Understanding rural children's environments and health: Developing a novel framework for healthy rural communities and exploring children's perspectives

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Rural children experience a variety of health disparities compared to their urban counterparts. While we know that neighbourhoods can impact the health of those residing within them, there has been little research into the impacts of rural neighbourhoods on children's health specifically. Additionally, children have been and continue to be underrepresented in both planning research and planning practice, a gap that is even more persistent for rural children. In response to these gaps, this research seeks to explore the following research questions: 1) "How can existing healthy community frameworks be adapted for application to children in rural communities?" and 2) "How do rural children perceive their neighbourhoods as contributing to or hindering their health?". This thesis will respond to these questions through two approaches. First, a review and synthesis of healthy community frameworks will lay the foundation for the creation of a novel rural children's healthy community framework. The second research question will be answered through go-along interviews with twenty rural children in Bruce County, Ontario, a rural municipality in the southwestern region of the province. There exists a variety of healthy community frameworks used in public health and planning, but few are specifically targeted toward children's needs and none toward rural children's needs. The analysis of frameworks revealed trends among frameworks that exist, and these trends were applied to the rural children's context. Rural children's perspectives of their neighbourhoods revealed that the components of physical environment, social environment, play, and safety had the most significant perceived impacts on their health. Future research should explore the application of healthy community frameworks to communities and focus on monitoring and evaluation. As well, research should be conducted with First Nations communities on reserves to determine similarly what aspects of their neighbourhoods contribute to or hinder their health and with older rural children to gain a better understanding of neighbourhood factors that may impact youth retention after post-secondary school.

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Chapter 1
Introduction

Children in rural areas have higher rates of obesity and overweight (Veugelers et al., 2008), worse access to mental health services (Van Vulpen et al., 2018), higher rates of suicide (Fontanella et al., 2015), lower fruit and vegetable consumption (Minaker et al., 2006), unique barriers to physical activity (Button et al., 2020), and more Adverse Childhood Experiences (ACEs) (Crouch et al., 2020) than their urban counterparts. With this knowledge, there is a need to better understand children's perceptions of their health from a place-specific context so that rural children's health can be improved and so that the unique strengths of rural communities can be leveraged (H. Bilinski, Duggleby, et al., 2013; H. Bilinski, Henry, et al., 2013; H. N. Bilinski et al., 2010; Gauthier et al., 2011).

Children's health can be defined in a number of ways. For the purposes of this thesis, a definition has been adopted from the National Research Council & Institute of Medicine (2004). This definition was derived from the principles of the Ottawa Charter of 1986, with adaptations made to reflect the interconnectedness of several health-influencing factors. When discussing children's health throughout this paper, it is therefore understood as "the extent to which individual or groups of children are able to or enabled to (a) develop and realize their potential, (b) satisfy their needs, and (c) develop the capacities that allow them to interact successfully with their biological, physical, and social environments" (National Research Council & Institute of Medicine, 2004). This definition is pertinent to the current research because of the acknowledgement that health is influenced by a variety of factors and also because of its specific mention of children's interactions with their environments, which is explored in this paper.

Extant literature has focused mainly on quantitative research pointing to the health disparities between rural and urban children or the challenges facing rural children in flourishing (H. Bilinski, Henry, et al., 2013; H. N. Bilinski et al., 2010; Gauthier et al., 2011; Veugelers et al., 2008; Zhou et al., 2021). However, the depth needed to understand why children thrive in one environment or another is needed to better contextualize the existing research and better utilize it for planning practice. It is particularly important that this context come from children themselves rather than from assumptions made by adult researchers or practitioners to increase the likelihood of success in

practice (H. Bilinski, Duggleby, et al., 2013; Gauthier et al., 2011). Furthermore, healthy community research, which often benefits children, has focused primarily on urban areas, with less consideration given to how these principles can be adapted for rural areas and consequently improve the lives of rural children.

1.1 Healthy Communities

Healthy community frameworks have existed in planning scholarship since at least the 1980s, when the term 'healthy community' was coined in Canada (Williams-Roberts et al., 2015). Since this time, a large number of healthy community frameworks have emerged from various organizations and in research, like Child-Friendly Cities, from UNICEF (UNICEF, 2018); Inclusive Healthy Cities, from Gehl People (Gehl People, 2018); and 8 80 Cities (8 80 Cities, n.d.); to name a few. Common among most healthy community frameworks that exist is a lack of specific initiatives for children and for rural communities, or together, for rural children.

Healthy community frameworks can be useful to guide planning practice, particularly given what is known about neighbourhood impacts on health. Neighbourhood impacts on health are complex because of the interrelated nature of the components that make up a neighbourhood, like physical environment and social environment (Diez Roux, 2001). Neighbourhoods impact multiple aspects of children's health through a variety of mechanisms. For example, neighbourhood deprivation is associated with reduced physical activity (Holst Algren et al., 2015) and children's developmental health is negatively impacted by area-level social inequalities (for example, the resulting safety of a neighbourhood) (Minh et al., 2017). There are also various neighbourhood characteristics associated at various strengths with depressive symptoms (Mair et al., 2008). There are also positive associations between obesity and neighbourhood features that discourage physical activity (Black & Macinko, 2008). Given the wide array of impacts neighbourhods can have on health, healthy community frameworks have attempted to address some of these to improve health among individuals in a community.

1.2 Importance of Children's Perceptual Data

This thesis relies in part on perceptual data from rural children. Perceptual data from children is important in qualitative, place-based research for a number of reasons. First, children have historically been excluded from planning research, leading to a lack of understanding of how their

neighbourhoods or built environments impact them from their own perspectives. With a recent and growing recognition that children have unique perspectives and that they deserve to weigh in on matters that impact them, it is important to integrate them into research (Carroll et al., 2015; Lundy, 2007). Second, adult assumptions about the way children see the world are often inaccurate. Reducing the impacts of the adult perspective can elicit more accurate data by doing research directly with children, who can provide their firsthand experiences and viewpoints (Alparone & Rissotto, 2001). Finally, although there is a distinction between engaging with children in research and in planning practice, there may be lessons to be taken from engaging in the academic context to planning practice that can result in better communities for children. In fact, a handful of studies have conducted research concurrent with planning practice engagement to evaluate various approaches to engagement with children (Carroll et al., 2015; Ergler et al., 2015). Perceptual data in this thesis will provide richness to what is already known about rural children's health related to their neighbourhoods.

1.3 Defining Rurality

A persistent problem in research on rural communities is the lack of a clear and consistent definition of rural. Across geographical jurisdictions, academic disciplines, and organizations, the definitions for 'rural' are diverse. In many studies, authors acknowledge that there is no one consistent definition of 'rural' and that this is a challenge in the realm of rural academia (Moore et al., 2013; Sandercock et al., 2010). For the most part, authors use valid and verifiable definitions of 'rural', although it is rare that the same definition is used study-to-study by different authors. There are studies that adopt geographical classifications from census-tract data from national statistical agencies (e.g. Crouch et al., 2023a), population thresholds (e.g. Salmon et al., 2013a), categorizations provided by other national agencies (e.g. Hardy et al., 2024), categorizations from the regional level or from school boards (e.g. Davison et al., 2012), or definitions from the literature (e.g. Kramer-Kostecka et al., 2022). The definitions are specific, but few studies opt to use the same definitions.

Several authors acknowledge that definitions of rural are 'contentious', 'heterogeneous', and 'differed' (Cleland et al., 2010; Hansen et al., 2015; Sandercock et al., 2010). While it is true that defining 'rural' has been a longstanding challenge for rural studies researchers, it is important to be explicit in study design and methodology for replicability and validity. In some studies, a specific definition is not provided; in these cases, characteristics of the community should be provided for context so that future researchers can understand the authors' specific conceptualization of 'rural'.

For example, Button et al. provide the following statement “In this article, the researchers describe the geographic context of the study areas, enabling future researchers to determine the applicability and context of the research” (2020). Such a statement is helpful for future research to use as reference when building upon existing literature.

The definition of ‘rural’ is often juxtaposed with that of ‘urban’. Typically, rurality and urbanity are viewed dichotomously, which can ignore variability within the two categories. Moore et al. (2013) and Sandercock et al. (2010), in their studies on built environment and children’s physical activity, discuss the need to trichotomize the categorization of geographical settings because the simplification of these to only urban and rural ignores a significant third category: suburban (Moore et al., 2013; Sandercock et al., 2010). However, the authors note that this still may be an oversimplification and may require a reconceptualization of the rural-suburban-urban divide as a spectrum or continuum instead of falsely discrete categories.

Recently, Eurostat (the statistical office of the European Union under the European Commission) came up with a methodology for categorizing cities, towns, and rural areas in collaboration with six other organizations. This methodology is called the ‘degree of urbanization’ or DEGURBA. The goal of DEGURBA is to establish an urban-rural continuum on which all regions can be classified to improve international statistical comparisons (European Commission. Statistical Office of the European Union. et al., n.d.). The methodology addresses the concerns of many rural researchers who note the need for a spectrum when categorizing urban and rural places (Moore et al., 2013; Sandercock et al., 2010). DEGURBA is used to classify rural areas in the current thesis.

The setting of the second study in this thesis is Bruce County, Ontario, which is classified as a rural area using the DEGURBA methodology. According to the first level of DEGURBA analysis, rural areas are spatial units that have more than 50% of their population in rural grid cells, meaning 1 km^2 grid cells that are neither urban centre nor urban cluster cells (European Commission. Statistical Office of the European Union. et al., n.d.). Although the second level of DEGURBA analysis classifies two towns within the municipality as semi-dense urban clusters, all other parts of the municipality are comprised of rural clusters or dispersed rural areas according to the Level 2 analysis. All parts of the municipality, including these towns, have limited access to functional urban areas (areas capturing the full economic function of a city), supporting the classification of Bruce County as a rural area (European Commission. Statistical Office of the European Union. et al., n.d.).

Understanding the gaps in the literature on rural children's health and rural neighbourhoods, this thesis has two main research questions. First (R1): How can knowledge on rural children and healthy communities inform a novel healthy community framework for rural children? And second (R2): How do rural children perceive their neighbourhoods as contributing to or hindering their health?

1.4 Implications for Rural Planners

An important outcome of this research is its implications for rural planners. As discussed, there are gaps in rural research to inform rural planning practice, so the studies contained in this thesis work toward addressing this. Specifically, this study highlights the importance of engaging with children in rural areas since, as evidenced in Chapter 3, rural children have distinct needs and perspectives from other members of their rural community, between subgroups of the population, and from urban children. Given the importance of the interrelated neighbourhood components of physical environment, social environment, play, and safety for children in this study, planners should consider the unique context for rural children that can enable or prohibit them from playing and using their neighbourhood. For example, what creative solutions to safety in rural communities could feasibly be implemented to enable more play and better interaction with the physical and social environments? The feasibility of the initiatives undertaken by rural planners also necessitates consideration because it may be unlikely, in many cases, that the addition of permanent amenities or features (e.g. improved or additional playgrounds, sidewalks, etc.) is within the financial means of a small rural community. So, there is an opportunity to consider unique and non-permanent approaches, like a pop-up 'play street' (Meyer et al., 2021), that could improve opportunities for play, temporarily alter the physical environment to children's needs, address safety concerns, and enhance the social environment.

1.5 Structure of the Thesis

This paper consists of four chapters, including this, the introduction chapter. Chapter 2 will consist of a review of academic and grey literature on healthy community frameworks and will look at how these can be applied to rural areas, with children as a target population (R1). This chapter will conclude with a proposed rural children's healthy community framework that can be used to guide future research and practice.

In Chapter 3, the same framework will guide the discussion on rural children's views of their neighbourhoods. The study presented in this chapter asks (R2), "How do rural children perceive their neighbourhoods as contributing to or hindering their health and wellbeing?" These questions were addressed using go-along interviews with twenty children between the ages of 7 and 15 in Bruce County, Ontario. The findings showed that rural children viewed characteristics of their neighbourhood like fresh air and quietness as importance; tended to place increased value on places that were associated with socializing; perceived safety, or lack thereof, as an important way in which their neighbourhoods impacted their health; and viewed play differently depending on the context in which they lived. In this study, there was also a significant distinction between rural children residing in the countryside and in small towns.

In the fourth and final chapter, a summary and integration of the findings will be presented as well as a discussion of how this work contributes to existing research and planning practice, an identification of strengths and limitations of the research, and avenues for future research.

This research will help practitioners and academics better understand the challenges and opportunities that rural children have in their neighbourhoods. It will provide more information on what works and what does not work in rural areas for children and their health and will point to potential areas of improvement or importance. The research will also provide insight into the characteristics of neighbourhoods that help rural children thrive and can hopefully be transferred to other rural contexts. As a result of this research, planning practitioners in rural areas may have better information on how to design communities for children to thrive. It also may provide planning practitioners in urban areas with some lessons that could be useful for the urban context for areas in which rural communities outperform their urban counterparts. This research also points to the importance of asking questions, like these, to children themselves, in both the context of research and of planning practice.

Chapter 2

Proposing a Rural Children's Healthy Community Framework

2.1 Introduction

Healthy community frameworks began in the public health field and in recent decades, have begun to influence the planning discipline (Williams-Roberts et al., 2015). Over time, they have come to include topics like public transit, technology, active transportation, diversity and more. Frameworks like UNICEF's Child-Friendly City, Gehl People's Inclusive Healthy Cities, 8 80 Cities, and the Pan-American Health Organization's Healthy Municipalities, Cities, and Communities Movement are broad frameworks that address the needs of people in the city or community context (8 80 Cities, n.d.; Gehl People, 2018; Pan American Health Organization & World Health Organization, n.d.; UNICEF, n.d.). Some regions also have their own healthy community frameworks that may be tailored to their specific context; for example, BC Healthy Communities is an organization that exists in British Columbia to address challenges like creating age-friendly communities and encouraging active school travel (BC Healthy Communities, n.d.-a).

Although dozens of healthy community frameworks exist, there is little mention of rural communities in these frameworks or consideration about how to apply existing frameworks to rural communities. Another major gap in many existing frameworks is a lack of explicit acknowledgment of children. Some frameworks, like the Child-Friendly City initiative (UNICEF, n.d.), do have a specific focus on children, but do not address the intersection of rural needs and children's needs. Since rural children face unique challenges to attaining good health compared to urban children, as evidenced by many studies, (H. Bilinski, Henry, et al., 2013; H. N. Bilinski et al., 2010; Button et al., 2020; Crouch et al., 2020; Fontanella et al., 2015; Gauthier et al., 2011; Minaker et al., 2006; Veugelers et al., 2008; Zhou et al., 2021), it is important to explore how rural communities can better support children's needs. A healthy community framework that addresses this issue could be useful to planners and public health practitioners who work at the neighbourhood or population level, as these frameworks work to address individuals' limits to maintaining healthy behaviour shaped by the built and social environments (Williams-Roberts et al., 2015). In this paper, this topic will be explored by considering how healthy community frameworks may be applied to children living in rural contexts.

This paper aims to explore the following research question: "How can existing healthy community frameworks be adapted for application to children in rural communities?" This paper has four objectives stemming from the research question. The first objective is to synthesize the literature on rural community priorities and healthy community frameworks to demonstrate the lack of existing frameworks that sufficiently address the health and wellbeing of rural children. The second objective involves assessing healthy community frameworks that will be used to make recommendations for a child-focused healthy rural community framework. The third objective is the analysis of the healthy community frameworks and synthesis of key features that appear across the frameworks, which will then establish trends and commonalities of the frameworks. The fourth objective is to discuss the application of these principles to rural communities and provide a recommendation for a healthy rural community framework that can be used by planning practitioners and academics to better understand how to create communities that are supportive of rural children's health and wellbeing.

2.2 Literature Review

This literature review first focuses on rural community priorities as set by various levels of government and other agencies. This overview will help shape the discussion on the gap that exists in addressing rural children's needs and where a healthy community framework for rural children could be helpful.

Rural communities have a distinct set of priorities for their growth, development, and prosperity that are specific to their geographic, environmental, economic, and demographic characteristics. These priorities are shaped formally and informally by federal, provincial, and municipal governments, as well as by agencies like the Federation of Canadian Municipalities (FCM), the Ontario Federation of Agriculture (OFA), and the Rural Ontario Municipalities Association (ROMA). The federal government, through the Department of Innovation, Science and Economic Development, sets priorities related to the provision of affordable and attainable housing, talent and youth retention, climate change resilience, improved infrastructure, strengthening the local economy, and the provision of high-speed internet (Minister of Rural Economic Development, 2023). The Ontario provincial government's priorities for rural communities include the expansion of high-speed internet, increased investment in rural economies, increased job creation, and supporting careers in agriculture (D'Mello & Callan, 2023). This paper looks at provincial government priorities from in the Ontario context but acknowledges that other provinces have different approaches.

Common rural priority areas emerging from the FCM, the OFA, and the ROMA include the need for high-speed internet, investments in infrastructure, affordable housing, improved healthcare and access to services, expansion of long-term care facilities, climate change adaptation, and workforce growth (Federation of Canadian Municipalities, 2018; Ontario Federation of Agriculture, 2023; Rural Ontario Municipal Association (ROMA), 2024). Federal, provincial, and association priorities are also frequently expressed in rural municipalities' Official Plans. For example, in the Official Plan for Bruce County, Ontario, rural municipal priorities include appropriate use of land and resources; orderly development; provision of adequate transportation infrastructure; protection of ecologically significant areas, water sources, and land; provision of affordable housing; encouragement of a cooperative approach to land use planning with First Nations communities; development of a diverse economic base; and support of economic growth in the County (Bruce County, 2024). Many of these organizations' primary efforts are on economic prosperity or growth in rural communities.

In this discussion of rural priorities, there is little to no mention of the importance of children's needs related to health. Children are occasionally mentioned in the context of youth retention for the purpose of maintaining population and economic growth, as an objective of the overall economic goals. This is problematic because we know that health and wellbeing disparities exist between rural and urban children. Without specifically addressing the causes of these disparities, like higher rates of obesity, worse access to services for mental health, higher rates of suicide, lower fruit and vegetable consumption, added barriers to physical activity, and higher ACE scores, they are likely to persist (H. Bilinski, Henry, et al., 2013; Button et al., 2020; Crouch et al., 2020; Fontanella et al., 2015; Gauthier et al., 2011; Minaker et al., 2006; Veugelers et al., 2008). Since health habits track from childhood to adulthood, it is important that these inequities are addressed to improve population health (Bohnert et al., 2022; Dobbins et al., 2013; Meyer et al., 2021; Wende et al., 2022). Improving quality of life in rural communities also has the potential to increase youth retention, which is of noted importance by organizations like the FCM, as previously mentioned (Federation of Canadian Municipalities, 2018).

More broadly, there is little mention of health as influenced by community context for rural populations from organizations like the FCM, OFA, ROMA, and federal and provincial governments, beyond the need for better healthcare services and the need for expanded long-term care options (Ontario Federation of Agriculture, 2023; Rural Ontario Municipal Association (ROMA), 2024).

These topics are often in relation to the aging population that is occurring in many rural Canadian municipalities but neglects the topic of rural children's health. Although most of Canada's population resides in urban areas, almost a fifth (17.8%) reside in rural areas (Statistics Canada, 2022), and exploring other dimensions of health could yield positive results for rural populations.

An ongoing challenge in rural studies scholarship is defining rural and establishing a consistent definition that can be applied across research. Among the various opinions that exist in rural research, there is some consensus that rurality is a spectrum and that different types of rural communities have different needs (e.g. Moore et al., 2013; Sandercock et al., 2010). This idea is validated by the Degree of Urbanization (DEGURBA), a metric established by the Statistical Office of the European Union, which acknowledges the varying degrees of urbanization and rurality and the differences within and between these contexts (European Commission. Statistical Office of the European Union. et al., n.d.). Consequently, this means that children in varying rural contexts have different needs and lived experiences. For instance, some children have close walking access to amenities like parks and downtown areas if they live in a small town, while others must drive some distance to access these same things, resulting in uneven physical activity environments (Button et al., 2020; Hansen et al., 2015; Meyer et al., 2021).

While the previous paragraphs have focused on modern rural priorities, the important history of health in rural places is worth noting. Historically, there has been an acknowledged connection between humans and sites linked to healing (historical examples include Roman Baths in Bath, England, and the Marian Shrines in Lourdes, France), termed 'therapeutic landscapes' (Williams, 2009). These sites were often naturalized or were made up of a combination of built and natural features and were believed to be health- and wellbeing-promoting (Williams, 2009). Through more recent centuries of urbanization, the idea that certain places are linked to health persisted with the perception that urban places were unhealthy and rural places were healthy (Gesler, 1992). Some city dwellers came to view the cleanliness and perceived political neutrality of rural areas as the antithesis of urban pollution and classism, instilling a desire to escape to these rural landscapes (Gesler, 1992). Even though life in rural areas has been linked to poorer access to healthcare, lower income, and unhealthy lifestyles, the association of rurality with health also led to the establishment of a variety of institutions, including asylums, correctional houses, and jails, in rural areas. This stemmed from the belief that users of these facilities who suffered from mental illness would be healthier due to the healing properties of the rural environment (Gesler, 1992). The perception of rural places are

particularly healthy is juxtaposed against the reality of poorer health outcomes for rural populations today, as previously discussed.

In planning practice and scholarship, healthy community frameworks have existed since the term 'healthy communities' was coined in Canada in the 1980s (Williams-Roberts et al., 2015). These frameworks usually aim to address multiple non-medical determinants of health through environmental interventions in a community (Williams-Roberts et al., 2015). Even before 'healthy communities' became a commonplace term, health promotion was considered an important part of planning. During the Industrial Revolution, diseases like cholera, typhoid, and smallpox spread rapidly through cities via sanitation systems and overpopulation (Schneider & Greenberg, 2018). Since this time, health has been an important part of planning with the planning profession playing a role in addressing the obesity epidemic and chronic diseases by influencing the social and environmental factors that are associated with these (Lopez, 2018), but the aspects of health that are addressed have continued to expand.

These frameworks have been applied and have guided practice both formally and informally, but they have a common characteristic of being generally based on and applied to urban communities. As noted above, many approaches to creating healthy communities emerged in response to issues that stem from densely populated urban areas (Lopez, 2018; Schneider & Greenberg, 2018), so less attention has been given to the specific issues faced by rural communities in these frameworks. Additionally, most of the Canadian (and global) population resides in urban areas (Statistics Canada, 2022), so the abundance of frameworks that are for the urban context is perhaps logical. However, there are important reasons to focus efforts on rural communities, particularly in the Canadian context. Healthy habits in childhood can result in healthier adults (Bohnert et al., 2022), so it is possible that a focus on rural children's health could put less burden on the healthcare system later in life; and we know that neighbourhood has impacts on individuals' health, so addressing health in this domain could be beneficial (Wende et al., 2022). As well, youth retention is an important priority of Canadian organizations that focus on rural matters (Federation of Canadian Municipalities, 2018; Minister of Rural Economic Development, 2023), and creating neighbourhoods that are conducive to children could play a part in retaining rural children into adulthood.

Current understandings of rural health have evolved from the histories described above. It is now understood that health in places is shaped by a myriad of forces, key among them social and

physical environments (Diez Roux, 2001), individual perceptions (Wilson et al., 2004), and various micro- and macro-level factors (Perez et al., 2020). While exposure to or use of green and blue space (abundant in rural areas) has been validated as a positive contributor to health and wellbeing (Finlay et al., 2015; Twohig-Bennett & Jones, 2018), supporting the historic notion that rural spaces are healing, it is also acknowledged that living in rural communities is associated with worse health outcomes, as previously described. Altogether, this points to the need for new approaches to healthy communities in rural areas.

For the purposes of this paper, children's health is understood as "the extent to which individual or groups of children are able to or enabled to (a) develop and realize their potential, (b) satisfy their needs, and (c) develop the capacities that allow them to interact successfully with their biological, physical, and social environments" (National Research Council & Institute of Medicine, 2004). This definition is based on principles developed in the Ottawa Charter of 1986 but is adapted to reflect health as an interplay for several influencing factors (National Research Council & Institute of Medicine, 2004). The proposed framework in this paper will consider how neighbourhoods can support the realization of rural children's health, based on the above definition of children's health.

Given the importance of rural children's health and wellbeing and the lack of a framework for creating healthy rural communities for children, this paper has three main objectives: First, to review the most frequently used healthy community frameworks that may be relevant to children's health and wellbeing. Second, to identify common components of these frameworks. Third, to evaluate the feasibility and relevance of these components to rural communities with the goal of establishing a healthy rural community framework that addresses some of the common concerns or needs of rural children. Therefore, this study addresses the following research question: "How can existing healthy community frameworks be adapted for application to children in rural communities?"

2.3 Methods

The purpose of this study is to evaluate common healthy community frameworks in order to consider how these might be applied to the needs of children in rural communities by rural planning academics and practitioners. First, I conducted a scan of grey and academic literature for healthy community frameworks and did a preliminary screening to evaluate eligibility and relevance to the study. Then, I conducted a document analysis with the remaining frameworks to identify important components that may be important to a rural children's healthy community framework. Last, I considered these

components against what we know about rural children's health to present recommendations for the framework.

2.3.1 Search Strategy

Scopus (1966 to present), the Cumulative Index to Nursing and Allied Health Literature (CINAHL) (1981 to present), and PubMed (1950 to present) were used to review the academic literature on healthy community frameworks while a Google search was done to review the grey literature. Using the database (Table X) and search engine (Table X), the following searches were queried.

Table 0.1: Academic Database Search Terms

Search Term	**Included Synonyms Searched**
"healthy community"	
AND "framework"	OR "approach" OR "theory"
AND "child*"	OR "kid*" OR "youth" OR "child"
AND "built environment"	

Table 0.2: Google Search Terms

Search Term	**Included Synonyms Searched**
"healthy community"	OR "built environment"
AND "framework"	OR "approach" OR "theory"
AND "child*"	OR "kid*"
"World Health Organization"	*OR "United Nations" OR "Government of Canada"*

Synonyms were identified through an iterative process as an initial review of the results revealed that studies used various terms to refer to similar concepts within the realm of healthy community frameworks (e.g. approach versus theory versus framework).

For the Google search of grey literature on healthy community frameworks, searches were queried for results from organizations or agencies that could reasonably be assumed to have a framework, approach, report, or mandate on the topic (e.g. the World Health Organization or the United Nations) and on initiative-specific websites (e.g. 8 80 Cities and Child-Friendly Cities). From

here, the results snowballed as some frameworks were based on previous iterations of the framework from other organizations or contained elements from other frameworks. The reference lists for the relevant studies and grey literature were also examined for additional sources that were not found in the primary search.

2.3.2 Eligibility Screening

All frameworks that were related to healthy communities were included in the first screening phase based on a title and abstract screening of the academic paper or grey literature report of origin. To be eligible for inclusion in the analysis, the frameworks were explored in greater depth for their relevance to rural children and healthy communities. Frameworks that did not have sufficient information, did not contain mentions of children, or did not contain mentions of rurality were excluded from this study. A table of the frameworks, a brief description, and the reason for exclusion from the study was kept.

2.3.3 Data Characterization

Frameworks that were eligible for the study were accessed in their full-text format either through the University of Waterloo databases or through the website of the organization of origin. Taking a scoping review approach of the frameworks, an Excel spreadsheet was created to track framework characteristics and confirm the relevance to this study. The spreadsheet included headings for the following characteristics: Framework/Theory; Source (e.g. organization or author); Target Population; Key Elements; Mentions of Rurality; Mentions of Children; and Notes. An abbreviated version of this table is included in the Results section, and a full version can be found in Appendix A. This methodology comes from the five stages of Arksey and O'Malley's scoping review: identifying the research question, identifying relevant studies, study selection, charting the data, and reporting the results (Arksey & O'Malley, 2005).

2.3.4 Analysis of Frameworks

This study takes a qualitative manifest content analysis approach, whereby the data – in this case, the components of the included frameworks – are reduced into categories in a systematic way (Schreier, 2014). In this study, the term 'components' is used for consistency to describe what some frameworks refer to as 'pillars' (Government of Alberta et al., n.d.), 'guiding principles' (UNICEF, 2022), or others. In this approach, the framework components are grouped into categories (groupings of

components with shared characteristics) that can help identify the commonalities in healthy community frameworks. The systematic nature of the methodology was upheld by only evaluating the components of the frameworks that were specifically identified by the publishing organization, per the manifest content analysis approach; meaning, if an organization discussed engagement in supporting documents for the framework but did not list engagement as a key component, then engagement was not categorized. This ensured a baseline for standardizing the inclusion of information.

To analyse the data, a coding frame was constructed inductively to identify the subcategories of healthy community frameworks. The categories that initially emerged from this inductive approach were used to categorize the components of the first three frameworks being analysed and were then revised and expanded iteratively to ensure that all categories were captured and were mutually exclusive (Schreier, 2014). Then, categories were consolidated if necessary. After a preliminary categorization, all the frameworks were re-examined to ensure that their components were correctly categorized. The categorization process was repeated to ensure validity (Schreier, 2014). The objective of this analysis was to gain an understanding of what areas the frameworks tended to focus on and whether there were trends among these (Objective 1).

2.4 Results

The academic and grey literature search revealed 22 frameworks to healthy communities that, from the title and abstract scan, appeared to be potentially relevant to the study. These frameworks, the intended target population, and their descriptions are provided in Table 0.3.

Upon a full-text review of the 22 frameworks for their relevance and applicability to a rural children's healthy community framework (Objective 2), 13 were removed for one of the following reasons. Table 0.3, below, includes the 22 frameworks indicates if they were 1) included (n= 9); 2) excluded for lack of sufficient information (n= 6), 3) excluded for lack of mention of children and/or rurality (n= 5), or 4) excluded for both a lack of sufficient information and a lack of mention of children and/or rurality (n= 2). Because of the manifest content analysis approach, a lack of mention of children or rurality in the frameworks was used as a proxy to determine that the frameworks would not be relevant to the analysis for rural children.

Table 0.3: Healthy Community Frameworks Identified in Preliminary Scan

Healthy Community Approach	Target Population	Description	Reason for exclusion
Child-Friendly City Initiative (CFCI)	Children	Launched in 1996, the CFCI is intended to support municipal governments in realizing the rights of children at the local level (based on the UNCRC) by creating a network of government, other stakeholders, and children themselves to make their communities more child-friendly (Child-Friendly Cities Initiative, n.d.).	*N/A - Included*
Healthy Rural Communities Toolkit	Whole population (rural)	Funded by Public Health Ontario, the Healthy Rural Communities Toolkit is intended for use by rural municipalities. This toolkit addresses some of the specific planning challenges faced by rural communities and provides guidance on how to address these (Caldwell et al., 2015).	*N/A – Included*
Healthy Municipalities, Cities, and Communities Movement (HMCC) *removed*	Whole population	The Pan-American Health Organization (PAHO) adopted the criteria for HMCC in 2022 to present a set of guidelines that would strengthen public policies, plans, and programs of local governments meant to improve health and wellbeing (Pan American Health Organization & World Health Organization, n.d.).	Excluded for lack of mention of children and/or rurality.
Coalition for Healthier Cities and Communities (CHCC) *removed*	Whole population	The CHCC was formed in 1996 to bring together organizations at all levels to support local efforts in building healthier communities through the economic, social, and physical wellbeing of people and places (E R Norris & Pittman, 2000).	Excluded for lack of sufficient information.
Inclusive Healthy Places Framework	Whole population	The Gehl Institute created the Inclusive Healthy Places Framework to evaluate and create healthy and inclusive public places that support health equity. In this framework, the focus is on social determinants of health that can be viewed clearly through the lens of public space (Gehl People, 2018)	*N/A - Included*
Healthy Communities Framework	Whole population	The Healthy Communities Framework, funded by the Government of Alberta, is a community development tool intended for local health and wellness champions or professionals to help increase healthy	*N/A - Included*

Healthy Community Approach	Target Population	Description	Reason for exclusion
		eating and active living in communities across the province (Government of Alberta et al., n.d.).	
Our Healthy Community (OHC) *removed*	Whole population	OHC is a model run by academic institutions that is intended to be a tool for local governments to support effective and sustainable health promotion and intervention across sectors. The model works with the understanding that health and disease are informed by the interplay between people and their environments (Aadahl et al., 2023).	Excluded for lack of mention of children and/or rurality.
8 80 Cities	Whole population	8 80 Cities is an organization whose objective is to promote the design of cities for an 8-year-old and an 80-year-old, with the idea that this design would capture the needs of all people. The overarching goal of 8 80 Cities is to create cities that are healthier, more equitable, and more sustainable (8 80 Cities, n.d.).	*N/A - Included*
Healthy Cities	Whole population	The World Health Organization's (WHO) Healthy Cities initiative has existed for around three decades and seeks to build a movement for public health and wellbeing at the local level. It promotes healthy, equity, and sustainable development through innovation and multisectoral change and collaboration (World Health Organization, 2020).	*N/A - Included*
Safe Routes to School *removed*	School age children	The National Centre for Safe Routes to School focuses on the importance of safe walking, biking, and rolling for communities. The initiative starts with children's trips to school, with the idea that these trips becoming safer will make all trips safer (National Center for Safe Routes to School, n.d.).	Excluded for lack of sufficient information.
Active Living by Design *removed*	Whole population	The Active Living by Design program was funded by the Robert Wood Johnson Foundation in 2001 to create communities that support physical activity. The program funded communities to establish multidisciplinary partnerships and implement Active Living by Design principles: preparation, promotions, programs, policy, and physical projects (Bors et al., 2009).	Excluded for lack of sufficient information and lack of mention of children and/or rurality.

Healthy Community Approach	Target Population	Description	Reason for exclusion
Smart Growth Planning Network *removed*	Whole population	The Maryland Department of Planning and the U.S. EPA Office of Sustainable Communities jointly created the Smart Growth Planning project to support a range of strategies to protect human health and the natural environment through 10 basic principles to guide decision-making. Ultimately, this project is intended to make communities economically competitive, create business opportunities, and strengthen the local tax base (Smart Growth Network, 2015).	Excluded for lack of mention of children and/or rurality.
Safe Communities *removed*	Whole population	The International Safe Community Certifying Centre (ISCCC) created guidelines for International Safe Communities so that local governments and organization can take evidence-based actions against violence and injury. The ISCCC focuses their work on developing indicators for community certification, educating communities, and research on safe communities (International Safe Community Certifying Center, 2015).	Excluded for lack of sufficient information and lack of mention of children and/or rurality.
Livable Communities Initiative *removed*	Whole population	This initiative was launched by the Clinton-Gore administration in 2001 to help American communities grow to sustain strong economic growth and to promote a high quality of life. This included protection of water sources, improved transportation planning, and citizen involvement in local planning. The initiative is no longer active, and information exists in government archives (Clinton-Gore Livability Initiative, 2001).	Excluded for lack of sufficient information.
Global Age-Friendly Cities	Older Adults	The WHO created the Global Age-Friendly Cities Guide in 2007 to address the needs of the growing share of the population aged 60 and older. The guide is intended to be a reference to create cities that encourage active ageing through opportunities for health, participation, and security to increase quality of life (World Health Organization, 2007).	*N/A – Included*

Healthy Community Approach	Target Population	Description	Reason for exclusion
Dementia Friendly Cities *removed*	Older Adults	The Dementia-Friendly Cities initiative was created by Alzheimer's Canada to provide educational opportunities for the public and for professionals that mobilize them to implement dementia-friendly principles in their cities (Alzheimer Society of Canada, 2023).	Excluded for lack of mention of children and/or rurality.
BC Healthy Communities	Whole population	BC Healthy Communities is a non-profit that operates across the province of British Columbia to facilitate the development of healthy, thriving, and resilient communities. Their initiative, PlanH, specifically builds relationships with health partners and local organizations to build an understanding of the community's specific health and wellbeing challenges (BC Healthy Communities, n.d.-b).	*N/A - Included*
Community Wellbeing Framework *removed*	Whole population	The Community Wellbeing Framework was designed by consulting firm, DIALOG, and the Conference Board of Canada, for built environment professionals as a tool to examine design features that contribute to community wellbeing and guide decision-makers. The framework looks at the social, environmental, economic, cultural, and political spheres of a community to determine the presence or lack of community wellbeing (DIALOG, n.d.)	Excluded for lack of sufficient information.
Healthy Communities Practice Guide	Whole population	The Canadian Institute of Planners (CIP) created a Healthy Communities Practice Guide to help planning practitioners create healthy communities. The Guide provides a framework for considering the interconnected components of a healthy community through liveability, equity, and sustainability (Canadian Institute of Planners, 2024).	*N/A - Included*
Healthy Community Guidelines *Removed*	-	*Accessible only via email request to University of Alberta Department of Medicine. Email request unanswered as of June 4, 2024.*	Excluded for lack of sufficient information.
Healthy Community Neighbourhood Initiative (HCNI)	African Americans, Latinos, other	The HCNI is a collaboration between two local community organizations, a medical centre, and three university departments. It is designed to address health disparities in a low-income community	Excluded for lack of mention of children and/or rurality.

Healthy Community Approach	Target Population	Description	Reason for exclusion
removed	racialized adults (low-income)	in Los Angeles. The initiative takes into account community and individual risk factors to address health disparities (Brown et al., 2016).	
Health in All Policies (HiAP) *removed*	Whole population	HiAP is the principle that health should be considered in all local policies, an idea that developed during the 2006 Finnish presidency of the European Union. This idea is now more widespread and aims at strengthening intersectoral health policies to improve population health (Ollila, 2010).	Excluded for lack of sufficient information.

The key components of the remaining 9 frameworks are provided in Table 0.4 below. The analysis will use the components of each framework to determine the most commonly occurring components amongst the included frameworks. These key components will be evaluated to extend to rural children's needs.

All the included frameworks minimally had mention of either children or rural areas, and sometimes both. However, the frameworks addressed children and rurality in different depths. The table below indicates if the framework had no mention of children or rural areas (0), mention of children / rural areas, but no specific strategies or not specifically targeted to these populations (1), or the framework specifically targets children or rural areas or contains specific strategies that address these (2).

Table 0.4: Healthy Community Frameworks Included in Study (with key components)

Name, Year	Organization	Purpose	Major components	Rural Focus	Child Focus
Child-Friendly City Initiative (CFCI), 1996	UNICEF	To realize the rights of children, according to the UN Convention on the Rights of the Child, at the local level	• Children are safe and protected from exploitation, violence, and abuse. • Children have a good start in life and grow up healthy and cared for. • Children have access to essential services. • Children experience quality, inclusive, and participatory education and skills development. • Children express their opinions and influence decisions that affect them. • Children participate in family, cultural, city / community and social life. • Children live in a clean, unpolluted and safe environment with access to green spaces. • Children meet friends and have places to play and enjoy themselves. • Children have a fair chance at life regardless of their ethnic origin, religion, income, gender, or ability.	1*	2*
Healthy Rural Communities Toolkit, 2015	Public Health Ontario	To provide guidance to municipalities on creating a rural built environment that contributes to a positive quality of life and health outcomes	Key mechanisms for action for rural communities: • Community Design and Land Use Planning • Active Transportation • Community Engagement and Capacity Building • Water Quality • Air Quality • Tourism • Planning for Special Age Groups • Agriculture	2	1

Name, Year	Organization	Purpose	Major components	Rural Focus	Child Focus
			• Cultural Strategies and Revitalization • Access to Local Food • Nature • Safe and Affordable Housing • Climate Change		

Inclusive Healthy Places Framework, 2018	Gehl People	The framework is meant to provide themes and connections that help to understand health equity and public space so that users can adapt the framework for their specific context and leverage inclusion in doing so.	• Context
			  ○ Community assets
			  ○ Predictors of exclusion
			  ○ Community health context
			  ○ Characteristics of people present
			• Process
			  ○ Civic trust
			  ○ Participation
			  ○ Social capital
			• Design & Program
			  ○ Quality of public space
			  ○ Accessibility
			  ○ Access
			  ○ Use & users
			  ○ Safety & security
			• Sustain
			  ○ Ongoing representation
			  ○ Community stability
			  ○ Collective efficacy
			  ○ Ongoing investment in space
			  ○ Preparedness for change
				1	1

Healthy Communities	Communities Choosewell,	The Healthy Communities	The framework has seven pillars:	1	0

Name, Year	Organization	Purpose	Major components	Rural Focus	Child Focus
Framework, 2006	Alberta Parks and Recreation Association, and Government of Alberta	Framework is meant to help increase healthy eating and active living by giving local communities a toolkit.	• Policy • Places • People • Partnerships • Programs • Promotion • Participation.		
8 80 Cities, 2007	8 80 Cities	The organization helps facilitate engagement, planning, and facilitation at the local level to create healthier communities. The idea that guides 8 80 Cities is that a city will be better for everyone when it is built to work for an 8-year-old and an 80-year-old.	To address the needs identified in the engagement strategies, 8 80 Cities recommends that cities: • Take an integrated and holistic approach. • Take a multi-sector approach. • Dedicate a consistent source of funding. • Collect data from and invest in front-line staff. • Make participation free and accessible. • Engage the entire community.	0	2
Healthy Cities, 1986	World Health Organization (WHO)	The initiative is focused on process rather than outcome; meaning, any city that is striving to improve its health is considered a healthy	1) Improve city governance for health and wellbeing 2) Reduce / minimize health inequalities 3) Promote health-in-all-policies approaches 4) Promote community development and empowerment and create social environments that support health 5) Create physical and built environments that are supportive to health and healthy choices	0	1

Name, Year	Organization	Purpose	Major components	Rural Focus	Child Focus
		city regardless of current health status	6) Improve the quality of and access to local health and social services 7) Consider and plan for all people in the city and prioritize those most in need 8) Strengthen local public health services and capacity to deal with health-related emergencies 9) Plan for urban preparedness, readiness and response in public health emergencies		
Global Age-Friendly Cities, 2007	World Health Organization (WHO)	The initiative that encourages cities to become more age-friendly as share of residents aged 60 and older increases.	Through consultation with older adults, the WHO determined eight domains that are important to the ageing population in cities. These are: 1) Housing 2) Social participation 3) Respect and social inclusion 4) Civic participation and employment 5) Communication and information 6) Community support and health services 7) Outdoor spaces and buildings 8) Transportation	1	1
BC Healthy Communities, 2005	BC Healthy Communities (non-profit)	The organization recognizes that 60% of what makes people healthy is determined by their built, social, environmental, and economic circumstances, and so their objective is	BC Healthy Communities key building blocks: • Community and citizen engagement • Multi-sectoral collaboration • Political commitment • Healthy public policy • Asset-based community development	1	2

Name, Year	Organization	Purpose	Major components	Rural Focus	Child Focus
		to help local governments design environments supportive of health and wellbeing.			
Healthy Communities Practice Guide, 2010	Canadian Institute of Planners (CIP)	The guide has the goal of helping planners discover opportunities and methods for collaborating with health professionals, stakeholders, and community members to work toward healthy communities.	In the Healthy Communities Practice Guide, the themes that are addressed through planning and the built environment are: • Human Services (i.e. health services, education, social services, emergency services) • Social Development (i.e. conviviality, social capital, community development, spirituality, arts and culture, crime prevention, equity) • Food Systems (i.e. large-scale agriculture, urban farming, agribusiness, distribution, food services) • Buildings (i.e. commercial, residential, industrial, institutional, green design, universal design, aesthetics) • Infrastructure (i.e. mobility, water supply, solid waste management, energy, telecommunications) • Parks, Open Space & Natural Areas (i.e. recreation, contemplation, physical activity, biophilia) • Ecosystem Health (i.e. climate change, conservation of resources, pollution of air/water/soil/biodiversity) • Development Patters (i.e. land use, built environment, urban design, public realm) • Economic Development (i.e. sustainable economic activity, meaningful work, provision of social benefits) • Governance (i.e. jurisdiction, civic participation)	2	1

*0 = the framework had no mention of children or rural areas, 1 = mention of children / rural areas, but no specific strategies or not specifically targeted to these populations, 2 = the framework specifically targets children or rural areas or contains specific strategies that address these.

2.5 Analysis of Frameworks

Through content analysis, the 85 components of the frameworks were categorized by theme; this included component that were repeated between frameworks. A total of ten categories based on the shared characteristics of the components of each framework were established through this process: programs and services; engagement, participation, and communication; physical environment; policy and governance; social environment; cross-sectoral collaboration; equity and diversity; access and accessibility; safety and security; and play. The framework components were categorized discretely, but it should be acknowledged that the categories are interconnected. For example, play is closely linked to both physical and social environment, as availability of green space impacts play, and children gain social interaction when they play in public places (Meyer et al., 2021; Sutton, 2008). Similarly, cross-sectoral collaboration and public policy and governance are closely linked, with the distinction that public policy and governance is focused on the public sphere, while cross-sectoral collaboration is focused on bringing private and non-profit groups together with government to enhance efficacy.

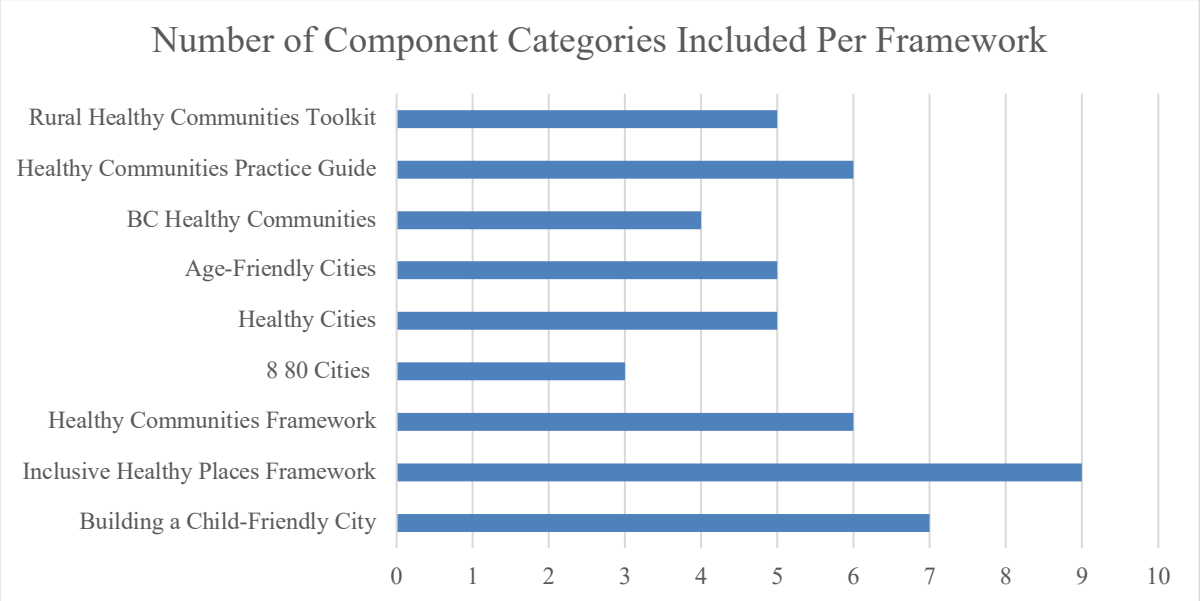

Figure 0.1: Number of Component Categories Included Per Framework

Figure 0.1 shows how many of the ten categories were represented in the key components of each framework. Of the ten categories, the Inclusive Healthy Places Framework had components in 9 categories, Child-Friendly City in 7 categories, Healthy Communities Framework in 6, Healthy Communities Practice Guide in 6, Age-Friendly Cities in 5, Healthy Cities in 5, Rural Healthy Communities Toolkit in 5, BC Healthy Communities in 4, and 8 80 Cities had components in 3.

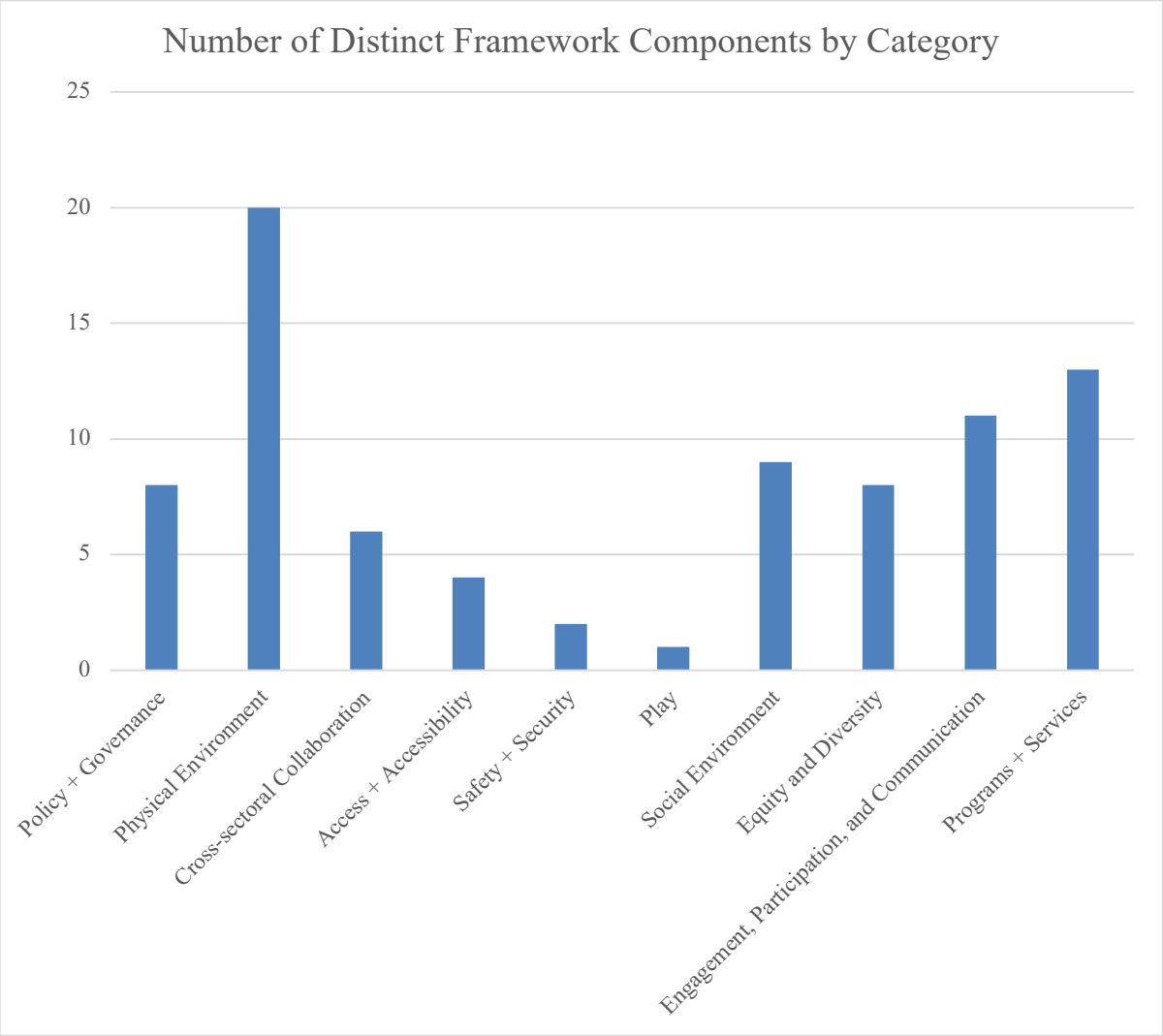

Figure 0.2: Number of Distinct Framework Components by Category

Figure 0.2 shows the number of framework components that fell into each of the categories out of the 85 total components. The physical environment contained the most framework components (n=20), followed by programs and services (n=13), engagement, participation, and communication (n=11),

social environment (n=9), policy and governance (n=8), equity and diversity (n=8), cross-sectoral collaboration (n=6), access and accessibility (n=4), safety and security (n=2), and play (n=1).

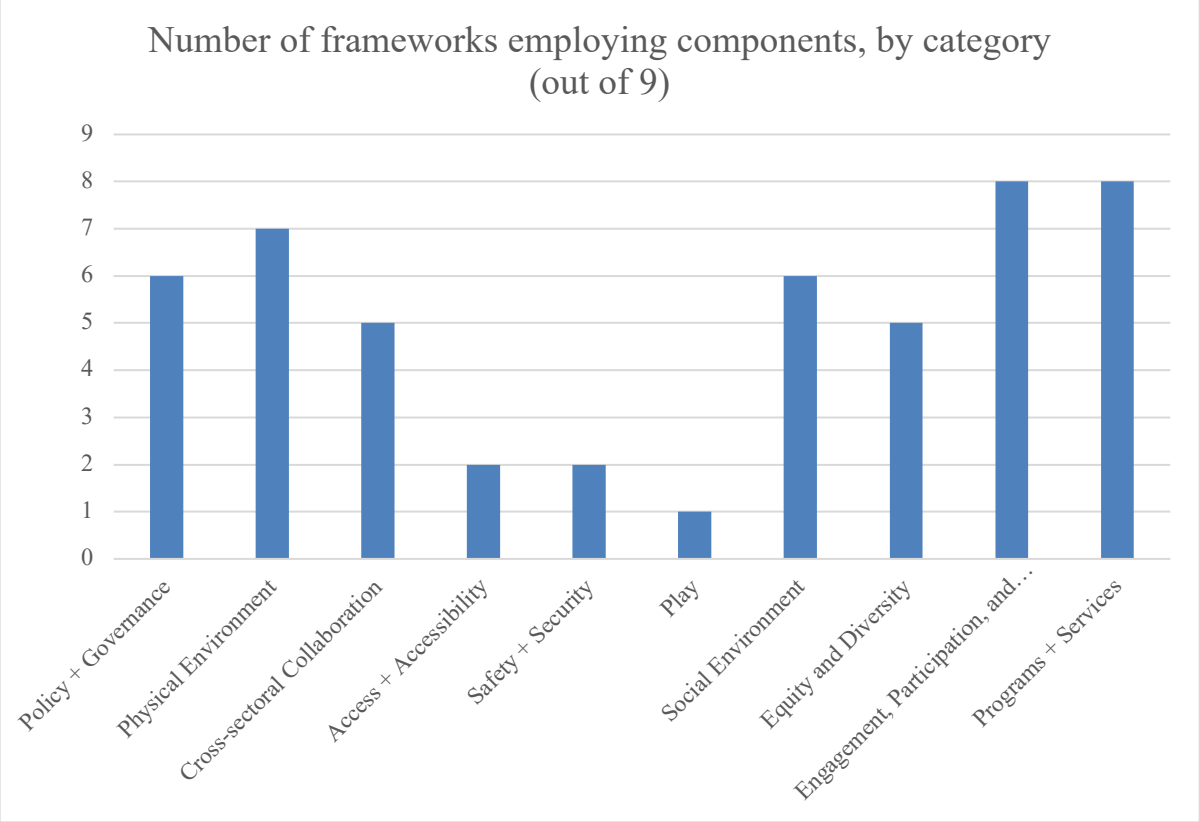

Figure 0.3: Number of frameworks employing components, by category (out of 9)

Figure 0.3 shows the number of categories with at least one component per framework. The categories that were represented among the most frameworks were: engagement, participation, and communication (n=8), programs and services (n=8), physical environment (n=7), policy and governance (n=6), social environment (n=6), cross-sectoral collaboration (n=5), equity and diversity (n=5), safety and security (n=2), access and accessibility (n=2), and play (n=1).

2.5.1 Rurality Considerations in Existing Frameworks

Five of the nine frameworks include mentions of rural areas or rural contexts in their frameworks. There is no specific mention of rural communities in the Healthy Cities framework, Healthy Communities Framework, or 8 80 Cities. However, the Healthy Communities Framework also does not specifically address cities and is focused on ‘communities’ broadly, which encompasses all

communities both rural and urban. In the remaining frameworks, rurality is most frequently addressed by mentioning that the framework could be applied to rural areas. Inclusive Healthy Cities can be applied to rural areas, but the authors acknowledge that some of the principles may work best when applied in denser areas. Global Age-Friendly Cities has a brief mention of rural communities when referencing the need for these places to be more age-friendly. BC Healthy Communities has some online resources available for rural topics. Child-Friendly City principles are intended to be applied everywhere, including rural places, and the guide has many mentions of this, but there are no specific strategies for applying the framework in a rural area. The Healthy Communities Practice Guide includes tangible guidance or examples on how the framework's principles might be implemented in a rural area. Finally, as the Rural Healthy Communities Toolkit is targeted to rural communities, it includes extensive guidance on applying the principles in a rural community. Although Inclusive Healthy Cities, Global Age-Friendly Cities, and Child-Friendly City have mention of rural communities, the presence of the word 'cities' in the names of the frameworks could be limiting to their uptake in rural areas.

2.5.2 Children in Existing Frameworks

All the frameworks except the Healthy Communities Framework include at least one mention of children. Child-Friendly Cities and 8 80 Cities are geared specifically toward children's needs and BC Healthy Communities has programs that focus more specifically on active school travel and youth mental health. The Inclusive Healthy Places Framework, Global-Age Friendly Cities, Healthy Cities Practice Guide, Rural Healthy Communities Toolkit, and WHO Healthy Cities discuss the benefits of the frameworks to children without specifically targeting children as a population.

2.5.3 A Novel Child-friendly Community Framework for Rural Areas

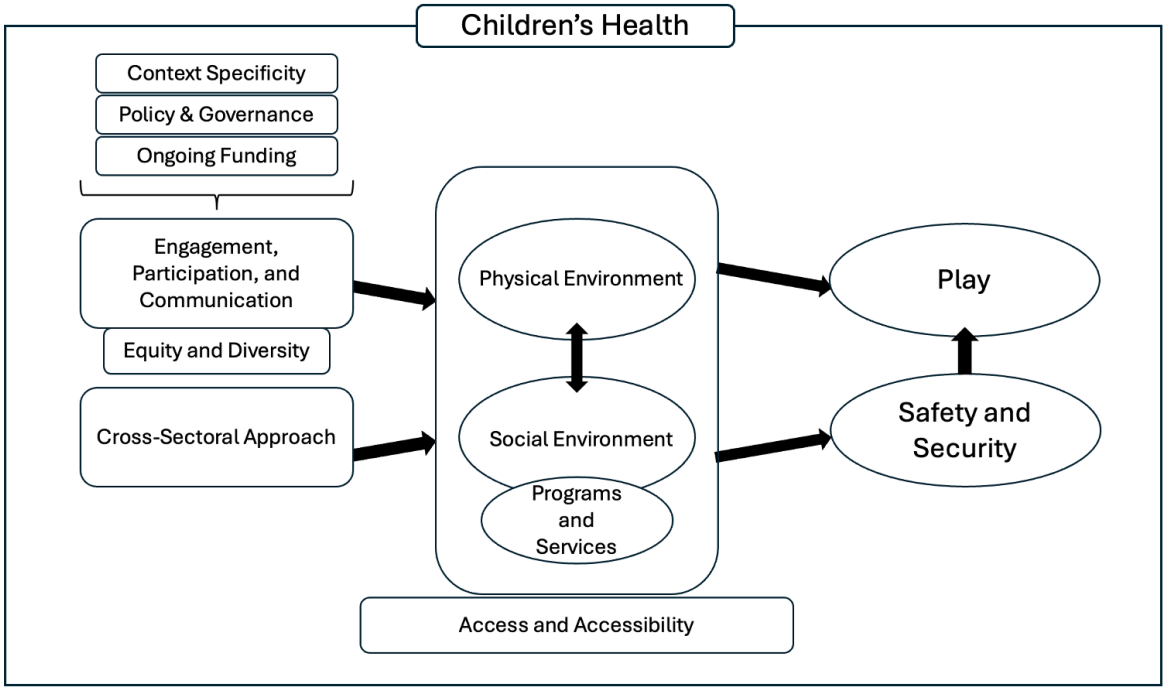

Figure 0.4: A novel rural children's healthy community framework.

Based on the analysis of frameworks, there were ten prominent categories to be included in the novel rural children's healthy community framework. In the proposed framework, these are organized to show their interrelatedness and interdependence (Objective 3). As a result of the proposed framework, play, and safety and security are outcomes. These support rural children's health by developing and realizing their potential, satisfying their needs, and developing the capacities that allow them to interact successfully with their environments (National Research Council & Institute of Medicine, 2004). The literature on children and their neighbourhoods is clear in showing that play is an integral part of children's ability to thrive and to be healthy (Schaeffner et al., 2018; Sutton, 2008). Additionally, in several studies that use children's perceptual data, safety and security are confirmed by children as crucial for their health (Button et al., 2020; Shortt & Ross, 2021).

Two framework components, funding and community health context, should be highlighted. The Inclusive Health Places and 8 80 Cities frameworks both include investment as a component (8 80 Cities, n.d.; Gehl People, 2018). Inclusive Health Places also includes community health context. These components are crucial to any initiative and, in the proposed framework, exist as the

foundation of its success. For each community, the specific health context matters and is the starting point of any initiative (Gehl People, 2018). This is especially important for the proposed framework for rural communities because there is great variation from community to community depending on the degree of rurality of the community (European Commission. Statistical Office of the European Union. et al., n.d.). This means that the same approaches may not be relevant from one rural community to the next, so starting with the context of that specific community is important.

Context specificity, ongoing funding, and policy and governance are all enabling factors for the framework. Without context specificity, ongoing funding, and policy and governance that prioritize rural children's health, creating better neighbourhoods for children's health is less likely. The next components of the proposed framework are Engagement, Participation, and Communication (including Equity and Diversity) and a Cross-Sectoral Approach, which provide input into how the Physical Environment, Social Environment (and Programs and Services), and Access and Accessibility support rural children. In any framework with children, Engagement, Participation, and Communication are particularly important because of the typical approach of leaving children out of planning processes and making assumptions about their experiences (Carroll et al., 2019). Equity and Diversity is a subcomponent of Engagement, Participation, and Communication, as they must be considered through the entire process and begin with engagement. The Cross-Sectoral Approach ensures that there is collaboration and support across organizations and that there are stakeholders in the community that will strengthen the initiative.

The information gathered through collaboration and engagement informs the type of Physical Environment and Social Environment (including Programs and Services) that exist. The Physical Environment is an important domain for rural children because it can contribute to the amount of physical activity, socializing, and independent mobility that they can do or have (Carver et al., 2023; Kramer-Kostecka et al., 2022; Sandercock et al., 2010), perhaps even more than for their urban counterparts, who often live in denser areas with more amenities. The Social Environment is the environment in which children interact with others and is distinct in rural communities, where children sometimes have unique and close relationships with many members of the community due to the nature of small towns (Crouch et al., 2023b). Programs and Services offered in the community offer another place where socializing can occur and can expand a child's Social Environment; included in this might be volunteering, with which rural children often have experience (Crouch et al., 2023b). Access and Accessibility underlies these components because all rural children should have

reasonable access to them and they should also be accessible for rural children, based in part on the input from the Engagement, Participation, and Communication and Equity and Diversity components.

The outcomes of these components of the proposed framework are Play and Safety and Security. Safety and Security are important for healthy communities that support rural children because rural children face unique barriers to physical activity, included in these barriers are safety and security; this could be due to lack of weather-protected physical activity infrastructure or fear of wildlife (Button et al., 2020). More broadly, children seem to equate safety and security with health when asked about parts of a community that are healthy or not healthy, citing areas with people drinking alcohol as unsafe and consequently unhealthy (Shortt & Ross, 2021). Similarly, in another study, youth felt unsettled and stressed walking on streets with features that were perceived as unsafe, like narrow sidewalks, which placed them in closer proximity to traffic (Buttazzoni et al., 2022). Finally, we know that parental perceptions of safety also impact children's ability to venture into their neighbourhood on their own, which is an important for child development (Shaw et al., 2015). Taken together, this means that a lack of Safety and Security can then prohibit interaction with the neighbourhood and play as well. However, acknowledging that perceptions of safety and actual safety can be different, Safety can be addressed in the framework through the interconnectedness of Social Environment and Programs and Services, for example. The interplay of these components points to opportunities for neighbourhood programs or educational opportunities that can keep children safe without having to alter the physical environment in every case.

Play is an integral part of childhood development, contributing to physical, cognitive, social, and emotional wellbeing (Milteer et al., 2012). Engaging in play allows children to use their bodies and engage in physical activity, to be creative and use their imagination or problem-solving skills, to build bonds between family and friends, and to learn to express needs or frustrations (Milteer et al., 2012). Given the importance of the role of play for children, it is an outcome of the proposed framework. In creating communities that are supportive of rural children, particular attention should be given to how the Play outcome can be achieved because rural children face a variety of barriers that require creative solutions (Meyer et al., 2021); for example, distance between rural children and their friends or playmates. As mentioned, Play is enabled or disenabled by the presence of Safety and Security. It is also possible that, in environments where lots of children are playing, the perceived and actual safety of the environment increases, resulting in a bi-directional relationship between Play and

Safety and Security. This possibility suggests that increasing Safety and Security can increase children's ability to play, and encouraging more Play can increase perceived Safety and Security.

A table summarizing all of the constructs included in the proposed healthy community framework for rural children and the components they comprise from the framework analysis can be found in Appendix B.

2.6 Discussion

This paper sought to explore how existing healthy community frameworks may be applied to children living in rural contexts and developed a novel rural healthy children's community framework. Three key findings emerged. First, existing healthy community frameworks are primarily intended for use in denser, urban areas. Second, there are some unique opportunities for applying a healthy community framework in the rural context due to rural-specific community characteristics. Third, context specificity is key to successfully applying a rural healthy children's community framework because of the heterogeneity of rural communities, validated by the issues in the literature with defining rural communities. This includes the need to be creative and innovative in the Physical Environment. Each of these findings are described in greater detail below.

First, of the 9 existing healthy community frameworks synthesized in this paper, 7 did not have substantive focus on rural areas. Among frameworks that did mention rural areas, most were superficial mentions focused on broadly considering rural communities or simply acknowledging that context is different for rural communities. Since the majority of Canada's, and the world's, populations live in urban areas, it is logical that frameworks would take an approach more suitable to denser areas.

We know that there are some significant differences between rural and urban children's health and wellbeing. Some of these differences can be advantageous when applying a healthy community framework in a rural community. Children in rural communities have been shown to have more positive childhood experiences (PCEs) than their urban counterparts, one of the reasons for this being that they have rich social networks in their small communities and more experiences with volunteering in the community (Crouch et al., 2023a). The close relationships that rural children have to community members and volunteerism should be considered for the Engagement, Participation, and Communication component of healthy community framework. There may be unique opportunities for novel engagement approaches to be applied. For example, engagement approaches

that involve working with older children as researchers or engagement practitioners and younger children as participants may be useful since they draw upon the existing strong relationships between neighbourhood children. As well, collaborating with the organizations where children volunteer for engagement could result in strong community partnerships that both reveal the needs of the community and establish program and service delivery infrastructure.

Because of the nature of rural areas, there is differing access to amenities amongst rural children, with some residing in small towns where there is some level of walkability and others in the countryside where driving is almost always required, for example. Access and Accessibility, as a component of the novel framework, can be challenging for rural communities in comparison to urban communities. Many urban communities set standards for access to amenities like parks in their Official Plans; for example, the City of Waterloo indicates that residents should be able to access Local Parks within 600 to 800 metres of their residences (City of Waterloo, n.d., p. 256). Unlike denser areas, it is more challenging to specify a standard distance to amenities in rural areas due to the spectrum of rurality that exists. These differences should be acknowledged through the entire process of implementing any rural children's healthy community initiative through Context Specificity and should be addressed in local plans and policies (e.g. Official Plans), recognizing the importance of Policy and Governance in implementing healthy community frameworks. For Access and Accessibility, specifically, individual communities will need to determine what they deem to be reasonable access for children based on context specific factors including, but not limited to, density and distance. By addressing these differences through tailored policy in local plans, it becomes more likely that the specific needs of children in various communities are addressed and that there is follow-through from local government.

Physical Environment was another prevalent component in the healthy community frameworks that were analysed. Acknowledging the differences that exist in different rural contexts (e.g. residing in a small town versus in the countryside), implementing a healthy community framework in a rural area will require consideration for how the physical environment can meet the needs of all children. Per Kramer-Kostecka et al.'s recommendation, local governments may need to consider new solutions to designing a built environment that meets rural children's needs, like creating regional or centralized recreational facilities that draw in children from the surrounding areas (2022). There are also unique opportunities for temporary initiatives, like play streets, where a street is closed to traffic and available for play, as described by Meyer et al. (2021). This may create

opportunities for places to play that would otherwise not exist and for interactions between children of different areas that can form friendships and social networks. Furthermore, there is ample opportunity for unique approaches like this given the amount of green and open space that exists in rural areas. This type of temporary and program-oriented solution may also be more feasible for rural municipalities' resources.

Healthy community framework approaches can be used in rural communities with an appropriate approach that considers the unique context. The proposed framework addresses many of the specific and unique needs of rural communities and rural children. Although there are significant health and wellbeing disparities between rural and urban children, there are also differences that present an opportunity for a novel approach to healthy communities. Furthermore, there are many beneficial characteristics of rural communities like access to green and blue space, tight-knit communities, and tranquillity that may not yet be used to their full potential in the creation of healthy communities (Buttazzoni & Minaker, 2022; Button et al., 2020; Crouch et al., 2023b).

2.7 Strengths and Limitations

There are several strengths and limitations to this paper. In terms of limitations, first, only the core components of each framework were considered in the analysis of the frameworks in keeping with the manifest content analysis methodology. The analysis worked under the assumption that the core components of the framework were representative of the priorities of the framework in its entirety; however, some frameworks described other approaches or objectives within the full framework that were important but not identified in the core components. This was a trade-off made in the analysis to attempt to equalize the way in which information was extracted from each framework. Second, this study only examined frameworks that were available through University of Waterloo databases or publicly available online and in English. This paper is also strong in that it acknowledges a gap in the literature on healthy community frameworks in addressing rural communities. It considers some of the most well-known healthy community frameworks and looks at overarching trends that shape the healthy community landscape. This paper also brings attention to the need to consider rural communities as distinct and with needs that are unique from urban areas.

2.8 Conclusion

The aim of this study was to analyse healthy community frameworks to better understand their common components and apply these, as relevant, to the rural context. This resulted in recommendations for a rural children's healthy community framework which, based on current knowledge, does not yet exist in Canada and has not yet been explored in the literature. In all, 22 frameworks were scanned for eligibility in the analysis and a total of 9 frameworks were analysed in depth. The components of the 9 frameworks fell into ten categories: Policy and Governance; Physical Environment; Cross-Sectoral Collaboration; Access and Accessibility; Safety and Security; Play; Social Environment; Equity and Diversity; Engagement, Participation and Communication; and Programs and Services. Of these, Physical Environment, Engagement, Participation, and Communication, and Programs and Services were the most prevalent categories. These findings led to recommendations that there are unique opportunities for engagement with rural children, that rural context is important and degree of rurality within the area must be considered, and rural communities should consider enacting plans or policies that specifically address rural children. Future research directions could include exploring initiatives in rural communities that enhance rural children's health and wellness, reviewing rural municipal plans, or exploring novel approaches to rural children's engagement.

Chapter 3

Rural Children's Perceptions of the Impacts of Neighbourhood on Health

3.1 Introduction

Children in rural areas have higher rates of obesity and overweight (Veugelers et al., 2008), worse access to mental health services (Van Vulpen et al., 2018), higher rates of suicide (Fontanella et al., 2015), lower fruit and vegetable consumption (Minaker et al., 2006), unique barriers to physical activity (Button et al., 2020), and more Adverse Childhood Experiences (ACEs) (Crouch et al., 2020) than their urban counterparts. These disparities require attention as health habits begin in childhood and track to adulthood (Bohnert et al., 2022; Dobbins et al., 2013; Meyer et al., 2021; Wende et al., 2022). This could mean that rural children without healthy habits become adults without healthy habits, leading to overall worse health outcomes.

Research has consistently demonstrated that neighbourhoods contribute to urban children's health (Crooks et al., 2022; Islam et al., 2020; Kyttä, Hirvonen, et al., 2015; Laatikainen et al., 2017; Veugelers et al., 2008) but there has been little focus on the same for rural children. People living in rural areas are impacted by their neighbourhoods differently than those in urban areas because of the difference in access to public amenities versus open space, the make-up of the neighbourhood, and longer distances between daily places. For children specifically, the experience with neighbourhoods is distinct as vulnerable members of society who have limited mobility and access and for whom safety is different from adults. Furthermore, no research has explored how, from rural children's perspectives, neighbourhoods can contribute to or hinder their health. There is a growing body of literature supporting the notion that children are experts on their own lives (Lundy, 2007) and so perceptual data can be valuable in planning rural communities to support children's health. Many researchers have cited the need to better understand rural children's perspectives of their health from a place-specific context so that better interventions can be made to improve youth health (H. Bilinski, Duggleby, et al., 2013; H. Bilinski, Henry, et al., 2013; H. N. Bilinski et al., 2010; Gauthier et al., 2011). This study therefore asks, "How do rural children perceive their neighbourhood as contributing to or hindering their health?"

The structure of this paper begins first with a review of the literature on rural children's health disparities; the importance of perceptual data; and neighbourhoods and children's health, looking specifically at physical and social environments, safety, and play, including what is known about these for rural children. Second, it describes the go-along interview methods that flow from the research question. Third, it summarizes the results of the go-along interviews and highlights key takeaways. Last, there is a discussion of the results and how these results build upon the existing literature. In this section, some thoughts for planning practitioners and researchers will also be provided.

3.2 Literature Review

3.2.1 Rural children's health disparities

Health disparities in rural versus urban children's health exists in Canada across multiple domains. This disparity between the health and wellbeing of children in rural communities compared to urban or suburban communities is an area that merits further exploration to determine the causes behind the inequality. Addressing this disparity has the potential to create better health outcomes later in life for those who grow up in a rural community. The unique context of rural communities should be considered as it may reveal novel approaches to health and wellbeing for rural children that would not be possible in the urban context.

Among rural children, there are higher rates of overweight and obesity than among urban children, as demonstrated by studies in the United States and Canada (H. Bilinski, Henry, et al., 2013; Wende et al., 2022). The accumulation of physical activity minutes in rural children also seems to be lower than in urban children (Moore et al., 2013), although time spent outside may be higher in rural children (Veugelers et al., 2008). Rural children are also reportedly consuming less fruits and vegetables compared to urban children (Minaker et al., 2006). Given the importance of establishing healthy habits during youth for health later in life, like those related to exercise and nutrition, these disparities between rural and urban children are significant.

Mental health and death by suicide has also been studied among rural children. Disparities in suicide rates between children living in rural and urban environments appear to be growing, with rates in rural communities almost double those of urban communities in the United States (Fontanella et al., 2015). Rural children also have a higher exposure to ACEs than their urban counterparts, with a

higher proportion of rural children than urban children having four or more (Crouch et al., 2020). However, Crouch et al. note that the disparity between urban and rural appears to be more related to compositional differences (e.g., income and education level of parents) of rural and urban populations rather than a relationship between environment and ACEs (2020). Importantly, children in rural areas may also have more exposure to *positive* childhood experiences (PCEs), such as volunteering in the community or residing in a supportive and familiar community (Crouch et al., 2023b).

Rural children have worse access to mental health services than children living in urban areas (Garbacz et al., 2022; Van Vulpen et al., 2018). Caregivers and guardians revealed that a large proportion of rural school-aged children had experiences with anxiety, bullying (Van Vulpen et al., 2018), violence (Carlson, 2006; Slovak & Singer, 2001), and home issues (Slovak & Singer, 2001). Garbacz et al.'s and van Vulpen et al.'s studies used interviews but were focused on adult perceptions rather than children's points of view, leaving a nuanced first-hand account from children unexplored (2022; 2018).

The preceding paragraphs have identified a variety of health behaviours and health outcomes among children, and specifically how rural children appear to be at higher risk of poor health behaviours and outcomes compared to urban children. Notably, in each of the rural research studies described above, defining "rural" was cited as an ongoing challenge. In the forthcoming sections, the importance of using perceptual data will be explored, followed by a review of the concept of neighbourhood and several dimensions of the neighbourhood related to children's health.

3.2.2 The Importance of Children's Perceptions in Research and Practice

Generally, children are excluded from planning processes and research. However, there is a growing acceptance among researchers of children as experts on their own lives and on childhood (Alarasi et al., 2016; Alparone & Rissotto, 2001; Bartlett, 1999; Bridgman, 2004; Carroll et al., 2015; Lundy, 2007). In practice, common assumptions about children's needs and desires by planners or researchers often lead to overlooking the impacts of the built environment on children, resulting in spaces that are not suitable for them (Bridgman, 2004); some examples include streets that are traffic-heavy, a lack of traffic calming measures, a lack of collective play spaces, or an insufficient number of quality of playgrounds (Karsten & van Vliet, 2006). Built environment initiatives that are meant to improve health and wellbeing but do not integrate children's views in the planning process are unlikely to be successful (Bartlett, 1999).

Planning decisions are sometimes justified by the claim that they are made for children, but without seeking to understand their views through engagement initiatives (Mansfield et al., 2021), using children's participation as 'decorations' or in a tokenistic manner as explained in Hart's ladder of children's participation (Hart, 1997). This can result in a lack of agency in children's lives and ultimately in negative impacts, like exposure to social, economic, or environmental hazards, when neighbourhoods are not designed with children in mind (Mansfield et al., 2021).

An important element of involving children in research and in planning practice is balancing the power dynamic between adults carrying out engagement and children participating in engagement (Ataol et al., 2019; Carroll et al., 2019; Shortt & Ross, 2021). With an uneven power dynamic, it is difficult to ascertain whether the feedback from children is authentic or influenced by the adult facilitators (Alparone & Rissotto, 2001). Employing methods that separate adult assumptions from children's perspectives is crucial to gathering authentic perspectives that can both influence policy decisions and lead to better research methods that will provide meaningful data to planning practitioners. One methodological example is training an older group of children as 'researchers' to engage younger children, with the older children involved from the outset of the data gathering process until data is analysed and interpreted, as was done in a New Zealand study (Carroll et al., 2019).

There is growing recognition of the need to give weight to children's perspectives on matters that pertain to children themselves and on which they may be 'experts' (Alarasi et al., 2016; Alparone & Rissotto, 2001; Bartlett, 1999; Bridgman, 2004; Carroll et al., 2015). This research takes the approach of gathering information from children themselves about their experiences in their neighbourhoods to better understand the implications of neighbourhoods on rural children's health.

3.2.3 Neighbourhoods and Children's Health

Neighbourhoods influence health in a variety of ways. This literature review frames these influences through the lens of a novel conceptual framework for healthy rural communities for children, developed in chapter 2. The model is the result of an analysis of existing healthy community frameworks and knowledge that we have on rural children's health. The scholarship explored will be organized based on the model depicted below in Figure 3.1 and will specifically focus on the physical environment, the social environment, play, and safety or security.

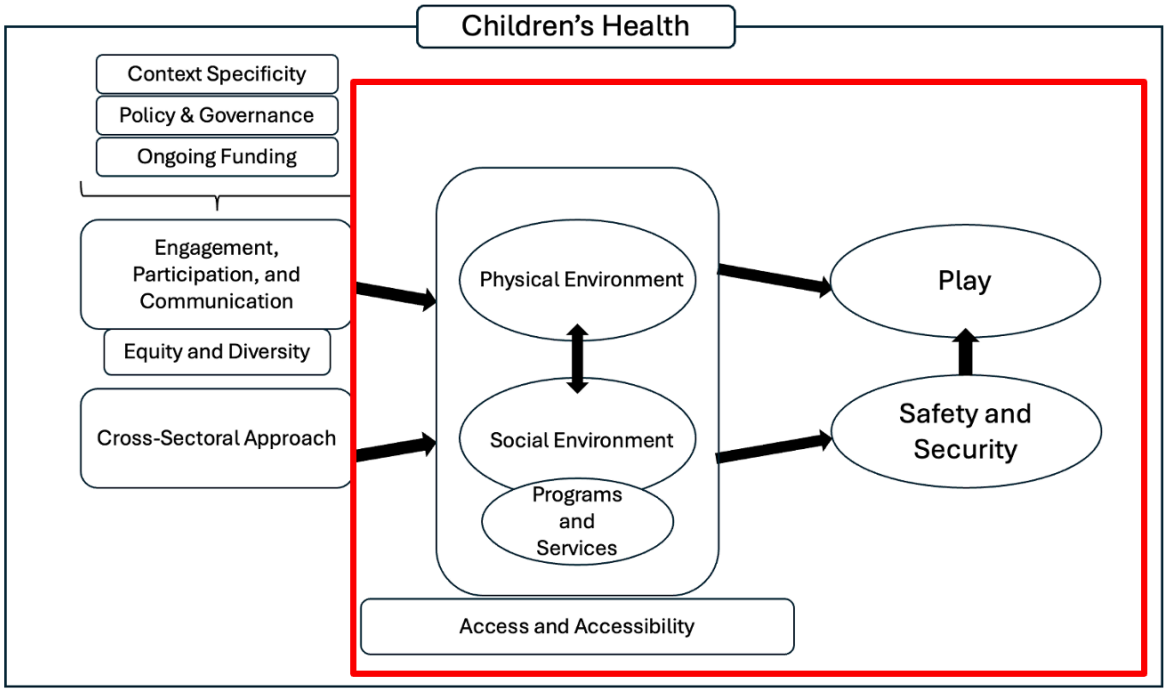

Figure 3.1: Conceptual framework for rural children's healthy communities

3.2.4 Overview of Neighbourhood and Health

Neighbourhoods can be geographically defined numerous ways, including as a unit with administratively defined boundaries, as census tracts, or as a person's immediate residential environment (Diez Roux, 2001). It also may be relevant to define a person's neighbourhood as what is perceived by that specific individual (Diez Roux, 2001), which is the approach taken by this specific study. Neighbourhood effects on health are complex because of interrelated parts that make up a neighbourhood. This could include the physical environment and the social environment, which both have impacts to the other, such as the physical environment shaping the types of social interactions that can take place or the social norms of a neighbourhood dictating people's behaviours (e.g. driving speeds or smoking practices) (Diez Roux, 2001). Although the geographic definition varies greatly, the overall objective of neighbourhoods has been to create places that have a sense of community grounded in first, the opportunities that exist for leisure, recreation, and social interaction and, second, in the safe, secure, and protected environment (Forrest et al., 1999).

There is a consensus in research that neighbourhoods do have impacts on health, based on both physical and social environment factors (Diez Roux, 2001). However, some critics posit that

there are micro- and macro-level factors that can overshadow the impacts of the neighbourhood (Diez Roux, 2001; Perez et al., 2020), but the neighbourhood is not separate from these (Macintyre et al., 2002). According to Macintyre et al.'s review, it is worthwhile exploring what humans need to live a healthy life in their specific socio-economic and socio-cultural context (2002). The authors concluded that even though neighbourhood might not be the sole or strongest determining factor in health, there are some neighbourhood impacts to health for some people, some of the time (2002).

Indeed, since this study, neighbourhood impacts to health have been studied across multiple domains with results pointing to associations between neighbourhood and various health indicators, some of which will be described here. One review found a positive association between lowered physical activity and neighbourhood deprivation (Holst Algren et al., 2015). Another review showed that children's developmental health varies based on social inequalities between neighbourhoods, mediated through mechanisms like safety (Minh et al., 2017). A review by Mair et al. found that 37 of 45 studies found positive associations between at least one neighbourhood characteristic and depressive symptoms (2008). Black and Macinko's review on neighbourhoods and obesity found positive associations with neighbourhood features that discourage physical activity and increase body mass index (2008).

The context of the neighbourhood is important, as what supports people's health in one neighbourhood might be different in another. Of note in Macintyre et al.'s research is the assertion that studies must also consider rural and sparsely populated areas, which have different needs (2002). Pearce et al.'s study in New Zealand (2006) confirms Macintyre et al.'s suggestion that rural neighbourhoods have specific needs based on their context (2002) and found that some of the largest variations in access to community resources were between urban and rural neighbourhoods. This study employed a GIS approach to determine that rural neighbourhoods had worse access to resources, especially those like food shops (Pearce et al., 2006). Findings like this show how the physical environment and context of a neighbourhood are important because of the consequences for residents, but a study from Wilson et al. also demonstrates that people's perceptions of their neighbourhoods are just as important as physical characteristics of a neighbourhood for health (2004).

The following sections will discuss specific aspects of neighbourhoods – the physical environment, the social environment, safety, and play – that are important to children's health and will also look at these aspects as they relate to rural children's health.

3.2.5 Physical Environment

The physical environment can impact health in a variety of ways. It can support health by encouraging physical activity, improving access to healthy foods, and encouraging social connection (Kent & Thompson, 2014). This is sometimes achieved through good access to open, natural, and green space; these places that support social interaction and safety can enhance wellbeing by supporting happiness (Pfeiffer & Cloutier, 2016). For different age groups, there are different parts of the built environment that are perceived as more positive (i.e. where residents enjoy spending their time and that encourage them to move around), like sports, residential, and commercial spaces for children (Laatikainen et al., 2017). Kyttä et al. (2015) confirmed that the perceived quality of physical environment is important to a person's health, as previously found by Wilson et al. (2004), which could in part explain why different age groups enjoy different types of physical spaces.

Children experience unique impacts of the physical environment on their health. Because of their position as vulnerable members of society, they usually cannot move freely throughout their environment without supervision (Kyttä, Hirvonen, et al., 2015). Conversely, when children's independent mobility is enabled by their physical environment (i.e. urban form, presence of green spaces distance to school, and traffic speeds make it possible), they have more opportunities for physical activity and social interaction (Kyttä, Hirvonen, et al., 2015). The physical environment can also promote health for children when there is good access to playgrounds, parks, and recreational facilities. When neighbourhoods are safe, children have more opportunities for engaging in unsupervised sports (Veugelers et al., 2008). The physical environment also impacts mental health. Buttazzoni et al. explored the relationships between transit-oriented design, cognitive architecture, and mental health indicators for adolescents ages 9 to 17 (2022). This study found that adolescents had positive emotional links with visual richness in urban design, transparency and natural rather than built enclosure, and negative emotional links to a lack of human scale design, artificial noise (i.e. from cars, busses, and construction), and minimal complexity in design (Buttazzoni et al., 2022).

For rural children, the physical environment has unique challenges and opportunities. For one, rural children often have more barriers to physical activity like a lack of sheltered physical activity facilities for use during adverse weather conditions as well as a fear of exposure to wildlife when outdoors (Button et al., 2020). At the same time, there are numerous opportunities and benefits associated with the rural physical environment. Bilinski et al. found that rural children tended to view their physical environments favourably, particularly when open and green space was nearby and

accessible (2013). Because there is often more unstructured, open space in rural areas, rural children may spend more time outdoors than their urban counterparts (Salmon et al., 2013b).

Active transportation is another child health issue that may be more problematic in rural areas compared to urban areas. Many rural towns have low walkability (measured by Walk Scores), which can influence actual safety as well as parents' perceived safety of the physical activity environment and subsequently become a barrier to children engaging in physical activity (Kramer-Kostecka et al., 2022) by preventing walking to access physical activity facilities. Additionally, rural communities often have limited recreational areas like trails and parks, which can discourage physical activity for children (Hansen et al., 2015). Hansen et al. identified schools as a critical space for rural children's physical activity as they may be one of the few established recreational spaces they can access (2015). Factors that enable active transportation among children might include short distances to school, the number of crossings, and intersection density, which are uncommon features for most children in rural communities (Kramer-Kostecka et al., 2022).

3.2.6 Social Environment

The social environments that exist in neighbourhoods are crucial for children's health, as social health is a core tenet of childhood development (Milteer et al., 2012). There are environmental characteristics that improve social environments for children and also places that are viewed positively because of their association with friends and family. For example, a study in Scotland revealed that children aged 10 to 13 placed more importance on places that they visited with family and friends and that these places consequently evoked feelings of happiness, calmness, and fun (Shortt & Ross, 2021). Similarly, a study in Auckland, New Zealand, identified places like parks, shopping centres, libraries, and community centres as important for children ages 9 to 12 because of the activities they enabled (e.g. window shopping, playing, climbing trees), but more importantly, because of the ability to engage in these activities with friends (Carroll et al., 2015). Additionally, children's access to places like these are thought to improve social cohesion and to engender a sense of belonging in a child's neighbourhood (Carroll et al., 2015).

Rural children's social environments are distinct from urban children's. In a study in Northwestern Ontario, children suggested that they would meet up with friends and engage in physical activity more if their neighbourhood was home to more children rather than just older adults (Button et al., 2020). This type of barrier in rural children's social environments might be combatted

by creative initiatives, such as ‘play streets’, where a street is closed to traffic for play and recreation to take place. This type of initiative was explored by Meyer et al., who concluded that this novel approach to physical activity environments also created stronger social connectedness in the rural community that was typically missing (2021).

3.2.7 Play

Children’s ability to engage in play is an important part of their development (Milteer et al., 2012). Play can contribute to children’s accumulated physical activity minutes, it can foster social interactions, and it can be a healthy place for children to express their emotions (Milteer et al., 2012). Despite the importance of play, today’s children have had less freedom and opportunity for play in their neighbourhoods compared to previous generations (Carroll et al., 2015; Witten et al., 2013). This has been explained in the literature by a number of reasons, including some related to the nature of contemporary neighbourhoods compared to those of previous decades, such as increased traffic and decreased sense of safety; longer distances between home and daily places like parks and school; and confining children’s use of the public space to places like playgrounds (Carroll et al., 2015; Witten et al., 2013).

As mentioned, rural children experience additional, context-specific challenges to play. For example, Meyer et al. discuss the lack of community spaces for play in rural areas in their study on ‘play streets’ (2021). Kramer-Kostecka et al. similarly discuss the disparity in physical activity environments, which enable play, that exist in rural areas and suggest that more barriers to accessing recreation amenities exist in rural communities (2022). Button et al. also found that rural children have less access to recreation amenities, particularly indoor facilities (2020), which are generally important for Canadian children during wintertime.

3.2.8 Safety and Security

Shortt and Ross (2021) found that children ages 10 to 13 in two Scottish neighbourhoods were most concerned with littering and safety, feeling less comfortable in areas where littering was prevalent and areas perceived unsafe (e.g. where people were smoking or drinking) were consequently inaccessible to them. Similarly, Caroll et al. looked at the ways children ages 9 to 12 use their urban neighbourhoods in Auckland, New Zealand, finding that safety was key in children having a positive experience in their own neighbourhood (2015).

The physical environment is closely linked with safety and security and evidenced by Button et al.'s study and findings that the rural physical environment poses some safety concerns for children (2020). Namely, that perceived danger of wildlife prevented children from playing outside at some times in the year (Button et al., 2020). For rural children, the perception of safety influences how they view their environment, with perceived safe places considered positive influences on health (H. Bilinski, Henry, et al., 2013). Parental perceptions of safety matter for rural children too: Kramer-Kostecka et al. found that rural communities with low Walk Scores, which is characteristic of many rural communities, have lower actual and perceived safety and subsequently result in barriers to children's engagement in physical activity (2022).

This review has outlined the gaps in the literature related to rural children's health and their neighbourhoods. While the literature review demonstrates the array of positive and negative associations of neighbourhood features and urban children's health outcomes, far less research focuses on these relationships among rural children. Furthermore, studies have not explored this topic from children's perspectives, which would provide invaluable insight into what works and does not work in rural areas for children. A persistent problem in all rural research has been a lack of a definition of the word 'rural'; accordingly, this study provides a strong rationale for its definition of 'rural' in the following section. Given the gaps, the current study aims to explore rural children's perceptions of their neighbourhood's impact on their health. Specifically, this study aims to address the following research question: "How do rural children perceive their neighbourhood as contributing to or hindering their health?"

3.3 Methods

3.3.1 Study Context and Rurality

Bruce County was selected as the study site because of its rurality (according to the Degree of Urbanisation from Eurostat as described below). However, it is proximal enough to urban settlements (approximately 109 km from Kitchener-Waterloo, 106 km from Guelph, 143 km from London, and 183 km from Toronto) that all child participants had some experience interacting with urban environments and could juxtapose their views of their rural community with their experiences in urban areas.

There is a lack of a clear and consistent definition of 'rural' in rural research. This causes challenges in defining the subject group for research on rural children and in interpreting and comparing studies looking at this group (H. N. Bilinski et al., 2010; Fontanella et al., 2015; Wende et al., 2022). Between countries and within countries, there exists a myriad of possible definitions for 'rural'; some derived from institutions (i.e. government agencies, school boards, etc.), some from population or density criteria, some derived from the literature, and some created by researchers for the purposes of their study. Some studies provide no definition of 'rural', acknowledging that the word's definition is contentious and heterogenous. Although establishing a definition is complex, it is important for research validity and replicability that researchers studying rural populations provide a definition relevant to that study.

The Degree of Urbanisation (DEGURBA) is a methodology to classify geographic areas as cities, towns, and rural areas. The methodology uses the population of contiguous 1 km^2 grid cells (either urban centres, urban clusters, or rural grid cells) and total area population to classify areas into the three categories. Urban centres are high-density clusters of contiguous grid cells with at least 1,500 inhabitants per cell and at least 50,000 inhabitants after totalling the contiguous cells. Urban clusters are moderate density clusters and are similarly defined with thresholds of 300 inhabitants per cell and at least 5,000 inhabitants total. Rural grid cells may have less than 300 inhabitants per cell, but the defining feature is that they do not meet the criteria of either high-density or moderate density clusters. According to the Degree of Urbanisation metrics, cities (or densely populated areas) are spatial units (administrative units like municipalities, districts, neighbourhoods, or metropolitan areas) that have at least 50% of their population in urban centres; towns and semi-dense areas (or intermediate density areas) are spatial units that have less than 50% of their population in urban centres and no more than 50% of their population in rural grid cells; and rural areas (or thinly populated areas) are spatial units that have more than 50% of their population in rural grid cells (grid cells that are classified neither as urban centres nor urban clusters (European Commission. Statistical Office of the European Union. et al., n.d.). Urban centres are defined as 1 km^2 grid cells with a density of at least 1,500 persons and a total area population of at least 50,000.

According to Level 1 of DEGURBA, the municipality of Bruce County is classified as a rural area, with a population of 73,396 in 2021 and a density of 18 persons per square kilometre (Statistics Canada, 2021a). Further analysis using Level 2 of DEGURBA classifies some administrative units in the County as semi-dense urban clusters, like the towns Kincardine and Port Elgin, meaning they

have at least 300 persons per square kilometre and a population of at least 5,000 (European Commission. Statistical Office of the European Union. et al., n.d.). For the purposes of this paper, Bruce County has been classified as a rural area as defined by Level 1 of DEGURBA because of its sparse population and settlement. Even though the towns of Kincardine and Port Elgin are classified as semi-dense urban clusters, the majority of the municipality is comprised of rural clusters or dispersed rural areas, according to Level 2 of DEGURBA (European Commission. Statistical Office of the European Union. et al., n.d.). Furthermore, inhabitants of Bruce County (including the semi-dense urban clusters of Kincardine and Port Elgin) have limited access to functional urban areas (areas capturing the full economic function of a city), access to which requires them to drive over one hour (European Commission. Statistical Office of the European Union. et al., n.d.). According to Statistics Canada, Bruce County could also be qualified as a moderate Metropolitan Influenced Zone (MIZ) (Statistics Canada, 2021a).

As mentioned, Bruce County had a population of 73,396 as of 2021, with a density of 18 persons per square kilometre (Statistics Canada, 2021a). For context, Waterloo Region has a density of 429 persons per square kilometre (Statistics Canada, 2021b). Less than a fifth (16.5%) of Bruce County's population falls between the 0 to 14 age range (Statistics Canada, 2021a). The vast majority (83 per cent) of households are single detached homes (Statistics Canada, 2021a), and 96% of the population does not identify as a not a visible minority, with highest share of residents having European heritage (Statistics Canada, 2021a). There are two First Nations reserves within the geographic boundaries of the municipality, Neyaashiinigmiing and Saugeen.

Figure 3.2: Map of Bruce County, municipal boundaries depicted as white shaded area (Statistics Canada, 2021b)**.**

3.3.2 Recruitment and Participants

The research was conducted in Bruce County, Ontario, Canada, a rural municipality in the southwestern region of the province. Children from the qualifying area between the ages of 7 to 15 years of age were eligible for participation. This age range was chosen to ensure that coherent and high-quality responses were possible and that children were below the age at which they could obtain a driver's license. This is because a driver's license changes the nature of access and mobility and therefore could impact the ways in which the participants interacted with their neighbourhoods or reduce the time spent in their immediate surroundings.

Non-probabilistic purposive sampling, through existing social networks, and snowball sampling was used for recruitment of the study participants to ensure that quality responses were generated (Patton, 1990). To be involved in the study, children had to have resided at their residence for at least one year to ensure a baseline level of familiarity with the neighbourhood for the go-along interview. A total of 45 children responded to recruitment materials, which consisted of virtual posters shared through email and social networks, 20 of whom fully completed the screening and interview process.

Since qualitative research involves seeking out individuals who can provide a deep recounting of their lived experience, sample sizes in qualitative studies are usually relatively small (Emmel, 2013; Farthing, 2016). In qualitative research, there is an accepted trade-off of more depth and less breadth (Emmel, 2013; Greig et al., 2013). Theoretical saturation was reached at a sample size of n= 20. The relatively small number of cases allows an opportunity to collect rich data to present an argument about the research question (Emmel, 2013; Morse, 2015).

Figure 3.2 shows the participants' ages, gender, and whether they lived in a small town or the countryside. More participants were girls (65%) than boys (35%). Participants were between the ages of 7 and 15: 7 to 9 (25%), 10 to 12 (45%), and 13 to 15 (30%). Half of the participants resided in small towns with the population ranging from approximately 200 persons to 11,000 persons and half of the participants resided in the countryside.

Table 3.1: Demographic features of participants

Characteristic	N (%)
Gender	
Boy	7 (35)
Girl	13 (65)
Age	
7-9	5 (25)
10-12	9 (45)
13-15	6 (30)
Residential location	
Small towns (populations ranging from approximately 200 to 11,000)	10 (50)
Countryside[1]	10 (50)

3.3.3 Theoretical Underpinnings of Epistemology, Methodology, and Methods

3.3.3.1 Epistemology

This research project is grounded in constructionist epistemology: it was conducted to acknowledge that people make meaning of their circumstances and that this meaning is subjective and informative to their understanding of the social world (R.Loseke, 2022). This means that the subtleties of participant-expressed experiences were where patterns were sought. The data derived from the methods was highly context-specific; this supports a relatively small sample size, as depth rather than generalizability is the goal (R.Loseke, 2022).

The implications of this epistemological view for the study are that the specific and unique views of children are important and are worth exploring to give meaning to children's actions and needs within their specific context (O'Reilly & Dogra, 2018). This is also consistent with a growing belief that children have a unique understanding of their own positions in the world and the ability to

[1] For the purposes of this study, participants residing on a First Nations reserve were counted in the 'countryside' because of their contextual similarities.

reflect on their position, and their voices deserve inclusion on topics that impact them (Farthing, 2016; O'Reilly & Dogra, 2018).

The constructionist view also recognizes the role that the researcher's views and experiences play in the research. My interpretation of the data is informed by my life experiences as a person who spent the entirety of childhood and adolescent years living in the countryside of Bruce County. This is relevant to acknowledge because of the subjectivity of carrying out this type of narrative research, in which there is no one truth (R.Loseke, 2022), as in research with naturalist roots. Reflexivity, the way the research is impacted by the person doing or process guiding the research, is relevant here because my particular background influenced the study as well as the people being studied and the way they responded to the research (Fetterman, 2020). The way that the research question was constructed, the problem articulated, and the results interpreted are all informed by my particular positionality with respect to the research (Fetterman, 2020).

3.3.3.2 Methodology and Research Design

This research project is grounded in naturalist methodology: it was conducted in a situation that approximates participants' daily lives (Farthing, 2016). This is important to the proposed research to ensure that authentic responses are collected from child participants on their views of their environment and health. When situated in their everyday environments, it is more likely that children will be able to provide responses that reflect their everyday experiences. This is a major benefit of using the go-along interview for the current research.

Following logically from the methodological and epistemological underpinnings, this study used qualitative methods to maintain the accuracy and authenticity of participants' responses. Qualitative interviews with open-ended questions can prevent distortion of behaviour and of expression of children's views, as can a qualitative analysis of children's responses (Farthing, 2016). Further, the research question seeks to gather contextual information on *why* and *how* rural children think their health may be impacted by their neighbourhoods and give depth to what is already known.

A qualitative approach was chosen for the research questions as the research sought to contextualize previous studies that found poor health outcomes, based on a variety of indicators, for rural children. It is thought that children possess a unique knowledge and are 'experts' on childhood and child-related matters as they experience the impacts of childhood day-to-day (Alarasi et al., 2016; Alparone & Rissotto, 2001; Bartlett, 1999; Bridgman, 2004; Carroll et al., 2015). The research

approach was chosen to ensure that children's perspectives were heard directly rather than assumed based on adult perspectives of children's experiences (Lundy, 2007).

This study used go-along interviews to explore the research question. In go-along interviews, the researcher asks questions as conversational prompts and the child has agency over the physical route of the interview as well as the figurative direction of conversation (Carpiano, 2009; Garcia et al., 2012). Before the interviews, participants completed a survey with basic sociodemographic information that was used in the data analysis (Corbetta, 2003). In this way, the data collection deviated slightly from the constructionist approach taken for the go-along interviews because the purpose of the survey was to collect objective responses about which reality can be knowable (i.e. age, gender, residential location, etc.) (Corbetta, 2003).

Data that addressed the research question was collected through the go-along interviews. The *Voice* method was integrated into the go-along interviews to support the naturalist methodology (Lundy, 2007; Shortt & Ross, 2021). The Voice method requires that children be 1) given the opportunity to be heard, 2) enabled to express their views, 3) listened to by an audience, and 4) given consideration (Lundy, 2007). The final criterion, having views considered and acted upon, is relevant here only insofar as its use for potential policy recommendations made. The first three criteria influenced the creation of the interview guide and the interaction between researcher and participant.

The go-along interview is a type of unstructured, ethnographic interview in which the participant has significant control over the direction of the interview with the researcher there to gently guide the conversation (Carpiano, 2009; O'Reilly & Dogra, 2017). Semi-structured interviews were useful in this study because perceptions are unique to participants and therefore little was known about the topic of children's perceptions in rural contexts (Carpiano, 2009; O'Reilly & Dogra, 2017). The go-along interview is particularly beneficial for research on health and place because it combines the strengths of qualitative interviewing with observational techniques (Carpiano, 2009); so, while the child describes a place, the place itself as well as the child's reaction to the place can be observed. The interview guide was co-produced with the research supervisor and comprised open-ended questions to guide the interview and prompt the participant to respond. Additional probing questions were asked in circumstances where further detail was needed. The responses were recorded and stored using a voice-recording device, then subsequently transcribed as described below (Brinkmann & Kvale, 2018).

3.3.3.3 The Go-Along Interview

Prior to embarking on the go-along interview, researcher and participant engaged in a short (10 minute) discussion on their understanding of health and wellbeing. This created a base level of understanding about what the child was considering when thinking about impacts of the built environment to their health and wellbeing.

For the go-along interview, participants identified 3-5 places in their neighbourhood or local built environment that were either "healthy" or "unhealthy". The locations selected were constrained by the need to visit all the places within the one-hour interview. Participants then led the researcher on a walk to each of the places. At each place, the same questions were asked about what the place meant the participant, with whom they usually visited the place, what they did when they were there, how the place impacted their health and wellbeing.

Between locations, additional questions were asked about the neighbourhood in general and what experiences the child had had in their neighbourhood that they understood as contributing to or hindering their health and wellbeing. The interview script is included as Appendix C of this paper.

3.3.4 Data Analysis

Files from the voice-recording device were uploaded to the online transcription software, OtterAI (*Otter AI*, 2023). OtterAI automatically transcribed the voice recordings from the go-along interviews. The transcripts generated by OtterAI were reviewed and cleaned to ensure accuracy with the recording.

Transcripts were then imported into NVivo, a qualitative analysis software, where interviews were coded using an open-coding approach, following the framework method (Gale et al., 2013). This approach encouraged better openness to the ideas that emerged from the data rather than having researchers' ideas restrict the possible themes, as with a deductive approach imported into the meaning of the participants' responses (Gale et al., 2013). Three interviews were initially co-coded with researcher and supervisor to establish consistency. Throughout the coding process, researcher and supervisor met for peer examination to ensure quality and rigour baxter (Baxter & Eyles, 1997). After all interviews were coded, the codes were grouped into categories (e.g. Safety, Play, Environment, etc.), which helped to form a working analytical framework (Gale et al., 2013). To determine which aspects of the children's neighbourhood were the most important, the code data was

examined for frequency of mention across all interviews. Connections were also made within the groups of countryside- and small town-dwelling children to determine common observations.

3.3.5 Ethical Considerations

With the academic freedom to conduct research that is believed to benefit society, there comes a substantial responsibility (*Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2018) – Chapter 1: Ethics Framework*, n.d.). The Tri-Council Policy Statement of 2018 (TCPS 2 2018) follows three main principles of Respect for Persons, Concern for Welfare, and Justice. For this study, Respect for Persons will be applied by ensuring that participants have autonomy, meaning they can exercise their judgment and make decisions freely, and by seeking informed consent from an authorized third party. Consent must be given by a third party since participants of this study will be under the age of 18, and thus, a parent or guardian would be entrusted to make decisions on behalf of the participant (O'Reilly et al., 2013; *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2018) – Chapter 1: Ethics Framework*, n.d.). Concern for Welfare aims to protect the welfare of participants by not exposing participants to unnecessary risks, minimizing risk throughout the study, seeking ongoing and informed consent, and providing participants (and in this case, their parent or guardian) with as much information as possible to make decisions about their participation (*Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2018) – Chapter 1: Ethics Framework*, n.d.). The minimization of risk was considered while drafting the interview guide and questionnaire to ensure that the questions asked do not cause harm. Finally, the principle of Justice refers to fairness and equity in the way that participants are treated through the research process. This was addressing primarily by attempting to balance the researcher-participant power dynamic through the go-along interview approach. Not only will this result in a fairer and more equitable process, but it will also allow results to be less impacted by the lens of an adult researcher.

The involvement of children as research participants requires ethics approval. The University of Waterloo Research Ethics Board approved the proposed research, ORE #45422.

3.4 Results

This section describes results from the go-along interviews. The participants offered insight on the characteristics of their rural neighbourhood that either supported or did not support their health during

the go-along interviews, which will be presented below. To address the research question, the results are organized into the following topics based on the conceptual framework introduced in the literature review: Physical Environment, Social Environment, Play, and Safety.

3.4.1 Physical Environment

Participants described several dimensions of the physical environment as impactful to their health. They discussed feelings of calm evoked by their environment and amenities in their neighbourhood, and contemplated changes they might like to see in the physical design of their neighbourhoods. Specifically, 17 (85%) of the participants (n= 112 mentions) reflected on calmness, amenities, and changes to their neighbourhood. Participants frequently made connections between physical features of their neighbourhoods and their own feelings of calmness, happiness, or wellbeing.

One participant described how she felt when visiting one of her favourite spots, a pebbled beach near her house, which she often visited while out for a walk in her rural neighbourhood:

> I just feel open. Like, I can just be alone with my own thoughts. And usually, sometimes bad thoughts or intrusive thoughts usually just start to go away because it's such a peaceful, open space… it's just really nice. And I can just go down there anytime. And then afterwards, I just feel so like, like, relieved and calm… Yeah, and like, because… when I'm at the beach, I don't think about before [things that might be bothersome], I just think about like right now and it's just… really peaceful and nice (Girl, 13 years, countryside).

Another participant described how she felt when she visited a nearby park in her small town on her own: “I just feel like more calm and like self-aware kind of. I just realize that like I'm lucky to be here and instead of some places where it's like not as fortunate and stuff… Yeah, yeah, there's not much chaos and horns and whatever going on. So it's nice” (Girl, 13 years, small town). Conversely, she said of cities, “Yeah… there’s always just cars going by [in the city]… and here sometimes… there’s obviously gonna be… truck horns, but like… it’s just louder [there].” Several participants (n= 4) also mentioned the loudness of cars as a negative impact on health.

Participants in countryside and small-town settings had ways of adapting to the amenities around them to use them for their needs. In her small town, one participant recounted using the nearby spaces to fit her needs, like using the community centre parking lot for biking. “When we… ride our bike because sometimes we'll go on our bikes… and go like around and just like, because there's not usually this many cars. It's just all open...” (Girl, 13 years, small town). On that particular

day, the parking lot was full of cars, which the participant pointed out and noted that this fact would prevent her from using this parking lot for biking.

Similarly, on her family farm, one participant created a makeshift swing in the barn to sit and watch the cows: “Well it was like not a swing, but yeah, I swing on it. I feel happy because, like, nobody would be there with me… it's not loud. Cuz it's like, it's always really loud in the house.” (Girl, 11 years, countryside). These two participants demonstrated how rural children may lack certain public amenities (e.g. bike parks, swing sets) but given unsupervised recreation time, were able to find ways to satisfy their desire for those amenities anyway.

Over half of participants (n=12) described improvements they wished to see to the physical environment (n= 36 mentions), with two primary common themes that emerged. First, some children felt that their neighbourhood did not have recreational amenities that were appropriate to their age group and felt they had grown out of what was available. For example, play equipment at many parks was perceived to be for younger children. As a result, some children did not feel that the play equipment was engaging or noted that it was physically too small for them. Some older participants did not or could not play at these parks due to the inadequate recreational amenities. One participant said of the park nearest to her house, “Like it's appropriate for most ages, but like, at some point, you're gonna get bored of bit… Like, [they could add] probably, monkey bars and like, more playground space.” (Girl, 11 years, small town). Other participants noted that the components of the playground, such as the platforms and entrances of the equipment, were physically too small, preventing them from using the play equipment.

Second, there were a few children whose desired improvements to their community were related to a lack of community resources, like gas stations, grocery stores, or other retailers. Interestingly, no children described being personally responsible for visiting any of these places, but rather seemed to recognize the inconvenience it caused to the family unit. For example, one participant said, “[I wish there was a] gas station cuz my parents have to drive all the way into town.” (Girl, 10 years, small town). Another participant had a similar comment, but weighed the benefit of the gas station against the benefit of peacefulness in her small town: “Maybe [I’d like to see] a gas station [added to my town]… You have to go to [nearby town]. [But if they did] I think it would make it a little too busy.” (Girl, 13 years, countryside).

Some neighbourhoods enabled participants to be physically active on a regular basis, like if they lived in walking distance from their school. One participant explained that he enjoyed his walk to school "because it doesn't take me long to get to school… Yeah [it is healthy to walk to school] because you're using your muscles in your body…" (Boy, 9 years, countryside). Walking around the neighbourhood or property was also noted to be good for lungs because of the fresh air by 11 participants (n= 30 mentions).

Interestingly, 14 participants juxtaposed their rural physical environment with what they imagined to be the reality of the urban physical environment (n=59 mentions). The comments made about cities were generally negative in contrast to the positive elements of rural neighbourhoods that participants identified (i.e. calmness, amenities) and positive in contrast to the negative elements of rural neighbourhoods (i.e. lack of community resources). One participant described her perception of living in cities: "I wouldn't go outside as much I don't think. Because there's too many people and cars just crowding everywhere." (Girl, 11 years, small town). Conversely, urban amenities that did not exist in rural areas were described positively, for example, "I like to go to the city though. We go to some fancy restaurants sometimes that make good food and we'll go to the mall." (Boy, 12 years, small town).

3.4.2 Social Environment

Many of the amenities that participants' neighbourhoods had to offer were important to their health because of the role that these places played in enabling social interactions with friends or family members. Places where participants had fond memories of spending time with friends or family were considered significant and important to participants' health. One participant chose to visit a nearby community park during her interview and talked about how much she enjoys going with her friends, and, in particular, unsupervised by parents.

> This park, we love to come here in the summertime because it's, there's a pool. And the park is really fun to like dry off after being in the pool… [there is public swimming] every day of the week. Yeah, we like to go on Tuesdays because it's toonie swim, so we only have to pay $2. I always… depending on who I want to go with… I'll probably go get somebody or sometimes my friends come to call me. We're allowed to just go with our friends… At a certain age at the pool, we're allowed to just go with… by yourself. But when I was eight, or nine or something around there, I had to go with a parent (Girl, 10 years, small town).

Participants were particularly excited by the notion of hanging out with friends without adult supervision, a freedom granted to them because of the perceived safety of their neighbourhood social networks. Several participants were able to easily hang out with friends, access food retailers, and use local amenities like parks and public pools. The ability to easily see friends outside of school was particularly prominent, mentioned by 7 participants out of the 10 participants living in small towns, and most participants identified this as one of the most important contributors to their health. One participant described his freedom to get around town with his friends and his ability to explore without a planned destination:

> [We bike and scooter] all the time, we [participant and friends] go downtown to go to lunch places. Or we'll go get a pizza and share it. And then, yeah, we sometimes go to Dairy Queen to get an ice cream… Yeah, we normally will just go downtown and be like, 'Oh, I guess I want to stop there today' (Boy, 12 years, small town).

Although the participant described purchasing and consuming foods that would typically be described as 'unhealthy' (e.g., pizza, ice cream), it was the social experience and ability to hang out with friends, enabled by the safe and walkable nature of his neighbourhood, that he identified as important to his wellbeing.

Participants living in the countryside had different access to the area beyond their property and their ability to get around without parents was limited. Consequently, they described being able to see their friends less often than their small-town counterparts. These participants were fully reliant on the availability of their parents to drive them to a friend's house, or the availability of a friend's parents to drive the friend to their own house. One participant described how she feels limited by her home in the countryside at times:

> There's nowhere really to go. We can't go to [nearest town] or something. [We're] not [allowed to go] past the front highway… I don't want there to be a highway there because I would like to walk to [convenience store] or walk to our bus stop or to the school or to my friend's house. That's pretty annoying because I'm not allowed to go on the highway (Girl, 11 years, countryside).

Although many of the participants who resided in the countryside did not have the same level of access to public amenities like parks and pools, which enabled spending time with friends, they often had places in the boundaries of their own property that facilitated social interaction and were subsequently important to them. For instance, one participant lived in the countryside but had a pond in which she could swim with friends, a bunkhouse where she and her friends could sleepover, and a

large yard where she and her friends tobogganed. She said of the bunkhouse, “It’s fun. I spend a lot of time in here with my friends. [I] kinda just hang out with my friends [when I’m out here]… It makes me feel happy when I'm [out here] with my friends.” (Girl, 13 years, countryside). For the children living in both the countryside and in a small town, spending time with friends seemed to engender more of a sense of importance upon a specific place or amenity rather than what exactly that place was.

Another participant recognized that her ability to see her friends frequently was somewhat limited, a theme that came up many times (n= 26 mentions from n=8 participants of the 10 participants living in the countryside), as the importance of proximity to friends was emphasized from almost all (95%) participants. However, this participant also acknowledged some unique freedoms characteristic of living in the country, like having access to farm animals and ample open space:

> Yeah. Definitely different [between the countryside and towns]. Like, cuz I feel like in the country, you're so much more like, free. You can go like anywhere. But like in a town, you do you have like all your friends around from school… Like it, I think it'd be like, fun to see my friends but then I also wouldn't have, like I wouldn't have like all the animals (Girl, 13 years, countryside).

Similarly, one participant talked about the responsibility and independence she had from keeping horses. She showed the horse stalls that she and her father had built:

> Yeah, it's my idea. Me and my dad built this… Like, well, I learned how big a foot was. Cuz I did not know how big that was. Oh, I learned how to use a screwdriver. And I like measured the stuff and I levelled everything. And I did everything. And you know, I'm most proud about? I levelled it perfectly so then I can stop the door. I feel so excited (Girl, 13 years, countryside).

Participants who were involved in caring for farm animals, like this, felt a sense of accountability to the joint effort of the family and to the animals themselves. Contributing to the collective effort involved in farm activities was positively impactful to the participants’ social environments.

Places that supported interpersonal relationships were important to participants’ social health. For example, participants pointed out specific walking routes, parks, and amenities in their neighbourhood that they most often visited with friends and family, noting that this made them feel happy and the experience more enjoyable.

One participant said of his walking route, which he prefers to visit with others, “Yeah… [I sometimes do this walk with] friends… sometimes just with my brother and sister, we bike down to

the [nearby convenience store]. We get ice cream… I like to do them [walks] in like a group with my family… [It's better] with company." (Boy, 9 years, countryside).

3.4.3 Play

Parts of participants' neighbourhoods that enabled or encouraged play were often places where participants reported feeling happy. Play seemed to be a function of both enabling physical environments (e.g., parks) and social environments (e.g., friends or other children in the location). Of the 13 participants who mentioned play during their interview, 11 also focused on the social aspect of play. These participants discussed participating in active play with parents, siblings, and friends, which seemed to add to the feeling of fun and the importance of the activity or place where the activity occurred. As she pointed out where her friends lived across the street from her house and how near they all lived to the park, one participant said, "All my friends live… we all live close. And then we all come and get each other and play at the park. It's nice to have somebody there to play with."

One participant said, "I feel happy to play [when I come to the park]. Cuz I can run around and play and do the swings and do the monkey bars. And I enjoy doing things like that. Yeah, but sometimes I forget that I enjoy [active] things like this because I'm always inside playing video games." (Boy, 10 years, small town). This contrast between the feelings of being active indoors and being indoors (using screens, sitting, etc.) was one made by many participants (n= 15 participants).

A participant spoke about some of her play activities as a function of geographic proximity to friends and social networks:

> And then, sometimes when I'm with [friend], which is the girl we just saw, we walk the dogs together. And we come around here, and then we walk down there and we visit her [grandmother], which lives like in the new subdivision. And then that's always fun… It's nice to have somebody there to play with (Girl, 10 years, small town).

When participants (n= 5) resided near a school, they described using the school's recreation amenities after school hours with friends or family. "We play foursquare, we play basketball. [During the winter] we bring… towels and… shovels clean off the slide… We always put our snow pants and… winter stuff on. So, me and [sister]… if there's a little downhill [on the snow pile] then we jump! It's so fun!" (Girl, 9 years, small town). There was a sense of excitement at using school amenities after school.

For participants in the countryside, particularly those who were older (approximately 12 to 14 years), ‘play’ was sometimes tied to their animals (n= 3 out of 10 participants residing in the countryside). A participant described spending her leisure time after school:

> I'll play with the goats usually or to like groom the horses, brush them, usually with the goats I'll, in the morning, I'll like come out and say hi to them. Give them like a few cuddles, kind of with them, say hi to the horses and maybe like feed the goats a bit, feed the horses then go back inside basically. (Girl, 14 years, countryside).

3.4.4 Safety

Safety was an important aspect of the participants’ neighbourhood that shaped the way they interacted with the neighbourhood in a variety of different ways. Conversations about safety were shaped by both family rules and by child perceptions about the neighbourhood. First, safety was relevant to the participants’ boundaries or rules they were required to follow when out in the neighbourhood. Second, when participants felt unsafe in a specific part of their neighbourhood, they made efforts to avoid this that area. Third, the perceived safety of the areas seemed to impact the degree of independence they were afforded. Fourth, the presence or absence of cars was an important consideration for children for their safety in their neighbourhoods.

In terms of family boundaries, one participant was allowed to bike on his street alone, but his parents had some parameters for his safety: “Sometimes my brother and sister and my mom we all go biking. So we just bike around… [Sometimes] alone. I'd stay at my boundaries. Like the first stop sign. My mom told me what my boundaries were.” (Boy, 8 years, small town). In general, participants seemed very amenable to the parameters their parents had set for them.

Another participant described how she maintained safety while walking on the road near her house, which was a maintained town road that turned into an unmaintained gravel road:

> Well, I cross the road with my brothers… I usually walk on this side until we get to the bottom of the hill. Well, really I walk on this side, but my parents walk on that side. [We walk over here] because when cars come up, they can’t really see you… Mom and Dad [taught me to walk on the road safely] (Girl, 7 years, countryside).

Places that participants thought to be ‘sketchy’ (unsafe) were places they considered not supportive to their health. When asked about the places in their neighbourhoods that they viewed as unhealthy or not supportive of their health, several children showed places where they felt unsafe or

uncomfortable, like an abandoned high school, broken down or old houses, and buildings in disrepair. For example, one participant described an abandoned high school down the street from his house:

> [It makes me feel unhealthy] because it's scary over there. There's lots of No Trespassing signs. And lots of broken things. It's creepy. Like before it was closed, I used to hear a dog, a dog barking inside. And a sign that said Beware of Dog. Before it was closed, before all the No Trespassing signs, me and my mom used to bike through there on our bicycles. But we went through there fast, so we didn't really see anything. But there's also basketball hoops, so one time me and my brother and sister went to go play there. But then we heard the scary sound like the dog barking and signs that said No Trespassing. So we left… [because it felt] scary and creepy (Boy, 10 years, small town).

Similarly, places where participants had observed other people smoking or consuming alcohol in the past were also deemed unhealthy. To some children, these places felt unsafe or were concerning because of the risk of second-hand smoke, which was consistent with several participants' conceptualizations of health, which often included a need for clean air and strong lungs. For example, a participant referenced a house in her neighbourhood and said, "Oh, like when I'm walking my dog [I feel unhealthy], like going around there. Like, you can smell the smoke from their house. [They] like smoke on their front porch, like 24/7." (Girl, 11 years, small town).

This was similarly mentioned by a participant who, while describing her independent walking route, pointed out an area she preferred not to walk because of her belief that some of the residents consumed alcohol:

> So that's like one of the places that makes me feel more uncomfortable. Mainly because just it was like some people that drink more down there. So I just don't usually go down that path. Like if I'm alone, if I have the dog with me, then I feel a bit better (Girl, 12 years, countryside).

Many participants (n= 7) in small towns described being allowed to go out in their neighbourhood on their own starting between the ages of 9 to 11. Participants who resided in the countryside did not necessarily recall a specific age they were able to go outside alone but acknowledged they had played outside on their with boundaries (like the property line) enforced by parents from a seemingly young age. Cars were mentioned by over half (n= 11) participants as significant to their safety in their own neighbourhood or when travelling to other places.

One participant said, "Yeah. Cuz there's like not a lot of cars and stuff. You can like run around the block. Pretty much… Yeah, yeah. Usually [I can go places by myself], it depends where

we're going." (Girl, 11 years, small town). She had been allowed to walk the family dog on her own starting at age 9 and had been allowed to go around the neighbourhood with friends starting at age 10. She added, "It's fun, because you can really like go wherever… Yeah! [It makes me feel independent.] Sometimes I would stay for supper. But like other than that, like I'd say, "I'll be home by three, bye!"".

One participant in the countryside pointed out that she had experienced safety issues with vehicles when she was in the neighbouring small towns: "When I'm in town, there's lot of fast cars and trucks. Well, I just kinda get scared and… I don't want to get run over." (Girl, 13 years, countryside). This was echoed by another small town-dwelling participant, who lived on a street without sidewalks, where she regularly walked on the shoulder of the road: "Normally [I feel safe], but sometimes when there's cars coming, and there's cars on either side of the road, and you're walking between them… Yeah [then it can be tricky]." (Girl, 10, small town).

Another participant in the countryside acknowledged that the road just beyond her house could be unsafe because of cars, "Because when cars come up, they can't really see you. Mom and Dad [taught me to walk on the road safely." (Girl, 7 years, countryside). A participant in a small town similarly relied on adult assistance for road safety, saying, "Probably I wouldn't cross the road without… supervision… Or by me, at least. Even if it's like a kid's mom that I go to school with, [I'll say], 'Can you make sure there's no cars coming while I walk?'" (Girl, 9 years, small town).

3.5 Discussion

The findings of this study highlight some important perspectives from children regarding their neighbourhoods and their health. Four key takeaways are identified in this discussion in the domains of physical environment, social environment, play, and safety. First, there are common physical characteristics of rural neighbourhoods that children considered significant to their health and these were related to places where they felt calm, usually open spaces; access to and the suitability of amenities; and to the neighbourhood in contrast with urban areas. Second, the social environment appeared to be as important or more important than the physical environment, with places in the neighbourhood usually visited with family or friends ascribed heightened significance. Third, children engaged in play as a function of the interconnected physical and social environments and children in the countryside and small towns engaged in play differently. Fourth, safety was an important enabler or inhibitor for children exploring their neighbourhood. An important takeaway that underscored all

of these was the heterogeneity of rural children's experiences. Even within this small study, there could be multiple subcategories within the 'rural' category (i.e. small town, countryside, countryside-farm) and there were important differences between these subcategories that are noteworthy for research and for practice. These findings will be described in further detail below.

3.5.1 Physical Environment

In this study, children perceived characteristics of their neighbourhood like open space lack of busy roads (and subsequent reduced traffic) as facilitating quietness and calmness. This, as well as the surrounding amenities, was considered impactful to their health. They also often described the healthy and unhealthy physical characteristics of their neighbourhood relative to their perception of urban areas. Quietness and calmness were appreciated by rural children and considered one of the most important parts of living in the countryside or a small town that contributed to good health and wellbeing. These feelings were enabled by the open space (in one case, blue space), which was mentioned by several participants (n= 8). As well, participants (n= 6) identified the lack of traffic as contributing to feelings of calm and quiet. These findings align with other research, where urban children expressed feelings of calm and relaxation around blue and green open spaces within cities, while artificial noise, like noise from cars, busses, and construction, was associated with feelings of overwhelm and discomfort (Buttazzoni et al., 2022).

Many children were satisfied with some elements of their neighbourhood and also recognized shortcomings. Several children described being unable to use playgrounds because the equipment was too small or designed for younger users. This parallels the findings of previous studies, like of Button et al. (2020). that rural children often have more challenges accessing play and physical activity amenities. In this case, children around the age of 10 and older described the lack of age-appropriate amenities, suggesting there may be an amenity gap for older children and adolescents. This is important to consider because children above the age of 13 may rely even more on public, common spaces and group gatherings when going out than younger children (Sandercock et al., 2010).

Finally, this study demonstrated an interesting positioning of rural neighbourhoods in contrast to urban neighbourhoods by children. In rural children's perceptions of their physical environments, they identified characteristics that were in direct juxtaposition with the urban physical environments. For example, if a rural place was considered quiet and as having fresh air, then cities were considered to be loud, crowded, and polluted. Some of the assumptions that rural children had about cities like

the crowdedness, fresh air, strangers, and noise are indeed cited as negative impacts in studies with urban children (Buttazzoni et al., 2022; Shortt & Ross, 2021). Rural children in this study also reported the desire to have better access to grocery stores and restaurants, access to which they correctly understood to be better in cities. Veugelers et al. previously found that children in neighbourhoods with better perceived access to food were less likely to be overweight or obese (2008), so rural children's worse access (both perceived and actual) to food stores is significant to health.

3.5.2 Social Environment

Children residing in both countryside and in towns identified the importance of spending time with friends, which is a common finding among studies about health with children (Button et al., 2020; Chipuer et al., n.d.; Newland et al., 2014). While children in small towns were able to walk alone to a friend's house to see if they were available to play, children living in the countryside were constrained by planning a time to see their friends and relying on parents to drive them to and from these arrangements. Although there were certainly places in their neighbourhoods that participants considered important or enjoyed, in many cases, it seemed to be the association of a particular place with time spent with family and friends that made it important, which has also been found to be true in studies with urban children (Shortt & Ross, 2021). This was true of Carroll et al.'s study (2015), which showed that when children had access to places like parks to hang out with friends, it created a sense of belonging and social connection. In this way, the physical and social environments are intrinsically linked by the physical environment's inhibiting of older rural children's social interactions when amenities suitable for their age group are unavailable, as described by participants in this study.

Social networks emerged as an important part of rural communities for children. Many children described knowing all their neighbours, perhaps due to the small population sizes and a smaller number of schools, meaning that most children in the community attend the same school. Several children also described participating in community events or volunteering. This is consistent with Crouch et al.'s findings that rural children are more likely to have positive childhood experiences (PCEs) like having a guiding mentor, volunteering, and perceiving their neighbourhood as safe and supportive (2023b). Interestingly, rural children are also more likely to have adverse childhood experiences (ACEs) than urban children (Crouch et al., 2020). The important distinction

here, however, is that PCEs tend to be provided out in the neighbourhood, as was the case in this study, while ACEs tend to take place within homes, which this study did not explore (Crouch et al., 2023b).

3.5.3 Play

Play is an important part of childhood development and social interaction is a key benefit of engaging in play (Milteer et al., 2012; Sutton, 2008). The results of this study demonstrate that play is also of individual value to children, as the majority of them spoke about play in some capacity. As mentioned, play seemed to be the outcome of the interconnectedness of physical and social environment factors. Meaning, where the physical and social environments were both conducive to play (e.g. friends lived nearby and there were public amenities or spaces available), children reaped the benefits of play. Since children in this study who lived in the countryside had different access to public spaces where spontaneous play could occur, they were sometimes missing the social benefit of play within their own environment.

Many children in this study described playing with their friends at specific locations and explained the access they had to their friends after school; children residing in small towns were generally able to walk to friends' houses and engage in impromptu and spontaneous play in public places, while children living in the countryside were generally reliant on their parents to take them to or pick up a friend to scheduled play, similar to research in other rural settings (Button et al., 2020). Considering Sandercock et al.'s suggestion that children over the age of 13 tend to prefer meeting with friends at public places, rural children who live in the countryside or in recreation-deprived small towns may miss out on opportunities to engage in play as they get older. Adolescents' use of parks tends to decline in general (Veitch et al., 2007), so combatting this in rural areas by adding park amenities geared toward older children like basketball courts and bleachers, where amenities other than playgrounds might be scarce, could be advantageous to slow the decline of play. Even younger rural children could miss out on opportunities for play since, as described by Carroll et al. (2015), children's public spaces have become increasingly confined to places like parks, which already may not be in abundance or may not be suited for all ages, as in the current study.

Since there are rural children who have worse access to public amenities (i.e. parks, shopping centres, pools, etc.), where much of children's play and socializing occurs, there may be opportunities to innovate for solving this issue. For example, implementing temporary initiatives like the play

streets described in Meyer et al.'s study (2021) or considering the addition of regional amenities in rural areas where children are drawn from several nearby towns to use the amenities, per Kramer-Kostecka's suggestion (2022). However, these types of initiatives are costly and would only increase the accessibility marginally, since children would still need parents to drive them to these regional locations. Finally, although this study did not specifically ask children about organized programs, rural children in other studies have mentioned a desire for this (Button et al., 2020), which could add more opportunities for play, particularly during winter at centralized facilities when other outdoor amenities (like outdoor pools, which are common in rural municipalities), might be unavailable.

3.5.4 Safety

Participants in this study considered environmental cleanliness a part of safety. Several sentiments about the cleanliness of the environment are echoed in studies with urban children, where smoking cigarettes or littering were noted as things that made children feel unhealthy in cities (Shortt & Ross, 2021). Like children in urban areas, rural children had concerns around strangers. In general, rural children had a high level of comfort and familiarity with the neighbourhoods and with the people within. Unknown people were not necessarily perceived as threatening to their wellbeing, but people engaging in certain behaviours like smoking or drinking alcohol were considered dangerous. This parallels Shortt & Ross' finding that children felt that areas where adults frequented bars or smoked on sidewalks were harmful to their health (2021).

Safety was a major inhibitor to play and to the social environment for children living in the countryside. The safety that lacked from having no sidewalks or active transportation infrastructure coupled with the long distances prevented them from going beyond their property on their own in all but a few cases. Additionally, Kramer-Kostecka et al. (2022) noted that parents' perceptions of safety in physical activity environments mattered to the access that children had to these environments, in that parents allowed more freedom based on how safe they perceived a place. Consistent with this, rural children described having parent-imposed boundaries by which they had to abide to be permitted to go out in the neighbourhood on their own; for children in the countryside, the extent of their permitted area was usually the property line. Without the ability to go out and play or explore the neighbourhood due to safety concerns, rural children may miss out on many opportunities to play.

3.5.5 Rural Heterogeneity

Heterogeneity within the categorization of 'rural' places was very evident in the results of this study. Previous studies have grappled with the challenge of the lack of a single definition for rural and this study's findings further validate this challenge. While the municipality of Bruce County is considered in rural, the experiences between the children living in small towns was distinct from those living in the countryside. These two groups of rural children experienced differences social and environmental aspects of their lives, like proximity to friends, mobility, and autonomy afforded by the environment.

Both children living in the countryside and in small towns seemed to have relatively high levels of independence, including independent mobility within age-appropriate boundaries as deemed by their parents. Compared to studies that have been done about urban children's independent mobility, rural children in this study seemed to enjoy a moderate to high level of mobility. A study in Toronto, ON, found that only 65% of children in grades 5 and 6 were sometimes allowed to go out on their own, significantly lower than European counterparts (Mitra et al., 2014; Shaw et al., 2015), while children as young as grade 3 (roughly 8 years of age) described going short distances on their own in this study. The same study also found that parental perceptions of neighbourhood safety impacted the level of mobility a child had, with a compounding factor being the amount of time a family resided in a given neighbourhood: living in a neighbourhood for longer than 9 years was associated with higher levels of mobility for children (Mitra et al., 2014). This is an interesting finding that could help explain rural children's higher levels of mobility. Many children indicated that their families were from the area, and sometimes that their parents had grown up in the same town, perhaps contributing to a greater sense of safety because of their familiarity with the physical environment and the members of the community. Conversely, although children in the countryside had high levels of independence within their environment, they were usually not permitted to travel beyond their property due to a complete lack of infrastructure like sidewalks and trails that could provide safety.

The current study validates the need for such urban-rural continuum, as opposed to a dichotomy, such as that provided by the DEGURBA methodology. Within even one rural municipality, there was great heterogeneity in experiences between rural children who lived in small towns and those who lived in the countryside (or in DEGURBA terminology, those who live in rural clusters versus dispersed rural areas). As evidenced by the discussion here, this will be an important consideration for rural studies in the future to enhance the validity and generalizability of the study.

3.6 Strengths and Limitations

There are a variety of strengths and limitations to this study. The sample was majority white-identifying, with only two (10%) of the participants identifying as another ethnicity. Although the sample make-up was consistent with the overall demographics of the municipality where the study took place, with 96% not a visible minority and 4% a visible minority (Statistics Canada, 2021a), the results may not be generalizable to another rural population where the demographic make-up is more heterogeneous. The nature of interviewing children for research is also such that it can be difficult to ascertain if children's perspectives are their own or simply a reflection of their parents' beliefs and views. For the sake of research such as this, participant's responses must be taken at face-value. Also, there is a potential for self-selection bias since recruitment was done through parents, making it difficult to determine if children whose parents desired for them to participate in an academic study are representative of the broader population of rural children. Additionally, the nature of the go-along interview and of safety and ethical concerns for this study limited the range of the interviews. An important consideration for rural children is that many places where they feel healthy may require driving to access (e.g. to school, to a sports facility, etc.) and consequently may not have been visited or mentioned by participants. Finally, as mentioned in previous sections, the lack of a definition or classification of 'rural' is a challenge to all studies looking at rural communities. Even the designation of 'rural' to Bruce County points to the heterogeneity of experiences between children in small towns, living in the countryside, or somewhere between these contexts, suggesting rurality may be a spectrum. Acknowledging these limitations, this study also has strengths as one of the first studies looking at rural children's perspectives of their built environment's impacts to health and wellbeing. This is both an understudied place context and an understudied population of vulnerable people. Building on the work of this study, future research could look more specifically at the experiences of First Nations, Inuit, or Métis children on reserves and their perspectives of the built environment impacts of their distinct context. This research also brings up an interesting question about what qualifies as a neighbourhood or as the built environment since rural countryside-dwelling children have more interactions with private property and with public spaces that require driving to access.

3.7 Conclusion

The aim of this study was to explore rural children's perspectives on the impacts of built environment on their health and wellbeing. To our knowledge, it is one of the first studies in Canada to take a

qualitative approach to rural children's health as it relates to their neighbourhoods while centring children's own perspectives. Twenty go-along interviews with rural children between the ages of 7 and 15 years revealed interesting insights. The main takeaways of this study include the importance of certain rural physical environment characteristics like fresh air, quietness, social networks; the value children put on the social environment of their neighbourhood; the need for rural children to feel safe in their neighbourhood; the different ways in which rural children engage in play; and the necessary distinction between study participants who reside in a rural small town and those who live in the countryside.

Chapter 4

Conclusion

The aim of this thesis is to explore rural children's health and neighbourhoods. To achieve this, content analysis and qualitative interviews were adopted as methodological approaches and were organized in two separate studies. The two studies included in this thesis have highlighted several findings.

The first study analysed healthy community frameworks to determine common components that existed between them, addressing research question #1. These common components were then considered in the context of rural communities and children to create a novel rural children's healthy community framework. There were three key findings in this study. First, healthy community frameworks are designed for use in denser, urban areas, with little meaningful consideration of how to apply similar principles in rural communities. Second, rural communities present specific opportunities for applying healthy community approaches because of the unique characteristics of the context (ie., engaging with children through established volunteer or social networks). Third, rural communities are diverse and require context specificity in the application of a healthy community framework.

The second study addressed research question #2 by exploring rural children's perspectives of the impacts of their neighbourhoods on health through go-along interviews in their neighbourhoods. During each of the 20 interviews, participants identified 3 to 5 places that were significant to health. This study had four key findings. First, rural children identified common characteristics of their neighbourhoods that they considered impactful to health, such as the presence of open space which evoked feelings of calm; the level of access to and the suitability of amenities in their neighbourhood; and the characteristics of their neighbourhood in comparison to urban places. Second, the social environment seemed to be as important as or more important than the physical environment for health. For instance, the physical environment seemed to become more health promoting when experienced *with* friends or family. Third, children engaged in play as an interconnected function of social and physical environments, which meant that children in small towns and in the countryside engaged in play differently. Fourth, children frequently mentioned safety as a key factor in determining use of their neighbourhood.

4.1 Contributions to research

Within the context of the conceptual framework presented in Chapter 2, the results of this study contribute to the research by demonstrating what is relevant and important to rural children in their neighbourhoods. Consistent with previous research, this study emphasized the importance of the social environment in children's neighbourhoods for their perceptions of health (Carroll et al., 2015; Shortt & Ross, 2021). In identifying elements of neighbourhoods that were significant to their health, children identified the importance of their social relationships, which then seemed to influence their feelings about the physical environment and vice versa. Together with other researchers' findings (Lin et al., 2017; Meyer et al., 2021; Shortt & Ross, 2021), this suggests that the social environment, as much as the physical environment, impact children's perceptions of their neighbourhoods.

Children's positive perceptions of the physical environments of their neighbourhoods in this study are also relevant. Per Wilson et al. (2004), perceptions of neighbourhoods' impacts on health can be just as important for health as the actual neighbourhoods themselves due to their finding that satisfaction with physical features of the neighbourhood was associated with decreased odds or poor health. Although this study did not evaluate health or self-rated health, rural children's perceptions of their neighbourhoods, in comparison to other imagined alternatives, were positive. Children's positive perceptions of their neighbourhoods were related to characteristics like open space, quietness or feeling calm, and fresh air, the opposite of negative characteristics identified by urban-dwelling children like mechanical noise, and air and noise pollution (Buttazzoni et al., 2022).

Play, for rural children in this study, was a function of physical and social environments, with interactions between the two environments influencing children's ability to engage in play. Across participants, there were differences in the way that countryside-dwelling and small town-dwelling children engaged in play due to differences in their physical and social environments. For example, children in the countryside lacked the immediate access to friends that children in small towns had, which was similarly found by Button et al. (2020). Additionally, children in the countryside usually did not have nearby access to public spaces and amenities (e.g. playgrounds), but often had rich play experiences interacting with the physical environment within the boundaries of their own property.

Finally, safety was consistently relevant to the children in the study, with unique understandings of what safety was. Many participants identified "sketchy" people (e.g. people who were smoking or drinking), abandoned buildings, or old houses as unsafe, a similar finding to Short et

al.'s study in with urban children in Scotland (2021), suggesting that both rural and urban children experience these safety concerns similarly. Vehicular traffic was another concern, particularly for children in the countryside whose boundaries were limited to their personal property by their parents due to high traffic speeds on country roads. This is consistent with research that shows that rural parents' perceptions of safety in neighbourhoods matter for children because it impacts the amount of access they have within their neighbourhoods (Kramer-Kostecka et al., 2022).

Underlying both studies is an acknowledgment of the importance of defining 'rural' in research. This research used the Degree of Urbanization (DEGURBA) methodology, developed by the Statistical Office of the European Union (European Commission. Statistical Office of the European Union. et al., n.d.) to classify the study context, Bruce County, as rural. As other researchers have noted, it is important to define the rural context in every study of rural communities to be able to better utilize the data that emerges from these studies.

4.2 Contributions to planning practice

There are several practical implications of this research for planners, particularly those who practice in rural municipalities. The results of both studies suggest, as has been pointed out by other researchers (Wende et al., 2022), that there is a need for more focus on health for children in rural communities and address their needs as identified by children themselves. Both studies' results also suggest that rural planners should put efforts into enhancing not only the physical environment of rural neighbourhoods, but also to enabling the function of social environments, as social interaction was of great importance to all children. In the first study, the analysis of existing healthy community frameworks confirmed the importance of the social environment based on the inclusion of related components in the majority of frameworks. In the second study, rural children's healthy places were usually associated to social interaction in some way. To address older children's social and physical environments, rural planners might consider adding benches or natural seating areas where children can hang out with friends but not engage in traditional forms of play. This could be described as 'social infrastructure', or the places and organizations that shape the way that people interact (Klinenberg, 2019, p. 5) and create opportunities for gathering (Tomaney et al., 2024). Although these types of additions come at a financial cost, they may doubly benefit other groups; additional seating, for example, could also improve accessibility of the space for older adults. Given the importance of the social environment and social interaction to overall health, enhancing social

infrastructure could have a significant positive impact on rural communities. Additionally, rural planners will have to grapple with the differences in access to physical and social environments for children living in the countryside whose independent mobility is limited; this perhaps calls for creative thinking or collaboration with other departments to rely on programming, such as organized park meet-ups for children or temporary pedestrian streets that enable play, rather than just the physical environment as an enabler of the social environment, and both as enablers of play.

The second study also confirms that, as for urban children (Shortt & Ross, 2021), the perception of safety is a key impact to children's use of their neighbourhoods. There may be opportunities to improve rural neighbourhoods for children by leveraging road safety measures such as reduce car speed or enhance bicycle or pedestrian safety through painted crosswalks for safer street crossing, for example, although this example is likely only feasible within small towns and not in the countryside, where the trade off to reduced speeds would be significant in terms of transportation efficiency.

4.3 Limitations and Future Research Directions

There are limitations to the research presented in this thesis that can be addressed by future research. While the first study in this thesis explored existing healthy community frameworks, it did not look at whether some communities, particularly rural communities, have formally applied any of these frameworks and with what result. An evaluation of rural communities that have applied healthy community principles, if these exist, could yield interesting results for rural planners to consider for their own municipalities. Additionally, research that evaluated healthy community frameworks' success in rural municipalities could help shape future frameworks based on evaluative evidence. The second study focused on one rural municipality in southwestern Ontario, and consequently, the findings may not be generalizable to other rural municipalities with contextual differences, especially considering thaSt study's finding that there is vast heterogeneity of experiences within rural communities. Research comparing different rural communities and the health of children in these communities could offer valuable insight into common impacts of rurality to health and how to address these. While two participants in the second study identified as Indigenous, it did not specifically focus on Indigenous experiences, which was outside of the scope of this study. There is ample opportunity for Indigenous researchers to conduct similar research in First Nations, Métis, and Inuit communities in Canada, particularly because of the high degree of heterogeneity between

communities. For the same reasons that studying the perceptions of the general child population (or rural child population) is important, studying Indigenous children's perceptions of their neighbourhoods' impacts to their health could offer important insight, particularly for children on reserves. Since the second study was limited to children between the ages of 7 to 15, there was no representation in the data from rural youth who were making the decision to move away from the community for or after post-secondary school. All children in the second study determined that their current rural context was the most desirable place to live, yet youth retention is an issue in many rural communities, unexplored here. Research conducted with rural adolescents and young adults that explored the decision to return to live in their rural community or to move to an urban area could provide information useful for youth retention. Such research could bridge the gap between the findings of the current study (i.e. that rural children like their current neighbourhoods) and what we know about the challenges of retaining young people in rural communities.

Although much of planning research focuses on urban areas, and perhaps rightly so, this study points to the importance of focusing also on rural areas and the people residing within them. Rural communities are vibrant places that their residents are proud to live in or to have lived in, me included. It is clear to me, after conducting this research, that there is much that remains to be learned and explored about rural communities and rural populations. For future planning students, whether originating from a rural community or not, I hope that time is taken to meaningfully consider how the planning profession can improve the lives of the people in those rural communities, as it is for people in urban communities.

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Appendix A

Data Characterization Table for Healthy Community Frameworks

Appendix A: Data Characterization table

Framework/Theory	Source	Link	Population	Key Elements	Rural (Y/N)	Children (Y/N)	Notes
Building a Child-Friendly City	UNICEF	https://www.childfriendlycities.org/reports/child-friendly-cities-and-communities-handbook	Children	Safe & protected; good start in life; essential services; education & skills development; influence on decisions that impact children; participation in social life; clean environment; access to green spaces; meet friends and have places to play; fair chance at life.	N	Y	Created based on the principles of the United Nation Convention on the Rights of the Child (NUCRC). Most Child-Friendly City principles have roots in the principles of the UNCRC.
Healthy Municipalities, Cities, and Communities Movement (HMCC)	Pan American Health Organization	https://www.paho.org/en/healthy-municipalities-cities-and-communities-movement	All	Local leadership & governance; Promoting intersectoral action; Community participation & empowerment; Basic health & wellbeing services; Healthy, inclusive & Safe environments; Capacity building for health emergencies	N	N	Does not provide specific objectives/principles/guidelines to achieve healthy municipalities in the form of a framework.
Coalition for Healthier Cities and Communities	Community Initiatives, Inc.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1308699/	All		N	N	Not relevant, based in academia.

Inclusive Healthy Places Framework	Gehl People	https://ihp.gehlpeople.com/framework/	All	Civic trust; Participation; Social capital; Quality of public space; Accessibility; Access; Use & Users; Safety & Security; Preparedness for Change; Ongoing investment in space; Collective Efficacy; Community Stability; Ongoing Representation; Characteristics of People Present; Community Health Context; Predictors of Exclusion; Community Assets	Y	Y	Framework with very broad approach. Many resources available through the organization to support the main framework.
Healthy Communities Framework	Communities Choosewell (funded by Government of Alberta)	https://communitieschoosewell.ca/healthy-communities-framework/#:~:text=The%20Healthy%20Communities%20Framework%20(HCF,initiatives%20in%20communities%20across%20Alberta!	All	Policy; Places; People; Participation; Promotion; Partnerships; Programs	Y	N	Very broad framework. Not a lot of specific objectives and approaches, but can subsequently be applied to a variety of types of communities.
Our Healthy Community	Academia	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10001904/	All	Integration; Participation; Empowerment; Context; Knowledge	N	N	Not relevant, based in academia.
8 80 Cities Best Practices - Building Better Cities	8 80 Cities	https://880cities.org/wp-content/uploads/2017/11/BvL	Children	Integrated and holistic approach; Multi-sector approach; Consistent source of funding; Data	N	Y	A variety of approaches available through 8 80 Cities. Applicable to children and principles could be transferable

with Young Children and Families		F-8-80-Cities-Report-Final.pdf		from and investment in front-line staff; Free and accessible participation; Engage the entire community.			to rural communities, although not explicitly mentioned in documents.
Healthy Cities	WHO	https://www.who.int/publications/i/item/9789240004825	All	Improve city governance; reduce health inequalities; health-in-all policies approach; community development and empowerment; healthy physical and built environments; quality of and access to health services; plan for all people and prioritize those in most need; strengthen services to deal with health-related emergencies; urban preparedness for public health emergencies	N	Y	Brief mention of rural communities and the need for special consideration of similar principles in these communities. However, no specific focus on how to implement the framework in rural communities and perhaps challenging uptake due to 'cities' in name.
Safe Routes to School	National Centre for Safe Routes to School	https://www.saferoutesinfo.org/	Children	Presence, Design & Placement; Quality, Conditions, and Obstructions; Continuity & Connectivity; Lighting; Visibility; Driveways; Traffic; Signs & Pavement Markings; Access; Signals	N	Y	Very narrow focus on travelling safely to school, as name suggests.
Active Living Communities	Active Living Research	https://activelivingresearch.org/active-living-topics	Families	N/A	N	N	Not enough information and not kept up-to-date (archived).

Smart Growth Planning	U.S. EPA Office of Sustainable Communities AND Maryland Department of Planning	https://smartgrowth.org/what-is-smart-growth/	All	Mix of land uses; compact building design; Range of housing opportunities and choices; Walkable neighbourhoods; Attractive communities with strong sense of place; Preserve open space; Direct development toward existing communities; Variety of transportation choices; Predictable, fair, and cost-effective development decisions; Community and stakeholder collaboration in development decisions	Y	N	Overall focus on economic growth for communities, including rural communities.
Safe Communities	International Safe Community Certifying Centre	https://isccc.global/	All	Governance; Surveillance; Comprehensive; Vulnerable groups; Evaluation; Networking	N	Y	Narrow focus on one type of safety. Does not consider other aspects of health.
Livable Communities	Clinton-Gore Livability Initiative	https://clintonwhitehouse4.archives.gov/CEQ/livability.html	All	Preserve green spaces and protect wildlife; ease traffic congestion; restore sense of community; promote collaboration among neighbouring communities; enhance economic competitiveness.	N	N	Initiative has been archived and also did not exist in the format of a framework.
Age-Friendly Cities	WHO	http://apps.who.int/iris/bitstream/10665/43755/1/9/8921	Older Adults	Transportation; Housing; Social participation; Respect and social inclusion; Civic participation and	Y	Y	Primarily applicable to older adults, but many of the principles are also applicable to children (as the 8 80 Cities ethos would confirm). Also,

				employment; Communication and information; Community support and health services; Outdoor spaces and buildings			several mentions of children in the Age-Friendly Cities documents. Some mention of rural older adults.
Dementia Friendly Cities	Alzheimer's Society of Canada	https://alzheimer.ca/on/en/take-action/become-dementia-friendly/dementia-friendly-communities-ontario	Older Adults	Understands; Includes; Encourages; Assists; Values	N	N	Specific focus on adults with dementia.
BC Healthy Communities	BC Healthy Communities	https://bchealthycommunities.ca/	All	Community and citizen engagement; multi-sectoral collaboration; political commitment; healthy public policy; asset-based community development	Y	Y	A variety of initiatives and resources are available through the organization. Consideration for a variety of groups of people and information applicable to all types of communities.
Community Wellbeing Framework	DIALOG	https://dialogdesign.ca/community-wellbeing-framework/	All	Social; Environmental; Economic; Cultural; Political	N	N	Minimal specific information on the application to communities, particularly rural communities, and to children.
Healthy Communities Practice Guide	Canadian Institute of Planners	https://www.cip-icu.ca/healthy-communities/	All	Governance; Human Services; Social Development; Food Systems; Buildings; Infrastructure; Parks, Open Space & Natural Areas; Ecosystem Health; Development Patters; Economic Development (*non-exhaustive)	Y	Y	Many mentions of both children and rural communities. Strong focus on built environment.

Healthy Community Guidelines	University of Alberta	https://www.ualberta.ca/department-of-medicine/divisions/preventive-medicine/housing-for-health/healthy-community-guidelines.html	All	N/A	N/A	N/A	Guidelines were available via email request through the organization website. No response was received upon request to receive framework.
Healthy Community Neighbourhood Initiative	Los Angeles Urban League, Healthy African American Families Phase II, Charles R. Drew University, University of California Los Angeles, Cedars-Sinar Medical Centre, LA Biomed/Harbor-UCLA Medical Centre	https://www-ncbi-nlm-nih-gov.proxy.lib.uwaterloo.ca/pmc/articles/PMC4738849/	African-Americans, Latinos, other racialized adults (low-income)	Physical environment: food resources; walkability/sreet design; housing quality/type/density; disorder (litter, vandalism, graffiti, etc.)	N	N	Specific focus on a vulnerable urban group.
Health in All Policies	Council of the European Union / Finnish EU Presidency of 2006	https://academic-oup-com.proxy.lib.uwaterloo.ca/heapro/article/23/1/1/556005?login=true&token=eyJhbGciOiJub25lIn0.eyJleHAiOjE3MjAxMDM0NzEsImp0aSI6IjFlZ	All	A concern for health in all areas of policy and accountability for health impact of decisions.	N	N	This is primarily a principle and is not a framework. However, further investigation revealed that some other frameworks use the Health in All Policies (HiAP) principle in their work.

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Healthy Rural Communities Toolkit	Ontario local public health units; Public Health Ontario; University of Guelph	http://www.waynecaldwell.ca/wp-content/uploads/2023/04/HealthyRuralCommunitiesToolkit.pdf	All	Community design and land use planning; active transportation; community engagement and capacity building; water quality; air quality; tourism; planning for special age groups; agriculture; cultural strategies and revitalization; access to local food; nature; safe and affordable housing; climate change.	Y	Y	Applicable to rural communities with some mention of children, but target population is whole population, initiatives are not child-specific.

Appendix B

Healthy Community Framework Components

Appendix B: Components of healthy community frameworks organized by category

Construct	Component	Description	Source
Context Specificity	Community health context	Snapshot of existing health at the community scale, including physical and mental health and wellbeing, socioeconomic health, environmental health, and housing conditions.	Inclusive Healthy Places (Gehl)
Policy & Governance	Civic trust	Trust in public institutions and our neighbors can be measured by a suite of indicators, including rate and type of civic engagement (i.e., participation), degree of knowledge of public processes, and level of reported trust among community members.	Inclusive Healthy Places (Gehl)
	Governance	Jurisdiction and citizen participation.	Healthy Communities Practice Guide (CIP)
	Improve city governance	Forging local partnerships for health; promoting accountability; completing a city health profile introducing an integrated city health development plan; health in all local policies; city diplomacy.	Healthy Cities (WHO)
	Policy	Policy, guidelines, regulations, and strategies are important tools and guides for action that organizations and communities can use to help shape the settings in which we live, work and grow, as well as sustain promising community practices over time. Policies that aim to improve community health are called healthy public policies. Healthy public policies exist at an organizational and government level, can be mandatory or voluntary, and vary in level of monitoring and enforcement.	Healthy Communities (Communities Choosewell)

Construct	Component	Description	Source
	Health-in-all-policies approach	Developing mechanisms and capacity for integrating health and equity considerations within local policymaking. Ensuring policy coherence that is beneficial to health and promoting related systems.	Healthy Cities (WHO)
	Healthy public policy	Policy that is explicitly designed to improve population health but not necessarily developed by the health sector. Healthy public policies are those that, for example, promote active transportation, affordable and stable housing, and community food security and are designed to have as one benefit the improvement of population health and life quality.	BC Healthy Communities
	Collect data from front-line	Staff who interact with young children, pregnant women and families on a daily basis can provide a wealth of knowledge on the habits, concerns and preferences of these groups, based on observations and interactions. Frontline staff can also provide informed observations that can be collected as data through various tools.	8 80 Cities
	Political commitment	There is a vital role for involvement of all levels of government (local, provincial, national) in creating conditions for health and human development. While multi-sectoral partnerships are key, equally important are inter-sectoral, inter-departmental and inter-ministerial partnerships.	BC Healthy Communities
Ongoing Funding	Ongoing investment in space	Presence of funding channels for public space maintenance or improvements, in addition to local capacity for care as stewards or volunteers, can demonstrate financial or sweat equity ownership of a public space.	Inclusive Healthy Places (Gehl)
	Consistent source of funding	An on-going strategy for engaging young children, pregnant women and families requires a continuous, reliable source of funding. The failure to engage these groups often comes from	8 80 Cities

Construct	Component	Description	Source
		lack of funding and resources allocated to this process, and commonly results in sporadic or lost opportunities for engagement.	
Engagement, Participation, and Communication	Engage entire community	Engagement programs and initiatives that have the most impact reach out to caregivers, teachers, health care professionals, and other stakeholders that care about or interact with young children.	8 80 Cities
	Free and accessible participation	Participation and engagement should never be a financial burden for anyone. The opportunity to participate should be made as easy as possible, and families should, when possible, be compensated for their time.	8 80 Cities
	Participation	Broad-based participation in publicly accessible events or programs, attendance at public meetings, and the degree of investment in participatory public processes and in stewarding public assets are all essential factors.	Inclusive Healthy Places (Gehl)
	Citizen collaboration	Strategic collaboration in all points of planning process.	Healthy Communities Practice Guide (CIP)
	Express opinions and influence decisions	Every child and young person has their voice, needs and priorities heard and taken into account in public laws (if applicable), policies, budgets, programmes and decisions that affect them.	Child-Friendly City (UNICEF)
	Promotions	Fostering meaningful connections with children, youth, families, and individuals in the community are essential to building a healthy environment for people to live, work, and play. We create meaningful connections through conversation and effective communication. The Promotions Pillar focuses on the tools, best practices, and strategies to help effectively communicate and connect with the community.	Healthy Communities (Communities Choosewell)

Construct	Component	Description	Source
	Participation	Community participation is the underlying foundation in which you work to build a stronger and more healthy community. When encouraging participation, diversity needs to be recognized in communities. People have different ages, abilities, religious beliefs, economic statuses, lived experiences, and more. Acknowledging these differences allows community members' barriers to participation to be strategically addressed.	Healthy Communities (Communities Choosewell)
	Community and citizen engagement	Wide community involvement is particularly important for creating a shared vision for a common future and provides opportunities for individual and community empowerment and leadership. Engagement strategies are inclusive and take a 'whole of community' approach. Community members bring their voice to defining the issues, generating solutions, taking action and evaluating overall success and learning.	BC Healthy Communities
	Civic participation and employment	An age-friendly community provides options for older people to continue to contribute to their communities, through paid employment or voluntary work if they so choose, and to be engaged in the political process.	Global Age-Friendly Cities
	Communication and information	Participants in most cities in the developed world say there is a variety of information from many diff erent general and specialized media for older people, while in cities in developing countries, people in the focus groups emphasize a few community-wide media, mostly television, radio and newspapers.	Global Age-Friendly Cities
	Community Engagement and Capacity Building	The community is an important resource to help achieve mutual goals, and community engagement increases municipal capacity. Municipalities can leverage the expertise and knowledge of community members on a volunteer basis. Community engagement provides the perspectives of citizens, both as individuals and collectively. Engagement and participation are	Healthy Rural Communities Toolkit

Construct	Component	Description	Source
		vital in creating effective policy and programs for community health that are inclusive and holistic.	
Equity and Diversity	People	**People are the building blocks of communities.** The people in communities should guide and inform the creation of programs, places, promotions, partnerships, and policies and how participation is encouraged. Each pillar of the Healthy Communities Framework is grounded in and reflects the concepts covered in the People Pillar. The People Pillar focuses on the importance of Equity, Diversity, and Inclusion as a tool to build healthier and more engaged communities.	Healthy Communities (Communities Choosewell)
	Reduce health inequalities	Explaining the meaning and the root causes of inequalities and their negative impact on society. Measuring inequalities. Developing a step-by-step action plan for the city.	Healthy Cities (WHO)
	Plan for all and prioritize those in need	Giving every child a healthy start in life. Ensuring access to education for all, including pre-school for all children. Addressing ageism and healthy ageing. Mapping out the social landscape in the city with attention to the needs of vulnerable and socially disadvantaged people.	Healthy Cities (WHO)
	Fair chance at life	The rights of all children are respected, without discrimination of any kind, irrespective of the child's or the parents' or legal guardian's race, colour, sex, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status. Applying the Convention on the Rights of the Child and implementing the CFCI is about giving each child a fair chance in life.	Child-Friendly City (UNICEF)
	Good start in life	Children have the right to life, with the government committed to ensuring to the maximum extent possible their right to survival and healthy development.	Child-Friendly City (UNICEF)

Construct	Component	Description	Source
	People characteristics	Demographic characteristics of the impacted or local population.	Inclusive Healthy Places (Gehl)
	Predictors of exclusion	Essential measures of inequality and indicators of discriminatory practices or experience.	Inclusive Healthy Places (Gehl)
Cross-Sectoral Approach	Multi-sector approach	Forming networks across sectors leverages the strengths of each sector to engage young children and families. Local community organizations provide local knowledge and have longstanding relationships with residents, which makes them a valuable resource in reaching the community. Private sector partners can provide specialized services and programs to young children, pregnant women and families that can further support engagement efforts.	8 80 Cities
	Integrated and holistic approach	Engaging young children, pregnant women and families in city building processes needs to be approached in a holistic manner. All departments within a city have a shared responsibility and a role to play in creating better cities for and with children and families. Working with all departments to engage these groups will contribute to the well-being of families in all aspects of their life, which contributes to the success of a healthy city.	8 80 Cities
	Collective efficacy	The efficacy of a community is measured by the value of its members' input as stakeholders in ongoing processes shaping public space and in the strength of social networks.	Inclusive Healthy Places (Gehl)
	Multi-sectoral collaboration	Strong partnerships are also needed within and across a wide range of sectors including: environment, agriculture, sports/leisure, education, social, faith, culture, language, government and business. Working together, through taking a bottom up and top down approach, communities and governments	BC Healthy Communities

Construct	Component	Description	Source
		(at all levels) can create conditions for the health and wellbeing of the whole community.	
	Collaboration	Collaboration between planners and citizens, elected officials, staff, advisory groups, boards, health professionals, teachers, social services providers, first responders, neighbourhood/community groups, faith groups, artists, farmers, food retailers and wholesalers, landscape architects, urban designers, engineers, architects, biologists, ecologists, environmental specialists, employers, business associations, chamber of commerce, and unions.	Healthy Communities Practice Guide (CIP)
	Partnerships	Within the Healthy Communities Framework, we define a partnership as two or more organizations, individuals, or municipalities working together to reach a common goal. Whether it's two individuals working together or a multi-partner coalition, the Partnership Pillar will help enhance relationships to achieve goals.	Healthy Communities (Communities Choosewell)
Physical Environment	Ecosystem health	Climate change, conservation of resources, pollution of air/water/soil, biodiversity.	Healthy Communities Practice Guide (CIP)
	Buildings	Buildings including commercial, residential, industrial, institutional, green design, universal design, aesthetics.	Healthy Communities Practice Guide (CIP)
	Parks, open space, natural areas	Recreation, contemplation, physical activity, biophilia.	Healthy Communities Practice Guide (CIP)
	Development patterns	Land use, built environment, urban design, public realm.	Healthy Communities Practice Guide (CIP)
	Infrastructure	Mobility, water supply, solid waste management, energy, telecommunications.	Healthy Communities Practice Guide (CIP)

Construct	Component	Description	Source
	Outdoor spaces and buildings	T h e outside environment and public buildings have a major impact on the mobility, independence and quality of life of older people and affect their ability to “age in place”.	Global Age-Friendly Cities
	Transportation	Transportation, including accessible and affordable public transport, is a key factor influencing active ageing. It is a theme running through many other areas of discussion. In particular, being able to move about the city determines social and civic participation and access to community and health services.	Global Age-Friendly Cities
	Housing	Th ere is a link between appropriate housing and access to community and social services in infl uencing the independence and quality of life of older people. It is clear that housing and support that allow older people to age comfortably and safely within the community to which they belong are universally valued.	Global Age-Friendly Cities
	Places	“Places” refers to the environment around us in which we live, work, learn and play. While the natural, social and economic environments also play a role in influencing the behaviours of individuals and communities, within a community Healthy Eating Active Living (HEAL) scope we will focus on the physical environment. This includes both the built environments and the natural spaces within them such as: green spaces, recreation facilities, cultural grounds, municipal buildings, and more.	Healthy Communities (Communities Choosewell)
	Quality of Public Space	Quality is a driver of use and a factor contributing to how much time people spend in a place, including for social and physical activities, as well as their level of comfort in and enjoyment and ownership of a space. We measure quality through a mix of observational and survey-based indicators to capture user experience —essential in planning with inclusion in mind.	Inclusive Healthy Places (Gehl)

Construct	Component	Description	Source
	Supportive physical / built environment	Creating safe and clean neighbourhoods; addressing poor sanitation, air and noise pollution, hygiene and housing conditions; promoting cycling and walking and investing in healthy transport; making the city child- and age-friendly; addressing climate change and minimizing carbon footprints; ensuring access-to-all green spaces, areas for social interaction, and good facilities are available for all; investing in healthy urban planning and design, closely working with urban planners and architects.	Healthy Cities (WHO)
	Community design and land use planning	They help to build robust communities by managing and directing land use to achieve healthy, liveable and safe communities. They help to create communities as good places to live, work, learn and play in close proximity to one another. They promote complete and compact settlements. This is applicable in rural areas where the revitalization of existing towns, villages and hamlets is encouraged. Some communities must deal with populations that are even more widely dispersed. These include places where large-scale agriculture, natural regeneration of poorer agricultural land and recreational properties compose substantial amounts of land. Complete and connected communities located in these areas need other creative responses – for example, high speed internet connectivity and the provision of secondary road or waterway networks (MMAH, 2014). The creation of community design guidelines clarify the meaning of general official plan policies and put these policies into practice for new development in a community.	Healthy Rural Communities Toolkit
	Clean and safe environment and green spaces	Every child and young person lives in a safe, secure and clean environment.	Child-Friendly City (UNICEF)

Construct	Component	Description	Source
	Active transportation	It provides the opportunity for physical activity when travelling for both daily needs and recreational purposes. Active transportation has the ability to provide many co-benefits such as tourism, economic development and social equity, allowing all members of the community to potentially use the facilities. While sidewalks and bike lanes may not be feasible in many dispersed rural land areas, other opportunities such as wide paved shoulders may be useful for biking. While commuting by bike is seldom feasible, many rural residents enjoy the recreational aspects of cycling and walking. Therefore, it is important to encourage AT in rural areas. Often there are many trail network resources available in a rural setting, i.e. low traffic secondary roads, former rail beds etc. AT can also realize the goals of reducing local air pollutants and greenhouse gas emissions, and provide climate protection (CIP, 2012).	Healthy Rural Communities Toolkit
	Water quality	Water provides economic and social benefits and is the basis for healthy and diverse ecosystems and communities. Water is used by humans for consumption and by industry to support our economy. It also supports ecological processes including aquatic life and aquatic ecosystems (MMAH, 2014). In rural areas, sources of drinking water can come from surface water features or groundwater aquifers, and these sources are vulnerable to contamination or depletion. Drinking-water wells and intakes serve individual homes, clusters of homes and rural settlement areas. Healthy shorelines provide a range of social, economic and environmental benefits. They help to control surface run-off and erosion and filter associated nutrients and harmful pollutants, therefore protecting water quality. Healthy shorelines also help regulate temperature and microclimate, screen noise and wind, preserve the aesthetic appeal of the landscape and provide many	Healthy Rural Communities Toolkit

Construct	Component	Description	Source
		other cultural, social and economic benefits through recreation and tourism (MMAH, 2014).	
	Air quality	The quality of air affects all citizens living in a community. Air pollution has become increasingly evident in municipalities across Canada (MOE, 2007). Children, seniors and those with existing heart and lung conditions (like asthma) are particularly at risk due to exposure to air pollution.	Healthy Rural Communities Toolkit
	Tourism	In many rural areas tourism-based businesses and services are an important sector of the economy. Tourism has the ability to improve the quality of life and well-being of residents and visitors. It can enhance the use of a community's natural assets, character and cultural attributes.	Healthy Rural Communities Toolkit
	Agriculture	Agriculture is important to many rural economies. Permitting diversification on-farm, providing more flexibility and protecting agricultural uses and normal farm practices can encourage and protect sustainable farms and farmers (MMAH, 2014). Agriculture also provides a source of fresh food and employment opportunities and more directly connects consumers with the food that they eat. Agriculture is fundamentally connected to soil, air and water, and proper agricultural practices can contribute positively to each of these attributes.	Healthy Rural Communities Toolkit
	Nature	To assure the prolonged existence of natural heritage and resources, residents must protect and preserve the natural environment. This can be accomplished through stewardship of the land, air and water. Sustainable spaces help communities build an environmental ethic by providing everyday opportunities for people to connect with nature. In addition, a community with nature present at a variety of levels contributes to the spirit of a place. The availability of green space is associated with increased	Healthy Rural Communities Toolkit

Construct	Component	Description	Source
		levels of community social capital, and exposure to nature reduces individuals stress levels, anger and anxiety and replaces these with feelings of pleasure (CIP, 2012).	
	Climate change	It is now well recognized that climate change affects rural economies, the built environment and the natural environment. These impacts are hard to predict, but all facets of life will be affected. It is anticipated that both long-term and short-term alterations to land, air and water conditions will occur. The severity of storm events, including extreme heat events, is one of the most immediate impacts to rural areas that require consideration. Depending on location, these events can result in wind and water damage impacts. Various increased hazards to property damage and human injury and loss of life can occur associated with tornadoes, ice storms, flooding and wildfires. Climate change is a big picture issue; however, local rural community leaders can assist in acting locally to mitigate and adapt to climate change conditions.	Healthy Rural Communities Toolkit
Social Environment	Community stability	Communities are dynamic, and measuring changes related to shifts in housing affordability and neighborhood economic conditions can inform an understanding of where local benefits of public space improvements are accruing.	Inclusive Healthy Places (Gehl)
	Social capital	Strong social capital is an indicator of identity, ownership, and strong social networks, and can be enhanced through cultural diversity within a place as well as through cross-collaboration and acting with shared purpose.	Inclusive Healthy Places (Gehl)
	Social participation	Social participation and social support are strongly connected to good health and well-being throughout life. Participating in leisure, social, cultural and spiritual activities in the community, as well as with the family, allows older people to continue to	Global Age-Friendly Cities

Construct	Component	Description	Source
		exercise their competence, to enjoy respect and esteem, and to maintain or establish supportive and caring relationships. It fosters social integration and is the key to staying informed.	
	Respect and social inclusion	The respect and social inclusion of older people depend on more than societal change: factors such as culture, gender, health status and economic status play a large role. Th e extent to which older people participate in the social, civic and economic life of the city is also closely linked to their experience of inclusion.	Global Age-Friendly Cities
	Food systems	Large-scale agriculture, urban farming, agribusiness, distribution, food services.	Healthy Communities Practice Guide (CIP)
	Social development	Conviviality, social capital, community development, spirituality, arts and culture, crime prevention, equity.	Healthy Communities Practice Guide (CIP)
	Participate in family, culture, city, and social life	Every child and young person has opportunities to enjoy family life, play and leisure.	Child-Friendly City (UNICEF)
	Social environments that support health	Promoting health literacy; promoting community resilience; promoting social dialogue, participation, and inclusion; supporting local community-based projects and initiatives; ensuring access to social supports for the most needy; encouraging physical activity and active living for people in all age groups; creating smoke-free physical and social environments; ensuring access to healthy food and sustainable nutrition and preventing young people from easy access to sugary foods and drinks; addressing mental health services and wellbeing, and reducing stress in the community.	Healthy Cities (WHO)
	Access to local food	The major food-related issues in rural areas are different from those in urban areas given the low population density, lengthier distances between retailers and rapid rise of super centres and	Healthy Rural Communities Toolkit

Construct	Component	Description	Source
		their effect on other food retailers. Some barriers that exist to purchasing local food include perceptions that it is unavailable, consumer inability to identify it and acceptance of preserved foods in the off-season. Currently, communities across Canada are working together on developing grassroots solutions to food security and local food availability. Community supported agriculture and farmers' markets have been considered a viable option to provide a source of fresh, affordable and culturally appropriate food to those who would not otherwise have access. Local food can contribute to a healthy balanced diet, involves minimal processing and has a reduced environmental impact (by virtue of being local, it does not travel thousands of miles and has a higher nutritional value).	
	Safe and affordable housing	Decent places to live that are affordable and appropriate are a basic human need. Communities need to consider healthy and safe equity issues between those that have more and those that have less. The provision of safe and affordable housing to house less fortunate individuals and families is an important consideration of local and provincial government in Ontario. This is especially important as Canadians spend on average 90% of their time indoors. The provision of safe and affordable housing and special needs housing (for those within institutional support settings) is something that rural community leaders need to be mindful of. The costs of housing services are shared amongst various government levels (municipal and higher levels), and it represents a significant cost to taxpayers. Safe and affordable housing provision is reflective of a health and wellness perspective for citizens, which is outlined in both Ontario Planning Act legislation as well as the Public Health standards of Ontario. Many differing forms of safe and affordable housing	Healthy Rural Communities Toolkit

Construct	Component	Description	Source
		provision are available and constantly in need across the province – from subsidized rental accommodation to low cost ownership housing, special needs and institutional care facilities.	
Programs & Services	Community support and health services	Health and support services are vital to maintaining health and independence in the community. Many of the concerns raised by older people, caregivers and service providers in the focus groups deal with the availability of suffi cient good quality, appropriate and accessible care.	Global Age-Friendly Cities
	Preparedness for change	Adaptability is an essential capacity of both physical public spaces and of communities. Spaces that adapt to changing need, and communities that can assess their own needs as they change, are well-matched to see long-term benefits of inclusionary processes.	Inclusive Healthy Places (Gehl)
	Community assets	Every place possesses assets on which to build, such as public space and transportation access and the presence of local and cultural institutions.	Inclusive Healthy Places (Gehl)
	Asset-based community development	Building on the existing assets of a community (physical resources, existing strengths and capacities of people, organizations, and institutions) is empowering to community members while also acknowledging of the intrinsic merit and abilities individuals and communities have to contribute. Expanding on and nurturing existing community strengths helps to build lasting solutions and foster community sustainability.	BC Healthy Communities
	Access to essential services	Every child has access to quality essential services (e.g. schools).	Child-Friendly City (UNICEF)
	Education and skills development	Every child and young person has access to quality essential social services.	Child-Friendly City (UNICEF)

Construct	Component	Description	Source
	Economic development	Sustainable economic activity, meaningful work, provision of social benefits.	Healthy Communities Practice Guide (CIP)
	Human services	Health services, education, social services, emergency services.	Healthy Communities Practice Guide (CIP)
	Programs	Community programming is a crucial way that recreation supports community wellbeing. Recreational programming is especially important as it reaches entire communities using our facilities and parks as hubs and gathering points. Programming is a valuable way to bridge gaps between our diverse populations through play. The recreation sector often serves as the foundation for most community programming; and, as such, is an essential service. The Programs Pillar aims to provide recreation sector staff, community volunteers, and local champions with the resources and guidance to lead our communities in health and wellness.	Healthy Communities (Communities Choosewell)
	Urban preparedness for public health emergencies	Developing inclusive surveillance practices; providing information and evidence-based actions that leave no one behind; understanding and acting on vulnerabilities (immediate and longer-term care); working on community strengthening and response; planning for emergency measures that leave no one behind.	Healthy Cities (WHO)
	Improve quality and access to health services	Ensuring universal health coverage. Improving the quality of the services to address the needs and expectations of diverse community groups. Removing barriers (including cultural) that create underuse of or interrupt the provision of health and support services. Improving coordination between primary health care and other public health services.	Healthy Cities (WHO)

Construct	Component	Description	Source
	Strengthen local public health services	Investing in population-based and community-based health promotion and disease prevention programmes. Addressing obesity in the young and in adults. Improving capacity to deal with emergencies related to climate change, linked weather phenomena, epidemics and natural disasters.	Healthy Cities (WHO)
	Cultural Strategies and Revitalization	Cultural strategies and revitalization have the ability to contribute to improvements to the social fabric of communities and human health and well-being as well as the sustainability of a space. They can build and maintain public places that foster community and social development. The recognition of history and importance of place can be tied into historic preservation initiatives.	Healthy Rural Communities Toolkit
Access & Accessibility	Use and users	Diversity of uses and of users—and evidence of social mixing among them—in public space are indicators of the social benefits of public space on health and well-being. Similarly, this driver accounts for users' level of physical activity in a specific space or more broadly.	Inclusive Healthy Places (Gehl)
	Access	Distinct from accessibility, access is a measure of how easily one might have the opportunity to use a public space.	Inclusive Healthy Places (Gehl)
	Accessibility	The Framework uses accessibility to refer to both specific ADA and/or universal design elements for users with disabilities as well as to the physical accessibility of a public space for all users.	Inclusive Healthy Places (Gehl)
	Planning for special age groups	Rural communities have larger proportions of aging populations when compared to larger urban centres. Transportation access is consistently identified as a major barrier in studies on the impacts of an aging demographic (OPPI, 2009). Two of the issues which currently face many rural communities are out-migration of youth and an aging population.	Healthy Rural Communities Toolkit

Construct	Component	Description	Source
Play	Friends and places to play	Physical space is established for children and youth to play, meet friends and relax with family.	Child-Friendly City (UNICEF)
Safety & Security	Safe and protected	Are safe and protected from exploitation, violence, and abuse.	Child-Friendly City (UNICEF)
	Safety and security	Safety can be measured objectively/observationally and through user perception.	Inclusive Healthy Places (Gehl)

Appendix C

Interview Script

Appendix C: Go-Along Interview Guideline

Introduction: Thank you for agreeing to participate in our study! Before we get going, I would like to know where in your neighbourhood or environment you feel healthy or unhealthy. Think about mental health, physical health, and how places with other people, like friends and family, make you feel. Then I'd like you to take us on a walk to at least three of those places to show me and tell me more about what it is about these places that makes you feel healthy or unhealthy.

If at any time you do not want to answer a question, or want to end the interview, please let me know and we can skip a question or end the interview. Remember, there are no right or wrong answers: we are interested in understanding how you experience your [urban / rural] neighbourhood / space, and your own thoughts on how your neighbourhood contributes to your health.

When we write up the results of this study, we may eventually use one of your quotations and we need to protect your identity. So before this interview, could please provide me a pseudonym (i.e., fake name) you would like to be referred to if we use one of your quotations in the final write-up?

Answer: _____

Location	Opening questions and prompts	Potential probing questions
Setting 1, Part 1: Meeting location (in participant's neighbourhood)	➢ When I say health, what comes to mind? What does health mean to you? ➢ What do you think are the most important parts of health? ➢ Is health important to you, why or why not? ➢ Are there places in your neighbourhood that make you feel healthy? If so, where? ➢ Are there places in your neighbourhood that make you feel unhealthy? If so, where?	➢ What are some ways people feel or think or behave when they're healthy? ➢ What are some ways people feel or think or behave when they're unhealthy? ➢ What do you think stops people from being healthy or keeps them unhealthy? ➢ List places participant identifies. How far are these places from here?

Setting 1, Part 2:	➢ You've mentioned a few places that make you feel healthy / unhealthy. Some of them are closer and some are farther away. Are there any places that feel especially important in terms of how they influence your health?	➢ Researcher and participant to co-create a route for the go-along interview that is: a) feasible to complete in approximately 1 hour; b) covers the places that the participant deems as most important; c) covers places that <u>contribute to</u> health for the participant; d) covers places that <u>hinder</u> health for the participant.
Setting 2: Stop #1	➢ How does this place affect your health? What are some of the key features in this place that have this affect (e.g., trees, sidewalks, playgrounds, nearby stores, friends, family, parks, school, etc.).	➢ What makes this place important to you? How often do you come to this place? Is that the same in the winter? ➢ How do you feel when you're in this place? ➢ What do you find yourself thinking when you're in this place? ➢ What do you usually do in this place (e.g. play, sit, walk, eat, hang out with friends, etc.)? ➢ Are you usually here alone or with other people? If with other people, can you tell me a bit about what you do with these other people while you're here? ➢ Could anything be done to this place to make it better for your health? What could be done?
Setting 3: Stop #2	➢ How does this place affect your health? What are some of the key features in this place that have this affect (e.g., trees, sidewalks, playgrounds, nearby stores, friends, family, parks, school, etc.).	➢ What makes this place important to you? How often do you come to this place? Is that the same in the winter? ➢ How do you feel when you're in this place? ➢ What do you find yourself thinking when you're in this place? ➢ What do you usually do in this place (e.g. play, sit, walk, eat, hang out with friends, etc.)? ➢ Are you usually here alone or with other people? If with other people, can you tell me a bit about what you do with these other people while you're here? ➢ Could anything be done to this place to make it better for your health? What could be done?
Setting 4: Stop #3	➢ How does this place affect your health? What are some of the key features in this place that have this affect (e.g., trees, sidewalks, playgrounds, nearby stores, friends, family, parks, school, etc.).	➢ What makes this place important to you? How often do you come to this place? Is that the same in the winter? ➢ How do you feel when you're in this place? ➢ What do you find yourself thinking when you're in this place? ➢ What do you usually do in this place (e.g. play, sit, walk, eat, hang out with friends, etc.)?

		➢ Are you usually here alone or with other people? If with other people, can you tell me a bit about what you do with these other people while you're here? ➢ Could anything be done to this place to make it better for your health? What could be done?
Setting 5: (optional) Stop #4/#5	➢ How does this place affect your health? What are some of the key features in this place that have this affect (e.g., trees, sidewalks, playgrounds, nearby stores, friends, family, parks, school, etc.).	➢ What makes this place important to you? How often do you come to this place? Is that the same in the winter? ➢ How do you feel when you're in this place? ➢ What do you find yourself thinking when you're in this place? ➢ What do you usually do in this place (e.g. play, sit, walk, eat, hang out with friends, etc.)? ➢ Are you usually here alone or with other people? If with other people, can you tell me a bit about what you do with these other people while you're here? ➢ Could anything be done to this place to make it better for your health? What could be done?
Setting 7: End (original meeting location or pre-determined drop-off point)	➢ Thanks so much for walking with me today! Now that we're done, do you have any other thoughts about any of the places we went? ➢ Do you have any other thoughts or ideas about what health means to you?	➢ Looking back on our original list, are there any other places you wished we could have gone? If so, what makes them important and how do you use those places? ➢ Do you think kids who live in a [urban / rural] neighbourhood have different ideas about health than you? What do you think the differences might be? ➢ If you think about your background, experiences, interests / hobbies, age, gender, do you think health would mean something different to you if any of these were changed? ➢ Have you ever been to a place that you think helped you be healthy more than the place you live? What did that place have that your neighbourhood does not? Is there anything you wish your neighbourhood had or did not have?