

# Nature Prescribing for Adolescent Health

Findings from a Scoping Review and Exploratory Study

**LESLEY GITTINGS, PHD**  
**SOPHIE PAQUET**

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**Presentation to WeCLISH Climate Cafe**

*On behalf of the Land-based Healing/Nature for Healing Research Team*

*Ataullahjan, A., Burke, S., van Hooren, T., McDougall, A., Macias, M., Samuels, B.,  
Struthers, N., Yawney, N., Ybarra, M., Zecevic, A.*







### Land-Based Healing Nature For Healing

The Nature for Healing program increases the opportunity for all to connect with nature for healing and healing through:

**Nature Prescription:** Written prescriptions for connections with nature between a healthcare provider and a patient and their family.

**Nature Spaces:** Creating more open spaces connected with nature both indoors and outdoors.

**Nature Prescription Example:**  
 Patient Name: Melissa Boudart  
 Prescription Details: 30 minutes a day of nature, 3 or 4 times with follow up in a week.

**Activities to Consider:**

- Use natural play materials
- Engage nature using each of your senses
- Create a nature meditation
- Find a window outlook for a different part of nature
- Watch or listen to nature. What are they doing and why?

**HEALTH BENEFITS OF CONNECTING WITH NATURE**

- Improves mental health
- Builds resilience
- Improves physical health
- Reduces stress

Physicians & Staff | Patients & Caregivers





# Land-based Healing | Nature for Healing



Medical Director, ChEHC ON;  
Pediatric Intensivist, Children's  
Hospital, LHSC; Assistant Professor,  
Schulich School of Medicine &  
Dentistry, Western University

*“Aims to enhance patient and family healthcare  
experience through increased exposure to nature, both  
inside and outside”*



Youth Indigenous Wellness  
Consultant, Children's Hospital,  
LHSC

- 📍 Children's Hospital, London Health Sciences Centre, London, Ontario
- Two objectives at Children's Hospital:
  1. Implementing **Nature Prescriptions** for In- and Out-Patients
  2. Developing and Enhancing **Naturalized Areas**

@ <https://www.natureforhealing.org>



# Objectives

## Today's Presentation

1. Present findings from a a scoping review on barriers and facilitators to implementing Nature Rx programs for child and youth health
2. Share findings from an exploratory study in London Ontario with adolescents, health and social providers on perceptions and experiences and suggestions for Nature Rx for adolescent health and wellbeing in London, Ontario
3. Discuss! We welcome your questions and feedback on this nascent programme of research



# Background: Nature Prescribing

SLIDE 05

- Nature prescribing: a type of social prescribing that involves a health provider, social provider, or educator giving a **recommendation to spend time in, and connect with, nature** (James et al., 2019; Kondo et al., 2020)
- Nature Rx are increasingly an adjunct to conventional healthcare focused on education and pharmaceutical treatment (Astell-Burt et al., 2022)
- Can be provided as a:
  - Written prescription
  - Verbal counselling
  - Referral to another provider or nature-based intervention (Kondo et al., 2020)
- Nature Rx programs are being implemented in various settings
  - The UK has launched a green social prescribing initiative to address poor mental health;
  - Canada has Parks Rx, an initiative driven by healthcare professionals with the aim of improving patient health by connecting them to nature



# Evidence on Nature Rx & Nature Exposure

- Recent systematic review and meta-analysis published in *The Lancet Planetary Health* on Nature Rx found (Nguyen et al., 2023)
  - Mental health benefits (anxiety and depression);
  - Cardiometabolic improvements;
  - Increased daily step counts;
- Nature Rx benefits extend beyond clinical outcomes to include pro-environmental behaviours (Martin et al., 2020) and improved social connectedness (Leavell et. al, 2019)
- Nature Rx literature builds on health benefits of nature exposure:
  - Cardiovascular, psychological, respiratory, neurological, and digestive processes (Maas et al., 2009)
  - **Improved** concentration, positive affect (Greenwood & Gatersleben, 2016), attentional control (Schutte et al., 2015),
  - **Reduces** emotional symptom scores (Amoly et al., 2015), depression (Bang et al., 2018), stress (Wells & Evans, 2003), and attention deficit and hyperactivity disorder symptomatology (Kuo & Taylor, 2004)
  - ***Land-based healing: Indigenous worldviews have long-acknowledged the relationship between the health of people and the environment (Redvers, 2020)***



# Adolescence, Nature and Health

- **Few studies and Nature Rx programmes for young people:**
  - 2% of identified studies in recent systematic review and meta-analysis focused on adolescents aged 10-18; 10% focused on children under 10 (Nguyen et al., 2023)
- **Adolescence is a socio-biological window of opportunity**, major socio-developmental transitions with lifelong implications;
- **Recent shift towards chronic conditions in adolescents** (Patton, 2016) incl.
  - Substance use
  - Overweight and obesity
  - **Mental health challenges** - affect 1.2 million children, adolescents and youth in Canada (MHCC, 2017)
  - Mental health is a **strategic priority** of the Canadian Paediatric Society (Canadian Paediatric Society)
- **In Canada, there is a growing vulnerability to **eco-distress** amongst adolescents and youth:**
  - 63% of Canadian youth reported feeling anxious about climate change, including feeling **afraid** (66%), **sad** (65%), **helpless** (58%), and **powerless** (56%) (Galway & Field, 2023);
  - Little is known about risks and benefits for Nature Rx for young people living with eco-distress
  - There exists a relationship between connectedness to nature, and pro-environmental behaviour (Whitburn et al, 2020)
  - Facilitating a stronger connection to nature may result in greater engagement in pro-environmental behaviours, yet more research is needed (Whitburn et al, 2020)





# Adolescence, Nature and Health (cont)

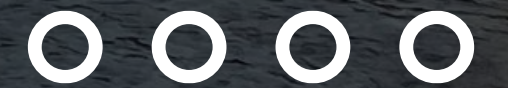
- Nature Rx may have strong potential to benefit adolescent health outcomes, yet significant knowledge gaps exist:
  - (1) How do nature prescription programs occur in practice for children, adolescents, and youth?
  - (2) What are their barriers and facilitators?
  - (3) What do youth and their health and social providers think about Nature prescriptions (including in Canada and locally)?





# Barriers and Facilitators to Implementing Nature Prescription Programs for Child and Youth Health: A Scoping Review

Sophie Paquet\*, Nicole, A. Struthers, Anna Gunz, Lesley Gittings





# Objectives



To explore the barriers and facilitators to the delivery of nature prescription programs to children and youth

To explore the barriers and facilitators to child and youth participation in nature prescription programs

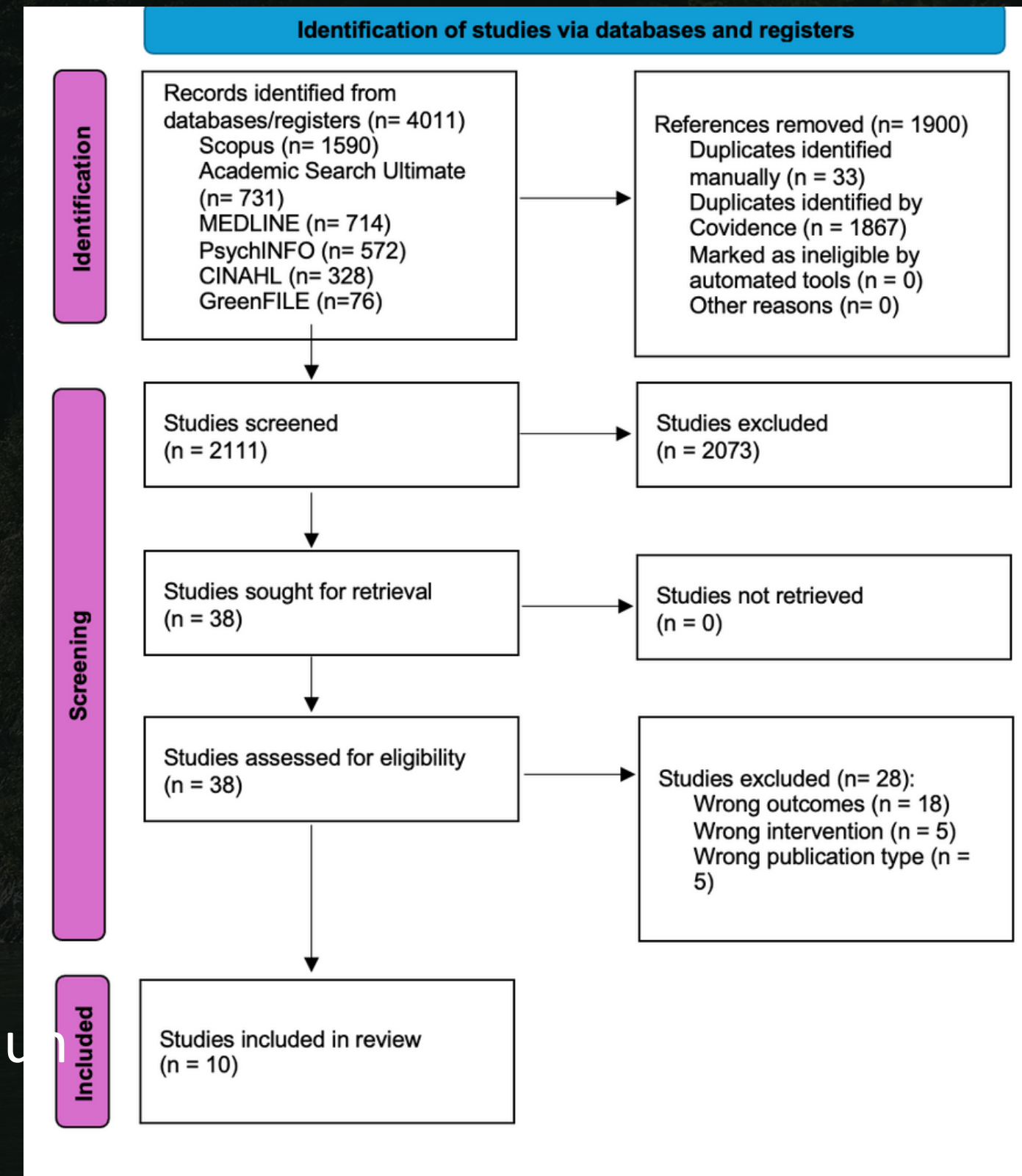
To explore the barriers and facilitators to provider participation in nature prescription programs





# Methodology

- A scoping review is a type of knowledge synthesis that identifies and maps an existing or emerging topic of literature (Thomas et al., 2017)
  - Arksey & O'Malley (2006)
  - Levac & Colleagues (2010)
- Data analysis followed thematic analysis outlined by Braun and Clarke (2022)





# Findings- Key Themes



Safety Considerations



Materials, Resources, and  
Support



Program Features





# Findings #1: Safety Considerations SLIDE 13



Factors that relate to perceived feelings of security, protection, and stability, both in terms of physical safety and risk perception

- **Physical Safety**

- Unsafe parks & neighbourhood spaces (**barrier**)
- Police patrol and video surveillance (**facilitator**)

- **Health Safety**

- Participant vulnerability in the event of an emergency (**barrier**)
- Participants with various health conditions (**barrier**)
- Participants with poor physical ability (**barrier**)





# Findings #2: Materials, Resources, Support

SLIDE 14



Factors such as transportation, financial support, equitable opportunities, knowledge transfer, time, and prescribing materials

- **Materials**

- Running out of materials, limited culturally and developmentally appropriate materials, poor internet connection (**barrier**)
- Maps and smartphone applications (**facilitator**)

- **Resources**

- Time: burden of school, studies, and work , and caregiver responsibilities and limited time for providers (**barrier**)
- Lack of Accessibility (Financial, location, readiness) (**barrier**)

- **Support**

- Knowledge and Buy-in (**facilitator**)
- Individualized consultation (**facilitator**)





# Findings #3: Program Features



Environmental features of the program and program activities that enticed/inhibited participant engagement

- **Environmental Features**

- Dangerous activities and crime at local parks (**barrier**)
- Gates to provide child safety (**facilitator**)
- Autism-friendly parks (**facilitator**)
- Maintained and clean spaces (**facilitator**)

- **Program Features**

- Walking, yoga, gardening, meditation, outdoor cooking, music, arts and crafts (**facilitator**)
- Group-based activities (**facilitator**)





# Discussion

**Nature prescription programs should integrate low-to-no cost opportunities in local community and consider environmental and socioecological factors**

## **Limitations**

No definition of the interventions in relation to nature prescription programs

## **Future Research**

Further explore facilitators and barriers to support equitable participation of children and youth inclusive of varying socio-economic and geographic realities.

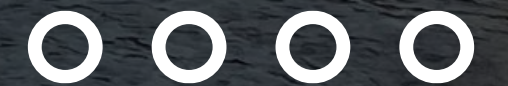






# Nature Rx: Exploring and Documenting Youth and Frontline Providers Perspectives on Nature Prescriptions in Social and Health Settings

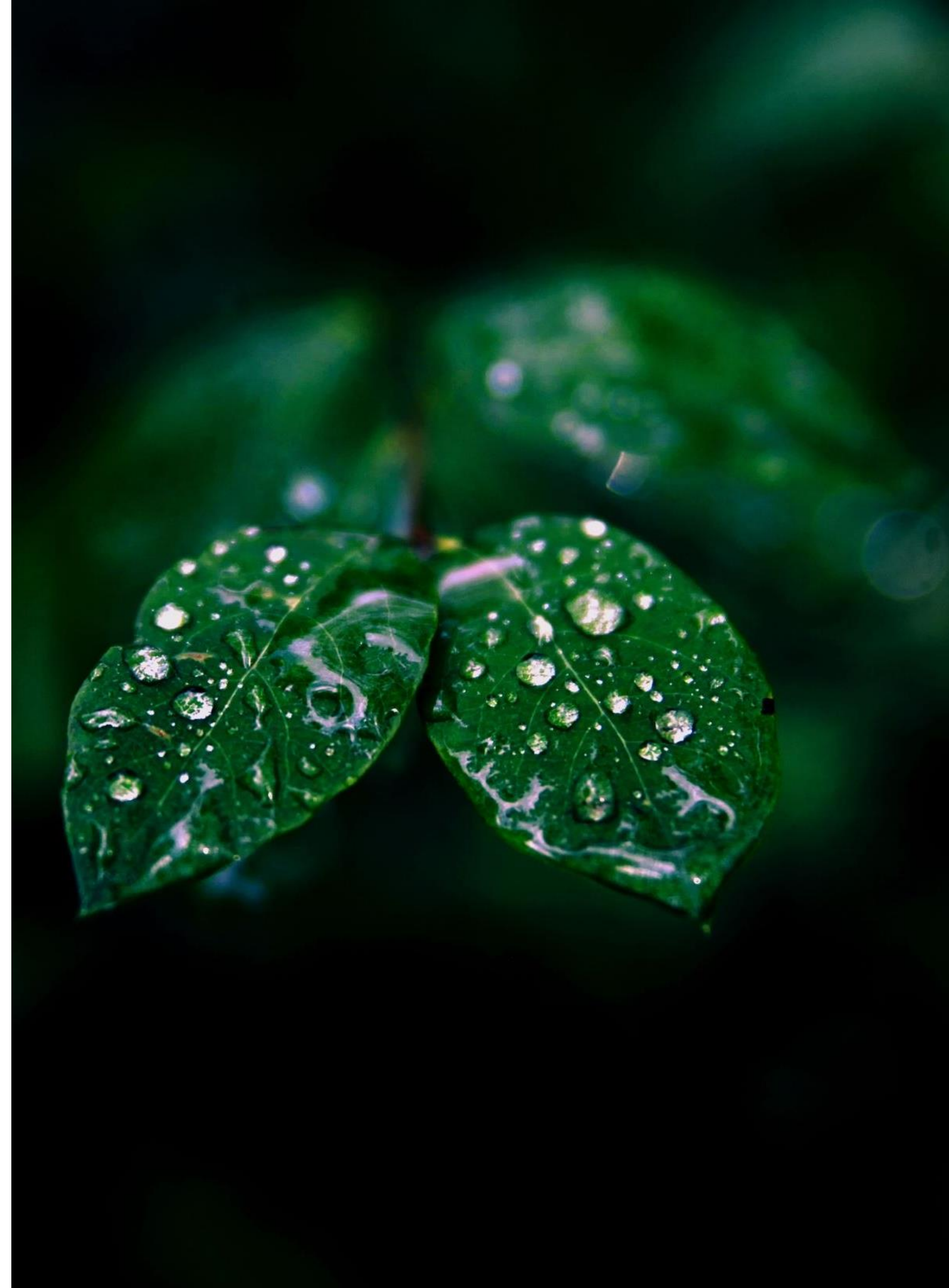
Gittings, L; Paquet, S; Gunz, A; Ataullahjan, A; Burke, S; Van Hooran, T; MacDougall, A; Macias, M; Samuels, B; Struthers, N; Yawney, N; Ybarra, M; Zecevic; A





# Study Objectives

1. Identify adolescent, health and social provider perceptions and experiences of Nature Rx for adolescent health;
2. Identify barriers, facilitators to Nature Rx roll-out for adolescent health locally, using an implementation science approach





# Study Design

- Exploratory, qualitative study
- Focus Group Discussions (FG) (n=4) and in-depth, semi-structured interview (n=1) with youth, health and social providers in London, Ontario
- N=21 participants;
  - n=5 adolescents, aged 15-20 from Child and Youth Advisory Council, Children's Hospital-London Health Sciences Centre (CH-LHSC)
  - n=9 health providers
  - n=7 adolescent focused social service providers, working in and outside of healthcare settings
- Ethics approvals from Western (WREM #124807); Lawson (#R-24-284)
- **Analysis**
  - Inductively using thematic analysis (Braun and Clarke, 2022)
  - Deductively grouped barriers and facilitators, mapped onto socio-ecological model (Bronfenbrenner, 1979)



*Nature has, you know, a big impact on your mood, your mental health..., it improves overall positivity, the way you act... you just feel better. So, I know that it has impact on you cerebrally... like nature specifically it's good for your health.*

*(Child and youth advisory board FGD)*

*Being able to get outside has a significant mental health component with my clientele... I can see (Nature Rx) of being a great component for long term childhood well-being.*

*(Healthcare Provider FGD)*

## **Finding 1: Strong awareness of health benefits of nature & Interest in Nature Rx**

- Awareness of mental health, cognitive development and cardio-metabolic benefits.
- Strong focus on mental health and well-being-related benefits (depression, anxiety, mood, emotional regulation).
- Suggested Nature Rx could provided a much-needed break from connecting with social media, technology and pressures of life.
- They suggested that Nature Rx could support adolescents living with complex health conditions feel more connected.



# Finding 2: Gap between interest in Nature Rx and practice

- Despite enthusiasm around Nature Rx and knowledge about them 'in practice', few health providers had prescribed nature
- Those who had tried to prescribe nature encountered a challenge on the first try, and had not tried again
- Noted challenges with knowledge and technology

**I feel like I don't know what I'm doing...  
(Paediatric Health Provider)**

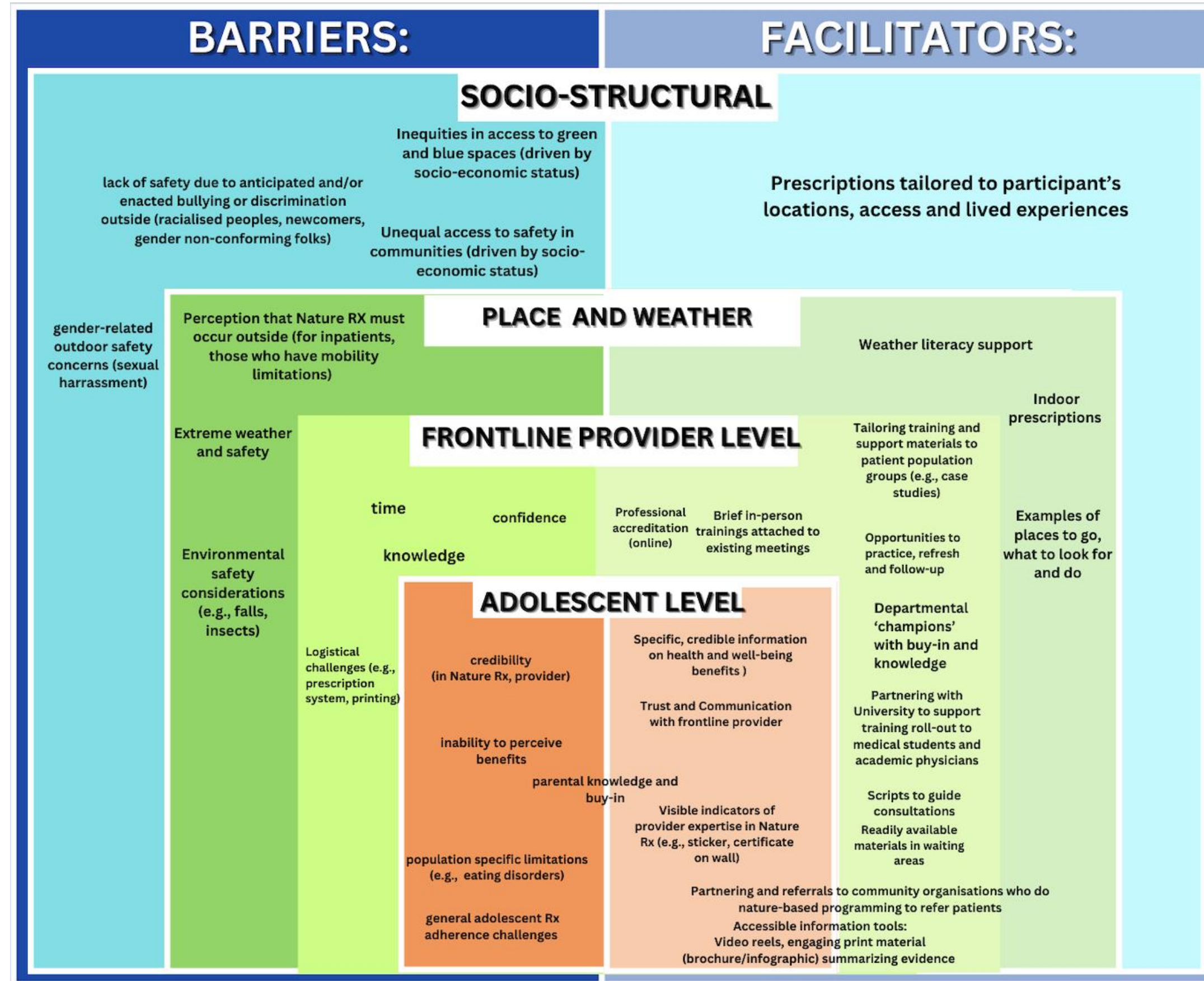
**Participant 1: I tried once, but I couldn't manage Power Chart. It didn't print. It didn't work.**

...

**Participant 2: Yeah... I've just been having conversations. I think I also tried to order it (and got confused and then didn't.  
(Paediatric Health Provider)**



# Finding 3: Multi-level barriers and facilitators





# Adolescent-level barriers and facilitators

- Barriers:
  - Credibility
  - Inability to perceive benefits
- Facilitators:
  - Specific and credible information on health and well-being benefits
  - Accessible information materials (creative print pamphlet, video reels)
  - Trust and communication with frontline providers
  - Visible indicators of frontline provider expertise (e.g., certificate)

Participant 1: Like it's not like *"oh here are meds you know to pick them up.. it's serious that you take this every day"*. I don't know if it's going to be taken as seriously, as it should be, just because it isn't medicine...  
Participant 2: It's not that it isn't medicine. It is. But it might not be seen that way.  
(Child and Adolescent Advisory Board)

...Like a certificate. I think that's I think that's... great cause it's like, you trust... because.. if it's been your doctor for ten years and all of a sudden he's bringing up this prescription, you're like, *"What? What's a nature prescription? What do you know about it, buddy?" [participants laughing] ...*  
If there's like an education to it, I feel like you can trust it. If that makes sense.  
(Child and Adolescent Advisory Board)



# Provider-level barriers and facilitators

- Barriers:

- Time
- Knowledge
- Confidence
- Technology challenges with script

What I'm struggling with is implementing this with my patients in a busy clinic where they already are waiting for a long time... sometimes it's even hard to, you know, finish talking ... So, I, I think there are like practical barriers to implementing this in a real life situation.  
(Health provider FGD)

- Facilitators:

- Professional accreditation
- Brief trainings attached to existing meetings
- Tailored training and support materials for specific population groups (e.g., case studies)
- Departmental 'champions;
- Scripts to guide consultations
- Materials in waiting rooms or at intake

...the professional development component could be a really good way of getting interest, um, cause I know a lot of providers, um, prioritize their time if they know that it's gonna go towards their professional development hours  
(Health provider FGD)



# Environment-level (Place, Weather) barriers and facilitators

- **Barriers:**

- Perception that Nature Rx must occur outside (for inpatients, those with mobility limitations, during extreme weather)
- Extreme weather
- Environmental safety concerns (falls, safety)

- **Facilitators:**

- Weather literacy support
- Indoor prescriptions





# Socio-structural Barriers & Facilitators

- **Barriers:**
  - Inequities in access to green and blue spaces (driven by socio-economic status)
  - Unequal access to safety in communities (driven by socio-economic status)
  - lack of safety due to anticipated and/or enacted bullying or discrimination outside (racialised, newcomers and gender non-conforming peoples)
  - gender-related outdoor safety concerns (sexual harassment against women and girls)
- **Facilitators:**
  - Prescriptions tailored to adolescent locations, access and lived experiences

**Inequitable access to health benefits of Nature is an urgent environmental justice issue**



A climate narratives collaboration between Grace Nosek and Meghan Wise (from 'Climate Doom to Messy Hope Handbook, UBC Press 2021)



# What's next?

Demonstration Project (Western as a Living Lab) initiative to design and test Nature Rx toolkit (September 2024-August 2025) with the following objectives:

- 1) To develop a toolkit to support HCP to implement Nature Rx for adolescent health and well-being;
  - Print and video information materials
  - Scripts and templates to support HCP in prescribing Nature
  - Case studies tailored to patient groups
  - Training materials for health providers
  - Exploring training accreditation
- 2) Pilot and adapt Nature Rx toolkit with clinical services at Children's Hospital-London Health Sciences Centre (CH-LHSC) using an implementation science approach; and
- 3) Evaluate the acceptability of the Nature Rx toolkit to HCP prescribing nature to adolescents at CH-LHSC.

**Future research directions:** Feasibility and effectiveness of Nature Rx on adolescent health and well-being, including for mental health and eco-distress related outcomes, pro-environmental behaviours



# Thank You

FOR LISTENING

Questions?





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