation of the StigmaWatch program revealed that 1300 reports of stigmatising media portrayals of mental illness and suicide were lodged between 2017 and 2021 (Ross et al. 2023).

Similar programs focused on promoting children and young people's mental health help seeking, resilience, and with options to report stigmatising and harmful media portrayals of climate change related mental health issues and/or mental health issues in general, should be developed.

Programs that normalise seeking help for climate change related mental health issues should also be prioritised.



#### Primary care access

Primary care is the first point of clinical contact for mental health services in Australia (Australian Government Department of health 2019). Yet it is difficult to encourage young people to access mental health services, without first addressing barriers to accessing primary care (Australian Government Department of Health 2019; Levesque, Harris, & Russell 2013).

Access to bulk billing in general practice has been identified as major concerns of patients when accessing healthcare services. The Australian Healthcare Index report (2022) reported that:

 out of the 11,405 respondents nationwide; only 46% of young people aged 18-24 years would first go to GPs for advice,

- 33% of respondents identified "increasing out-of-pocket costs to see GP" as the next biggest healthcare concern,
- 26% of respondents noted that GPs had changed their prices, with 88% of them now paying more, and
- 64% of respondents reported that mental health is the medical condition that needs improved access to support services.

General practice is the gatekeeper to mental healthcare (Mental Health Australia 2021; CHF 2020). The sufficiency of initiatives to address issues of to address issues of access, affordability, and acceptability in primary care affects the implementation of policy opportunities that promote the willingness and ability of children and young people to use mental health services.



## Social media misinformation

National evidence-based guidelines for social media use in Australia have yet to be developed. This has contributed to a wealth of misinformation about climate change. Misinformation around climate change on social media is known to result in public confusion; and lead to government inaction, rejection of climate change mitigation policies, and in children and young people can result in negative mental health (Treen et al. 2020; UNICEF 2019a; Brulle 2018; Cook, Ellerton & Kinkead 2018). Children, with their developing cognitive and emotional capabilities are particularly vulnerable to miscommunication as a consequence of difficulties distinguishing between reliable information and misinformation. This results in a risk of perspectives becoming skewed among children and young people, and a generation who mistrusts public communication (UNICEF 2019b). The functioning of society and the economy is undermined by widespread misinformation (Colomina, Marcalef & Youngs 2021).

Internationally, several governments, including the European Commission and Canada, have introduced policies to limit the spread of misinformation online, with efforts to limit impacts on human rights and freedom of speech (Buckmaster & Wils 2019).

In Australia, the development and implementation of government regulation that balances various rights (e.g., freedom of speech) and addresses social media misinformation should be considered.

Policy makers, educators, and the public are also exposed to climate misinformation in the

media. For example, in order to sell the public on the continued use of fossil fuels, marketing plans have incorporated climate misinformation (Turrentine 2022). Instagram influencers have been reported to being paid to convince the public that gas stoves are more beneficial than electric ones (Palmer 2021).

The magnitude of and breadth of misinformation on social media is not well known. This is due in part to a lack of data and in part to an inability or unwillingness by government to address the issue. For example, in the United States, the 2023 Surgeon General's Advisory report on Social Media and Youth Mental Health (The U.S. Surgeon General's Advisory 2023) has made no reference to the impact of misinformation on mental health among this population group. This lack of information extends to our understanding of the impact of climate misinformation on children's rights (i.e., how restricting online information may affect children's rights).

In Australia, government efforts to combat misinformation have been narrow in scope, do not provide a holistic strategy which explicitly combats climate misinformation, or misinformation targeted towards children and young people. For example, in 2018, a taskforce was introduced in Australia to address threats to electoral integrity (Buckmaster & Wils 2019). Its role was to provide technical advice and expertise to the Australian Electoral Commission related to cyber interference with electoral processes. In 2019, a social media literacy campaign was introduced to coincide with the 2019 federal



election (Buckmaster & Wils 2019). However, this campaign only focused on alerting voters to check the source of electoral communication they may be exposed to during the 2019 federal election campaign.

In 2021, the Australian Digital Industry Group Inc published the Australian Code of Practice on Disinformation and Misinformation (DIGI 2022). The Code aims to provide protection against harms from the spread of social media/online misinformation (ACMA 2023). Its role includes the assessing of signatories' transparency reports, examining signatories' handling of user complaints, and encouraging

more platforms to sign up to the code (ACMA 2023).

In 2023, the Australian Government announced that the Australian Communications and Media Authority (ACMA) will be given new powers to begin to tackle misinformation on social media. These include holding digital platforms accountable for misinformation; and improving efforts to control harmful misinformation. However, these regulations lack appropriate policies to control the type of information or misinformation available around climate change on social media.

The 2021 European Commission's guidance on strengthening the code of practice on disinformation has been developed with the aim of (European Commission 2021):

- reinforcing the application of the code and expanding it beyond social media platforms,
- demonetising misinformation,
- expanding the coverage of fact checking information and, and
- encouraging users to recognise and flag misinformation and so-called 'alternative facts'.

The guidance highlights the key role of government and civil society organisations in managing misinformation. The code has proven to be effective at limiting the spread of online misinformation. This has been particularly evident during electoral periods and through quick responses to crises such as the COVID-19 pandemic (European Commission 2022).

Children are particularly vulnerable to misinformation and media literacy programs should be provided with strategies that allow them to distinguish between evidence-based information and alternative facts (Howard, Neudert & Prakash 2021). Australia should introduce regulations to control climate misinformation and ensure the transparency of digital media companies regarding news production and distribution.

Social media as a tool for supporting children's and young people's mental health

Excessive negative messaging and scaremongering related to climate change in media/social media, has been shown to not only disengage children and young people from climate change related content but also potentially desensitise them to alarmist messages (Hibberd & Nguyen 2013).



Threat information is information that undermines one's self-efficacy, (the ability to believe in the individual's capacity to carry out necessary actions) (Maran & Begotti 2021) and is commonly used in the media and social media around climate change content.

Negative feelings and eco-anxiety are common responses to negative news stories/content on climate change (Maran & Begotti 2021).

However, at the same time, social media can also be used as a tool to promote climate action which in turn can reduce levels of anxiety and promote mental health (Gunasiri et al. 2022a, Gunasiri et al. 2022b).

The impact of social media on mental health as a duality of the climate change experience (Gunasiri et al. 2022a)

The impact of social media on mental health has been explored using a mixed-method study to explore issues of mental health promotion related to climate change for Australian young people aged 18-24 years. 14 interviews and an online survey of 46 respondents were conducted. Social media engagement was found to impact young people's mental health; both negatively and positively.

Negative mental health impacts of social media engagement: The study found that climate information on social media can be overwhelming and confronting for young people. Young people expressed feeling hopeless and anxious when viewing negative social media stories about climate change. For example, when exposed to social media content on the impact of climate change impacts, such as increasing temperatures and rising sea levels.

Social media as a tool to promote climate action: Good news stories around people who care about the environment and people taking climate action were found to have a positive impact on young people. The participants stressed the importance of social media as a powerful tool in finding evidence on climate action and in giving people immediate exposure to news on/opportunities for climate action, globally.

Given the duality of influences that media and social media can have on climate change related mental health in children and young people, government should increase support for the mental health sector's engagement with these platforms, as a tool for supporting mental health and also for negating misinformation on climate change. For example, social media can be used to raise

awareness about climate change related mental health impacts, and coping strategies to manage mental health concerns or ecoanxiety in children and young people.

Tools should be developed and implemented by government in consultation with mental health professionals, researchers, and health promoters.



# The role of education in children's and young people's mental health promotion in a changing climate

In Australia, a national climate change education curriculum has yet to be established (Gobby & Variyan 2021). Consideration of the impact of climate change on health or mental health are also not included in the Australian education curriculum, despite climate change related concerns becoming increasingly common among children and young people.

The exclusion of these important issues from the curriculum does not support an environment in which children and young people know to seek mental health support when necessary (Beasy et al. 2022).

Formal education contributes to building confidence, social skills, and healthy habits in

children and young people. Mental health promotion in schools helps create a positive, safe, and supportive environment for students and plays a significant role in identifying signs of mental health issues, providing support, and referring students to appropriate health services (Victorian Government Department of Education 2023a).

Mental health promotion spans across every area in school including the culture, curriculum, policies, and activities (Victorian Government Department of Education 2023a), and all staff members should be involved in it.

#### The Mental Health Menu

In 2022, a mental health initiative was introduced into Victorian schools by the Victorian Department of Education (Victorian Government Department of Education 2023b). This initiative included a mental health fund, which allowed schools access to a 'Mental Health Menu' which provided schools with an opportunity to purchase evidence-based programs, including programs targeted at promoting student mental health, as well as providing individualised support for students.

The Mental Health Menu items have been through external assessments to examine their effectiveness at promoting student mental health and wellbeing and ensuring schools' access to evidence-based interventions to address issues related to mental health.

Schools are encouraged to have a focus on positive mental health promotion related programs and resources to promote mental health and wellbeing of students.

Considering climate change in the curriculum will facilitate improved engagement with mental health in children and young people (Noy et al. 2022). Government and educators should build an evidence-based curriculum that considers climate change related mental

health and wellbeing and is able to support climate resilience in children and young people. However, a number of barriers have been identified that affect the development of an education curriculum around climate change and health.

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#### These include:

- the cognitive bias of educators,
- climate related anxiety among staff, and
- limited space in the curriculum to include additional material (Seritan, Coverdale & Brenner 2022).

These barriers need to be addressed prior to implementing an education curriculum which includes an aspect of climate change related health/mental health impacts.

#### Addressing climate change and mental health in school curriculum.

Cognitive bias: A sense of urgency can be created using stories and images that that show devastating consequences of climate change. Even though it is tempting to use climate change related negative images and stories to create urgency, the excessive use of such imagery can increase distress in the audience (Center for Research on Environmental Decisions 2009).

To address this, educators should use case studies and personalise the consequences of climate change (e.g., thinking of someone who has been affected by a climate related extreme weather event), and making it less abstract and not overwhelming (e.g., focusing on the entire planet at once can be overwhelming) (Seritan, Coverdale, & Brenner 2022). Students and educators should also be encouraged to imagine a future that they desire, and plan actions that can be taken to reach that goal (Seritan, Coverdale & Brenner 2022).

Eco-anxiety or climate related anxiety: Eco-anxiety or helplessness related to climate change can lead to inaction feeding into passivity and despair. In turn, these feelings reduce one's motivation to learn about issues and lead to inaction in developing curricula and in teaching. Developing teams of likeminded staff will counter feelings of despair and passivity. It will also encourage action and support the planning, design, and implementation of the curriculum.

Limited space in school curricula: Introducing new topics to an existing curriculum can be challenging. Several creative strategies that are considered by psychiatric educators should be adopted by school educators to address this issue (Seritan, Coverdale & Brenner 2022). For example, capitalising on existing curriculum (e.g., mental health and wellbeing (VCAA, 2023)) to include an aspect of climate change impacts on health/mental health, and suggesting each educator/teacher include at least one teaching point on climate change impacts as part of their topic.

A focus on climate change related health and mental health impacts and coping strategies to manage mental health issues should be developed and included in the education curriculum. This could be supported by the Government and mental health providers. Without a focus on mental health promotion in a climate change context, children and

young people will have difficulty in building capacity and resilience to cope with their emotional responses to climate change (Léger-Goodes 2022; Sanson & Bellemo 2021).



# Barriers to and opportunities for coping and adaptation

For certain vulnerable population groups such as young people with pre-existing mental health issues, climate related worry can exacerbate their complexities (Ojala 2022). Climate change related worry is considered mainly as an adaptive response. In a climate change context, adaptation includes the range of coping strategies a person may take at an individual or community level to respond to climate change threats and other psychological processes (APS 2023a). Without psychological adaptation and coping in a climate change context, how an individual understands and perceives issues, how they react emotionally, how they make decisions, and how they behave in response to the issue can be affected (APS 2023a; Sciberras & Fernando 2021; Ojala 2012). It is important not to only focus on climate related emotions, but rather on how children and young people cope with their worries (Ojala 2022).

Children and young people have various ways of actively coping with climate related worries. These include (Ojala 2012):

- Problem-focused coping strategies: for example, searching for information, communicating about issue with others.
- Meaning-focused coping strategies: for example, using positive reappraisal and trust, finding meaning in challenging situations.
- De-emphasising the seriousness of the issue: for example, thinking that climate change is not a serious issue.

Young people who use problem and meaningfocused coping strategies to manage their climate change worries generally communicate more with their peers and family about climate change related issues.

However, young people who de-emphasise the seriousness of the issue tend to communicate less with others (Sciberras & Fernando 2021). Consequently, it is critical to provide opportunities to encourage children and young people to engage in more adaptive coping strategies and ensure that their worries are validated and taken into consideration when constructively responding to climate related issues (Sciberras & Fernando 2021).

This should involve incentivising the development and implementation of programs aimed at promoting meaning and problem focused coping strategies. These programs could be initiated along with safe spaces that offer children and young people tools to manage their climate related distress and promote mental health.

# Safe spaces to discuss climate change related concerns

In Australia, there is a lack places where children and young people can go to get support for climate change related concerns and worries, making it difficult for them to develop adaptive coping strategies (Gunasiri et al. 2022a; Sciberras & Fernando 2021).

To support children and young people in a climate change context, it is necessary to create an atmosphere of trust in which they





feel comfortable in actively engaging. Social support makes an individual feel that they are cared for, have support from others, and are a member of a supportive social network. While social support is beneficial in coping with stress and distress, it also improves psychological wellbeing and reduces distress during difficult times.

According to publicly available knowledge, there are no safe spaces for children and young people to share concerns about climate in community settings.

# What is considered a safe space for children and young people in a climate change context?

Children who do not have a social support network and relationships with other people are known to struggle to cope with difficulties in life (APS 2023b).

A safe space is a place where an individual can be themselves and feel cared for without being judged (Yee 2019). It can be online, offline, personal, or peer to peer. Ensuring that everyone is respected and can engage with conversations on their own terms with their preferred means of communication is vital in creating a safe space.

A quality improvement program, which outlines the key requirements that children and young people need in a psychological safe space has been developed for use in the United States (Harding 2019). These requirements include:

- creating a positive emotional atmosphere that that is respectful, equitable, and encouraging;
- demonstrating and practicing positive group management approaches such as calm redirection;

- ensuring it is an accessible and safe platform – assessing suitability for different people and their needs; and
- ensuring active engagement of young people without bias, from different socioeconomic status, genders, religions, or sexual orientation.

The effect of safe spaces for children and young people to talk specifically about climate change and related worries has yet to be examined, either in Australia or internationally.

A study on workplace mental health promotion has identified the importance of having safe spaces in a workplace setting (Noy et al. 2020). This study also found that finding time in a private space for debriefing and mutual support can promote positive mental health outcomes. Activities initiated by staff to enhance self-care, relaxation, and fun were also found to promote positive mental health outcomes (Noy et al. 2020).

This approach should be adapted by the government and the health promotion sector to support the development of safe spaces for children and young people in community settings; and which could be established using existing resources. For example, in community centres, university/school clubs, or via online platforms (e.g., Zoom) and hybrid options.

Funding should be provided to support the development of these programs in conjunction with health promotion officers in communities.



## **Conclusions and recommendations**

- A comprehensive evidence base around the impact of climate change on the mental health of children and young people.
- Training mental health professionals to address climate change related mental health issues.
- National guidelines on social media and misinformation including climate change misinformation.
- Safe spaces for children and young people to discuss climate change related concerns.
- A focus on climate resilience, active citizenship, and media literacy in the education curriculum.
- Representation and inclusion of young people in decision-making.

Recommendations under the key action areas of the Ottawa Charter for health promotion

The recommendations to promote children's and young people's mental health in a changing climate are stated under the key action areas of the Ottawa Charter for Health promotion framework and future research. They are:

- Building healthy public policy
- Re-orienting health services
- Creating supportive environments for health
- Developing personal skills
- Strengthening community action for health
- Moving into the future

Recommendation 1: Building healthy public policy - Funding and resourcing of a comprehensive evidence base

**Health promotion setting:** Government (national level)

Government investment in data collection and analysis using co-design and systems approaches to build consensus among children, young people, and stakeholders and tracking of the impact of climate change on mental health is essential.

To effectively use the full potential of systems dynamics to manage climate change related mental health issues, it is necessary for the governance and decision-making structures of public organisations to be well coordinated.

This will facilitate the development and implementation of mental health promotion programs and actions for individuals, the mental health sector, health organisations, and different levels of the government.

Government needs to allocate funding support and resources to initiate these programs.



Recommendation 2: Re-orienting health services - Training mental health professionals to address climate change related mental health issues

**Health promotion setting:** National and organisational levels

Upskilling mental health professionals to recognise and respond to climate related mental health issues needs to be prioritised. This is vital in encouraging children and young people to access mental health services. Increased training and upskilling for general practitioners and mental health professionals will help in recognising and responding to symptoms of pre-trauma, PTSD, climate anxiety, and other mental health issues related to climate change.

Training programs related to mental health assessment should be initiated and support for children and young people experiencing climate anxiety should be developed.

Evidence based information about protecting children, young people, and the wider public from climate related risks and managing their responses to these risks should be provided in the training programs. This is vital in providing mental health care and support.

Recommendation 3: Creating supportive environments for health - Guidelines on social media misinformation including climate change misinformation

**Health promotion setting:** Government (national level) and organisational levels

Appropriate measures to control the spread of misinformation in social media must be taken. At the national level, guidelines on managing misinformation on social media should be developed. This should include,

- the role of government (e.g., social media policy departments) in ensuring policy and guidelines for content providers are fit for purpose,
- fact checking, and
- collaboration with major social media companies to provide the public (e.g., children and young people) with more skills and tools to evaluate the information they encounter.

A pilot program should be developed and evaluated to assess the effectiveness of media literacy programs.

Government should incentivise the development of media literacy programs at organisational levels, for example schools and universities, to help children and young people recognise misinformation on social media and provide them with evaluation tools.

Recommendation 4: Developing personal skills
- Safe spaces for children and young people to
discuss climate change related concerns

Health promotion setting: National and
community (community and health promotion
sector) levels

Implementation of programs/methods to promote coping strategies with children and young people in community settings should be encouraged. The development, planning, and implementation of these programs should be supported by health promotion officers in community settings and mental health professionals. Most importantly, developing safe spaces for children and young people in community settings should be prioritised.

Various activities and programs such as climate change awareness programs, activities to increase contact with nature, self-care and



relaxation sessions, mindfulness programs, should be initiated in these spaces.

Government should incentivise pilot case studies to assess the effectiveness of using different types of safe spaces (e.g., community centres, online, school/university environmental clubs, or hybrid approaches) and development of programs, thereby promoting mental health.

Recommendation 5: Strengthening community action for health - A focus on climate resilience and active citizenship in the education curriculum

**Health promotion setting:** Government (national level)

A focus on climate resilience and active citizenship should be included in the Australian education curriculum to promote children's and young people's mental health. A comprehensive approach to climate change education that should inspire hope in children and young people and help them reach their potential through climate change related concerns includes:

- ongoing mental health support for students and educators (Seritan, Coverdale & Brenner 2022),
- appropriate and evidence-based information on climate change and related health/mental health impacts and how to cope with mental health challenges,
- mental health programs and activities to promote knowledge and awareness about climate change impacts on mental health,
- information on climate action that is currently happening in community, local, and global levels,

- developing awareness of available mental health support services, and
- encouraging participation in community action projects.

To initiate, a task force consisting of mental health professionals, health promoters, educators, and student representatives should be appointed.

Recommendation 6: Moving into the future - Inclusion of young people in decision-making and co-designing interventions

**Health promotion setting:** Government (national level)

As a priority population group in a climate change-mental health context, children and young people have a right to participate in decision making processes related to climate change at local and global levels.

The establishment of (or engagement with) a youth advisory group that provides government with the opportunity to consider children and young people's suggestions and recommendations relating to climate change concerns should be pursued. Using this approach, mental health considerations for children and young people should be integrated into the national strategy on climate change and health that is currently under development.

A co-design and systems approach (e.g., Group Model Building research approaches) should be incorporated when designing, planning, and implementing interventions for children and young people.

These approaches help identify evidencebased actions and recommendations based on lived experiences of children and young people to protect and promote their mental health.



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**Citation:** Gunasiri H and Haddock R. (2023). Promoting mental health in a changing climate: children and young people as a priority population group. Deeble Issues Brief 51. Australian Healthcare and Hospitals Association, Australia.

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