

Sustainable diet perceptions among Canadian young adults: a qualitative study

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Abstract

Purpose – Canadian diets are unsustainable, and perceptions of sustainable diets among Canadians are not well-understood. The purpose of this study was therefore to explore perceptions of sustainable diets among Canadians.

Design/methodology/approach – The study sample comprised 30 Canadians aged 18–35 years (33% male; 3% gender diverse, 27% rural and 27% who did not attend university) who were recruited using online advertisements, posters, snowball sampling and word-of-mouth. Semi-structured online interview transcripts were analysed using thematic analysis.

Findings – The study themes included: understanding of sustainable diets, sustainable diet behaviours, willingness to change, barriers to sustainable diets and strategies to support sustainable diets. Participants associated sustainable diets with health and nutrition, environmental protection, ethics and economics. The mean willingness to change eating habits to be more sustainable was 8.2 (1 = not at all willing; 10 = very willing). Barriers included a lack of food affordability, accessibility and availability, low food literacy, food systems distrust, food-related values, beliefs and norms, and dietary preferences and restrictions. Strategies to support sustainable diets included intrapersonal approaches related to improving food literacy, interpersonal factors such as shifting norms, community-based and institutional approaches to increase food accessibility and government actions such as subsidies for producers and consumers.

Originality/value – This study builds upon previous research by exploring perceptions of sustainable diets among a diverse sample of Canadians using in-depth interviews. Findings can inform public health messaging, behaviour change interventions and policy approaches to support the adoption of sustainable diets.

Keywords Sustainable diet, Sustainable development, Qualitative methods, Food consumption, Consumer perceptions, Young people

Paper type Research paper

1. Introduction

Sustainable diets have been defined as “dietary patterns that promote all dimensions of individuals’ health and wellbeing; have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable” (FAO & WHO, 2019,

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p. 9). However, current diets across much of the world do not align with this definition and the associated human health and environmental implications are significant (Auclair *et al.*, 2024; Nelson *et al.*, 2016; Springmann *et al.*, 2018). From 1990 to 2016, diet was the second greatest risk factor contributing to the loss of healthy life years in Canada and was surpassed only by tobacco (Alam *et al.*, 2019). Both national dietary guidelines (Health Canada, 2019) and international reports (Willett *et al.*, 2019) recommend eating more plant-based protein foods which are associated with a reduced risk of cardiovascular disease, type 2 diabetes, cancer and premature mortality (Wang *et al.*, 2023). Yet, evidence suggests that Canadians eat more animal-based protein foods compared to plant-based protein foods, with 63% eating red or processed meat on any given day, while only 14% ate legumes (Statistics Canada, 2018). Canadian eating patterns are also associated with the emission of nearly 4 kg of carbon equivalents per person each day on average, the majority of which is related to the consumption of animal-based foods (Auclair and Burgos, 2021). Food waste is another significant environmental issue, with approximately 58% of food entering the Canadian value chain being lost or wasted (Gooch *et al.*, 2019). Although 80% of Canadians report being mindful of food waste (Agriculture and Agri-Foods Canada, 2024), research has found that Canadian households throw away nearly 3 kg of avoidable food waste per week which represents approximately 23 kg of carbon dioxide emitted weekly (von Massow *et al.*, 2019). To protect both human and environmental health, more effective strategies that support consumers in implementing sustainable diet behaviours are required (Srinivasan *et al.*, 2024). Development of these strategies requires a clear understanding consumers' current perceptions of sustainable diets as well as what factors may support or impede consumers' adoption of sustainable diet behaviours.

Young adults are an important population to target in sustainable diet promotion as their transition into adulthood is marked by increased independence to influence their own eating habits as well as food systems through their work, community and family life (Bonnie *et al.*, 2015; Winpenny *et al.*, 2018). Despite this, only three studies have examined Canadian young adults' perceptions of sustainable diets. In a survey of 614 young adults aged 18–25, most were either thinking about or preparing to act when asked about sustainable diet behaviours (Ruzgys and Pickering, 2024a), suggesting that there is strong interest in sustainable diets among young people. However, many participants did not agree that reducing consumption of animal-based protein foods was an important behaviour to foster more sustainable diets (Ruzgys and Pickering, 2024a), demonstrating some confusion about the behaviours associated with sustainable diets. This is problematic as confusion can lead to inertia around the behaviour changes necessary to achieve more sustainable diets. In contrast, other Canadian research examining young adults' perceptions of sustainable diets using survey and focus group methods found that participants often understood sustainable diets to be related to the reduction of animal-based proteins, indicating some awareness of this sustainable eating behaviour (Mollaei *et al.*, 2023; Ruzgys and Pickering, 2024b).

While previous qualitative research has examined young adults' perceptions of sustainable diets, none of the previous Canadian studies have used interviews. Compared to other methods such as surveys, interviews can provide more in-depth and richer data, which is important for understanding the nuances of sustainable diet perceptions. Interviews may also provide more opportunity for participants to freely express their thoughts with less concern of group dynamics compared to focus groups (Maison, 2018). Using this in-depth approach may allow for greater elucidation of Canadian young adults' understanding and perception of sustainable diets, which may help clarify some of the discrepancy seen in the previous Canadian studies described above (Mollaei *et al.*, 2023; Ruzgys and Pickering, 2024a, b). Thus, qualitative research using in-depth interviews is needed to investigate how Canadian consumers understand sustainable diets and to inform health messaging, interventions and policy approaches to support the adoption of sustainable diets.

A better understanding of the enablers and barriers to behaviour change is also needed to inform the promotion of sustainable diets. Previous research suggests that enablers of

sustainable diet shifts are related to knowledge (of sustainability, health, sources of information and food safety), marketing (media influences and point-of purchase actions such as labelling) consumer–product relationships (when sustainable foods are affordable, familiar and appealing) and social and community support networks (Srinivasan *et al.*, 2024). Consumers are also more likely shift towards sustainable diets when behaviours correspond with their values (Srinivasan *et al.*, 2024). Another review identified internal factors influencing sustainable diet consumption related to food literacy, emotions, trust and cognitive dissonance, attitudes and beliefs, values and personal orientations and habits and taste as well as external influences such as social media, cost and time (Muñoz-Martínez *et al.*, 2024). Kenny *et al.* (2023) outline structural determinants of sustainable diets such as macro-economic policies, education and sex or gender as well as intermediary influences including psychosocial influences, resources and awareness.

While previous research provides insight into sustainable diet enablers and barriers, several gaps in knowledge exist. First, most past research on this topic has used quantitative methods (Kenny *et al.*, 2023). More qualitative investigations are needed to gain an in-depth understanding of how consumers perceive sustainable diets. Second, previous studies have included predominantly female, well-educated and urban populations (Kenny *et al.*, 2023; Srinivasan *et al.*, 2024). Recruitment of diverse samples that include more male and gender diverse participants, those with less education and rural participants are required to better understand how a broader range of consumers understand sustainable diets (Kenny *et al.*, 2023). Third, ethnicity data has rarely been collected in previous research of sustainable diet perceptions (Srinivasan *et al.*, 2024), and no previous Canadian research on this topic has reported rurality, ethnicity or parental status of participants. Research which includes these variables is therefore required to understand how these factors may impact sustainable diet perceptions. Lastly, the socio-political context and structural determinants of sustainable diet behaviour and attitudes are not often considered (Kenny *et al.*, 2023). To address these gaps, the objective of the present study was to explore perceptions of sustainable diets among young Canadians aged 18–35 from a variety of backgrounds using semi-structured interviews. The structural determinants of sustainable diet behaviours were highlighted by presenting the barriers and strategies to promote sustainable diets while socio-political context was considered in the discussion of findings.

2. Methods

2.1 Participant recruitment, screening and consent

Participants were recruited between January and April 2024 using online advertisements on Facebook and Instagram, posters at targeted rural community institutions such as the library and grocery store, word-of-mouth and snowball sampling (Supplementary File I). To be eligible for the study, participants must have lived in Canada, been proficient in English, and been between ages 18 and 35 years. Those with a post-secondary degree in nutrition, environmental science or sustainability were excluded to avoid recruiting a sample of participants with high levels of knowledge and interest in sustainable diets. As the study was designed to support a transition towards sustainable diets, those following a vegan or vegetarian diet were excluded. Quota sampling was used to ensure recruitment of a diverse sample by considering gender, education and rurality of participants. A sampling quota of at least 30% men was set given that sustainable diet research is often skewed towards women (Kenny *et al.*, 2023; Srinivasan *et al.*, 2024). Quotas were also set to recruit a sample of at least 30% of those who do not have university education based on the positive association between educational attainment and health literacy (Nutbeam, 2008; Rudd, 2007) and at least 30% of participants from rural communities as barriers to plant-based eating have been shown to differ among urban and rural residents (Pohjola *et al.*, 2015). Based on previous research using similar methodology (Ronto *et al.*, 2022; Whittall *et al.*, 2023) and considering data saturation, we estimated that our sample would include approximately 30 participants. Potential participants completed study screening by phone or using Microsoft Teams, and those who

were eligible and met the quotas were sent a copy of the consent form and invited to participate in an interview. Verbal informed consent was obtained before proceeding with the interview. This research was reviewed and approved by the University of Guelph Research Ethics Board (REB#23-10-018).

2.2 Data collection and analysis

In this qualitative study, semi-structured online interviews were conducted, recorded and transcribed by KE using Microsoft Teams. During interviews, participants were first asked a warm-up question to encourage conversation and build rapport between the participant and interviewer. Through nine main interview questions, participants were then asked to share their understanding of sustainable diets and associated behaviours, perceived environmental and health impacts, willingness to change their eating to be more sustainable, perceived difficulty of sustainable diets and barriers and facilitators of sustainable diets ([Supplementary File II](#)). Interview questions were adapted from previous research exploring perceptions of sustainable diets in Australia ([Mann et al., 2018](#)) and the United Kingdom ([Whittall et al., 2023](#)). Rather than “sustainable diet”, the term “sustainable eating” was used in participant communications to avoid potential confusion with the concept of dieting for weight loss. Probing questions were used to provide clarification and foster discussion, and participants were compensated with a \$40 CAD online gift card for completing the interview. Participant numbers were used to protect participant confidentiality in the presentation of findings.

After the data were collected and transcribed, KE and KP independently coded the same three interview transcripts to compare analysis process and interpretation of the data. KE then led the remainder of the coding and received support from KP. After the data were coded, thematic analysis was conducted to generate themes and subthemes in an iterative manner by categorizing codes within and across interviews ([Braun and Clarke, 2022](#); [Saldaña, 2011](#)). The analysis was mostly inductive, as themes and subthemes were generated from the data itself versus being determined *a priori*. NVivo software (Version 14) was used for data management and analysis. A critical realist epistemological perspective, which views reality as objective but knowledge as subjective and context dependent, underpinned the analysis ([Vincent and O’Mahoney, 2018](#)). The Social Ecological Model (SEM), which categorizes determinants of behaviour across five levels including intrapersonal, interpersonal, community, institutional and policy, provided a useful framework to guide the interpretation of findings ([Golden and Earp, 2012](#)). By considering how factors from these five societal levels enable sustainable diets, the SEM was used to highlight potential strategies for future sustainable diet interventions.

2.3 Study rigour

To promote the rigor and trustworthiness of the study, we employed the following research techniques: inter-coder comparison, use of participant quotes, active listening, the use of a warm-up question and researcher reflexivity. Inter-coder comparison by KE and KP was conducted through an independent analysis of the same three interview transcripts to compare researcher analysis process and interpretation of findings ([King and Brooks, 2018](#)). This technique allows researchers to explore potential differences in perspective ([King and Brooks, 2018](#)). To illustrate findings and support trustworthiness of the results, participant quotes are presented ([Morrow, 2005](#)). Active listening, an interview strategy where interviewers reflect on the participant’s words to confirm a shared understanding, was used as a form of participant checking to facilitate a more accurate interpretation by the researcher and to establish rapport with the participant ([King and Brooks, 2018](#); [Lavee and Itzchakov, 2023](#); [Morrow, 2005](#)). The use of a warm-up question also supports the quality of the research by developing rapport between the interviewer and participant and encouraging open conversation ([Oerther, 2021](#)). Lastly, reflexivity was considered to reflect on how researcher knowledge and assumptions may inform the interpretation of findings and to make the researcher’s “implicit assumptions and biases overt to self and others” ([Morrow, 2005](#), p. 254).

2.4 *Researcher reflexivity*

The authors are female, university-educated researchers with an interest in fostering sustainable diet behaviours. KE and JH are Registered Dietitians. The knowledge, experience and values of researchers are viewed as inseparable from the research process; therefore, themes for this study are considered to be generated by both participants and coders (Braun and Clarke, 2022).

3. Results and discussion

3.1 *Participants*

There were 53 participants screened for study eligibility, and 17 were ineligible. Reasons for ineligibility included advanced training in nutrition, environmental science or sustainability ($n = 9$), vegetarian or vegan diet ($n = 5$), age greater than 35 ($n = 2$) and quota sampling requirements ($n = 1$). Thirty participants completed interviews, and the mean interview length was approximately 23 min. Among the 30 young adults in our sample, 33% were male, 3% were gender diverse and 27% were non-white, including Afro-Indigenous, Asian, Biracial, Indigenous and South Asian ethnicities (Table 1). In terms of education and income, 27% did not have a university degree and 36% reported that it was neither easy nor difficult or difficult to make ends meet. More than a quarter of participants were from rural locations and 27% were parents.

3.2 *Theme 1: understanding of sustainable diets*

When asked for their thoughts upon hearing the term “sustainable eating”, participants described a variety of topics related to the environment, health and nutrition, economics and

Table 1. Demographic characteristics of $n = 30$ Canadian young adults who completed individual interviews exploring perceptions of sustainable eating

Variable	N	%
<i>Gender</i>		
Female	19	63%
Male	10	33%
Gender diverse	1	3%
<i>Race/ethnicity</i>		
White	22	73%
Non-white	8	27%
<i>Education</i>		
Post-graduate university degree	8	27%
Undergraduate university degree	14	47%
College diploma	3	10%
High school diploma	3	10%
Some high school	2	7%
<i>Income</i>		
Very easy to make ends meet	3	10%
Easy to make ends meet	16	53%
Neither easy nor difficult to make ends meet	10	33%
Difficult to make ends meet	1	3%
<i>Rurality</i>		
Urban (>100,000)	22	73%
Rural (<100,000)	8	27%
<i>Children</i>		
No	22	73%
Yes	8	27%

Source(s): Authors' own work

ethics, often aligning with the dimensions of the [FAO & WHO \(2019\)](#) definition of sustainable diets. However, a significant proportion of participants ($n = 8/30$ or 27%) were unsure or had not previously heard of the concept of sustainable diets, highlighting the need to increase awareness of sustainable diets among young Canadians. This is comparable to a previous Australian study where nearly one-third of participants were unaware or had limited awareness of the concept of sustainable diets ([Ronto et al., 2022](#)). For participants who were unsure or did not refer to the environment in their understanding of sustainable diets, the following prompt was used: “Another way to think about sustainable eating is how the foods we produce and eat may impact the environment”. Social media was the most common source for sustainable diet information, and universities and schools, news articles, documentaries and television shows and word of mouth (among family, friends and at the workplace) were other common information sources. Sources mentioned less frequently included podcasts, food labels, restaurants and grocery stores. Participants frequently described an awareness or consciousness of food systems as an important part of sustainable diets. Behaviours associated with food system awareness included doing research and reading about food, identifying personal values related to farming practices, learning about the impact of purchasing behaviours, participating in cooking classes, reading labels, shopping in-season, locally and at farmers markets, gardening, meal planning, preparing meals at home and sharing meals. Conscious consumption was described as a facilitator of sustainable diets by promoting care, connection and appreciation of food and food systems. Notably, two non-white participants noted that the concept of sustainable diets was rooted in their ancestral knowledge. This is important as Indigenous knowledge and the origins of sustainable diets should be recognized and prioritized for food system transformation ([Vijayan et al., 2022](#)).

3.3 Theme 2: sustainable diet behaviours

3.3.1 Subtheme: *purchasing local, organic and ethical food*. There was nearly consensus among participants that local, organic or ethical food purchasing were important aspects of sustainable diets, with 90% (27/30) discussing at least one of these topics. Participants viewed local food consumption as healthier and associated eating local with consumption of more “whole” and organic foods, and a lower intake of preservatives, chemicals, antibiotics and processed foods. Consumption of local foods was also linked with higher vegetable and protein intake, higher quality vegetables and meats, less exposure to plastic, greater availability of nutrients in food and fresher, more flavourful and more enjoyable food. Environmentally, local foods were often perceived as having lower transport-related emissions, reduced food and food packaging waste and more sustainable farming practices such as reduced use of pesticides. Participants also described how local food fostered greater awareness of food systems, strengthened community relationships and supported small farmers, local businesses and the local economy:

126 (female, university education, urban resident): I think eating more organically does feel better health wise. I like to believe that the less processed, the less chemicals and pesticides and whatever goes into it, the better it is for you. I also feel like just on an emotional level, if I'm supporting locally grown produce like farmers markets and stuff, I kind of like knowing the person that I'm supporting and where my food is coming from and knowing that it was grown, I don't know, 50 km away and it's close to home.

Despite these perceived benefits, there were also difficulties associated with acquiring local food including the higher cost and the lower accessibility and convenience of local food products and farmers markets. Similarly, organic food was perceived to be associated with health and environmental sustainability among participants; however, it was viewed as expensive and difficult to access:

147 (male, university education, urban resident): If there were no cost implications, I would love to go everything super local, everything organic. Like, really lean into high quality everything. The reality is

life is super freaking expensive though. So, it's just hard to justify being able to do that instead of being able to pay your mortgage.

In terms of ethics, local and organic foods were often perceived as more ethical for both human and animal welfare. The negative impact of food purchasing patterns in Canada on producers in other countries and the welfare of animals were described as important ethical considerations for sustainable diets:

104 (female, university education, urban resident): I feel like that's like an important part of sustainability. I think we have to look at carbon footprints and stuff, but then there's also the human impact and the ethical impact of these things.

The strong focus on local food is in-line with previous Canadian research where 86% of adults indicated selecting local food "at least sometimes" ([Agriculture and Agri-Foods Canada, 2024](#)) and 34% of young people reported engaging in the sustainable diet behaviour "consuming local and seasonal produce" ([Ruzgys and Pickering, 2024a](#)). The perceptions of local foods observed in the present study may reflect the current socioeconomic and political context in Canada with the rising cost of food among large chain grocers and associated discontent among consumers who may seek alternative food purchasing options. Although the literature regarding the relative sustainability of local foods is inconclusive ([Enthoven and Van Den Broeck, 2021](#)), the perceived community benefits and strong participant interest suggest that local foods are important to Canadian consumers. More research is needed to evaluate the potential multiple impacts of local foods for sustainable diets in Canada.

3.3.2 Subtheme: gardening and homesteading. Gardening (community, backyard, rooftop and balcony gardens) and other homesteading behaviours such as hunting, foraging and raising chickens were perceived as sustainable diet behaviours among 53% (16/30) of participants. Environmental, health, social, community and economic benefits were associated with gardening and homesteading behaviours.

155 (female, university education, urban resident): We have beds that are offered to the community for them to grow their own vegetables. That has not only reduced the cost of the groceries, but also mentally and physically, it is creating a positive impact on the community.

Community gardens may positively affect social and mental health ([Zutter and Stoltz, 2023](#)) and increase fruit and vegetable intake ([Hume et al., 2022](#)). Environmentally, agrobiodiversity benefits have been observed for home gardens ([Gbedomon et al., 2017](#)), and community gardens have been shown to foster awareness of the environment and care for planetary health among participants ([Zutter and Stoltz, 2023](#)). Finally, the importance of gardening for food security and food systems agency has been highlighted by previous research ([Diekmann et al., 2020](#)). More research is needed to explore the benefits of gardening as a component of sustainable diets in Canada.

3.3.3 Subtheme: plant-based protein food consumption. Participants discussed a range of behaviours related to plant-based protein food consumption, including the reduction of meat and animal-based foods, "meatless Mondays", vegetarian and vegan diets and eating more legumes, beans, lentils and alternative proteins. These behaviours were discussed by 43% (13/30) of participants and overall were perceived to have environmental and health benefits. However, there was some uncertainty among a few participants who reported being unsure of the environmental impacts of plant-based protein food consumption due to the possibility of misinformation, potential trade-offs between environmental impacts (i.e. emissions vs water use), and the relative impact of different food products (i.e. coffee vs meat) and different behaviours (i.e. eating local vs plant-based). While some participants noted that plant-based protein food consumption can be easy, appetizing and inexpensive, others viewed it as complicated, unsatiating, expensive, restrictive and potentially harmful for health. In reference to a vegan diet, one participant noted:

103 (male, high school education, urban resident): I would like to know more about what it's doing to your body. I know it is an important part of it, caring about what we're doing to the planet and the animals and all, but long term, what are the health benefits? Or is there a negative side to it?

These results may help explain previous quantitative findings among Canadian young adults where 22% were unwilling to reduce red meat consumption, and many disagreed that reducing dairy and red meat intake were effective actions to support sustainable diets (Ruzgys and Pickering, 2024a). As the literature regarding the health and environmental benefits of eating more plant-based protein foods has been well-established, identifying effective strategies to increase awareness of the benefits of plant-based protein foods and interventions to promote consumption among Canadians should be a priority for future research and policy efforts. Since social media was identified as the top source of sustainable diet information in this study, social media campaigns could be an efficient strategy to increase awareness of sustainable and plant-based protein foods among young adults.

3.3.4 Subtheme: reducing waste. Reducing food waste or food packaging waste was discussed by 60% (18/30) of participants as a behaviour aligning with sustainable diets. Reducing waste was associated not only with environmental benefits, but also economic and ethical impacts:

106 (female, college education, rural resident): I feel like between me and [partner], we really try to eat from our fridge first and our freezer and we really, really try not to waste any food because it's expensive and I just feel so terrible when I'm throwing out food. It's just, you know, somebody else could have had that if I didn't buy it and not eat it.

Participants reported a variety of strategies to reduce waste, which were often related to food knowledge and skills. Meal planning, batch cooking, eating less fast food, sharing food, cooking at home, growing food, avoiding large chain grocers, eating leftovers, using food scraps, food preservation and storage techniques (i.e. reviving vegetables in water, canning), composting and developing kitchen skills were reported by participants as strategies to reduce food and food packaging waste. These findings support the use of food literacy interventions to reduce food waste in Canada (Laila *et al.*, 2024; Parizeau *et al.*, 2015; Van Der Werf *et al.*, 2021).

3.4 Theme 3: willingness to change

The average willingness to change eating habits to be more sustainable was 8.2 on a scale of 1 (not at all willing) to 10 (very willing). Overall, participants were willing to change, particularly if the changes were aligned with their current lifestyle and culture. Health and environmental benefits were cited as key motivations to change. Other motivations included a readiness to change, the modelling of food habits for children, a belief that sustainability is consistent with world interests and advancement, and a desire for self-improvement. The higher costs of food perceived as sustainable such as fresh and organic food, and the inaccessibility of local food, especially for those in rural areas, those with children and those without a vehicle were other frequently discussed factors affecting willingness to change. One participant demonstrated his willingness to engage in sustainable diets if there were not higher costs:

147 (male, university education, urban resident): If there were no cost trade-offs, let's rock and roll.

The increased time and effort of meal planning, cooking and grocery shopping were other common factors influencing willingness to change, and a lack of knowledge regarding sustainable diets, cooking, and plant-based recipes were also discussed. For parents, children's willingness to eat sustainable food was an additional consideration, and one prospective university student anticipated that a lack of control over food choices at the dining hall would likely affect their willingness to change. Lastly, scepticism about processed plant-based food products, concern regarding dietary restrictions related to veganism and a desire to enjoy meat

were factors reducing participant willingness to eat more sustainably. These findings are reflective of past research, where participants were willing to make changes to their diet but reported uncertainty about how to implement changes and desired small, easy changes that fit within their current lifestyle (Whittall *et al.*, 2023).

3.5 Theme 4: barriers to sustainable diets

When asked to rate the difficulty of eating more sustainably on a scale of 1 (not at all difficult) to 10 (very difficult), the average response among participants was 6, or mildly difficult. Key barriers to sustainable diets included: A lack of affordability, accessibility and availability, low levels of food literacy, distrust of the food system, food-related values, beliefs and norms and food preferences and restrictions (Table 2).

3.5.1 Subtheme: lack of affordability. The lack of affordability of sustainable diets, particularly of foods perceived as sustainable including local, organic, fresh and plant-based protein foods, was commonly discussed by participants. For certain groups such as parents and students who may have additional financial pressures, this barrier was particularly salient:

114 (female, high school education, urban resident): Sustainable foods, a lot of them are really expensive. Being somebody in university and having so many other things that you have to worry about money wise, it's just easier to go with those slightly less sustainable options because they're cheaper.

As nearly 23% of individuals across the Canadian provinces lived in a household that was food insecure in 2023 (PROOF, 2024), this finding is unsurprising. Among 30 countries surveyed, Canada ranked 2nd highest for the lack of food affordability, with 77% of Canadian participants identifying the lack of affordability as a barrier to sustainable diets (EAT & GlobeScan, 2024).

3.5.2 Subtheme: lack of accessibility and availability. A lack of accessibility and availability, mostly in terms of local foods and growing food, were other frequently discussed barriers to sustainable diets. Participants described difficulty accessing local foods due to a lack of transportation and the increased distance to markets and a lack of local and fresh foods available at grocery stores. Those living in rural or remote areas experienced greater difficulties finding local food options and one participant reported low food inventory at grocery stores. A lack of time to eat sustainably, particularly for students, parents and shift workers, and a lack of resources, knowledge, space, time, money affected participants' ability to grow their own food. A lack of availability and accessibility have been discussed as barriers to sustainable diets by research in other countries (Ronto *et al.*, 2022; Whittall *et al.*, 2023).

3.5.3 Subtheme: low food literacy about sustainable diets. A lack of knowledge, education and awareness of sustainable diets and a lack of accurate and trustworthy sources of sustainable diet information were other factors that made it difficult for participants to implement sustainable diet behaviours. The extra time and effort associated with researching where to buy sustainable foods, learning new food skills and preparing food affected willingness to change and perceived difficulty of following a sustainable diet. Some participants described a need for increased supports such as recipes and cooking classes to incorporate plant-based protein foods. These findings support previous research among Canadians which has observed a correlation between higher food literacy and sustainable diet behaviours (Ruzgys and Pickering, 2024a) and identified a gap in plant-based protein food literacy (Barco Leme *et al.*, 2022).

3.5.4 Subtheme: food system distrust. Distrust of various aspects of the food system were expressed by some participants. A few discussed how capitalism is not conducive to sustainable diets, and global food production was perceived by some to be more likely to use unethical labour practices and "chemicals" or pesticides compared to local foods. Industrial agriculture was perceived as being less sustainable in terms of animal welfare, and participants were concerned about the inflated cost and lower quality of food sold at large chain grocers.

Table 2. Sustainable diet barriers and sample quotes among $n = 30$ Canadian young adults who completed individual interviews exploring perceptions of sustainable eating

Sustainable diet barriers	Sample quotes
1. <i>Affordability</i>	134 (female, university education, urban resident): Unfortunately, I just think it's ridiculously priced. I've gone to market warehouses and eggs are \$7.00 for a dozen. And I'm like I can't even keep up with \$3.50 at the grocery store, what do you mean?
– The high cost of food, especially fresh, organic, local foods and plant-based products	
– Costs associated with gardening	
– Inflation	
– The high cost of living	
2. <i>Accessibility</i>	139 (male, university education, urban resident): if I had to go get some, we'll say very fresh local vegetables, there's a very limited number of places you can go to
– Lack of transportation to grocery stores	106 (female, college education, rural resident): I'd love to plant our own garden, but we would really need to landscape our yard to do that. Time wise and money wise, that's not always easy to do
– Canadian climate – difficulty buying local food	149 (female, university education, urban resident): I live in an area where there's no real farmers markets. So, we have to drive 30 min to get there, and [large chain grocer] is literally 5 min away
– Difficulty grocery shopping with children for sustainable food to cook at home	
– No option for composting in apartment building	
– Inconvenience of farmers markets (i.e. distance)	
– Lack of resources and accessibility of gardening (knowledge, space, time, climate)	
– Increased time demands to eat sustainably – particularly for students, parents, shift workers	
3. <i>Availability of food</i>	103 (male, high school education, urban resident): I know people that are either vegan or [inaudible] and I've seen how much they can struggle to find good food
– Lack of plant-based options	139 (male, university education, urban resident): It's not only the access of like the physical location, but the actual inventory or quantity of the particular item that they have, that's really telling. Even if I looked at something like a common grocery store, you'd be shocked how often you'd go in there and they have no yellow onion or no green pepper. And so, there's that kind of just availability piece that I think is an important factor
– Lack of availability of sustainable food at corner stores	
– Limited food inventory at grocers	
– Lack of options for buying groceries – mostly large conglomerate grocers	
– Limited local food options	
4. <i>Lack of awareness, knowledge and education about sustainable diets</i>	108 (female, university education, urban resident): Say, you know, chicken breast . . . How much plant-based protein do I need to eat in order to get the same nutritional value? I have no idea. And what the equivalencies are, what would I need to substitute? What types of plant-based proteins have a lot of protein? I actually really don't know
– Lack of awareness of the definition of sustainable diets	167 (male, high school education, rural resident): Not going to lie, I don't really have a great idea on what sustainable eating is
– Lack of knowledge related to	140 (male, university education, urban resident): To be honest, I wouldn't say I've heard or seen anything specific [about sustainable eating]
a) Region-specific, scholarly, trustworthy sources	146 (male, college education, urban resident): I don't think I've heard [the term sustainable eating] before
b) The nutritional value of plant-based protein foods	118 (female, university education, rural resident): I mean, sure, if it says organic, you know that is sustainable. But what else? What if you buy something else? How do you know if it's sustainable?
c) Plant-based recipes	
d) Food labelling (i.e. free range, grass fed, etc.)	
e) Where to buy "ugly" vegetables	
– Lack of food skills related to sustainable diets, such as cooking plant-based meals	

(continued)

Table 2. Continued

Sustainable diet barriers	Sample quotes
<p>5. <i>Distrust</i></p> <ul style="list-style-type: none"> – Capitalism – Global food production – Industrial farming – Recycling and organic waste programs – Large chain grocers – Vegan food products – Greenwashing – Misinformation 	<p>149 (female, university education, urban resident): Different countries probably have different laws for pesticides. And I mean things could happen during transportation, like keeping food at temperature or just contaminations and stuff like that</p> <p>145 (male, university education, rural resident): It's annoying when companies will like throw around terms like sustainable, regenerative, organic, like, whatever these descriptors are without essentially being vetted by a third party certifier or, you know, have any teeth to them</p> <p>142 (female, university education, urban resident): There's misinformation, disinformation, mal information, all the types of that quadrant of information, it's difficult to know what is best</p>
<p>6. <i>Food-related values, beliefs and norms</i></p> <ul style="list-style-type: none"> – Beliefs about what a meal should be (i.e. meat and potatoes) – Social norms 	<p>110 (female, university education, urban resident): If you tend to have family, or relatives, or friends who are very traditional, I think that could have an impact on how much more or less likely you are to change your eating habits</p>
<p>7. <i>Food preferences and restrictions</i></p> <ul style="list-style-type: none"> – Children's and partner's food preferences – Dietary restrictions and allergies – Poor taste of plant-based products – Plant-based meals less satiating – Food restrictions of vegan diet 	<p>101 (male, university education, urban resident): For me, like I find sometimes I will try to eat a tofu meal like a tofu stir fry or something like that. But I actually get hungry, and [partner] doesn't like it when I make those meals sometimes because she knows she's like "... You're gonna be really hungry", and the next day like it actually makes me a little bit irritable</p> <p>108 (female, university education, urban resident): I'm not the one that cooks. [Partner] does all the cooking, so I'm not going to be picky about what's being cooked. He enjoys animal protein like steak and stuff like that. So, I tend to kind of go with the flow</p>

Source(s): Authors' own work

Vegan food products were sometimes viewed with scepticism, and greenwashing, or the misrepresentation of food products as being environmentally conscious, was a concern. Lastly, there was apprehension about misinformation and a lack of reliable sources about sustainable diets.

Public distrust of food systems has been observed in past Canadian research (Eckert *et al.*, 2024). As those with higher levels of food systems distrust may have lower dietary variety and more scepticism about public health programs (Tonkin *et al.*, 2021), research to better understand and address food systems distrust is recommended.

3.5.5 Subtheme: food-related values, beliefs and norms. Food-related values, beliefs and norms including more "traditional" Canadian values and beliefs about what constitutes a meal (i.e. meat and potatoes) and social norms, such as the impact of attitudes among friends and family were noted as having the potential to affect willingness to eat sustainably:

101 (male, university education, urban resident): I think it's my thoughts on what constitutes supper, for example, like the way we grew up was a lot of meat, potatoes, peas, that was the meal. Like you have potatoes or rice and a vegetable and then your main meal is a meat. So that is my idea of what supper is or should be, but I know there's lots of different things you can have that doesn't have to be that plate.

While norms may influence food choice (Robinson *et al.*, 2014), there are few previous interventions designed to promote sustainable diet behaviours such as meat reduction through

the activation of norms, and existing intervention have not always been effective (Çoker *et al.*, 2022; Patel *et al.*, 2024). Shifting food-related values, beliefs and norms, which are often strongly engrained, may require longer interventions and multi-level approaches to achieve significant effects.

3.5.6 Subtheme: food preferences and restrictions. Food preferences and restrictions, including those of family members and children, were other potential barriers to sustainable diets. As such, family-based approaches to foster sustainable diets may be practical, given that food preparation and consumption often occur within a family system. The dietary restrictions associated with being vegan and the perceived poor taste of plant-based products such as vegan cheese were noted by a few participants. Although this subtheme was less frequently mentioned across interviews, it is an important finding as it suggests that some young adults perceive sustainable diets to mean following a vegan diet. Increasing awareness and education about sustainable diet behaviours could help to address this perception and reassure consumers that eating more sustainably does not require extreme dietary changes.

3.6 Theme 5: suggested strategies to support sustainable diets

Despite some uncertainty about the concept of sustainable diets, most participants described potential strategies to support sustainable diet behaviours. Suggested strategies to foster sustainable diets were categorized into levels of the Social Ecological Model and include intrapersonal, interpersonal, community, institutional and policy factors (Golden and Earp, 2012) (Table 3). Future research can use this information to develop and test interventions. Increasing one's own knowledge and awareness was a frequently discussed enabler of sustainable diets. Participants expressed a need for practical information such as plant-based recipes, cooking classes and guidance about growing food, and advocated for increased school-based education about sustainable diets for children. Increased access to fresh, local and sustainable food through community-based programs such as sliding scale markets and community gardens and institutional changes at schools, restaurants, cafeterias and grocers were recommended. Interestingly, there was a strong desire for additional government-led incentives such as tax rebates and subsidies for producers and consumers to encourage sustainable diets. The effectiveness of financial incentives for promoting healthy eating was investigated in a previous systematic review which demonstrated increased fruit and vegetable purchases and the potential for health improvements (Huangfu *et al.*, 2024). Due to consumer interest and potential effectiveness, this topic should be explored in the context of sustainable diets.

3.7 Synthesis of findings

These findings help address gaps in the literature by providing a more in-depth understanding of young adult Canadian's sustainable diet perspectives, which is key for designing more effective interventions. Results suggest that there may be important differences in perceptions of sustainable diets and sustainable diet engagement by gender, rurality and education. For example, although a lack of access, availability and affordability of foods perceived as sustainable were significant barriers for participants across different regions, those in rural and remote regions may experience more limitations in terms of food availability and access.

Ethnicity and parental status were other sociodemographic characteristics that may have influenced sustainable diet perceptions among study participants. Two participants of non-white ethnicity described sustainable diets as being rooted in their cultural ancestral knowledge. Interventions that meaningfully incorporate cultural knowledge of sustainable diets could facilitate increased food literacy and promote sustainable eating among the population more generally. Lastly, being a parent was associated with increased motivation to eat sustainably, with parents striving to model healthy and environmentally sustainable eating behaviours for their children. Families with young children may therefore be an important population to include in approaches to promote sustainable diets. While one study has tested a

Table 3. Suggested strategies to foster more sustainable diets reported among $n = 30$ Canadian young adults who completed individual interviews exploring perceptions of sustainable eating

Suggested strategies	Sample quotes
<p>1. <i>Intrapersonal approaches</i></p> <ul style="list-style-type: none"> – Increasing one’s own knowledge and awareness of sustainable diets through a) Information about local producers and farmers, gardening and regulations for raising chickens b) Recipe books – plant-based recipes c) Guidebook or YouTube channel about gardening for beginners – Buying only what food you need – Budgeting – Attending markets when prices reduced for quick sale – Packing lunch – Eating at home – Meal planning <p>2. <i>Interpersonal approaches</i></p> <ul style="list-style-type: none"> – A shared understanding and common definition of sustainable diets across stakeholders – Shifting cultural and social norms, including a. Shifting perceptions that sustainable diets are for exclusive groups and reframing it as a community activity b. Norms about what makes a meal (i.e. meat and potatoes) c. Viewing sustainable diets as necessary for the future – Spreading awareness among others through networking and talking about sustainable diets – Modelling sustainable diets for children – Using social media to increase education and awareness <p>3. <i>Community approaches</i></p> <ul style="list-style-type: none"> – Community collaboration to foster food skills and literacy, food sharing, food waste reduction and food security – Increasing education and awareness of sustainable diets through a) Community cooking classes b) Education sessions with a nutritionist c) Classes/education sessions about gardening and sustainability – Increasing accessibility of fresh, local, sustainable food through a) Community fridges b) Community gardens c) Access to fresh food at food banks d) Access to farmers markets e) Vegetable delivery boxes f) Markets with a sliding scale cost for fresh local produce, reduced prices 	<p>134 (female, university education, urban resident): I feel like what could help is almost a “sustainable eating for dummies”, some sort of guide or book or a YouTube channel</p> <p>168 (male, high school education, rural resident): For my lunch, something more sustainable for my bank account would be something like packing lunch and making it obviously healthier instead of eating fast food and all that garbage out there</p> <p>126 (female, university education, urban resident): I think even social media trends making sustainable eating more commonplace or bringing it into the limelight a little bit more as it’s not talked about super openly or frequently. So, making it more of an active part of the conversation I think could also help a lot</p> <p>139 (male, university education urban resident): Culturally, I think if we moved more in that direction of sustainable eating is not just something that’d be nice to do, that is ethically good, but also, almost a must for our long-term future, then I think that those cultural norms just seep into things, and suddenly people’s behaviors kind of shift with that in mind</p> <p>106 (female, college education, rural resident): Maybe if there were meetings or groups where a nutritionist or anybody could come in and give people the information. I feel like some people don’t really even know what sustainable eating is</p> <p>134 (female, university education, urban resident): I think the community aspect is really huge, too. Like when I lived in [redacted], we had so many community gardens and it was quite literally open like there were voluntary hours that you came in and helped with the garden. And then people could just walk in and pick food that they needed. And it was like fully open, like, nothing was gated, nothing locked. And I don’t know, it just worked really well like I used to walk past one all the time to get to school and work</p>

(continued)

Table 3. Continued

Suggested strategies	Sample quotes
<p>4. <i>Institutional changes</i></p> <ul style="list-style-type: none"> – Restaurants decreasing food packaging waste – Cafeterias and schools serving sustainable meals – New grocery store chains that sell sustainable food – Lowering the cost of groceries 	<p>162 (female, university education, urban resident): Well obviously the markup coming back down and making groceries more affordable for everyone</p> <p>108 (female, university education, urban resident): If the restaurants themselves take action to reduce the packaging or make it recyclable</p>
<p>5. <i>Government actions</i></p> <ul style="list-style-type: none"> – Incentives for producers, wholesalers, retailers, companies and consumers to promote sustainable diets (tax rebates for purchasing local food, subsidies for local farms and producers, grants for purchasing gardening infrastructure) – Including sustainable diets in the school curriculum – Funding social programs at the federal, provincial and municipal levels to increase access to sustainable foods – Regulations for new buildings to be sustainable – rooftop gardens – Increasing minimum wage to increase the affordability of sustainable food 	<p>150 (male, university education, urban resident): I think that knowledge is power, and I think that we have an opportunity in the school system to teach that at a younger age</p> <p>147 (male, university education, urban resident): Government subsidies to help motivate people to make better decisions that are better for the environment</p> <p>139 (male, university education, urban resident): If there was some sort of government incentives in terms of how we produce food, so at the farm level, and I know there's obviously a very elaborate subsidy system for certain things like milk and eggs and such, but for other vegetables, if there was that plus if there was some sort of incentives on the consumer side, I think it would take a multi-pronged approach to really do things there</p>

Source(s): Authors' own work

food waste intervention among Canadian families with children (Laila *et al.*, 2024), no previous research has tested a sustainable diet intervention in this population representing a significant gap.

3.8 Limitations and strengths

There are study limitations and strengths which should be acknowledged. First, due to the small sample size, study results may not be generalizable to all young Canadian adults. Second, although participants with high levels of knowledge and interest in sustainable diets were excluded (such as those who were vegetarian or vegan), selection bias was still possible due to recruitment methods. This means that participants in our sample may have had more knowledge and interest in sustainable diets compared to average Canadians; however, our finding that over a quarter of participants were unsure about or had not previously heard of sustainable diets suggests this bias may not be present. Third, while we were successful in reaching our goal of at least 30% male participants, we were slightly below quota sampling for 30% rural and 30% of participants without university education. Future research should use more targeted recruitment strategies and plan for additional time for recruitment to achieve a more balanced sample. Strategies to increase involvement among difficult-to-reach populations such as male and rural participants are discussed by Moura and Philippe (2023) and Kim *et al.* (2021) and could be used in future sustainable diet research. Lastly, participant province of residence was not collected. Future research should collect this information to better understand whether regional differences affect sustainable diet perceptions in Canada. In terms of strengths, this was the first qualitative interview study to explore perceptions of sustainable diets among young Canadian adults. By exploring this topic in-depth using interviews, a more thorough understanding of the barriers and strategies to support sustainable diets for this population has been described. Lastly, by collecting and reporting

sociodemographic information including ethnicity, rurality and parental status, we have increased knowledge of how these factors may influence sustainable diet perceptions.

4. Conclusion

In this qualitative interview study, sustainable diets were associated with health, environmental sustainability, ethics and economics; however, more than 1 in 4 participants were unsure or had not previously heard the term. There was often uncertainty about sustainable diets, particularly regarding the impacts of meat reduction and plant-based eating. Participants frequently discussed local, organic and ethical foods as sustainable options, as well as food and food packaging waste reduction strategies related to knowledge and skills. Participants suggested institutional changes and government policies to increase the affordability, accessibility, availability of sustainable foods and recommended intrapersonal, interpersonal and community approaches, such as recipes, social media campaigns and community education sessions to improve sustainable diet awareness and food literacy. These findings can inform public health messaging, research interventions and policy by providing insight about the understanding, perceived behaviours, willingness to change, barriers and enablers of sustainable diets among Canadians.

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Supplementary material

The supplementary material for this article can be found online.

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