Chronically Excluded? Public Toilet Access for Youth with Gastrointestinal Illnesses

Stefanie Kiriazis

A THESIS SUBMITTED TO THE FACULTY OF ENVIRONMENT AND URBAN CHANGE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

GRADUATE PROGRAM IN GEOGRAPHY

YORK UNIVERSITY

TORONTO, ONTARIO

March 2025

Abstract

This thesis explores the intersection between public infrastructure, health and youth geographies, time geography, and sensuous and emotional embodiments to highlight public toilets as a critical yet often overlooked urban space. Through these intersections, this thesis not only spotlights public toilets as central nodes in everyday life, but also the differential ways these spaces impact populations who rely on them most for medical needs. Through a feminist methodological approach that employs semi-structured interviews and space-time diaries, this thesis asks: How do the daily mobility patterns of youth with chronic gastrointestinal illnesses depend on the spatial and temporal availability and accessibility of public and private toilet facilities? This thesis investigates the constraints to mobility and wellness that these individuals face when met with inadequate and inaccessible toilet infrastructure, with a case study in the Greater Toronto Area. Encompassing both suburbs and city centre, the research sample illustrates the infrastructural disparities between dense and sparse landscapes. From the 'in-betweens' from one toilet to the next, to the sensuous and emotional experiences felt within these spaces themselves, this research investigates how the everyday lifeworlds of chronically ill youth – through work, school, and play – can be enabled and disabled by the quality of infrastructure they are met with, and the coping mechanisms they employ to aid their journeys and experiences, attributing to overall wellness.

Acknowledgments

To Philip, JM, and Liette: Thank you for your guidance, support, and enthusiasm for geography. Each of you made the program feel truly meaningful and inspired me to strive higher than I knew I could. I am honoured to have learned from you all.

To Amanda: I could not have asked for a better committee. Your knowledge, passion, and kindness have been a light in this process! I am so grateful to have you as a part of my journey.

To Alison: Thank you for supporting me at all times, no matter where you were in the world. I cannot thank you enough for your patience, understanding, and care through times where I needed to take a step back during this research process. At the same time, you pushed me to produce better work, better writing, and to be an overall better scholar. This thesis would not have been possible without your guidance, expertise, and passion.

To my Master's cohort, Nikki, Victoria, Jacob, and Misba: thank you for your endless support, friendship, and laughter through the highs and lows, from collective writer's block to conference trips that created memories to last a lifetime. I cannot emphasize enough the importance of your positive attitudes, humour, and support.

To my family, Mom, Dad, and Simon: Although I am quite certain you still have no idea what I'm doing, I could not have done any of this without your love and support. Thank you for supporting my goals and achievements at every step.

To Carson: I would have never made it to this point without you. Your passion and care for all those around you have inspired me to pursue my own passions, to push myself, and to work harder at everything I do. Thank you for being my critical disability studies expert, thank you for being my built-in study partner, thank you for talking through every idea with me for three years.

Table of Contents

List of Figures

Chapter 1: How a Childhood Diagnosis Turns into a Master's Thesis: An Introduction

Daily life as a youth with chronic gastrointestinal illness means undergoing a continual renegotiation of time and space – a cycle that extends seamlessly from one day into the next. During flare ups of my own Ulcerative Colitis, I will wake up knowing that I cannot leave the house on a given day. My first thought each morning is how my body will fare throughout the world today, how much time it will demand I devote to managing my health. Some days, my body lets me forget – I relish those days. Other days, I am acutely aware that my body will never be healthy, never fully energized, never with an immune system that does not insist on attacking itself. On those days, I cannot help but to spiral into a place of fear, I cannot help but to feel trapped within my own body. I will read through the side-effects of my medication and wonder if the worst of them will catch up to me one day – I wonder if they've already rendered me infertile, even though I am not yet sure I want children. I will attend a doctor's visit and be reminded of the elevated risks for bowel cancer or reach injection day and wonder what it's like to not worry about how my $6000-a-dose medication will get covered once I am no longer on a student plan. I will try to go about my day but find myself needing to use the toilet[1] up to twenty times. I have sat in university classes, getting up and down, up and down, up and down, feeling the weight of my classmates' stares and wondering what they are thinking. I have gotten so frustrated that I left the class in the middle, and never came back, not the next week, or the next, or the next.

[1] I opt to use the term 'toilet' (apart from when citing authors who use alternate terminology) in line with Greed's (2003) argument that it is a more globally universal term than its counterparts, e.g., washroom, bathroom, restroom.

My absences in life, through work, school, and amongst friends and family can be isolating. Socially, the first things I think about before an outing: *How will my symptoms be? Will I have stomach pains? Where are we going? Will there be toilets? Am I going to feel comfortable excusing myself around the people I am with? Will people judge me? Should I take Imodium? Should I pack panic medication in case I can't get to a toilet?* These questions spin around in my mind for hours, weeks, or even months before an event. In some ways, social outings become less about the people I will see and the fun I might have, and more about if I can master my mind and body to cooperate for that period of time. With the progression of my illness came the progression of feeling like my city was working against me. Whether I was traveling through the streets of Toronto or the Greater Toronto Area suburbs, I didn't feel like my body was welcome. My body, which is leaky and smelly and functions on its own accord; my body, which my mind cannot command to fit into a society where we are meant to be the masters of our flesh and bone and organs. The city, I realized, was not only working against me but was telling me that my body was not 'normal.' The barriers I faced went beyond not having a toilet when I needed one: my disease flared up, my grades suffered, my social life was almost non-existent, and I developed stress and anxiety that I had never experienced before. Soon, every moment outside my home was spent contemplating escape routes to the nearest toilet, thinking about if I would have an accident, thinking about the pain I experienced without relief. The stress I endured only worsened my symptoms, leading to a viscous cycle of stress, isolation, and inflammatory flare ups.

Living with a chronic gastrointestinal illness can transform the most basic aspects of daily life into a landscape of obstacles and constant negotiation, from social interactions to academic and work commitments, to navigating the basic public spaces around us. The city I live

in, and many others like it, does not accommodate bodies that defy conventional norms. For youth with these gastrointestinal conditions, the Greater Toronto Area's lack of adequate and accessible public toilets only heightens the sense of exclusion, reinforcing the notion that these bodies – our bodies – are somehow not welcome. This experience of being 'out of place' is more than an inconvenience; it is a continual reminder of the societal and infrastructural gaps that make life with chronic illness more difficult, shaping our geographies and mobilities, and ultimately reinforcing isolation. By understanding the physical and social challenges of illnesses like Ulcerative Colitis, Crohn's disease, irritable bowel syndrome, and Gastritis, we can further grasp the importance of supportive urban infrastructure and inclusive policies. Each of these conditions, though unique, share common themes in the experiences they create – of being invisible conditions, facing barriers in public spaces, of being shamed and silenced by societal taboos and stigma, and of navigating a world that often does not acknowledge, let alone accommodate, such needs.

Talking about Gastrointestinal Illnesses

When I was first diagnosed with Ulcerative Colitis at 12-years-old, I had never heard of it. I was young – in fact, my doctor initially told me I was "too young" for an inflammatory bowel disease. Now, a decade into managing this chronic illness, I realize that most people still look confused when I mention Ulcerative Colitis. This lack of awareness might be more understandable if it were a rare condition, but it is not: over 320,000 Canadians live with inflammatory bowel disease (IBD), and this number is rising, with the prevalence expected to increase by 2.44% each year (Crohn's and Colitis Canada, 2022). I believe there are two main reasons these diseases often remain in the shadows. First, the stigma around talking about bowel issues and defecation still lingers. Second, gastrointestinal illnesses like IBD are often "invisible"

– you cannot visibly guess at one's diagnosis. This invisibility applies not only to IBD but to a range of gastrointestinal conditions, including Gastritis, Colon Cancer, and irritable bowel syndrome (IBS), the most common among them.

Canada has a particularly high incidence of Crohn's disease and Ulcerative Colitis, both autoimmune diseases within the IBD category. The rate of new Crohn's and Ulcerative Colitis diagnoses is 17.5 per 100,000 people annually. In 2023 alone, more than 11,700 Canadians received these lifelong diagnoses, and by 2035, it is predicted that 470,000 Canadians will be living with IB (Crohn's and Colitis Canada, 2023). These diseases involve chronic inflammation of the gastrointestinal tract, disrupting digestion, nutrient absorption, and waste elimination. While Crohn's can affect any part of the digestive tract, Ulcerative Colitis typically targets the large intestine. Symptoms range from mild to severe and can include abdominal pain, diarrhea, rectal bleeding, weight loss, and changes in appetite. Although there is no cure, treatments range from medication to surgery (Crohn's and Colitis Canada, 2023).

Irritable Bowel Syndrome (IBS), another common chronic gastrointestinal disorder, affects about 18% of Canadians – compared to 11% globally (CDHF, 2024). IBS symptoms include abdominal pain, bloating, and irregular bowel habits like diarrhea or constipation (Chey et al., 2015). The exact causes of IBS are not fully understood, though factors like gut-brain interactions, intestinal inflammation, and altered gut microbiota are thought to play a role (Simrén et al., 2017). IBS can significantly disrupt quality of life; unpredictable symptoms often interfere with daily activities, socializing, and mental health. Many individuals might also experience anxiety and depression, creating a cycle in which stress worsens gastrointestinal symptoms (Black et al., 2020). Managing IBS is unique to each individual, usually requiring a combination of dietary changes, medications, and stress management. However, similarly to

other gastrointestinal conditions, its unpredictable nature can complicate routines, leading to social withdrawal and reduced productivity (Ford et al., 2017).

Gastritis, another painful condition, causes irritation and inflammation of the stomach lining. A healthy stomach is protected by a mucus layer, but long-term gastritis can wear this down, leading to ulcers. Symptoms of gastritis can vary in severity and include nausea, heartburn, bloating, stomach pain, and digestive tract bleeding in severe cases (Mount Sinai, 2024). This condition can also act in an unpredictable manner, seeming to appear sporadically which could add to what makes these conditions so difficult to live with and often misunderstood (Mount Sinai, 2024).

Gastrointestinal illnesses deserve greater attention not only for their high prevalence or the physical toll they take on individuals but also because of the profound impact they have on everyday life, shaping how individuals interact with spaces and communities, and in social, educational, and professional spheres. The constraints imposed by gastrointestinal conditions highlight important issues related to public infrastructure, accessibility, and social inclusion. For many, the constant need for toilet access can shape decisions about where to go, how long to stay, and whether to participate in activities at all. This challenge is particularly evident in urban and suburban spaces with inadequate public toilet facilities, creating physical and psychological barriers that affect quality of life. Furthermore, the “invisibility” of these conditions often leads to a lack of social empathy, leaving affected individuals to navigate stigma and misunderstanding. Acknowledging the unique challenges of these invisible illnesses is crucial for fostering environments where all individuals can feel welcome and supported in their daily movements and interactions. Cities are already understood to be adultist environments that exclude and marginalize young people (Valentine and Holloway, 2004), but that dynamic only

intensifies when it intersects with disabling illnesses. Through this research and case study on youth with gastrointestinal illnesses, I extend scholarly geographical understandings of the spatial constraints that chronic illness can impose and to emphasize the significance of inclusive public spaces for both health and age.

Justifying the Invisible: Why Youth with Gastrointestinal Illnesses?

The study focuses on youth aged 18-25 with chronic gastrointestinal illnesses, a group often overlooked. Youth are typically within a transitional phase of life, often balancing multiple responsibilities, including work, education, and social activities, while paving the way for long-term life goals and patterns. Combining youthhood with gastrointestinal illnesses furthers the risk of everyday mobility becoming a source of constant anxiety and limitation. Gastrointestinal symptoms can necessitate frequent and urgent toilet access, making the availability and accessibility of public toilets a crucial factor in these youth's ability to navigate the city freely with physical and mental ease. Thus, youth with gastrointestinal illnesses are part of a group which may have a more complex relationship with public toilet infrastructure than the average population. The spatial qualities within public toilet facilities themselves can either support or challenge wellness during their use, serving as deeply sensuous and emotional landscapes despite being passed off as mundane. Without adequate public toilet infrastructure, substantial barriers to everyday geographies in the public sphere can impact physical health and social wellbeing.

By specifically focusing on youth rather than older adults, this research challenges prevailing adultist narratives in literature that often prioritizes the needs and experiences of older populations while marginalizing younger voices. Adultist perspectives frequently portray youth as a resilient, adaptable, and inherently healthy group, thereby overlooking the diverse health

challenges they may face (Skelton, 2013). In urban and suburban contexts, this age bias translates into infrastructure and policy decisions that cater more visibly to older adults, neglecting the nuanced and intersectional needs of youth who are balancing transitions into the workforce, higher education, and social development (Vanderbeck, 2007). In regard to public toilets specifically, existing research has often concentrated on how inadequate public toilet access affects women, seniors, queer communities, or individuals with disabilities but has yet to delve extensively into how these issues can uniquely constrain youth, particularly those with chronic health conditions. While studying public toilets from the perspectives of each of these demographics is crucial, my research seeks to extend the narrative. Although all individuals with gastrointestinal illnesses may relate to some generalized struggles of inadequate public toilet facilities, by centering on youth, this research challenges adultist assumptions and highlights how cities can better serve youth as an overlooked demographic in the urban fabric.

The Greater Toronto Area (GTA), encompassing both densely populated urban centers and sprawling suburban regions, presents unique challenges for youth with gastrointestinal conditions. Urban areas in the GTA often lack sufficient, accessible public toilets due to rapid growth, commercial zoning priorities, and privatized spaces. Suburban areas, while more dispersed, also fail to offer consistent public facilities due to a lack of integrated infrastructure planning for such needs, fragmented transportation, and vast landscapes. By focusing on the GTA as a whole – encompassing the multifaceted everyday geographies of its residents – this research highlights the gaps in public infrastructure within one of Canada's most diverse and dynamic regions.

While focusing on youth with gastrointestinal illnesses aims to fill a research gap, there are also several limitations that arise which could impact the breadth and generalizability of my

findings. Focusing on gastrointestinal illnesses among youth specifically also means certain stories and perspectives are missing. Older adults with gastrointestinal conditions, for instance, may face additional challenges as their symptoms worsen or are compounded by age-related mobility issues. Similarly, children and adolescents with gastrointestinal conditions encounter unique struggles, as they rely more heavily on caregivers and school environments that may not be equipped to meet their needs. Their narratives might highlight different social and educational challenges, such as managing symptoms in a classroom or dealing with stigma among peers. There are also missed insights from individuals with other chronic conditions who may face similar constraints, such as those with bladder issues, chronic pain, mobility limitations, or those with illnesses such as diabetes who may utilize public toilets as quasi-medical spaces. Their experiences could shed light on the broader accessibility issues in public spaces beyond gastrointestinal illnesses. Finally, youth facing intersecting marginalizations – such as queer individuals, racial minorities, or those with disabilities – may experience a unique layering of stigma and exclusion, especially in spaces like gendered or shared public facilities. Youth who are part of other marginalized communities may have compounded experiences such as experiencing discrimination in gendered shared spaces on top of their anxieties. Incorporating these perspectives on a more in-depth scale would provide a richer, more nuanced understanding of how chronic illness and public space accessibility intersect across different social and demographic lines.

While the scope of this research may seem narrow, its relevance is broad. Accessible and plentiful public toilets would benefit a wide range of groups beyond youth with gastrointestinal illnesses; for example, parents with young children, tourists, elderly individuals, and people with disabilities all stand to gain from better facilities. Globally, the lack of adequate public toilets has

contributed to cities being less inclusive and more challenging to navigate, impacting the quality of urban life. Tokyo has implemented accessible, transparent public toilets in high-traffic areas to improve access and safety, while Paris has long provided free public restrooms to promote hygiene and accessibility (Greed, 2019). However, many cities, including those in North America, often lack sufficient public toilets, leaving individuals with few reliable options. Research reveals that the shortage of accessible toilets in cities like London limits people's movement and engagement with public spaces (Jewitt et al., 2011). In turn, this limited access can perpetuate social exclusion, reduce quality of life, and contribute to broader public health risks, particularly among those with specific medical needs. Understanding these global efforts and challenges contextualizes the pressing need for improved public toilet infrastructure in cities all around. In places like San Francisco and New York City, "poop maps" reveal the extent of this issue, with residents forced to navigate areas plagued by public defecation due to a lack of facilities, marking these cities as inhospitable spaces for many (Amato et al., 2022). Improved toilet infrastructure would make cities more livable and socially inclusive, fostering spaces that respect the needs of diverse populations and reinforcing the idea of universal design in public infrastructure. This not only eases the burden for individuals with specific health requirements but also enhances urban hygiene, dignity, and accessibility, contributing to a higher quality of life on a citywide scale.

Framing the Inquiry: Understanding Inclusion for Youth with Chronic Gastrointestinal Illnesses

This research investigates how chronic gastrointestinal illnesses and public toilet infrastructure interplay to shape the everyday geographies and mobilities of youth who medically require frequent and timely access to facilities. The central question driving this study is: *How*

are the everyday geographies, mobilities, and spatial experiences of youth altered by chronic gastrointestinal illnesses that require more frequent and timely access to public toilets? To deepen this exploration, this research also asks: How do the daily mobility patterns of youth with chronic gastrointestinal illnesses depend on the spatial and temporal availability and accessibility of public and private toilet facilities? What factors determine how far these individuals are comfortable traveling from home, and how does this influence their engagement with different urban and suburban spaces? How do these individuals cope with, navigate, negotiate, and wayfind through spaces where public toilet access is inadequate? How do experiences of social stigma – such as shame, embarrassment, and fear – or lack of awareness about chronic gastrointestinal illnesses influence the spatial behaviours and social inclusion of these youth in public space? And what attributes or features of public toilets are most valued or prioritized by youth with chronic gastrointestinal illnesses?

These questions are aimed at nuancing our understanding of how toilet access affects youth's choices surrounding their home reach, – how far individuals are willing and comfortable travelling from home – social participation, and overall quality of life, in addition to bringing light to the complexity of toilet spaces as extending beyond their practical uses and into sensuous spaces which become deeply intertwined with the emotions of their users. By mapping these individuals' wayfinding strategies, temporal adaptations, and preferences for and feelings towards specific toilet attributes, this study aspires to bring greater awareness to the lived realities of youth with chronic gastrointestinal illnesses. To answer these questions, I draw on the works of scholars who explore public and personal spaces through lenses of gender, disability, and social identity. Barcan (2010) and Greed (2010) offer touchstone work in addressing the dynamics of public toilets, specifically focusing on issues of exclusion, gender, and the politics

of shared spaces. Building upon this, Cavanagh (2010) contributes perspectives on queerness and disability studies, framing toilets as sites of identity negotiation. To examine how chronically ill and disabled individuals navigate everyday spaces and lifeworlds from a feminist lens, I rely on the works of Crooks and Chouinard (2006), Dyck (1995), and Moss and Dyck (2002). Additionally, I anchor my research in analysis of space and time, building off Hägerstrand's (1990) conceptions of time geography with Rose's (1997) feminist critiques, Kafer's (2013) crip time, and Lefebvre's (1992) Rythmanalysis. To structure my youth-centred focus, I employ Holloway and Valentine's (2000) social studies of childhood – and the emerging youth works which followed – as theoretical foundations for understanding spatial experience and accessibility from an anti-adultist lens. Finally, to ground the sensuous and emotional geographies component of this research, I lean on Porteous's (1990) *Landscapes of the Mind* to address how youth with chronic gastrointestinal illnesses experience heightened emotional and sensory responses in public toilet spaces. Here, the interplay of sensory stimuli – including sights, sounds, textures, and smells – evokes a complex spectrum of emotions, from shame, embarrassment, and unease to humour, relief, and comfort. These literary foundations collectively support an inclusive, intersectional approach to this research, which posits that youth with chronic gastrointestinal illnesses may constantly struggle for temporal and spatial resources, trying to align the unpredictable rhythms of their bodies with the structured rhythms imposed by society.

From Town to Toilet: Outlining the Written Journey

This thesis is structured to explore the complex relationship between youth with chronic gastrointestinal illnesses and the need for accessible and adequate public toilets, highlighting the impact of this necessity on daily life, mobility, and personal wellbeing. Following this

introduction, the literature review chapter explores key themes around the design and social implications of public toilets, focusing on inclusivity, accessibility, and the experiences of marginalized groups. It analyzes foundational works that this research draws upon to address gendered and chronically ill bodies in public spaces, toilet politics, and spatiality, drawing from feminist, queer, and disability studies perspectives. By examining these themes, the chapter highlights how public toilet design intersects with social identity, embodiment, and accessibility, providing a foundation for this thesis as a whole.

The Methods Chapter outlines the feminist research framework adopted for this study, which prioritizes the embodied experiences of youth and the vulnerabilities around discussing intimate health issues. It details a methodological approach that combines an autoethnographically informed approach, with data collected through space-time diaries and semi-structured interviews. This chapter also describes the data analysis process, incorporating both qualitative and quantitative methods, and explains the thematic coding by sensory and emotional responses. This methodological foundation enables a nuanced exploration of youth experiences, setting the stage for the subsequent empirical chapters.

The body of this thesis is divided into two parts, the Journey – to illustrate the *in-betweens* of toilet spaces and everyday life – and the Destination – to delve into the micro-geographies of toilet spaces. Chapter 4 underscores the daily struggles of youth with gastrointestinal illnesses as they navigate an urban environment that is frequently inaccessible. This chapter combines personal narrative with theoretical insights from Lefebvre (1992) and Porteous (1990) to illustrate how these youth are caught between their bodily needs and societal expectations, particularly during commutes and in settings like school and work. It argues that their daily rhythms can be constrained by the need to secure reliable toilet access, with every part

of the day – from morning routines to social outings – shaped by this fundamental requirement. This chapter calls attention to the urgent need for more accessible, flexible public facilities to support the physical and psychological wellbeing of youth with gastrointestinal illnesses.

Chapter 5 examines public toilets as emotionally charged and socially complex spaces for youth with chronic gastrointestinal illnesses. Drawing on works from Longhurst (2001), Barcan (2010), and Porteous (1990), this chapter highlights how public toilets reflect societal values around cleanliness and bodily privacy, which can amplify feelings of vulnerability for those reliant on these spaces. Using insights from sensory geography, it emphasizes how non-visual senses (like smell and sound) evoke strong emotional reactions, creating an often-distressing experience for youth with gastrointestinal issues. This chapter traces an emotional journey through feelings of shame, discomfort, and even humour, underscoring how public toilets serve as critical yet challenging urban spaces for these individuals.

Finally, the conclusion synthesizes the insights gained from this research, emphasizing the importance of improved public toilet accessibility and accommodations for youth with chronic gastrointestinal illnesses. It reflects on the implications of this study, the need for structural change, and potential areas for future research to foster inclusivity and reduce the health and social burdens faced by this population.

Embodying the Research: Lessons in Time, Space, and Self-Compassion

In this project, I often had to push back against an inner dialogue urging me to power through and be more productive. Over the past two years, my body has endured the fluctuating realities of chronic illness – the highs of feeling "healthy" or being in remission, moments when I could almost pretend, just for a while, between the pills and the injections, that I was fully

present in my life, in control. And then the lows: pain, fear of what comes next, the unknown. My health has, in many ways, directed my research process, dictating the time and space I could occupy in the scholarly world. There were weeks I could not write because my dizzy mind and body would not let me, days I could not commute because my body would not permit it, and hours spent questioning my future. *What will my body allow? What kind of job can I manage?* Many times, I spiraled into self-doubt and uncertainty, criticizing myself for the very things my research advocates against. I have to keep reminding myself: *No, I do not always have to be resilient. Yes, I am allowed to rest. Yes, my timeline can look different than my peers'. No, that does not make me a lesser scholar.* My work is a reflection of my lived experience, an embodiment of my timeline through health and illness. As much as this project extends beyond me in scope and purpose, it has also been healing and empowering. It is a lesson to myself, as much as I hope it will educate others, about what it means to navigate space, time, and life as a youth with chronic illness.

Chapter 2: Time, Space, Body: Chronically Ill Youth in Public Space

Where public infrastructure is insufficient in meeting the demands of those with chronic illnesses, the burden of health management is increasingly shifted upon the individual; but *who* is this individual? And *how* might we better conceptualize their mind and body – embodied – experiences as deeply intertwined while they move through and exist within space and time? This chapter engages with scholarship at the intersections of feminist, health, disability, emotional, sensuous, and time geographies that centre concepts of spatial and temporal experiences of the body in public space. This research intersects these realms to illustrate the connections between time, space, and the body – particularly from the perspective of youth with chronic gastrointestinal illnesses.

The body and its senses connect with time and space through a multifaceted dynamic. Bodily senses are inherently fleeting, with emotions and perceptions shifting over time as we process and interpret information from our surroundings. Certain senses, such as sound and smell, are typically more episodic in nature, occurring in distinct moments and often tied to specific experiences or events. For example, we may associate public toilets with smells of flatulence or defecation; however, these smells only linger so long as they are produced by an occupant. In contrast, physical forms that we process through vision or touch can have a more enduring presence, providing a sense of permanence in our environments. Yet even the more fleeting senses can anchor memories and emotions to specific locations (Porteous, 1985). Time-geographical frameworks, such as Hägerstrand's (1970) focus on space-time constraints – and the feminist interpretations that followed – offer valuable insights into how sensory experiences

are embedded within and shaped by temporal rhythms and spatial contexts. For instance, the episodic nature of certain senses aligns with the time-geographical emphasis on the sequencing of activities and events, while the enduring qualities of physical forms reflect the stability of spatial anchors within individual trajectories. This interplay between time and the senses underscores how our sensory experiences inform, and are informed by, temporal and spatial dimensions of everyday life.

For youth with chronic gastrointestinal illnesses, this interplay between the senses, emotions, time, and space becomes particularly significant in their experiences of navigating toilet spaces and the everyday journeys in-between. As these experiences intersect with space-time constraints (Hägerstrand, 1970), youths' mobility and access to public and social spaces can be limited when toilet availability or accessibility are uncertain. Space-time constraints can amplify feelings of exclusion, disrupt daily routines, and force individuals to make decisions about where and how they move through the world based on their gastrointestinal needs. Thus, sensory experiences of toilet spaces are deeply intertwined with the spatial and temporal realities of living with chronic illness, making a combination between space-time and emotional-sensory realms ideal literary and methodological foundations to this research. To illuminate these dynamics, this chapter begins by introducing key theoretical perspectives on time geography, rhythmanalysis, and crip time, which provide essential insights into how time, movement, and bodily constraints shape the ways individuals experience and navigate spaces, before moving to a more in depth section on sensuous and emotional geographies, emphasizing how sensory experiences (e.g., touch, sound, and smell) along with accompanying emotional responses to environments play a critical role in shaping both access and engagement in urban landscapes, especially for those whose bodies may experience discomfort or pain in public spaces.

After establishing the foundations of time, space, emotions, the senses and the important connections between them, this chapter delves into the intricacies that define bodies specific to this research. Feminist discussions of embodiment as they intersect with health geographies is the focus of the next section, which draws attention to how embodied experiences of chronic illness are deeply interwoven with the social and spatial structures that govern mobility and accessibility. The chapter then narrows in on youth literature, emphasizing how youth engage with and wayfind through urban and suburban public spaces, resisting or renegotiating spatial constraints and asserting agency in the process. Following this, the discussion then prioritizes a particular kind of public space that is the focus of this thesis – public toilets – underscoring their centrality to wellbeing and to ensuring the overall health and mobility of marginalized individuals, including youth with chronic gastrointestinal illnesses. The chapter concludes by synthesizing these diverse theoretical perspectives and literatures, reflecting on how they inform my research as a whole.

The Feminist Body Clock: Cripping Time Geography

All bodies demand some degree of alignment between space and time to meet their everyday needs. A chronically ill body may demand much more of this alignment to dedicate to health management. For example, in their analysis of the relationship between daily life activities such as paid work and chronic illness, McQuoid et al. (2015) argue that individuals may face a competition between spatial and temporal resources in managing their health through everyday life. They find that the unpredictability of body rhythms – combined with an average of two hours a day dedicated to illness management – reduce temporal resources and make it a challenge for chronically ill individuals to obtain and maintain paid work (McQuoid et al., 2015). Thus, it is easy for a significant portion of everyday life to become consumed by the constant

struggle to align spatial and temporal resources. To understand what this struggle means and looks like for chronically ill youth, this research utilizes time geography and opens its original theorizations to feminist and critical disability critiques.

Feminist and crip critiques address time geography's limited engagement with the embodied and uneven experiences of space and time, particularly for individuals whose bodies deviate from normative expectations. While time geography's original framework effectively maps the basics behind space-time constraints, it assumes a universal, able-bodied subject, overlooking the gendered, disabled, and chronic illness-specific barriers that can shape mobility and access. Notably, Rose (1993, 1997) critiqued time geography's normative masculinist assumptions, demonstrating how the notion of the body as undefined and undifferentiated ignores embodied intersectional power dynamics that cut across space. In Hägerstrand's original formulation, time geography offered no explanations for the meaning of 'people' or 'space,' and the individual was established as a non-sexed body in undefined public spaces within society (Scholten et al., 2012). Despite such issues, feminist scholars have found valuable ways to rework time geography as an analytical tool to reveal the micro-level obstacles and constraints that women grapple with in their daily lives as they juggle competing responsibilities (Scholten et al., 2012).

By incorporating feminist perspectives of time geography with critical disability studies literature, I accentuate a more inclusive understanding of everyday spatio-temporal experiences. Critical disability studies scholars have leveraged "crip time" to extend temporal critiques further. The historically derogatory term "cripple" has been abbreviated to "crip" and reclaimed by disabled activists and scholars as a form of empowerment that resists ableist norms and advocates for diverse bodies and experiences (McRuer, 2006). Such diversity includes the many

intersections of identity, including sexuality (McRuer, 2006), and invites the treatment of disability as a social and political identity instead of simply a medical condition (Kafer, 2013). Building upon crip theory, Kafer (2013) conceptually offers “crip time” as individually differentiated, rupturing linear notions of progress and opposing narratives of productivity. Here, disabled individuals – and also those with chronic illness – develop an alternative relationship to time as they navigate and resist temporal norms (c.f., Dyck, 1995; Moss and Dyck, 1999, 2002).

Time is understood as flowing constantly and continuously, and as such, individuals live through every moment through the activities being performed in its duration, even if the activity is ‘doing nothing’ (Ellegård, 2020). Hägerstrand (1970) claimed that geography is truly all about the struggle for access to space between existences and events, arguing that the basic structure of society is constructed through the continuous process of individuals enacting their everyday life activities. Aligned with these tenets of time geography, Henri Lefebvre’s *Rhythmanalysis: Space, Time, and Everyday Life* (2004) introduces a method for understanding the interplay between time and space, with a specific focus on daily life rhythms. The concept of rhythmanalysis focuses on how social, natural, and bodily rhythms intersect and shape urban environments, emphasizing the cyclical (natural, repetitive) and linear (socially constructed) rhythms that influence human experience. Thus, Lefebvre argues that urban spaces are not static but are constantly being produced and reproduced through the rhythms of inhabitants and their interactions with the environment.

Within the parameters of space and time, individuals’ opportunities to perform their planned activities are constrained by obligations which take up their time, in addition to the availability of resources and their locations. From a time-geographic perspective, Ellegård (1999) argues that such limitations constitute the primary constraints as defined within time geography: capacity,

coupling, authority, and movement. *Capacity* constraints are the physical or biological limitations on an individual's ability to move (e.g., health) while *coupling* constraints involve the need to coordinate with others, schedules, or facilities at specific times and places (e.g., transit schedules). *Authority* constraints, on the other hand, are external rules or restrictions (e.g., laws) while *movement* itself represents the trajectories individuals take through time and space, influenced by these overlapping constraints. For example, a youth with chronic gastrointestinal illness may face the capacity constraint of their symptoms, the coupling constraint of their work schedule, the authority constraint of privatized toilet spaces, and the movement constraint of trying to coordinate the need to use the toilet on the way to work whilst also not missing their bus and getting to work on time. Together, this conceptualization of constraint emphasizes how structural, social, and personal factors shape mobility within cities and access to resources, services, and spaces. These constraints may emerge from within or outside of the body in the form of everyday, biological activities required to survive, such as eating or using the toilet. In my research, these biological constraints – specifically of gastrointestinal nature – are the primary focus from which other constraints emerge over time and space. These basic physiological activities are typically performed without deeper reflection, even though the nature of everyday life is constituted by these space-time organizations (Ellegård, 1999). This need for space-time couplings often restricts how individuals come to use their time throughout their day and can alter or limit the actual realization of planned activities (Ellegård, 2020). However, there are instances where the network city (Moiseeva et al., 2018) constitutes a de-coupling of time and space – such as through digital space, which allows us to occupy multiple spaces at once – which youth can enact as a mode of agency; for example, working from home. We can further enrich this conversation between time geography and crip time through the incorporation of

sensuous geographies, to explore how fluctuating space-time capacities not only alter routines but transform sensory engagement with environments. For instance, the possibility of heightened awareness of public toilet availability among chronically ill individuals underscores how the senses and temporal experiences may be co-constituted, situating embodied rhythms and sensuous geographies within the landscapes of public accessibility.

Sensuous and Emotional Geographies

Our most immediate and intimately felt geography is the body: the site of emotional experience and expression (Longhurst et al., 2008). Sensuous and emotional geographies are intertwined as they both emphasize the embodied, sensory interactions occurring within space and the feelings they evoke. For example, youth with health conditions may experience and perceive public spaces differently on a sensory level, potentially navigating spaces that feel hostile, unsafe, or comforting. The sensuous dimensions of geography can reveal how emotions play into individual's experiences of public spaces and influence their mobility, comfort, and even their sense of belonging or identity.

Sensuous and emotional geographies emphasize the role of sensory experiences and emotions in shaping our understanding of space, place, and human-environment interactions. Porteous (1990), and Rodaway (1994) laid the foundation for sensuous geographies by exploring how sight, sound, touch, smell, and taste can mediate spatial relationships. Porteous highlighted the multi-sensory dimensions of landscapes, while Rodaway argued for a deeper understanding of how sensory modalities connect individuals to their environments. My research is most closely aligned with Porteous's (1990) conceptualizations of the sensory and emotional dimensions of landscape experience, encompassing the ways in which sights, smells, sounds, and

tactile elements of spaces – in my research, public toilets – contribute to an individual's emotional and cognitive connection to their surroundings. Further, the fear and discomfort tied to specific environments and the perceptions that occur within them, conceptualized by Porteous as 'topophobia,' aids the conversations surrounding how individuals navigate and perceive spaces and their embodied experiences within them, which is especially relevant to the intricate and often taboo nature of public toilets. I further engage with Porteous's (1990) work on 'sensescapes' which seek to uncover the sense-specific elements of landscape – such as 'soundscape' and 'smellscape' – in Chapter 3 to outline how I came to code semi-structured interviews by sense.

Paterson (2009) extends Porteous' (1990) and Rodaway's (1994) theorizations by engaging with the spatialities of the sensory realm in *Haptic Geographies*. He defines 'haptics' as the sensory experiences (e.g., textures and temperatures) and movements (e.g., walking, grasping, or feeling surfaces) involved in touching and argues that touch is a fundamental way through which people engage with their surroundings and develop emotional connections with places. For example, tactile sensations can variously evoke feelings of comfort, warmth, or discomfort, which enriches an individual's environmental connectedness by imbuing tactile sensations with social meaning. In Paterson's work, sense of touch is not solely reducible to tactility, but is also concerned with that which is beneath the skin, such as muscular tensions, movements and balance, sensitivity to temperature, and pain. For those with gastrointestinal illness, there may be a keen awareness to the internal feelings of digestion or stomach pains, which prompt different emotional responses. Paterson (2009) argues that these sort of somatic senses – like sensitivity to feelings of pain, urgency, hunger, thirst, or temperature – constitute the under-explored 'background feelings' of embodiment, the self-perception of inner bodily

states. Perhaps we can map the geographies felt within the body – such as the sensations of a bite of food from its entrance through the mouth, its digestion in the belly, to its excretion from the bowels – to gain a deeper understanding of how our internal senses impact our state of being in external space. My research does not go as far as this internal mapping, but it begins to hint at its potential significance by emphasizing the senses and emotions in the intimate setting of public toilets, where we perceive these somatic sensations in the same space we interpret through our senses and process our consequential feelings.

For youth managing chronic gastrointestinal illnesses, the interplay between internal somatic sensations and external environmental factors – such as cleanliness, accessibility, or odours – becomes particularly critical. The inability to find accessible, private, or clean public toilet facilities might lead to heightened anxiety, restricted movement, or avoidance behaviours, impacting overall health and everyday life experiences. This exploration foregrounds the necessity of analyzing how spatial practices, built environments, and sensory and emotional geographies intersect to influence health and wellness outcomes. By examining how health is shaped by the interaction of internal and external geographies, we can better understand how space both supports and constrains the physical and emotional wellbeing of marginalized individuals.

Is there Space for Illness? Embodiment & Health Geographies

The intersection of sensuous, emotional, and embodied geographies with health geographies highlights how sensory experiences and emotions within public spaces can directly impact individual and collective wellbeing. Studies of embodiment elicit these discussions by interrogating the relationality between bodies and spaces. In a touchstone book for feminist

geographers, Grosz (1994) examines how the body is entangled with social and cultural contextualities, particularly relating to gender and sexuality. She argues that traditional feminist theories can overlook embodied experiences and emphasizes the need to centre bodies as sites of resistance.

Feminist health geographers Moss and Dyck (1999, 2002) take seriously Grosz' (1994) call to centre bodies as sites of resistance by developing an understanding of how our sense of space and place are altered by illness. They argue that chronic illnesses can lead to a diminishing use of public space and shrinking social and geographical worlds especially amongst women. Moss and Dyck (1999; 2002) contribute to understanding chronic illness as a dynamic and spatially situated process that reshapes identity, self-perception, and bodily experiences. They argue that women with chronic illnesses such as Myalgic Encephalomyelitis (M.E.) often face disrupted social roles and a profound disconnection from their bodies due to symptoms like fatigue, pain, and cognitive challenges. The metaphor of a journey is central to their analysis, highlighting how chronic illness involves an indirect, nonlinear progression marked by fluctuations between health and illness, rather than a singular destination of wellness. This framework reframes the experience of illness as encompassing not just the challenges of daily life, but also the opportunities for re-negotiating identity amidst societal expectations of productivity and wellness. Importantly, the authors emphasize the spatial and emotional dimensions of illness, noting how particular places shape the journey and influence decisions, while the unpredictability of the body contrasts with the relative stability of the surrounding environment. Thus, environments offer a source of potential consistency amidst the inconsistency of physical conditions, shaping everyday decisions and long-term trajectories. This approach resonates with broader themes in health geography, particularly the interplay of

embodiment, spatiality, and the socio-cultural production of identity. Notably, this work reaffirms and expands upon Dyck's (1995) findings from a study of women with Multiple Sclerosis, which found that chronic illness shapes women's everyday lives through spatial marginalization of their health conditions. Dyck's (1995) study reveals how societal expectations around women's roles – such as caregiving and domestic responsibilities – are complicated by illness, leading to feelings of isolation and reduced autonomy.

The differential experiences shaped by bodily conditions and space are also explored by Longhurst (2001; 2008), examining the embodied experiences of pregnancy and fatness to demonstrate how bodily fluidity challenges rigid spatial boundaries, conceptualizing the 'leaky body.' Longhurst's work highlights the intersections of bodies, space, and spatial exclusion, pointing out cultural discomforts around bodily functions. Her focus on gendered and aged bodies emphasizes how bodies are deemed 'out of place' and subsequently regulated and marginalized. Longhurst (2008) extends these ideas to examine stigma, visibility, and how normative infrastructures fail to accommodate bodily diversity. In dialogue with health and youth geographies, Longhurst's arguments can aid in the illumination of how youth with chronic gastrointestinal illnesses and their 'leaky bodies' can have difficulties navigating public infrastructure such as toilets which are shaped by stigma, bodily management, and spatial injustice (Longhurst, 2001; 2008).

In dialogue with Moss and Dyck and Longhurst, Crooks and Chouinard (2006) look at chronic illness through an embodied geography of disablement. With research on women diagnosed with arthritic chronic illnesses, they uncover the struggles for enabling places in spaces of both health care and daily life. Their study illustrates how the process of becoming chronically ill is geographically uneven, as women experience changes in the spatial

configurations of their everyday lives. Furthermore, Crooks and Chouinard explore the ways in which the identity of these women become intertwined with illness and argue that embodying illness involves assigning meanings to the changing material, lived, and represented places and spaces in the world. For example, activities that once felt routine – such as commuting, socializing, or accessing public spaces – become challenging due to fatigue, pain, or physical limitations (Crooks and Chouinard, 2006). Their study found that all participants experienced profound spatial changes in their lives, including the need to rework their lifeworld's to accommodate for their health needs – something that can be particularly challenging when applied to youth in their liminal stages of life. Furthermore, Crooks and Chouinard (2006) found emotional impacts experienced by these women because of being negatively 'differenced' in multiple spaces of life, where spaces are not designed to accommodate health needs – as well documented by feminist scholars (e.g., Dyck, 1995; Moss and Dyck, 1999, 2002; Longhurst, 2001, 2008).

Much of the early scholarship by feminist health geographers on chronic illness used the language of resilience – the capacity to endure in the face of pain and societal neglect. Yet, resiliency has also been critiqued by MacKinnon and Derickson (2013) as a neoliberal trope of individuation, which has implications in activism and policy. When understood as the ability to 'bounce back' from adversity and adapt to changes or hardships, resilience, MacKinnon and Derickson (2013) argue, is a method of reinforcing power structures instead of challenging them. Resilience initiatives, they caution, typically focus on individual and community-level responses, neglecting the systemic causes of inequality. With this critique in mind, the authors invite a shift from resilience to resourcefulness, with a focus on collective power to challenge structural inequalities and strive towards more inclusive forms of governance. Similarly, in an article

examining how suburban spaces designed for LGBTQ2S youth go beyond simply providing safety to foster resilience and resourcefulness, Bain and Podmore (2021) explore the challenges of spatial deficits and lack of visibility faced by youth. Their study contributes to a growing understanding of resilience and resourcefulness by highlighting how youth adapt and thrive despite spatial marginalization. For example, they highlight how youth often encounter urban environments that lack dedicated, inclusive, and accessible spaces for their social and recreational needs, with public spaces like parks, community centres, and gathering areas often insufficient, poorly maintained, and or unavailable particularly in marginalized neighbourhoods. However, despite these challenges, youth display remarkable agency by reclaiming and reimagining spaces to suit their needs, challenging their invisibility by asserting themselves in urban and digital spaces, and engaging in grassroots organizing and activism (Bain and Podmore, 2021). My research adopts these critiques of resilience and focuses on the resourcefulness which individuals – especially youth – have adopted to assert their agency in inequitable public spaces.

Youth Geographies: Liminality, Agency, & Mobility

Youth is a transitional stage of life often socially conflated with health and vitality, which can invisibilize the lived experiences of young people grappling with chronic illness. My research draws from the growing field of children and youth geographies to trouble such associations and erasures. Key scholars in the movement towards situating children and youth as important actors in society and research, geographers Valentine and Holloway (2000) assert that young people have unique experiences relative to other age demographics. They argue that young people are typically not regarded as valid members of society and subsequently neglected in research. Since this critique, there have been bodies of literature produced which seek to uplift young voices and agency in research including Cahill's (2007) Participatory Action Research

with adolescent girls of colour in New York City. Through a collaborative project, participants explored their experiences of gentrification and neighbourhood change and worked to advocate for community-centred urban planning (Cahill, 2007). However, despite the significant contributions concerning the spatialities of youth from the 1990's onwards, there is still work to be done to better include youth in research agendas. Evans (2008) argues that youth perspectives have been marginalized as research tends to focus on mainly children and childhood. This sentiment is also reflected by Skelton (2022), who rearticulates arguments from the mid-1990s that teenagers and young people in their early twenties are seen as being 'out of place' in urban public spaces and are negatively portrayed. While there are some positive associations for youth, such as energy and youthful appearance, Evans (2008) argues that youth are often stigmatized as possessing a lack of responsibility and control. While focusing on children and childhood agency in research is important, grouping older youth in with this field may erase or overshadow the narratives from those aged around 18-25, who are surely not children and certainly possess greater capacities for responsibility and control. In recognizing that this broad youth demographic – while still in a liminal or transitional stage of life – use and experience space differently than children, we can begin to analyze and meet their needs.

To better understand the specific ways in which youth are marginalized within space, we can engage literature that forefronts inclusivity, accessibility, and the role of design and planning in shaping public spaces. Little (2020) utilizes the concept of *experiential accessibility*, which expands beyond conventional notions of physical access to emphasize the design of inclusive public spaces that foster positive experiences for people of all ages and abilities. Highlighting how public spaces – when designed with principles of universal and sensory design – can have therapeutic benefits, Little states that space can promote mental, emotional, and physical

wellbeing. On a similar note, Holt (2024), continues her significant contribution to the field of children and youth geographies by examining how young people with impairments navigate social, spatial, and institutional landscapes. The book challenges traditional perspectives on disability by framing it through the lens of complex embodiment, which recognizes the interplay between physical impairment, social constructions, and individual experiences. Holt emphasizes how young people with impairments experience and negotiate exclusion, discrimination, and limited access to public spaces and services, while also highlighting their agency and resourcefulness.

The resourcefulness expressed through Holt's (2024) work extends beyond physical disability to varying modes of disablement and marginalization. Youth geography scholars have explored the marginalization of young people in public spaces, underscoring the importance of recognizing youth as active agents in shaping space. Skelton and Gough (2013) state that young people remain primarily absent from urban studies and argue for their visibility to be taken seriously, as these individuals "are not only *in* the city they are *of* the city; their lives are shaped by urban dynamics and they themselves are significant actors in, and creators of, the city" (p. 457). They explain that young 'mobilees' move through urban spaces in diverse ways seeking social and cultural mobility, but some young people lack or are limited in this mobility as a result of various social, economic, and structural factors. Evans (2008) also cautions that there is a danger in asserting that each youth is entirely free to choose their path, as this ignores the abundance of structural factors which may limit the experiences or opportunities for some youth. For example, low income can reduce resources for transportation and access to social events (Skelton and Gough, 2013), whilst others remain reliant upon self-determined care practices amidst ongoing colonial violence (Ansloos et al., 2021).

Adding to the discussion on youth exclusion and agency, Moris and Loopmans (2019) focus on how the stigmatization of youth limits opportunities for their social interaction and civic engagement. They highlight the role of critical youth workers in advocating for youth-friendly urban environments by challenging societal norms and power structures that perpetuate this marginalization. By collaborating with municipalities through initiatives like youth councils, participatory planning, and youth-focused policies, these workers aim to create inclusive spaces that support young people's rights and wellbeing. Similarly, Fernandez et al. (2020) focus on the underrepresentation of marginalized youth, particularly ethnic and racialized groups, in the planning and design of public spaces. They argue for skill development and leadership training to empower these youth to participate meaningfully in decision-making processes. Such involvement, the authors contend, not only addresses systemic inequalities but also leads to improved design outcomes, greater community engagement, and enhanced social equity. Thus, existing literature has emphasized the importance of youth as active agents in public space, and my research seeks to provide an additional narrative where youth experience is centred.

Public/Private Space: Mobility through Urban and Suburban Landscapes

My case study spans the Greater Toronto Area (GTA), encompassing both urban centres and sprawling suburban peripheries. I subscribe to Keil's (2020) argument that studying the suburbs is crucial for our modern existence as we are now living on a suburban planet, contending that the relationships between the centre and the suburb are no longer linear but marked by multi-functionality and multi-embeddedness. Despite their interconnectivity, the suburbs face distinct challenges, greatly stemming from masculinist underpinnings (Bain, 2013). This ideology, rooted in nuclear family ideals, the idea of female domesticity, and the 'freedom' of car use, creates exclusionary environments for women and other marginalized groups in

suburban landscapes (Bain, 2013). For example, the car-centric design of the suburbs excludes those who cannot afford cars, lack a licence, or are physically unable to drive (Bain, 2013). Many Torontonians commute daily between these contrasting, yet imbricated, urban and suburban environments for education, employment, recreation, and socialization; thus, making it crucial to understand the implications of these varied settings and the fluidity of youth's movements within and between them. While public toilet infrastructure is scarce in the outskirts of the city, urban spaces are characterized by denser populations – and therefore, higher demand for provisioning – where access is often restricted by locked doors or 'customers only' policies.

The shifting relationships between suburbs and city centres is sometimes referred to as 'network cities.' In these cities, it is not only spatial but temporal dynamics at play, in a way that is possibly more significant than ever, as articulated by Moiseeva et al. (2018). Their work underscores the evolving nature of public spaces with the concept of the 'network city,' referring to urban areas characterized by extensive transportation networks, fluid spatial boundaries, and digital connectivity, where traditional notions of public space must be redefined in the rapidly changing mobility and interactive patterns (Moiseeva et al., 2018). The authors examine space-time behaviours, exploring how individuals move through and utilize urban spaces, and contend that understanding this concept is essential for unveiling the dynamics of public spaces in the network city with its dynamic and multi-functional spaces.

Pairing the concept of the 'network city' with that of wayfinding, as discussed by Lynch (1960), allows for a more updated understanding of how individuals move through space. Lynch offers up wayfinding as a critical aspect of mobility in urban space, referring to the process by which people navigate and make sense of their physical environment. Wayfinding is achieved through various elements – such as paths or landmarks – that contribute to a city's 'legibility,' or

the ease with which individuals can traverse landscapes. Lynch (1960) argues that effective wayfinding enhances accessibility and mobility, fostering a sense of autonomy and inclusion for diverse populations. For youth with chronic gastrointestinal illnesses, wayfinding is particularly significant, as intuitive navigation can mitigate the stress and uncertainty of locating essential amenities. Integrating Lynch's principles into the literature on mobility and modern network cities highlights how the design and legibility of urban infrastructure directly impacts the capacity of marginalized groups to move through and engage with public spaces. For example, modern network city spaces are characterized by a constant flux of movement throughout the day, and now the role of technology that has the capacity itself to shape space-time behaviours (Moiseeva et al., 2018). Cellphones, for example, can influence how individuals perceive and navigate urban spaces. The transformative impact of technology allows individuals to pre-plan journeys, occupy physical and virtual spaces simultaneously, – de-coupling space and time – and engage in a multitude of activities which redefine our relationships with urban environments. Youth with gastrointestinal illnesses, for example, may use technology to research accessible toilets before journeying out in the city, or may check menu options for a dish that will not trigger their symptoms.

Urban and suburban landscapes are also marked by increasing privatization of resources and infrastructure. This is problematic as privatization tends to exclude and marginalize vulnerable individuals. Public toilets for instance, although essential, almost exclusively exist within private facilities in the GTA. Even beyond groups who are particularly marginalized, Greed (2003) argues that if the government wants people to use public transportation, walk, and cycle, public toilets are the solution, as people cannot be expected to travel these ways without being secure in the comfort and health of meeting the needs of their bodies. The privatization of

public infrastructure has therefore led to the privatization of bodily functions. Wood's (2018) examination of privately owned public spaces (POPS) within the GTA sheds light on the challenges inherent in their existence and governance. POPS, described as privately owned places within urban developments that are accessible to the public, serve as social and recreational spaces in urban environments (Woods, 2018). In the rapidly evolving and urbanizing GTA, navigating the planning and management of POPS presents significant hurdles, particularly regarding the insurance and maintenance of public accessibility and inclusivity. This challenge emerges from the conflicting interests between public access and private interests: although POPS are technically open to the public, it is difficult to monitor accessibility and design to ensure inclusivity for marginalized individuals. Wood (2018) advocates for the importance of proactive planning to maximize public benefits in private spaces, and calls for a collaborative approach between developers, the government, and community stakeholders, to foster a positive contribution to the urban environment, similar to the arguments of youth agency in urban settings discussed earlier. An understanding of POPS is crucial throughout my research as the majority of publicly accessible toilets – to be discussed more in depth in the following section – exist within private spaces, posing significant challenges for the inclusion of marginalized groups, such as chronically ill youth.

Public Space: Access & Toilets

Despite being regarded as a taboo topic in literature, the past twenty years has produced touchstone works on public toilets from urbanists, geographers, and sociologists that have significantly contributed to understanding them as spaces where societal inequalities and norms are reproduced and contested. Greed (2003) argues from a predominately UK perspective that public toilet provision is a neglected yet essential element of urban planning, particularly for

addressing the needs of women, older adults, and disabled individuals. For example, she argues that public toilets are sites of ingrained societal norms, and that the spatial distribution and design of these spaces often prioritize certain groups – typically able-bodied men – while marginalizing others whose bodies or needs deviate from normative expectations. Greed attends to the impacts on women and mothers, arguing that poor design and accessibility, in addition to a general lack of public toilets, restricts access and mobility in cities. The historical lack of access to women's public toilets, and the present absence of adequate provisioning, confines individuals who require more frequent toilet access to domestic spheres (Greed, 2010). Further, toilet provisioning fails to account for the usually longer time women spend in toilets due to caregiving responsibilities, menstruation, or pregnancy for example, reinforcing gendered inequalities in these spaces (Greed, 2003), and tying to the underpinning of hegemonic, masculinist norms permeating public infrastructure (Bain, 2013). By delving into the historical roots of gendered public toilet provision, Greed (2003) reveals how early initiatives prioritized men's facilities, reflecting societal norms and economic imperatives tied to the industrial landscape. As contested sites, Greed (2010) argues that even the common terms used to refer to these facilities, such as washroom, bathroom, and restroom, subtly mask the inherent 'dirtiness' associated with them, promoting a cleanliness narrative.

Not only are the names we use to refer to public toilet's contributors to a 'hygienic imagination,' but the signs we use to mark them enforce strict binaries. Browne (2004) writes about genderism and the 'bathroom problem,' and the discriminating role of toilets against individuals who do not fit into the gender binary. Highlighting the experiences of women, queer, trans, and non-binary people, Browne states that in a society where the binary of man/woman is still central to public toilet design, those who exist outside these rigid lines are forced to make

difficult decisions, and potentially subject themselves to harassment from those who feel they are in the 'wrong' bathroom. Similarly, Cavanagh (2010) examines how public toilet facilities enforce binary gender norms and marginalize LGBTQ+ individuals, while advocating for the implementation of inclusive, gender-neutral designs. A queer theoretical perspective is central to Cavanagh's (2010) analysis where public toilets are presented as sites of both oppression and resistance. Cavanagh offers insights into broader themes of identity, power, and social justice through the concept of 'queering bathrooms,' which entails questioning normative gender and sexuality assumptions regarding public and private toilet facilities. Through a historical lens, Cavanagh delves into how bathrooms have been sites of regulation and social control, especially through gendered and heteronormative standpoints. Historically, public bathrooms became sites of surveillance and sexual policing fuelled by the fear of sexual deviance and misconduct as justification for discriminatory policies. Cavanagh (2010) highlights how LGBTQ+ individuals and allies have resisted and challenged discriminatory bathroom policies and practices through grassroots organizing, legal challenges, and public education, and have become a community at the centre of fighting for more equitable toilet spaces. Throughout the book, Cavanagh emphasizes the importance of 'queering bathrooms' to disrupt normative understandings of gender and sexuality, calling for awareness and solidarity in the struggle for inclusive public and private bathroom facilities.

Similarly, Barcan (2010, p. 25) cites dirt as "an offence against order," which threatens the categories meant to promote social stability. Barcan explains how the body holds a symbolic role in social ordering, while also being a constant source of pollution. Bodily waste represents an overt form of dirt, rendering public toilets inherently 'dirty spaces.' The less obvious form of dirt occurs culturally, often referred to as social hygiene, and cannot be addressed with standard

sanitation practices. Drawing from Elias's classic study *The Civilizing Process,* Barcan (2010) underscores how modernity's progression is intertwined with an increase in shame and embarrassment, perpetuated further by consumer culture's reinforcement of disgust for the human body. The metaphor of 'dirt' alludes to the significance of the senses, as we detect contamination through them, evoking feelings of disgust, shame, and embarrassment. Touch, symbolically and literally, serves as a conduit for contamination, while smell is harnessed to mask and eradicate odors associated with bodily functions (Barcan, 2010). Being spaces of feared contamination, public toilets invite the user to sense signs of cleanliness which usually have nothing to do with actual cleanliness or health; for example, air fresheners which mask the smell of waste do not purify the air but rather imbue it with toxins that are particularly triggering for some chemically-sensitive individuals. In regard to our sense of sound, Barcan (2010) points out how a fear of others hearing us use the toilet is tied to embarrassment and shame; yet, sound, being the sense that does not respect boundaries (Porteous, 1990), can also provide comfort, particularly for women, who may feel safer knowing that if faced with violence their screams will be heard beyond stall doors. In men's toilets, the open space of urinals is argued to test for the presence of 'contaminating' homosexuality, policed by the power of the male gaze itself. In today's society it seems we are made to fear our own bodies as much as the bodies of others, and we evaluate posed threats through our senses.

All in all, public toilets are deeply political and cultural sites where power and identity are negotiated. By engaging with issues of gender, sexuality, and accessibility, as well as the design, distribution, and experiences within public toilets, we can better understand the ways in which even the most 'private' of infrastructures reflects and reinforces broader societal structures and marginalize certain groups. Molotch (2010) states that the public toilet can become a tool to

examine how a society functions, what it values, how it separates people, and the trade-offs that come to be made. This is evident in that the distribution of toilets – and what qualities they have – impacts urban space by pre-determining who goes where and when. Furthermore, Kern (2019) highlights issues that many shy away from, including the fact that menstruation can cause more frequent urination and bowel movements, that trans men also need products and facilities for menstruation, that homeless communities need access to pads and tampons alongside freely accessible toilet spaces in cities, and that line ups for the bathroom only seem to queue outside the women's facilities. From menstruation to sanitation, public toilet spaces evoke local and global critical conversations of equity, inclusion, health, and safety (Kern, 2019).

Not only are public toilets political and cultural sites, but they are also key nodes through which we might structure our daily lives, with diverse uses amongst the public. Delving into the mechanisms through which public toilets become spaces for more than washing, menstruation, urination, and defecation, Cowen, Lehrer, and Winkler (2005) outline uses such as cleaning, breastfeeding, medicating, debating, sex, and overall refuge from the outside world. The authors frame how we start and end our day with toilet use, come back to the toilet throughout, and how when we are away from home we must rely on some form of public provisioning, marking toilets as critical nodes in our everyday lives. Together, scholars and literature on public toilets have been breaking down social stigma and taboos that have previously prevented public toilets from being viewed and researched as vital infrastructure, far more than simple functional spaces.

Conclusion

The intersection of time geography and its feminist critiques, crip time, rhythmanalysis, and sensuous and emotional geographies reveals how time, space, and embodiment are mutually

constitutive and unevenly experienced. While time geography traditionally centred able-bodied, adult male bodies, feminist and crip interventions challenge these norms, exposing temporal rhythms shaped by illness, care, and accessibility constraints. Building on feminist health geographies and youth geographies, my research highlights the social and spatial exclusions faced by chronically ill youth navigating urban and suburban spaces and their infrastructures. This scholarship provides tools for reconceptualizing public infrastructure, framing public toilets as more than utilitarian spaces; they are sites where sensory, emotional, and embodied experiences converge. While feminist and queer scholars reveal the exclusionary politics of toilet design, these critiques remain largely adult and urban-centred. By bridging youth-focused scholarship, my research centres the lived experiences of chronically ill youth, examining public toilets as critical spaces of mobility, emotion, and negotiation. My thesis utilizes these bridges to explore two interconnected themes: the spatial and temporal dimensions of mobility as shaped by toilet access (Chapter 4: The Journey) and the complex emotions and negotiations that occur within public toilets as physical and social spaces (Chapter 5: The Destination). These threads culminate in a critical examination of public toilets as sites where agency, accessibility, and rights to the city are contested and reimagined.

Chapter 3: Methodologies for a Feminist Conceptualization of Time, Space, the Body and its Senses

Embarking upon this research journey, I knew that the very nature of its subject matter would present a unique methodological challenge. Society deems the topic of toilet habits a private matter, one that is rarely talked about publicly, and to try and do so can make individuals feel variously uncomfortable, vulnerable, or ashamed. I approached this research, then, with the knowledge that not everyone is as willing to openly discuss the intricacies of their gastrointestinal illness as I am. While leveraging my youthfulness and lived experiences, I drew on feminist research practices to craft a methodological approach that is flexible, open, and respectful of individual vulnerabilities, choices, and stories.

This chapter begins by outlining my commitment to feminist research, especially though centring the embodied experiences of youth participants. I then reflect upon my use of experiential knowledge as a support and guide to this research. Next, I further narrate my journey of choosing a mixed methods approach, before delving deeper into the specificities of the primary methods used, space-time diaries and semi-structured interviews respectively, including the challenges faced in each. The next section explores the analytical tools and coding choices I made before introducing the research sample. In sum, this chapter lays the groundwork for spotlighting youth embodied experiences from a feminist standpoint and begins to unravel the themes of mobility and the validity of knowledge acquired through emotional and bodily accounts.

Feminist Research Commitment and The Body

Feminist research practice does not merely focus on women and gender, it prioritizes self-reflexivity and attentiveness to how power relations cross-cut research and society at large (McDowell, 1992). Inspired by feminist geographers, I too emphasize the personal as political (Ettore, 2017), and the importance of centring the embodied experiences of the 'other' while avoiding essentialization about them (McDowell, 1992; Longhurst, 2010; Dyck, 1993). Drawing upon my own lived experiences as a youth with Ulcerative Colitis, I pay particular attention to how society's underlying masculinist and adultist dimensions constrain and exclude youth and the chronically ill, while also seeking to open rather than foreclose these social categories.

The challenges I face, constantly negotiating access to public toilets, makes me keenly aware of the power dynamics and societal norms that regulate bodily functions. This awareness, in turn, has shaped my research approach: just as my body was regulated by external constraints in school (when, where, and how frequently I could go to the bathroom), I am now conscious of how research methods and academic disciplines are shaped by social constructions of power and knowledge. McDowell's (1992) emphasis on self-reflexivity in feminist research resonates with my experience as I find it necessary to interrogate not only the external structures I encounter as a person with a chronic illness but also the internal dynamics of how I conduct research, ensuring that my work accurately reflects the embodied realities of the youth I study. Through my own self-reflexive research practice, I aim to disrupt dominant narratives that often overlook or obscure the lived experiences of those with invisible conditions like gastrointestinal illnesses. Throughout my fieldwork, I kept a journal in which I reflected not only on my own thoughts, feelings, and observations before and after interviews with fellow youth, but also my own health status and how this affected what I could and could not do on a given day. By acknowledging my

own embodied perspective as both a researcher and a youth with chronic illness, I strive to bring authenticity and depth to the narratives of others who share similar challenges.

From Diagnosis to Discovery: My Journey in the Research Process

This research was born from my own experiential knowledge, and as such, including autoethnography in its process felt natural. While I do not incorporate autoethnography as a central method, it is constant throughout the backdrop of this research. Autoethnography aligns with my commitment to feminist research practice, as well as the empowerment in embracing a sensitive subject matter, as it encourages the acceptance of emotions as legitimate and valuable knowledge sources (Ettorre, 2017). Ettorre (2017) advocates for autoethnography as a valuable feminist research method and states that researchers should choose to embrace their subjectivity instead of trying to eliminate it to achieve greater validity and replicability. Initially, I grappled with concerns over potentially overshadowing my research and the voices of participants with my own narratives. However, I later embraced the idea that it is impossible to separate myself from my research, and that utilizing my experiential knowledge could instead be a strength and an asset. I ultimately employed autoethnography not as a means to add data to my research, but a means to shape my methods themselves. My experiences informed the conceptualization of the project, and the formation of my methods. For instance, I tested the space-time diaries in my own daily life, filtering the categories and formatting based on my own symptoms and daily journeys. Furthermore, the questions for the semi-structured interviews were formed from my own experiential knowledge, providing me insight into what similar or differentiating experiences participants like me might have to comment on. Beyond informing my methods construction, autoethnography also serves as an ever-evolving lens through which I interpret data throughout the research process.

Throughout my daily life, I also collect the photo's that make appearances in the empirical chapters of this thesis. In their space-time diaries, participants logged over 70 toilet sites in the Greater Toronto Area (GTA), and I was able to visit some of these locations, observing first-hand the places that individuals frequent for their toilet needs and take photos to document them.[2] These photographs – as sensory artifacts that can also evoke emotions (Bartram 2003) – added to a personal photographic archive I had already been collecting over the last few years of public toilet spaces.

Choosing Mixed Methods: Feminizing Quantification as an Accessory Method

As a primarily qualitative researcher, I combined semi-structured interviews with space-time diaries and strategically sequenced these so as to leverage the data from the diaries as the basis for discussion in interviews, while giving participants an opportunity to reflect before speaking with me. Given the personal nature of the research topic, from recruitment through to the completion of participant involvement, I placed a strong emphasis on the comfortability and safety of individuals. For recruitment, I opted to use social media advertisements for three reasons: my participant demographic of youth is known as avid social media users, I wanted to reach individuals who may not leave their homes often enough to encounter a physical advertisement, and I could cover the entire Greater Toronto Area with my range.[3][4] A general advertisement, unlinked to specific city locations also allowed for a sample reflective of the intersectionalities that exist within the GTA's population such as race, ethnicity, sexual orientation, gender identity, ability, and religion. The advertisement was dispersed through a

[2] I had initially considered having participants take their own photos of these sites as reference tools and points of discussion but later discarded the idea because of the potential to violate individual privacy.
[3] I used Instagram as my platform and set the advertisement to target individuals living in the GTA, aged 18 to 25.
[4] I considered the alternatives of advertisements in healthcare centres or on university and college campuses, but I wanted to avoid both the medicalization of participants and the homogeneity of only targeting students.

digital poster (Appendix D), with the criteria for participants being diagnosed with chronic gastrointestinal illness, aged 18 to 27, and living, working, or attending school in the GTA. The poster incentivized potential participants with a $40 honorarium in appreciation of their time. After posting on August 15th, 2023, I began to receive a steady stream of emails from interested individuals, and approximately half of these inquiries turned into study participants. Over the span of a month, I gathered 10 participants. Hoping to extend my findings, I later re-opened the posting on November 1st for one month until I reached 14 participants.

In sum, this mixed-methods approach, integrating both qualitative and quantitative data, offers a comprehensive exploration of the lived experiences of youth with gastrointestinal illnesses. By employing space-time diaries alongside semi-structured interviews, I was able to provide a richer, more nuanced understanding of how youth navigate toilet spaces in urban and suburban environments. The quantitative aspect of time geography brought structure to the analysis, while the qualitative interviews allowed for a more intimate exploration of the emotional and personal aspects of their experiences. The integration of both approaches, despite the inherent challenges of the topic, ultimately enhanced the depth and breadth of this research, allowing for a more comprehensive examination of youth experiences across landscapes.

When You Gotta Go, You Gotta Go: How Space-Time Diaries Illustrate the Spatio-Temporal Worlds

Individuals living with gastrointestinal illnesses can experience an altered sense of – or relationship with – time. These altered experiences of time for those living with gastrointestinal illnesses can be caused by health alone but may also be intensified by surroundings and infrastructure which either support or diminish quality of life. With Hägerstrand's (1985) time

geography, its feminist critiques (Rose, 1993; Scholten et al., 2012; Ellegård, 1999, 2020), and the works of feminist geographers on health and space, I establish my own variation of space-time diaries to support my research.

When formulating a space-time diary, or in time-use in general, it can either be intended for the activity or the indivisible individual to appear as the unit of analysis; my method uses the latter. Ellegård (1999) set groundwork for a space-time diary method based in the frameworks of time geography in a way that is intended to suit to the empirical study of individuals everyday life activities. In this proposal, the focus is on individuals, and fore-fronting how knowledge and tools are used, and thus the resourcefulness that can be displayed. Taking the individual as the unit of analysis prioritizes context and sequence (Ellegård, 2020), allowing the day to unfold naturally within the method. Taken at the individual level, the space-time diary can offer the diarist time to reflect on their daily life and routine (Ellegård, 2020). In my research I tailored the diary to allow youth to track their mental and physical wellbeing as coupled to activities and their relationships with people, places, and things. At a societal level, space-time diaries can create an image of what a group of individuals' activities and movements look like (Ellegård, 2020), and can then show how these factors correlate with existing resources and services, and even make suggestions to better them.

My research places significant emphasis on highlighting the voices of youth, which are often overshadowed in an adultist society, and thus, it is essential for my methods to support and encourage this goal. One way this can be achieved is by following up the completion of space-time diaries with in-depth interviews or designing the method itself to encourage more emotion and reflectiveness to have an overall richer perspective (Nordell, 2002). An additional strategy to enrich the collected data is to follow up with a stimulated-recall interview to gather reflections

from the participants themselves (Orban et al., 2012). While I did not opt for a stimulated-recall styled interview, I incorporated its ideas by asking youth to reflect on their experience near the start of the semi-structured interviews I held after the completion of their diaries.[5] As for the actual information collected in space-time diaries, this is all dependent on the study's purpose. However, there are some commonalities and categories that are relatively standard. Ellegård (2020) includes common data categories as follows: time, activity, place, and with whom. Some studies have included diary sections which ask for a numerical reflection and optional comments on an individual's state of mind. Orban et al. (2012) utilize a 1–5-point scale with 5 being very well and 1 being not well at all. To replicate this in my diary formatting, I opted for a 1-10 scale, to provide more range, on general physical and mental wellbeing. I additionally included a notes section at the bottom of each daily log for participants to elaborate on the rating, or to provide any additional commentary about the day (Appendix A). The openness of the format is intended to promote flexibility and comfort, but also to establish a scenario where individuals can self-define what they regard as an activity, their experiences, and what is important information to include (Ellegård, 1999). This strategy was additionally aided by the exclusion of any specific criteria for activity, with the only prompt being to jot down all journeys that involve movement from one place to another.

For the purpose of my research, a space-time diary entry includes similar pretexts to the format described by Ellegård (2020), using 'time', 'activity', 'with whom,' 'location' (where one is leaving from and where one is travelling to), 'mode of transportation', 'number of toilet visits' (during the time frame of the activity and transportation involved), 'toilet locations' (of those used during activity and transportation involved, and 'wellness rating' (a 1-10 scale of mental

[5] On average, within a week of their completion, allowing for data to be fresh in participants' minds.

and physical wellbeing during activity). It also utilizes sequencing as emphasized by Hellgren (2014), who argues this deepens the understanding of individuals' organizations of time and activities throughout the context of their day.

Since participants are the best informants of their own everyday geographies (Ellegård, 2020), diaries were independently filled out by the participants themselves.[6] The diary format could be accessed digitally or printed to suit the preferences of each individual, and participants completed one diary form every day for seven consecutive days. Space-time diaries are ideally written throughout the day while activities occur to avoid the risk of forgetting the details (Ellegård, 2020).[7] Overall, my construction of space-time diaries provided a practical tool for tracking how participants' movements, toilet needs, and wellness unfolded across time and space. This method not only captured daily struggles but also reveals how spatial infrastructures either support or hinder quality of life. By blending time geography with feminist critiques, I was able to create a research framework that gave voice to youth navigating these intertwined constraints of time and space, yet still uphold my core feminist values, through both collection and analysis.

Analyzing Quantitative Data as a Qualitative Researcher

The structure of the space-time diaries permitted an abundance of avenues as to which I could compare different qualities and quantities. Participants recorded inputs – such as wellness rating or time of day – which could be measured against a range of variables like distance from home or type of toilet facility used. I choose to narrow in on what quantitative data speaks the

[6] Some participants opted to not complete the diary, as they felt it would not be productive with their lack of movement or were simply not willing to commit to the process. I terminated fieldwork with 11 of 14 participants completing their diaries, and one participant creating a list of toilets they frequent with notes on challenges they face, in its place.
[7] Participants were asked to contribute to their diaries promptly to the best of their abilities.

most volumes in contrast to my qualitative data, and of course, answers my research questions. For example, analyzing the quantitative distance travelled per journey provided data complimentary to the qualitative accounts of home reach and travel barriers discussed by participants.

Time geographic data is often represented through a range of visual components, from simple to complex charts, graphs, and diagrams (Hellgren, 2014; Orban et al., 2012; Sunnqvist et al., 2020). With the inputted data, I chose to start with relatively simple visual representations, ensuring that I could frame the quantitative information in a way that was meaningful and aligned with my research objectives. For example, participants – who experienced varying statuses of remission and flare-ups during their logged time – averaged 1.14 to 6.28 public toilet visits a day. This statistic provided a foundational understanding of the biological demands faced by participants over a seven-day period, offering insight into their reliance on public facilities. However, it is important to note that this figure does not reflect the number of *toilet needs* each participant experienced. In many cases, participants reported to need to use a toilet more frequently than they actually did, citing a lack of available or suitable amenities as a barrier. This led to many instances where youth had to cope with not having access to a toilet space when they needed one. Additionally, many individuals reported staying home entirely during flare-up days, further reducing the number of visits logged.

While the quantitative data offers valuable insights, I recognize that, without the rich context provided by the qualitative components, these figures alone would lack depth and meaning. As a feminist researcher, I approached this analysis with a commitment to honouring the lived experiences and voices of my participants, viewing them as essential to interpreting quantitative space-time data in a way that truly reflects the complexities of their daily lives.

Quantitative research can sometimes risk reducing individuals' experiences to mere statistics, which may inadvertently silence or overlook the nuances of everyday life. By pairing quantitative findings with qualitative accounts, I aim to respect and amplify the subjective realities of each participant: this approach allows the data to transcend mere numbers, maps, and statistics. Integrating the quantitative data with the rich qualitative feedback gathered through interviews helped illuminate the intricacies between bodily needs, spatial movement, and access to public toilet facilities.

Toilet Talk with Youth: Semi-Structured Interviews and the "Taboo"

The very concept of 'taboo,' and the reasons why natural bodily functions and needs are labelled as such, underscores the importance of bringing these narratives to the forefront of my research. In today's society, we are increasingly called to become alienated and detached from our own bodies and senses (Porteous, 1990; Longhurst, 1997), and it appears as though we are more comfortable denying our natural functions than embracing them. The reality, however, is that we can never truly be in control of our body and all its needs. We need to breathe, eat, and drink to survive, we must also urinate, defecate, flatulate, and burp, among many other natural functions that we have been taught are improper for public discussion, or perhaps that we should be embarrassed to perform them even though everyone must. I do not imagine that I can break down centuries of shame tied to our natural being; however, I can attempt to facilitate my methods in a way that challenges these taboos, while also feeling safe and comfortable for participants.

Following participants completion of space-time diaries, I conducted roughly hour-long semi-structured interviews between the months of August 2023 and January 2024. Semi-

structured interviews, which are one-on-one with participants and encourage a more conversational style, permitting the exploration of topics which emerge outside of pre-planned questions (Longhurst, 2010). These interviews promote substance beyond 'yes' and 'no' answers, and I found the freedom of flow to encourage a comfortable environment, and rich responses. When planning out this method, and before each interview, I took time to reflect on my own identity and how it might determine the nature of my interactions with others to uphold my commitment to reflexivity throughout the research process (Valentine, 2005; Moss, 2002). Researchers who are well-experienced in the method may opt to approach interviews with merely a set of themes, rather than set questions (Longhurst, 2010); however, as a master's student with limited practice, I opted to come equipped with 10 questions, thematically grouped in 3 sets around: 'condition,' 'constraints,' and 'coping' (Appendix B). I began with more basic and general questions and left more thought-provoking or potentially sensitive subject matter to the latter portion of the interview with the intention of having participants feel more comfortable as we settled into our conversation. The 'condition' section began by laying out some of the participants backstory, their diagnosis, their experience with their illness, and how it generally impacts their daily lives. The 'constraints' section narrowed in on the challenges that they face because of their health in combination with potential spatial and temporal barriers that complicate their experiences. Finally, the 'coping' section shed light on how youth navigate these challenges and demonstrate their agency within everyday geographies. Some of the questions were prompted by the diaries, to gain further context, and fill in the emotional and experiential gaps that cannot be obtained through the diaries alone. However, I often ended up asking questions out of order as different themes emerged within participant answers, or focusing on certain themes more than others, even disregarding some of the planned cues.

For the location of the interviews, I gave the option for either an in-person meeting or a video-call through Zoom. This flexibility was offered for various reasons, predominately health safety. Certain chronic gastrointestinal illnesses, and/or the medications that might be taken to treat them, can cause immunosuppression and make individuals more susceptible to catching a virus in addition to having a more difficult time fighting one off. With this health concern in mind, especially following the COVID-19 pandemic, I needed to ensure I prioritized safety first. However, even for individuals without these medical concerns tied to their conditions, many individuals might still opt to not leave their homes readily, nor feel comfortable out in public for certain lengths of time, whether in consideration of the pandemic, the unpredictability of their symptoms, or any number of personal reasons. The second reason for this in-person/online flexibility is the aspect of travel and distance, which due to the nature of gastrointestinal illnesses can be stressful and anxiety inducing.[8] The online interviews took place on Zoom, with some youth keeping their cameras off, whether for technical difficulties, privacy, or comfortability. Without video, some of these Zoom calls became phone-calls in a sense, without visual cues to interpret.

There can be both advantages and disadvantages to virtual interviews in contrast to face-to-face. As for the participants who opted to keep their cameras off, this could aid in eliminating the 'interviewer effect' power dynamic, since we couldn't see each other (Madge & O'Connor, 2002). Another benefit was through using the Zoom application, my interviews could be automatically transcribed, easing the transcription process to a matter of edits. On the other hand, there were less than ideal aspects of virtual interviews. It can be a bit awkward to start the online

[8] All but one participant opted for the online option. The in-person interview took place on York University's campus, where the participant was also a student.

interview, especially when getting settled into the technology and unmuting and turning cameras on. Although I only had one in-person interview, it felt more natural and casual to ease into and out of interview process. Researchers have explained how it can be difficult to build rapport in the absence of in-person cues, and that one must adapt to achieve this in the online process (O'Connor et al., 2008). I found that my best method was to casually introduce myself and my research, briefly sharing my experiences. The shared age group with my participants, and the knowledge that we had a commonality in our health experiences with gastrointestinal illness, helped to ease the pressure of the interaction. I found, and some participants offered, that the interviews could end up feeling like a conversation between friends. This result allowed for the interview to feel like a safe space even with the sometimes less-than-comfortable topics. I enjoyed the meaningful conversations I had with participants, who in many ways are my peers, and breaking through the discomfort of the 'taboo.' At times, having participants who outright voiced their hesitation to discuss personal matters appeared to breakdown the barrier just through naming it. Many of the youth expressed that they were not even sure why they felt embarrassed to voice certain experiences involving toilet use, and others were confident and outspoken, passionate about dismantling negative stereotypes on 'toilet talk.' Overall, I felt that semi-structured interviews, even facilitated digitally, encouraged candid and meaningful insights within a topic that is often shied away from. Despite the challenge of constructing a safe and comfortable environment to discuss personal and sensitive subject matter in a short length of time, I left each interview inspired and motivated by my participants' insights. The deeply vulnerable and emotional content which emerged from these semi-structured interviews was later complimented by an equally emotions-based and sensuous method of analysis.

Gastrointestinal Illnesses Stink: Spatializing the Senses

In the previous section, I discussed the ways in which societal taboos alienate us from our bodies; here, I aim to challenge this alienation by adopting a sensory-emotions-based method of analysis which centres on youth's embodied knowledge drawing on Porteous's (1990) work. Porteous (1990) argues that it is the non-visual senses which have a greater hold over our emotions, as they are closer to the body, and can even permeate the body. Building on Porteous's insights, I use the senses as a framework for my qualitative analysis, foregrounding the body and emotions through core sensory functions. By focusing on the sensory dimensions of space, I aim to uncover and emphasize the depth of spaces from an emotional standpoint: from our most detached sense of vision to the more interactive senses of smell, sound, and touch, these codes facilitate the idea of multi-sensory spaces that go beyond physical layouts and practical uses. Through these sensorial codes, I was later able to draw parallels to the feelings of shame, embarrassment, unease, disgust, stress, discomfort, fear, humour, and comfort, which they subsequently produced.

To code by sense and analyze semi-structured interviews, I utilized NVIVO 14 software. My codes included sight, smell, sound, touch, taste, in addition to physical pain, and psychological pain. In this research, I define physical pain as discomfort or distress originating from the body's physical condition, and psychological pain as discomfort or distress originating from emotional experiences. Psychological pain specifically is strongly influenced through the senses, as individuals' surroundings stimulate the 'mental landscape.' For youth with gastrointestinal illnesses, psychological and physical pain are intimately intertwined through symptoms and stressors and thus should be analyzed in relation to each other. In this study, youth expressed that psychological pain could contribute to the presence or perception of physical pain, meaning both forms of pain exist within a cycle that can be attributed to sensuous perception.

The sensuous perceptions of youth, and their relationships and contributions to physical and mental wellbeing within a given landscape can be further explored through what Porteous (1990) refers to as a variety of 'scapes' based upon the senses. 'Smellscapes' constitute the ways in which smells are spatially ordered or related to different environments. 'Smellscape' is non-continuous, fragmentary, and episodic throughout time, according to Porteous, and must be perceived as such. I code smell as a sense which adheres to Porteous's explanation, and the perceptions of smells which participants interpret, and the emotions that they evoke. For example, quotes where participants highlighted foul or pleasant smells observed in toilet spaces were coded as smellscape. Taste can be included in the 'smellscape,' however I code it as the separate entity it is. For an individual with chronic gastrointestinal illness, taste can signify safety or danger in terms of health and can evoke intense emotions. Within the 'touchscape' is perhaps the most common sense, as we are always experiencing a tactile sense of some sort, even if it is an absence. I code touch as a fundamental and immediate sense which we can rely upon for orientation. Hearing, on the other hand, is a directional sense of the 'soundscape' which can provide insights about environmental characteristics, we can use sound to assess mood and familiarity (Porteous, 1990). I code hearing as a multidimensional sense used to interpret surroundings, which we become immersed with throughout journeys and in different spaces. In the 'sightscape,' the 'out there' sense, vision is almost always a factor in perception, through reality or imagination (Porteous, 1990). I code sight as the projected sense through which we observe and 'see' the world of constant motion around us.

Longhurst et al. (2008) explain that while some might argue that feelings such as unease or disgust – which my analysis leads to – belong in the category of the everyday or banal, this does not translate to a lack of importance. Of course, coding by sense and connecting these

senses to emotions is unavoidably mediated through my own haptic experience as the researcher (Stroller, 1997). Researchers often reflexively mark their positionality through race, gender, age, and so on, but not so much body-space relations (Longhurst et al., 2008). In this research, I attempt to begin and end with my own body, making its presence and inherent objectivity known throughout. Coding by sense allows me to approach analysis through an embodied lens which prioritizes the lived experiences and emotionally acquired knowledge of the youth with gastrointestinal illnesses in this study. Through these embodied voices, this research maintains a commitment to youth agency, feminist research practice, and pushing back against the societal erasure of the human body and its natural functions. This sensory approach compliments both the quantitative analyses collected from the space-time diaries – such as mapping – and the detailed emotional accounts expressed during semi-structured interviews.

Defecation Locations: Mapping Toilet Geographies

Mapping can be viewed as a practical form of knowledge and representation (Perkins, 2010). This research seeks to understand how youth with gastrointestinal illnesses interact with the built environment to go about their everyday lives and their medical needs, and parts of this inquiry can be uncovered through mapping. In many ways, mapping is an art of navigating, describing, and analyzing spatial relationships (Perkins, 2010), and while my research does not engage with extensive mapping, it provides a visual tool to represent collected data, in addition to an analytical tool to uncover additional data sets, such as distance and time. Through the space-time diary sections on destinations and toilet locations, I was able to collect over 70 locations used by youth participants over the course of their seven-day loggings and cartographically represented this data using Google Map's My Maps software. The mapped data includes the approximate home locations of participants based upon postal code, nearest major

intersection, or neighbourhood (see Figure 3.1) and combines it with the locations of toilets used (or places used as toilets), the majority of which are inside private establishments, such as in restaurants, shopping malls, and workplaces (see Figure 3.2). Using these two data sets, I was also able to use Google Map's software to calculate the approximate distances that public toilet locations are from the homes of the youth who logged them, framing a relative image of individual's home-reach based upon the facilities they encountered over their space-time diary window. I was additionally able to use my mapped data to illustrate the average distance travelled per journey by each participant over the course of seven logged days of movement, including sedentary days, which showed participants travelling an average journey distance of 12.6 kilometres. Mapping, both as a practical form of knowledge representation and an art of navigating spatial relationships, even in the simpler formats which I employ it, play a significant role in uncovering and visualizing the intricacies of the interactions between youth with gastrointestinal illnesses and the built environment. The mapped data, including home locations, toilet facilities, and journey distances, serves as a foundational tool for understanding the home-reach and mobilities of youth throughout this thesis.

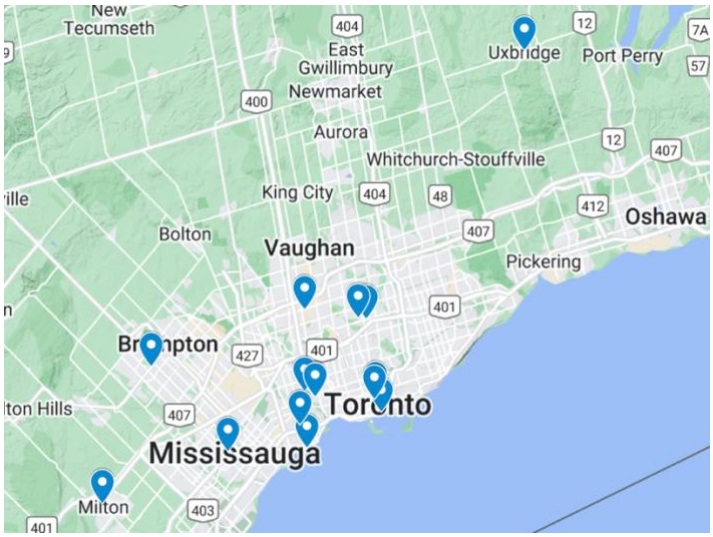

Figure 3.1: Map of approximate home neighbourhoods of participants. (Source: author with Google Maps)

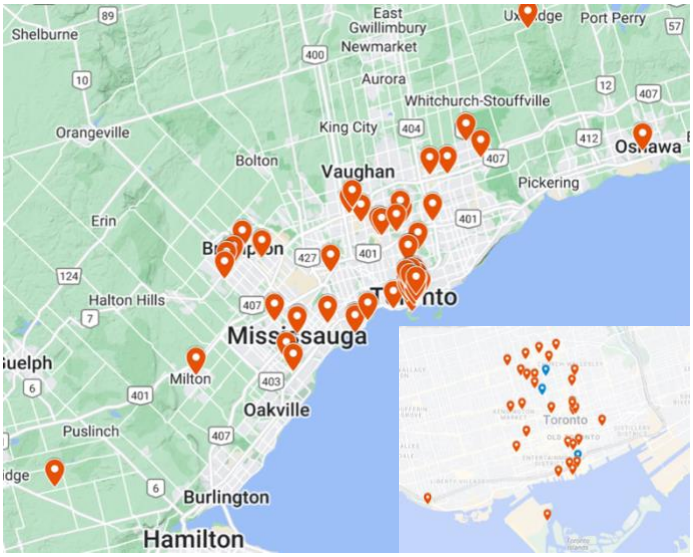

Figure 3.2: Map of toilet locations logged by participants (Source: author with Google Maps)

Young Faces of Gastrointestinal Illness: A Research Sample Portrait

This study engaged individuals aged 18-27, averaging 22, all self-identifying as having a chronic gastrointestinal illness. Out of the 14 participants, there were 4 representations of chronic gastrointestinal illnesses: 10 with irritable bowel syndrome, 2 with Ulcerative Colitis, 1 with Crohn's, and 1 with Gastritis. This sample is a small-scaled relative reflection of the prevalence of these illnesses within the population.

Among the 14 youth participants interviewed, the majority were full-time students. This was followed by full-time work, then a combination of full-time student and part-time work. Some participants combined being a part-time student with part-time work, and full-time work

with being a part-time student (Figure 3.3). Participants represented a relatively balanced range of urban and suburban locations throughout the Greater Toronto Area. Nine participants reside within the City of Toronto. The five remaining participants reside in North York and the peripheral municipalities of Brampton, Mississauga, Milton, and Uxbridge.

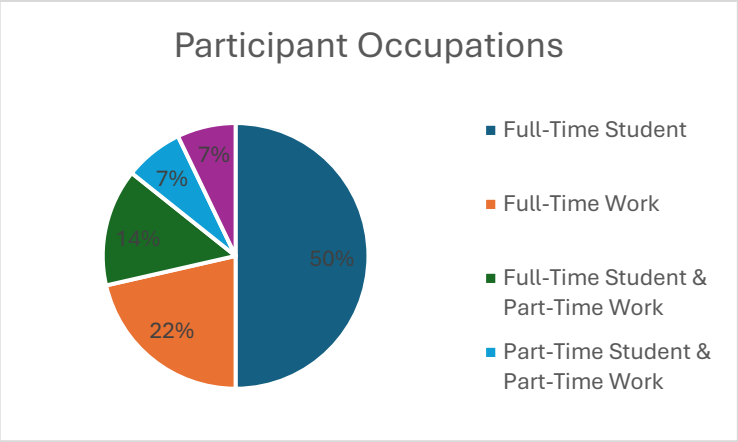

Figure 3.3: Participant Occupations (Source: Author with Excel)

In sum, this research sample represents a diverse set of experiences and demographics of 14 youth aged 18-27 living with 4 different gastrointestinal illnesses. The range of occupations demonstrates the varied daily routines of individuals based upon work and school routines, representing differential uses of time and space. With a case study on the Greater Toronto Area, the sample represents a variety of regions from urban to suburban settings, allowing for a range of perspectives that encompass the challenges which are unique to denser or more sparse built environments.

Conclusion

In my methodological journey I have navigated the complex and sensitive terrain of chronic gastrointestinal illnesses among youth, with a feminist lens marked by flexibility,

openness, and the leveraging of my own personal experiences as the researcher. This approach allowed me to draw from my lived experiences to foster deeper connections with participants and the research process in its entirety. By combining space-time diaries and semi-structured interviews, and further enriching these methods through my own autoethnographic experiences and observation of toilet spaces I frequent and those identified by participants, I was able to create a more comprehensive portrait of youth needs and agency.

The critical engagement with masculinist narratives in time geography, particularly regarding the body, facilitated an understanding of the constraints endured by youth with chronic gastrointestinal illnesses through the balancing act of space, time, and wellness. This methodological approach does more than reveal barriers; it actively challenges dominant societal norms by advocating for the recognition of embodied knowledge, emotional landscapes of lived experience, and the sensuous dimensions of space. Ultimately, this research foregrounds the multi-faceted experiences of youth by intertwining quantitative and qualitative data – including mapping, space-time diaries, and in-depth interviews – all interpreted through a feminist framework. This layered methodology not only captures diverse aspects of participants lives but also serves as a call to prioritize embodied experiences in both quantitative and qualitative research, contributing to the broader discourse on health and space in geography.

Chapter 4: The Journey: Renegotiating Space and Time as Chronically Ill Youth

Daily life as a youth with chronic gastrointestinal illness means undergoing a continual renegotiation of time and space which can be said to begin at the start of each day but is a truly never-ending cycle that extends from one day into the next and back again. Severe gastrointestinal symptoms can make public toilets central infrastructures throughout space-time journeys that extend outwards from and return to the privacy of homes. Such journeys compose individual mobility patterns within daily lifeworlds which emerge from natural and structural rhythms and draw from wayfinding techniques that define and extend home reach, all of which are the topical focus of this chapter. The structure of this chapter is informed by the temporality of a day. It begins even before the alarm clock goes off with the planning for the day ahead. Next on the schedule is the commute, which often transcends suburban and urban landscapes, and is a stage for the ways in which transportation infrastructure can make or break youth's journeys. These commutes to a range of different destinations define the home reach of youth and involve travel barriers that condition access to work and academic lifeworlds. The commute will lead us into the work and school days of youth, including how these standardized, linear structures interplay with the unpredictable body rhythms imposed by gastrointestinal illnesses. From daily lifeworlds of work and school, we then delve further into the spatio-temporal barriers of everyday life, including youth's home reach and the dynamics of familiarity of place. These spatial dynamics take us directly into wayfinding, as it is public toilet wayfinding around-the-clock that enables mental and physical wellness and participation in everyday lifeworlds. Throughout the day, wayfinding can be enabled by the network city and hindered by

privatization, which will be discussed subsequently. Another barrier to access comes from the cyclical nature of day, night, and the seasons, a section here on temporality will discuss the unique challenges imposed by nature and the built environment. Extending into individuals' downtime, this chapter then explores the social lifeworlds of youth, and the ways in which their chronic gastrointestinal illness plays a role in the planning of social activities. As the day ends, it is only fitting to talk about cycles, in these cases, the cycle of mental and physical pain that will become evident throughout the day as youth battle the psychological and physical stressors imposed (on and) by their bodies and their environments.

Good Morning / Bad Stomach Pains: Renegotiating Time and Space

Among study participants, there was a near unanimous consensus that, for whatever reason, the morning is a particularly trying time which sees a flare up of gastrointestinal symptoms. A typical day starts in the morning, and starting a day with pain and uncertainty can be unsettling and disrupt daily plans. Lefebvre's (2004) exploration of rhythms unveils a complex interplay between linear and cyclical patterns. The cyclical encompasses that which originates in nature, such as day and night, winter and summer, or our pulse, respiration, and digestion. The linear presents itself in human activity and social practice, through the monotony of actions which exist in imposed structures. The everyday then comprises of hourly demands and repetitive organization, such as transportation systems. In my research, youth with gastrointestinal illnesses expressed an ongoing battle between their unpredictable body rhythms and the imposed rhythmic demands of their days. Take Yara (12/08/23), a 25-year-old living in Downtown Toronto with Irritable Bowel Syndrome (IBS), for example:

> It's like my stomach is turning and turning for the first three hours of the morning… do you wake up early, get adjusted to the day? If you have to use the bathroom, use the bathroom. But it's like, after you have that experience, then I don't want to do anything…Maybe a lot of stress or that anxiety in the morning… has a little bit of something to do with that.

In this quotation, Yara explains the correlation between stress and anxiety combined with her IBS symptoms at the start of her days, and the internal battle of deciding how to cope with these challenges. She also notes in her space-time diary that on days she anticipates urgent toilet visits, she avoids leaving home altogether, and if she cannot, she will forgo eating to not provoke her symptoms, and feel like a "normally functioning person." In our interview, Yara further expanded on the cognitive burden imposed by the need to pre-plan activities for the day – including mealtimes and food choices – to mitigate potential stomach pain and toilet needs. She even goes to say that she sometimes forgets how debilitating her IBS can be on these bad days. Yara's experience affirms crip time scholarship in disability studies on the ways in which bodily ailments can disrupt linear notions of progress and time, necessitating spatial-temporal and socio-political identity balancing acts that extend beyond the seemingly simple bounding of medical conditions within daily life (Kafer 2013). Likewise, Brian (11/01/23), a 22-year-old from Uxbridge with IBS, explains, his morning routine of illness management begins early with numerous trips to the bathroom to ensure his bowels are completely empty and to reduce reliance on public toilets in the event of a "flare up", an "anxious tummy," or "feeling uncomfortable". Similar to Brian, Felix (10/05/23), a 24-year-old living in downtown Toronto with IBS, discloses that he visits the toilet approximately 18 times a day "which limits my mobility" and frequently results in the choice to work from home despite conjoiners from colleagues "to come in the

office more" because "it's nice to have my own bathroom." Felix's account additionally points to the social pressures of physically attending his workplace, in opposition to the comfort and familiarity of his home toilet.

The accounts of Yara, Brian, and Felix illustrate that the morning is a critical point of departure in their daily lives, as their symptoms can determine their mood or even the entire direction of their day. Furthermore, they indicate the conflict which emerges between their natural and unpredictable bodily rhythms and their daily routines. Such conflict lends itself to Lefebvre's (2004) contention that the everyday rhythm, shaped by both cyclical and linear repetitions, constantly intersects in 'antagonistic unity,' necessitating compromises or disturbances. He states that this intersection highlights the intricate relationship between rational laws and what he states as the inherent irrationality within human existence. Lefebvre (2004) argues that when our constructed, rational rhythms overlay natural bodily rhythms, this can alter them and lead to illness and disorder. In this research it is evident that youth with gastrointestinal illnesses struggle from the moment they wake up with the balancing act of their unpredictable bodily demands and the need to conform to the linear rhythms of their day, where they must plan, alter, or attempt to master their bodies to get through the days demands of commuting, work, school, and socializing. It is further evident that this struggle causes psychological stress on individuals, which can in turn cause elevated symptoms.

The collective narratives of participants' morning routines and struggles underscore the multifaceted challenges faced by youth with chronic gastrointestinal conditions, emphasizing the continual negotiation of temporal and spatial constraints in their daily lives and rhythms. At the same time, through each account we can also witness the ways in which all three youth were able to renegotiate their days spatially and temporally. For Yara, it was pre-planning meal choices and

times, for Brian, waking up earlier, and for Felix, choosing to work from home. The youth in the above examples demonstrate that yes, they are constrained by their illnesses, but they are also active agents who constantly renegotiate time and space to fit their needs. Just as these youth renegotiate their daily rhythms, so too is there scope for our transportation, employment, and education systems and structures to adapt to better support them and others facing similar challenges.

Got to Go (to the Toilet): Commuting Through Suburban and Urban Landscapes

Living with chronic gastrointestinal illness can mean frequent and unpredictable needs to use the toilet. These urges do not always occur at convenient times and places, where toilets are readily accessible. Perhaps the most inconvenient of times reported by participants is during transportation in its various modes, whether it be out on foot or aboard a public vehicle. Scholten et al. (2012) argue that mobility through varying forms of transportation have increasingly – and over greater distances – become standard everyday practices; and therefore, it is critical to study the struggles that come along with this reality from the standpoints of different bodies and perspectives. For youth with chronic gastrointestinal illnesses, the practice of commuting to work or school can become heavily intertwined with toilet access. While walking, particularly in suburban settings, public toilet infrastructure is sparse. Public transportation vehicles on the other hand, whether suburban or urban based, seldom come equipped with toilets. Greed (2003) argues that for people to use public transportation, walk, and cycle, public toilet provisioning is necessary. Thus, people should not be expected to travel without security and comfort for their health and their bodies.

For Jason (09/11/23), a 24-year-old from Mississauga with IBS, the bus component of his commute is one of his greatest stressors. His key concern is that there are few toilets on this journey. He laments, “I wish the bus had a washroom, but I don't think it’s hygienic to have one.” In the neighboring inner-suburb of Etobicoke, Gerald (01/03/23), a 27-year-old with IBS, discusses how it is the subway that he finds most challenging on his commute to work at varying construction sites. He compares the independence and flexibility of car travel to the contained, linear constraint of a subway car and train. As he remarks, *“*at least if I’m in a car…I can ask somebody to pull over to the nearest area, and they’ll be on the same page with me. We’ll find a bathroom. But on the subway, it’s harder.” In Lefebvre’s (2004) theorization, time as experienced through the body takes various forms such as physical, biological, mental, cosmic, social, cyclical, and linear. Linear repetitions, such as transportation systems, represent the dominant temporality of modernity, and at the intersection of these temporalities lies everyday life and the body which does not yield to the analytical separation of the cyclical and linear (Simonsen, 2005). Furthermore, rhythms are connected to needs with the body facing distinctions and conjunctions between rhythms of the self and of the other, such as the private and the public, illustrating the complex relationship of the body with space and time (Simonsen, 2005).

In my research, it becomes clear that the unpredictability of illness symptoms throughout time, places further strain on the body as it attempts to be complacent with the imposed linear structures and rational rhythms of transportation. As participants take part in movement, in their daily commutes, their bodies natural rhythms intersect and often demand an altered geography. For instance, a bussed commute from home to work, may become a fragmented journey from home to toilet (perhaps in a café or a terminal), aboard another bus, to work. In their space-time

diaries, participants recorded needing to use the toilet up to 6 times in a single journey. While some youth told me they attempt to endure the pain and discomfort of their symptoms, others demonstrated how the urgency of toilet access needs on such journeys lead to various forms of trip chaining, a practice of combining multiple trips in one – often to save time or money, but in this case, a somewhat involuntary or inconveniencing pitstop. In Felix's space-time diary, for example, he logged a journey from the Eaton Centre shopping mall to his home near the city's harbourfront, where he made a pitstop to his work office where he knew he could access a comfortable toilet space. Trip chaining for toilet use can sometimes lead to unanticipated expenses that can add up over time when youth stop at places that offer 'customer's only' facilities, which will be explored later in the chapter.

Jason's concern about the lack of toilets along his bus route, and Gerald's preference for personal automobile as opposed to public transportation, additionally highlight the broader issue of inadequate infrastructure within and along GTA commutes, where public toilet facilities are often scarce. These scarcities vary amongst urban and suburban landscapes, which the majority of study participants travel between on a daily or weekly basis. Residential landscapes predominate in the suburbs stretched across vast distances with limited active transport networks and fragmented public transit routes, fostering car dependency for those who can afford the costs of ownership and accompanying fuel, insurance, and repair expenses. The suburbs, however, do not exist in isolation; they are connected through multiple employment, education, and infrastructural dependencies to inner-suburbs and central cities. They are also becoming significantly more multi-functional and complex in their own right (Keil, 2020). Despite this growing land use complexity, research participants are aware of the disparities in toilet infrastructure between city centers and their peripheries. Maya (09/24/23), an 18-year-old from

Brampton now living in downtown Toronto with IBS, observes: “I guess [there are] more toilets in Toronto [compared to Brampton], closer together and walking distance.” She also notes that more restaurants in Toronto “make you buy something, like you have to be a customer to use their toilet.”

Youth use a range of different strategies to cope with the challenges of commuting in the GTA. From Gerald’s example, we see that the flexibility of car-use is preferable to his needs, and he opts for this method of transportation when available to him. Another coping example comes from Emma (09/27/23), a 25-year-old from Milton with Ulcerative Colitis, who prepares for the possibility that she may get stuck on public transportation without access to a toilet, “where I just couldn’t hold it,” by wearing diapers and incontinence pads for women. Other commuters, like Felix, choose transportation methods that offer greater personal control. He explains, “I prefer biking, to be honest with you. I find if the TTC all of a sudden stops, last thing I want to do is have to really go to the bathroom and I’m on the train and it’s not moving.” Felix finds Toronto’s city bikes (Figure 4.1a) to offer the greatest freedom of movement, suiting his need to swiftly move in and out of his main journey to stop at nearby toilets.

Figure 4.1a.: City Bikes Outside of Toronto's Union Station (Source: Author, 12/9/23). Figure 4.1b: 'Washroom for Customers Only' sign on toilet door at café in Kensington Market (Source: Author, 07/5/24)

These coping examples represent the options available to participants and their unique journeys, including how they may differ for someone travelling longer distances as opposed to those traveling only within the urban core. The strategies of youth like Gerald, Emma, and Felix reaffirm the findings of Moss and Dyck (1995) from a youth perspective, who saw that chronically ill women made home arrangements and coping plans which they continually assessed through their experiences and bodies based on their health conditions. For some women, this looked like rerouting their journeys to avoid hilly terrain or finding accessible grocery stores (Moss and Dyck, 1995). For the youth in my study, this type of coping looks like finding places with accessible toilets, changing transportation methods, and preparing for potential accidents, as seen in Emma's example. Collectively, these narratives underscore the pervasive and multifaceted challenges faced by youth with chronic gastrointestinal conditions, emphasizing the continual renegotiation of temporal and spatial constraints in their daily lives as they play out in varying landscapes which each present unique challenges to toilet access and mobility. These challenges and renegotiations extend from the commute into the work and schooldays themselves, where youth contend with stress, discomfort, and the difficulty of conforming to productivity and expectations imposed by themselves and others.

Work and School: Navigating Unpredictable Symptoms in Linear Structures

Youth-hood is often a transitional period of life, where some are pursuing higher education, others starting out in full-time careers, working multiple part-time jobs, or a mix of the above.

78% of study participants were either full or part-time college and university students, 22% full-time workers, and 28% balancing both work and school. Adding chronic illness to this mix can prove a further challenge in a liminal stage of life full of change, anxiety, and stress. All participants reported anxiety or stress in some form or another, a significant portion of which being experiences of pain, discomfort, and anxiety in relation to work and school settings. Moss and Dyck (1995) look at space-time routines implicated in the ongoing production and reproduction of social life from a feminist lens in health geography. Through a collection of their previous work, Moss and Dyck investigate the underrepresentation of disabled women in the workplace and explore the ways in which participants described how they shaped paid work and their home environments in response to physical, social, and structural restrictions. My research reaffirms these findings through the added lens of youth with chronic illness, as they renegotiate their academic, work, and social lives; for instance, by opting to work remotely or reducing course loads to balance school and health.

Most participants reported being diagnosed within the past five years: any health complication can be a dramatic temporal break in an individual's life, and a chronic illness diagnosis presents itself as a lifelong battle. In many regards, there becomes a before and an after to someone's life history and lived experiences, with the diagnosis as a sort of marker of a permanent shift in lifestyle and perspective. Take Reyna (01/05/23), a 21-year-old from North York with IBS, after her recent diagnosis, she discusses a shift in her academic life, noting the discomfort of pain and the subsequent trapped feeling within classrooms:

> …and then having gone through that pain of just sitting in there and then you feel like you can't leave, it just makes me really uncomfortable. So, school has changed a lot. And before, I had no issue going to class, and I really enjoyed lectures.

Following her diagnosis, Reyna's goals shift from regularly attending lectures and socializing, to where it is enough to "be on campus" or "just sit in the library." Her narrative illustrates the profound impact of her condition on her ability to participate in school activities, leading to a loss of confidence and changes in academic goals. Crooks and Chouinard (2006) demonstrated through their findings how chronically ill women experience profound spatial changes in their lives and the idea of their selves as spatial beings. Reyna's experience of altering her everyday lived reality and goals reaffirms their finding from a youth perspective that chronic illness drives individuals to rework their lifeworld's to accommodate for their health needs. Crooks and Chouinard additionally delve into the emotional impacts experienced by chronically ill women by way of being negatively 'differenced' in different spaces of life. For Skye (10/19/23), this exists through her altered academic experience causing her to get set back a year on university credits despite her general enjoyment of the school experience. Here, she delves into just how significantly her symptoms impacted her school career:

> …it was 15 bowel movements a day. It was hell. And every time I went, it was so painful, it was unbearable. I couldn't move. I was constantly fatigued.

Skye goes on to explain that the severity of her symptoms forced her to stop attending school and miss exams, which was an upsetting disruption in her perceived life plan. Skye's experience further emphasizes the disruptive nature of gastrointestinal symptoms on academic pursuits, including the need to drop courses and defer exams due to frequent toilet trips and pain, making it difficult to attend in-person classes, and ultimately experiencing isolation from peers. Skye's detailed account of the fatigue and pain she experienced illustrates just how severe gastrointestinal symptoms are and demonstrates the ways in which they can significantly impact

academic life. For youth like Reyna and Skye, illness poses a significant additional barrier to getting an education that manifests both physically and emotionally.

These challenges are also reported by participants in their work lives. McQuoid et al. (2015) note the inherent unpredictability of body rhythms for those with chronic illnesses. They state that this unpredictability is often combined with an average of two hours a day dedicated to illness management. This combination then puts a strain on and reduces temporal resources, making it a challenge for chronically ill individuals to obtain and maintain paid work. Greed (2003) states that the historical roots of gendered public toilet provision where early initiatives prioritized men's facilities have been reflected in societal norms in the industrial landscape. She argues that the systemic bias against women was a deliberate act to constrain their access to public space, and the present lack of adequate provisioning confines individuals who require more frequent toilet access to domestic spheres (Greed, 2010). In recent years, there has been more progress in the work-from-home movement; however, this is still isolating in that individuals are not experiencing the benefits of a physical workplace around their co-workers. Struggling with work/life balance, Yara comments on the temporal challenges of the typical workday as her symptoms are worse in the morning:

> …most workplaces are 8:30 to 4:30 or 9:00 to 5:00… I think they've tried to bring people to the office, and I'm like, 'No, I work from home. No, thank you'. If they tried, I'm like, 'I have a disability,' and I have other needs too that would need to be accommodated…but it would really frustrate me, though, if I know that I'm going to need to use the washroom and I have a meeting that I need to attend.

Yara's reflection on the inflexibility of traditional work schedules and the need for accommodations due to her condition emphasizes the importance of workplace support for individuals with gastrointestinal illnesses, in addition to the general stress and discomfort she experiences when her unpredictable body rhythms do not align with her work schedule. Furthermore, Moss and Dyck (1995) discuss how the inherent invisibility of some illnesses, like chronic gastrointestinal illnesses, can impact accommodations and acceptance in the workplace. They argue that the adjustments and negotiations made by the women in their studies with 'deviant' bodies must be placed within a wider political and social context as to stray from an individual focus on health and wellness in the workplace. Yara can advocate for her health needs and work from home, but she points to the frustration that can come along with a workday schedule, such as the timing of meetings coinciding with her toilet needs. For those that do work in-person, the narratives of discomfort and the need to advocate for one's health needs persists. One example comes from John, who needs to seek permission from his manager "whenever I have to rush to the washroom," highlighting the intrusive nature of these accommodations and the impact on his comfort and daily routine. John expresses feelings of discomfort over how his workplace requires him to seek permission before using the toilet, which he states in turn impacts his daily life.

The similar experiences shared by Reyna, Skye, Yara, and John illustrate the barriers faced by youth with gastrointestinal illnesses in their work and school lives. Together, these narratives highlight the pervasive and multifaceted barriers which underscore the discomfort and anxiety experiences in these environments because of the unpredictable body rhythms connected to symptoms. These findings additionally align with Kafer's (2013) crip theory argument that disability challenges normative narratives of productivity. Kafer states that these differences

prompt individuals to renegotiate temporal norms to create new possibilities and approaches to time and time use, such as how Reyna sets a new goal for campus life, or how Yara advocates for herself to work from home. From participants, we see difficult choices being made, such as choosing between the uncomfortable but social environment of a physical work or school place, or the comfort but isolation of home. These instances demonstrate how there is little room for unpredictability in our school and workday structures, raising questions of how more flexibility and adaptability can be built into our human-made and linear systems.

Not too Far from Home: Spatio-Temporal Barriers to Everyday Life

Balancing work and school lives can additionally come with the need to budget time for illness management through and across space and time. Given the already constraining combination of youth-hood, chronic illness, and inadequate public transportation infrastructure, it can be hypothesized that individuals will take fewer and shorter journeys overall. Hägerstrand (1985) theorized that geography is truly all about the struggle for access to space between existences and events. Ellegård (1999) built upon this theorization by outlining the constraint of coupling (of space and time), faced from within and outside the body as everyday essential activities, such as biological ones, are required to survive. In my research, biological constraints described by Ellegård as basic physiological activities typically performed without deeper reflection become essential to illness management and constrain or challenge individuals' capacity to comfortably expand their home reaches to far and unfamiliar places.

Based on space-time diary data, the average distance of public toilets visited were 12.6 kilometers from participants homes, with 1-3 toilets being repeat visits. On average, youth

journeys take place within 13 kilometers of their homes, 6.5 kilometers for those dwelling within the urban core and 14.5 kilometers for suburban dwellers.

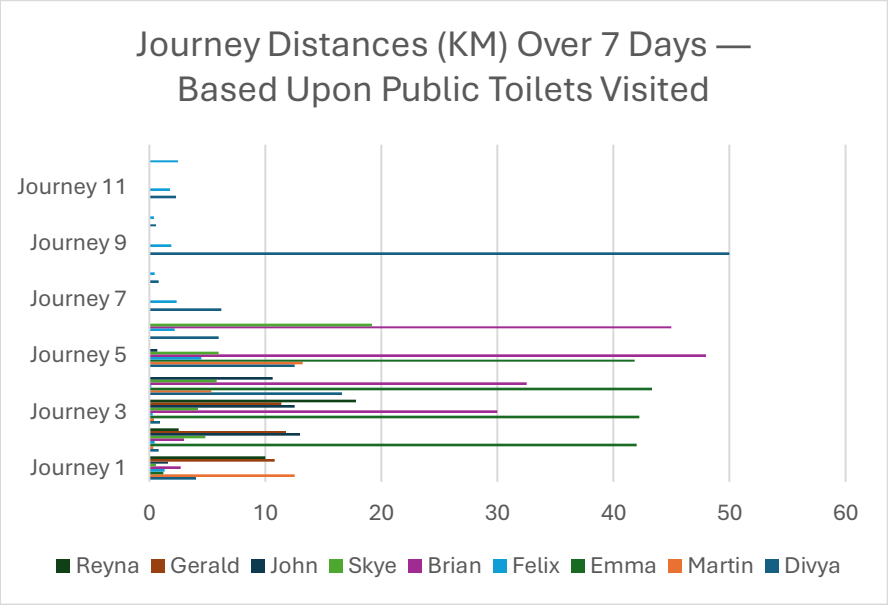

Figure 4.2: Chart Illustrating Distance in KM per Journey Based on Public Toilet Destinations (Source: author with Excel)

Both distance and familiarity of place are significant factors for many youths in the study in deciding where they may or may not journey to. For Jason, both elements cross his mind when considering travel due to his unpredictable symptoms, and as a result, he is confined “in my own circle.” Jason’s account of his thought process and lived realities regarding long-distance journeys illuminates the ways in which the unpredictability of his symptoms combined with an unfamiliar environment hinder his social life and restrict his home reach. Lynch (1990) states that you cannot evaluate or plan for a place until it is understood how residents see and use it. Through his ‘walk around the block’ study, where participants took an observational stroll, he found that individuals feel strongly about their visual worlds, having emotional associations to

spatial characteristics as they seek a sense of order and continuity in their environments. Notably, he stated that this sense of order can be achieved through familiarity, despite the chaos of the built environment. Also reaffirming the findings of Lynch, John, a 23-year-old from North York with IBS, delves deeper into the significance of familiarity of place when considering toilet access, telling me that going out in rural places brings him difficulties in terms of locating toilet facilities, and so he must have a plan ahead of time. John's experience in rural areas further emphasizes the challenges of navigating unfamiliar environments with limited access to toilet facilities, in addition to the disparities between urban and suburban landscapes, ultimately shaping his mobility decisions.

Crooks and Chouinard (2006) uncover struggles for enabling places in spaces of daily life, finding that participants experienced profound spatial changes in their lives, with the need to rework their lifeworld's to accommodate for their health needs. With the intertwined complexities of youthhood, chronic illness, and inadequate public toilet infrastructure, the journey becomes more than just a physical movement, but a strategic negotiation of space and time that can induce stress, anxiety, and alter the lived geographies of individuals. Through the narratives of Jason and John, we witness the impact of both distance and familiarity on their mobility decisions. For Jason, the fear of unpredictable health symptoms can confine him to short distances, while John's experience underscores the challenges of navigating unfamiliar territories, particularly rural areas, with limited access to essential facilities. Looking at these narratives through Crooks and Chouinard's (2006) findings shed light on the altered geographies experienced from chronic illnesses with the addition of a youth lens and a contrasting between urban and suburban landscapes. Ultimately, addressing the spatio-temporal barriers to everyday life demands, including social and recreational travel, requires an approach which not only

acknowledges the intersectionality of individual experiences but also strives to cultivate enabling spaces that foster autonomy and equitable access, in this case, through adequate public toilet infrastructure.

Where to Next? Wayfinding in the Network City

Public spaces are rapidly evolving, becoming more complex webs characterized by constant mobility and connectivity. The network city, as described by Moiseeva et al. (2018) may be more complex, but it also allows for more options when it comes to navigation and wayfinding. Each youth I interviewed had their own unique methods for wayfinding, some more intuitive and others more technological. On the intuitive end, many youths reported that they feel a sense of heightened awareness in public space as a result of their medical need to quickly locate a toilet at any given place or time. Take Emma, for example, who whether in a mall or at her university, is hyper-aware of where to find the nearest toilet, telling me that "most people, they ask directions for the bathroom, but I already know where they are." Emma relies on her on-the-spot wayfinding skills by enacting logic and spatial awareness to locate the nearest toilets, suggesting that her life experience with Inflammatory Bowel Disease has necessitated her to have a heightened sense of her environment. Similarly, Martin (09/12/23), an 18-year-old living in New Toronto with IBS, discusses their method of locating the toilets upon entry to a new space, with the additional access needs of a gender-neutral and private space:

> I kind of do, like, a little scout out when I get there to see where [the toilet] is and get an idea of how private it is…I'm also transgender, so I try and look for the gender-neutral washrooms, but only, I guess, partially because of the IBS.

Figure 4.3: Accessible, Family, and Gender-Neutral Toilet with Signage at Scarborough Toronto Public Library (Source: Author, 11/14/23)

Martins' narrative raises the important issue of the uptake in conflating gender-neutral and disabled toilet spaces into one designation, as being transgender is not a disability. In both the cases of Emma and Martin, signage is a primary factor which aids or constrains intuitive, on-the-spot wayfinding within spaces. Slater and Jones (2021) argue that toilet signage impacts the experiences of marginalized groups such as queer, trans, and disabled individuals. They contend that these signs not only seek to dictate access but also influence broader public space interactions. Signage matters in more ways than one, it should be inclusive, visible, and clear. Take, for example, one of the many makeshift 'washroom' signs I spotted on campus at York University, which is both difficult to read and non-indicative of the facilities accessibility (Figure 4.4).

Figure 4.4: Difficult to See White Printer Paper Reading ‘Washroom’ with an Arrow in York University’s Ross Building. (Source: Author, 09/27/23)

Lynch (1990) discusses concepts such as environmental perception and adaptability, arguing for the importance of navigable cities to both residents and visitors, such as through clear visual cues and recognizable landmarks, or legibility and imageability. For individuals living with chronic gastrointestinal illnesses, these clear visual cues can make all the difference in pain, stress, and anxiety levels by allowing for swift locating of the nearest toilet to relieve oneself or tend to health maintenance. Another example of poor or incorrect signage comes from Skye, a 20-year-old with Ulcerative Colitis, who came across a supposedly ‘out if service’ gas station toilet:

> I was driving along Bayview... there are maybe a few gas stations, but even one of the gas stations I stopped, there was a sign that said, ‘out of service.’ I asked the person, they’re like, ‘oh, yeah, go ahead.’

Skye’s account emphasizes the importance of accurate and up-to-date signage, but also the ways in which private spaces may try to deter the public from using their facilities. Greed (2003) discusses how toilet signage is essential for accessibility, safety, and inclusivity. Effective

signage ensures that toilets are easily locatable and usable by all, including people with disabilities. Greed argues that public toilets, including their signage, should be integrated into broader urban planning policies to enhance civic pride and urban quality. In a moment of need, Skye inquired about the toilet and was allowed to use it in the end, but not everyone would have thought to ask. Other participants expressed more technological approaches to wayfinding, which typically involves pre-planning, such as Maya who utilizes the internet and a mobile application on her phone called 'Flush.' The Flush app functions as a toilet map which also includes information such as the accessibility of toilets, and if they require a passcode or are customers only. Multiple participants reported using this app and similar ones such as the GoHere Washroom Locater App by Crohn's and Colitis Canada. Gerald also uses technology, but in a different way:

> I always look up the directions of the place anyway. So, I see street view, right? So, I'll take a look at a place, I'll be like, all right it doesn't look run down or whatever. So plumbing is probably there. You know what I mean? Yeah, I have to do a little detective work.

Gerald's account illuminates the more technologically creative ways in which youth can utilize technology to pre-plan journeys and assess their comfortability in different environments. The examples from Maya and Gerald highlight how the role of technology can shape space-time behaviours as argued by Moiseeva et al. (2018). While youth like Martin and Emma rely on lived experience-built intuition, others demonstrate how cell-phone applications can influence how spaces are both perceived and navigated, with the abilities to pre-plan journeys, and occupy physical and virtual spaces simultaneously, such as with the Flush app and GIS. Furthermore, study participants reported researching restaurant menu options before journeying out in the city to avoid triggering their symptoms with their trigger foods. In these ways, technology in the

network city aids chronically ill youth in wayfinding for public toilet access by redefining relationships with the built environment. It is thus evident that inadequate public toilet infrastructure, which is not easily located or accessed, has forced youth with gastrointestinal illnesses to adopt resourceful methods to exist in public spaces. The evolving complexity of public spaces, characterized by network cities, requires a redefinition of approaches to wayfinding and accessibility. The issue of accessibility is further complicated through the neoliberal city which hosts private toilets for *some* of the public to use.

The Privatization Problem before, during, and after COVID-19: From POPS to 'Customers Only'

It has become normalized for private spaces with toilets to uphold a customer's only policy. This expectation combined with the reliance on private facilities for public needs denies basic human needs. For marginalized youth such as those in this study – whom Evans (2008) argues can be further limited in experiences and opportunities by structural factors compared to older adults – the financial element of privatized facilities can be more prominent. Most study participants balanced part-time jobs with school or focused solely on academics. This financial burden does not go unnoticed, take for example Felix's note jotted down in his space-time diary:

> 'Having IBS is expensive – the need to make purchases at coffee shops/restaurants/etc. to be able to use the washroom without embarrassment adds up. Hate having to ask person at the front to unlock a door/ ask for the door passcode.'

A short and concise note that is replete with complexity, Felix's account emphasizes the financial burden of relying on private facilities, but also the general discomfort and potential embarrassment that can accompany these experiences. Gershenon (2009) argues that the

increasing neoliberalization of public spaces has privatized bodily functions themselves. In both the GTA suburbs and urban centers, most publicly accessible toilets are privately owned. Neoliberalization has essentially put a price on the basic human need to relieve oneself which is especially concerning for youth with chronic gastrointestinal illnesses on both the account of financial strain as young people, and the medical need for reliable and accessible toilets. Based on the toilet uses reported over a period of 7 days, 85.7% of the public toilet visits by participants in this study occurred in privately owned facilities. The most popular destinations being cafés, restaurants, grocery stores, schools, and shopping centers. The most common public toilet destinations were transportation terminals.

The COVID-19 pandemic closures highlighted the impacts of relying on private establishments for public needs, as there were simply no open places to go for bodily needs. Jason was one participant who recounted a resulting negative experience that was compounded by COVID-19 closures and stricter access regulations imposed by commercial establishments to control the spread of the virus in the face of significant public uncertainty, telling me how he would go into restaurants and be denied toilet access, and even argue with staff when he felt he could not control his bowel urgency. Jason went on to discuss how frustrated and angry he would feel in circumstances where he was denied toilet access in these private facilities, stating that he perceived it as a lack of empathy. While employees may just be following protocol from their management, it is difficult to come across a consistent or regulated experience in privately owned public spaces (POPS). These spaces encompass social and recreational spaces that are accessible to the public, but privately owned, which can lead to conflicts between public access and private interests (Woods, 2018). Wood's (2018) uses a GTA context to emphasize the challenges that POPS produce with accessibility and design, which usually leads to the exclusion

of marginalized individuals and communities. Regarding the public toilets that exist within these POPS, it can mean difficult regulation, where businesses are able to pick and choose who can access their facilities at their own discretion, apart from a few provisioning laws. For example, Little (2020) emphasizes the concept of experiential accessibility to argue that youth experience unique barriers in the public realm due to negative societal perceptions associated with them, and owners and staff of POPS may target or exclude youth specifically due to these perceptions. Take Martin's experience accessing 'customer only' toilets, which highlights the inherent selectivity within POPS:

> I find that a lot of places will let me use their washrooms, even if it's customer only. I don't usually mention IBS, but I have mobility aids. I'm very clearly disabled, and I find that people let me get away with a lot of stuff if I'm visibly disabled, but I've seen my friends who have similar stomach problems get denied at the same places.

Martin expresses that they believe they are permitted to use private facilities as a non-customer because of their visible disability, even where their friends are denied for similar needs. Gastrointestinal illnesses are invisible illnesses, which can result in a lack of empathy. With these inconsistencies in mind, the inability to effectively regulate POPS toilet facilities and who can access them makes them unreliable options for youth with chronic gastrointestinal illnesses. Furthermore, these individuals are often in a hurry and may not be financially able or willing to make a purchase. It is important to consider that these issues can be intensified based on intersectional inequalities. Borrowing from critical disability studies, Connor et al. (2016) discusses 'Discrit,' a term that combines 'disability' and 'critical,' drawing from critical race theory, feminist theory, and queer theory to foster a critical analysis of power dynamics, social structures, and systems of oppression that contribute to the marginalization of people with

disabilities as they intersect with varying identities (Connor et al., 2016). Examining toilet access through the lens of Discrit, offers a critical perspective on how intersecting factors such as race, disability, gender identity, sexuality, or socio-economic status can contribute to disparities in access. For example, individuals may experience discriminatory practices in both POPS and public toilets leading to restricted or denied access.

The privatization of public toilets in Toronto presents a multifaceted challenge that intersects with issues of accessibility, affordability, and dignity. As historical shifts in public opinion and policy have gradually relegated the provision of public lavatories to the private sector, the consequences of this privatization are emphasized for certain demographics who rely more heavily on public toilets. The examples of Felix, Jason, and Martin, demonstrate how daily lifeworlds of youth with chronic gastrointestinal illnesses are marked by the need for frequent toilet visits and illustrate examples of the inconsistencies and unreliability of privately owned public spaces (POPS). Another such inconsistency presented by POPS is the temporality of their open and close times, which prompts a discussion on the temporal and seasonal nature of toilet access.

It's like Day and Night: The Temporal and Seasonal Nature of Toilet Access

In visiting various sites participants jotted down in their space-time diaries, I found myself walking along Sunnyside beach and in need of a toilet. I hurried over to the toilet building only to be met with a sign indicating they were closed for the season; it was January at the time, and they would not open until as late as May (Figure 4.5a). Furthermore, the sign indicated that even when the toilets are open, it is only from 9:00 a.m. to 8:00 p.m., which takes a midsummer sunset stroll off the table, for example.

Figure 4.5a: Men's Public Washroom Door at Sunnyside Beach with Sign Reading 'Closed for the season and will reopen in May.' (Source: Author, 01/02/24). Figure 4.5b: Durham Region Transit Bus Stop in the Winter (Source: Author, 04/05/23).

An additional challenge to relying on private spaces for public needs is the reliance on their operation hours and maintenance schedules, such as those prompted by natural rhythms; however, it is not just private spaces operating on a temporal or seasonal schedule. The cyclical rhythms of day and night, winter and spring, summer, and fall, may be easily taken for granted in studies of human geography, yet they pose unique challenges which alter the everyday lives of individuals in a way that is more prominent for some than others. Palang, Printsman, and Soovali (2007) highlight the duality of landscape alterations, delineating between permanent transformations and cyclical variations, exemplified by seasonal changes and advocate for a nuanced examination of seasonality, emphasizing its profound implications on social and cultural dynamics. The authors stress the necessity of inclusive approaches to studying seasonality and landscapes, advocating for the inclusion of marginalized or specialized groups whose experiences diverge from the taken-for-granted norms. I seek to add chronic illness into these

conversations on seasonality, emphasizing the divergence of these youth's seasonal experiences from said norms.[9]

When asked about different challenges posed by time of day or the seasons, Felix narrated his experiences related to toilet access and his general modes of transportation. He stated that nighttime poses more challenges because of closures, whereas during the day "there's a coffee shop on every corner." Seasonally, he prefers the summer because the weather is more ideal to use his preferred form of transit, Toronto's city bikes. However, if he can, Felix will bike in the winter if there is minimal snow, because the snow presents the biggest seasonal obstacle preventing him from getting "from place A to B as quick as I would like to, and so, there's more of a likelihood that I'm going to be in transit and not get to my destination as quick." Here, Felix has encompassed the ways in which not only is access a temporal challenge through day and night, but also through the seasons. Furthermore, Felix's statement reflects the natural and unnatural barriers that account for these challenges, such as snowy weather in contrast to the operation hours of cafés. Seasonally, this example builds upon Brassley's (1998) assertion regarding the unrecognized significance of ephemeral landscapes, characterized by transient phenomena like weather conditions and seasonal changes. While incorporating this assertation in a unique context, my findings suggest that the study of seasonality and cyclical patterns may be an asset to understanding how chronically ill individuals must renegotiate their daily lifeworlds based on nature's cyclical rhythms. An additional perspective on this type of seasonal impact comes from Emma, who indicates the winter is a particularly challenging time, although for different reasons than Felix. Emma takes biologic medication for her Ulcerative Colitis which

[9] Ideally, my fieldwork would expand the seasons to capture the nuances of each time of year; however, the scale of the study allowed for a generalized window between late summer and early winter. Nevertheless, participants were able to recount seasonal challenges amongst their daily lives, alongside the changing landscapes between day and night.

are known to compromise the immune system, as a result, she is more conscious of cleanliness, particularly during cold and flu season, stating:

> I kind of need to prepare even if I go to the bathroom. So just taking my winter coat off and all that, the layers right, could be a little bit more of a nuisance and more of a hassle.

Here, Emma raises a critical health concern that impacts many youths with chronic gastrointestinal illnesses. For example, many with Inflammatory Bowel Diseases are prescribed medications which suppress the immune system in addition to the conditions themselves being immunocompromising. In Emma's experience, the hassle of removing winter layers when urgently needing the toilet, with the additional need to be diligent about cleanliness, makes the colder months of the year a more challenging time. While Paland, Printsman, and Soovali (2007) underscore the importance of examining the rhythm and repetition of variable patterns inherent in seasonal landscapes highlighting the aspect of accessibility, they argue this through a more macro scale. For instance, they note how different seasons can either facilitate or impede movement for both people and animals, impacting ecological and economic domains such as tourism and seasonal employment. Their perspective underscores the intricate interplay between seasonal dynamics and landscape accessibility; however, I argue that this can be interpreted on the micro scale to investigate how individuals seasonally adjust their lifeworlds.

Staying in Tonight: Shrinking Social Lifeworld's and the Stress Cycle

When we think of youth, we may often think of social individuals with lots of energy to go out with friends, party, and participate in abundant social lifeworlds. For chronically ill youth, this can require negotiations and tough choices between maintenance of health and social relationships with friends and family. Moss and Dyck (2002) found that some of the chronically

ill women in their studies opted to prioritize health, while others placed greater importance on friendship, even at the cost of their own fatigue or pain. My research demonstrates that for youth with chronic gastrointestinal illnesses, there exists both physical and mental affects to social participation. Furthermore, participants explained how these affects do not only occur during a social event, but even well in advance. For instance, Reyna reflects on the pervasive impact of anticipatory anxiety, where constant thoughts about toilet access detract from fully engaging in social events, leading to a diminished present experience:

> I'd realize I'm spending 10 minutes or 20 minutes or even just throughout the day… obsessively thinking about those ways out and those escape plans…it takes away from just being in the moment as well when I'm there because I'm still thinking about it…it's just my way of protecting myself and making sure that I'm going to be okay.

Reyna's account is representative of a common narrative among many participants who feel that the anxieties surrounding their symptoms and need for toilet access diminish or complicate their social lives. In our interview, she also went on to explain how she feels heightened anxiety at large events such as sports games, where there will be long lines and busy toilet spaces. In one instance, she tells me she chose to Uber home during a baseball game as opposed to using the toilets there, to ease her anxiety. Reyna's statements elucidate the connection between social anxiety and gastrointestinal symptoms, which in her case are exacerbated within crowded environments where she feels she may not be able to make it to an available and private toilet, in addition to making 'escape plans.' Skye further points to the significance of constantly thinking about toilet availability in social settings, illustrating how gastrointestinal symptoms dominate mental space, resulting in a narrowed focus and limited participation in social activities, as she states that when at a social outing, "all I can think about is having to go to the bathroom." She

explains that these thoughts, combined with what she describes as the constant interruption which comes from excusing herself to the toilet, at times prevent her from going out to restaurants with her friends. Skye walks me through her thought process while taking part in such events, which consists of "where is the nearest bathroom" and "is there a bathroom here?" While youth like Reyna and Skye place considerable importance on maintaining active social lives with their friends, they find themselves battling mental narratives of illness-related anxiety, which at times deters them from going out at all. Another example of an altered social life based on toilet access comes from Gerald, as he explains how he says no to plans that he is not comfortable attending:

> Oh, friends who it's like: 'let's go to the club.' What's the golden rule of the club? Don't be weird, but also you can't use the bathroom. You know what I mean? I see videos. It's like, 'hey, get out of there'…It's like, Man, I'm actually trying to use the bathroom.

Gerald's account further emphasizes the narrowing of social opportunities, with the fear of toilet access issues influencing social choices and ultimately leading to a more secluded lifestyle. He additionally points to how these experiences have shifted him into a "homebody." In their research on queer youth, identity, and space, Valentine and Skelton (2003) argue that venues such as pubs, clubs, and social settings are even more important to young people's transition to adulthood than leaving home or going to school or work. Without adequate toilet infrastructures – or with the stress or social anxiety that come with using them – these spaces, which can positively support identity formation and a healthy social life, can become absent in the lives of youth with chronic gastrointestinal illnesses.

In addition to the social isolation expressed above, the youth in this study illustrate the profound impact of both symptoms and structural inadequacies in public toilet infrastructure on their wellbeing and daily lives, highlighting the need for improved accessibility and built forms to mitigate the cycle of pain and anxiety they experience. Through this research, the perceived interplay between anxiety and stomach pain is evident. Youth reported heightened stress and jotted down lower wellness ratings in their space-time diaries during instances of rushed activities, unfamiliar environments, lack of companions, and unclean toilet spaces. Divya (08/26/23), a 21-year-old from Brampton with Gastritis, provides an example of these stressors while out with her mom running errands, stating that not being able to find a reliable toilet altered her mood as she just wanted "to get this out of my system and move on, but I can't." Additionally, Divya reports discomfort and a lack of interest in activities as a result of her emotional response to not having toilet access when she needs it in public. While most participants reported stresses or anxieties, those who did not still explained an altered social lifeworld. Spencer (10/25/23), a 20-year-old from Toronto with Crohn's, discusses how he differs his lifestyle from his university peers, by way of placing greater consideration on his daily life choices. He states that many of his peers socially drink and smoke, which are triggers for his symptoms. He further explains that while his friends stay up late, he places greater value on good sleep, as it impacts his health. Spencer's narrative further underscores the considerations and limitations imposed by chronic gastrointestinal illness on social interactions, including the avoidance of triggers like late nights and unhealthy habits common among peers. In these ways, Spencer may feel isolated from late night activities or the social consumption of alcohol and nicotine.

Together, these narratives illuminate how youth with chronic gastrointestinal illnesses experience a shrinking geographic and social world due to their symptoms and the structural inadequacies of public toilet infrastructure. As revealed through Reyna and Skye's reflections, the anticipation of symptoms permeates their thoughts, pre-empting the joy of social engagements and perpetuating a state of hyper-vigilance. Similarly, for Divya, not having access to a toilet while going about her daily life alters her mood and results in discomfort. Dyck and Moss's (2002) framework of shrinking social and geographic worlds finds resonance in these narratives, as individuals like Spencer and Gerald find themselves contending with a multitude of considerations and limitations in their social interactions. From Spencer's conscientious avoidance of triggers to Gerald's resignation to a more secluded lifestyle, the negotiation of space becomes a constant backdrop to their social lifeworlds. These accounts illustrate not only the material challenges posed by inadequate public toilet infrastructure but also the psychological toll of navigating social environments with a heightened awareness of bodily needs.

Conclusion

This chapter has highlighted how chronically ill youths' mobility and access to public toilets significantly impacts their educational, professional, and social spheres, drawing attention to the often invisible yet profound challenges they face. Space-time diaries submitted by youth, and the semi-structured interviews that followed, reveal how routines of commuting, attending classes or work, and engaging in social activities are dominated by the urgent and unpredictable need for toilet access, therefore reshaping spatial and temporal realities in urban and suburban contexts. In the pivotal, liminal, and transitional phase of youthhood, chronic illness realities take on unique meanings. For example, the additional financial restraint of using public/private toilets

when gastrointestinal symptoms flare on the go, difficulty attending college or university classes, or the social isolation that can be brought on by avoiding settings with inadequate toilets.

This chapter has underscored the critical need for improved public toilet accessibility, structural flexibility, and accommodations to create inclusivity and reduce the cycle of mental and physical pain, anxiety, and stress that perpetuate the everyday lives of youth with gastrointestinal illnesses. These youth are in a constant battle for temporal and spatial resources, including the alignment of their unpredictable body rhythms and the imposed structural rhythms of the day; and thus, experience altered social and geographic lifeworlds and ultimately a cycle of physical and psychological health stressors. However, these youth have also proved to be active agents in their everyday lives by renegotiating space and time to meet their needs, whether it be utilizing technology to find the ideal public toilet or altering their school or work schedule to meet their bodily demands.

Chapter 5: The Destination: Sensuous and Emotional Geographies of Toilet Spaces

As a sense-driven environment designed to meet a basic human need, public toilets can elicit intense emotions. Our emotions are tied to our senses and the ways in which we are culturally trained to perceive information from our surrounding environment as good or bad. For youth with chronic gastrointestinal illnesses, these emotional experiences can be amplified and more frequent, and thus observed with a heightened awareness as individuals who may assign greater value on toilets spaces. While we might pass public toilets off as simple spaces to relieve oneself, they are in fact intricate landscapes which offer a setting for urination, defecation, socializing, graffiti, drugs, health management, sex, grooming, hiding, or crime, to name just a few activities. Molotoch (2010) argues that toilets can act as a tool for uncovering how a society functions, including its values and how it separates some people from others. Similarly, Longhurst (2001, p.123) states that the instability of bodily boundaries of the individual or the collective threatens order, and to ignore these spaces "is to ignore that which is coded as intimate, queer, banal, or other." Furthermore, toilet spaces see the breaking of bodily barriers, where accompanying emotions are intended to be sealed off in these 'private' sites (Longhurst, 2001). Thus, unconcealed, public toilets can be viewed as 'dangerous' spaces as they are sites that prove the "fraudulence or impossibility of the 'clean' and 'proper' body" (Grosz, 1994, p.193). According to Lefebvre, despite the unresolved tensions between the social and the biological, the body represents the surmounting of divisions between the sensory, the mental, and the social (Simonsen, 2005). Further, the complexity of the body's relationship between space and time is demonstrated through the distinctions and conjunctions between rhythms of the self

and of the other, private and public (Simonsen, 2005). My research investigates this on a micro level from the lived experiences of young people with chronic gastrointestinal illnesses as they live their everyday lives reliant upon access to public toilets, experiencing, and perceiving these public, yet private, spaces managed within adultist urban infrastructural worlds from a unique youthful standpoint of personal need.

Inspired by Porteous (1990) and more contemporary feminist geographical scholarship on emotions, space, and power dynamics (Longhurst, 1998; 2001; Barcan, 2005; Grosz, 1994; Cavanagh, 2010), this chapter follows an emotional structure which, guided by the senses, journeys us through public toilet spatial experiences. Beginning with shame and embarrassment – perhaps the most common emotions associated with toilet facilities – the intricacies of our outlooks on bodily excrementality are explored. Close relatives of shame and embarrassment, the chapter follows up with unease and disgust to uncover the ways in which we discern cleanliness in both the symbolic and literal senses. Next, delving into stress, fear, and discomfort, this chapter explores the multitude of ways these emotions can impact public toileting experiences, from the threat of voyeurism to the future of automated facilities. Extending to a more positive outlook, the chapter will venture into the world of humour, acceptance, and coping, to understand the methods employed by youth to manage their gastrointestinal symptoms and accompanying emotions. This chapter concludes with feelings of relief and comfort, to express the attributes of public toilets that participants found desirable. This chapter argues that youth with chronic gastrointestinal illnesses encounter intensified emotional and sensory experiences in public toilet spaces, where the interplay of visual, tactile, auditory, and olfactory stimuli provokes a complex range of emotions – including shame, embarrassment, unease, disgust,

stress, fear, discomfort, humour, relief, and comfort – which situate public toilets as significant urban spaces critical to overall individual health and wellness.

What Happens in the Toilet: Shame & Embarrassment

Public toilets are odd in the sense that everyone knows what they are for, yet many people feel that they must be as discreet and obscure as possible when using them, so as not to arouse suspicion upon what one *actually does* within them. Whether it be using a scented spray to disguise the smell of defecation or flushing the toilet to disguise the rustling sound of removing a menstrual pad wrapper, it is evident that culturally many people are prone to feelings of embarrassment and shame that the senses intensify. Individuals may then self-monitor how they might offend the senses of the other through the sounds and smells their body releases. In fact, it appeared to be these two senses of audition and olfaction that were the most prominent culprits of arousing negative feelings of shame and embarrassment among youth in this study. Still present, but less prevalent in these emotions, are the senses of vision and touch, which revolved more around the presence of other individuals, their proximity in neighboring stalls and nearby sinks, and their inferred interpretations of participants' purposes for toilet use, their length of stay, or their adhesion to social rules. According to Porteous (1990), smell, like hearing, provides us with valuable information pertaining to environmental characteristics. For example, a foul smell can serve as a warning device for health risks, such as biohazards. Furthermore, in contrast to touch, smell does not significantly aid in the structuring of space, and perceived 'smellscapes' are most often fragmentary and episodic throughout time and space, which perhaps may be why it is an often-overlooked sense. Despite this, Porteous asserts that certain scents can be deeply meaningful and trigger memories. Research in psychology indicates that olfaction is more likely to stimulate emotional arousal as opposed to the other senses,

particularly vision which involves more direct cognition, as smells penetrate the body and permeate the immediate environment, leading to responses that may induce a stronger embodied response (Porteous, 1990).

Throughout our discussions, youth directly and indirectly expressed a strong sense of embarrassment and shame when it came to the smells of flatulence and defecation within toilet spaces. However, these smells only came to hold emotional power when other people, whether they be strangers, friends, or co-workers, were present in the space. When asked why he avoids public toilets, Brian (11/01/23), a 22-year-old from Uxbridge with IBS, for example, stated that the main reason is that he does not want "people to come in and make fun of me" and that "I smell bad." Porteous (1990, p.7) explains that as a sense, smell arouses emotions strongly and rapidly because olfactory signals plug directly into the brain's limbic system, the core of emotions and memory. Perhaps when individuals smell their own bodily odours in a public toilet, a strong olfactory response such as what Porteous describes contributes to a heightened experience of shame and embarrassment; it is evident that youth like Brian who have a more frequent need for toilet use are subject to these feelings on a regular basis, with space-time diaries indicating participants requiring use up to 8 times a day, and interview statements recalling upwards of 20 times a day. Porteous (1990) additionally notes that odor tolerances and preferences appear to be age-related, with children demonstrating more tolerance for bodily smells such as sweat and feces compared to adults, lending to the theory that most smell preferences are learned rather than innate, with little evidence for universally pleasant or unpleasant smells. When it comes to personal, bodily smells, Porteous (1990) explains that Western cultures have a strong practice of eliminating them and replacing bodily secretions with synthetic chemical perfumes. These eliminatory practices appear to provide comfort, relief, or

even protection from embarrassment and shame, which is demonstrated by Brian as he expressed, he was finally able to use his workplace bathroom after the installation of an incense stick. Like Brain's sentiments on personal odors, Yara (12/08/23), a 25-year-old living in Downtown Toronto with Irritable Bowel Syndrome (IBS), explains:

> A lot of people are rude when they go into a washroom, especially if it smells, I have heard tons of comments from people with remarks about bathroom smells, and it's really embarrassing…despite [it] being natural bodily functioning.

Here, Yara expresses negative feelings – particularly pertaining to smell – that she associates with public toilet usage as an individual who relies upon them regularly. Citing Elias's seminal work, *The Civilizing Process* where it is posited that the progress of modernity is marked by an increase in shame, repugnance, and embarrassment, Barcan (2005) delves into both the literal and symbolic understandings of hygiene. Elias argues that the 'civilizing process' led to a 'polite' distancing from the body, and Barcan adds that contemporary moral liberalization is not accompanied by body liberation, but rather consumer culture which intensifies our disgust towards our own bodies and those of others which do not fit the normative standards of society, such as by being unblemished, hairless, or odourless, or in other words 'not sealed off' (2005, p.27). In public toilets, these offences against societal standards are at-the-ready for assessment, with Barcan citing them as spaces of heightened affective and sensory charge. Furthermore, public toilets with their partitioning walls, interior, and exterior doors are technologies of division and separation, and driven by the concept of 'dirt,' they are accepted places for concealment, elimination, disavowal, and in turn shame, disgust, and fear. It is then the metaphor of dirt which underscores the importance of the senses as bodily vehicles employed to detect contamination, which evokes these aforementioned emotions. Emma (09/27/23), a 25-year-old

from Milton with Ulcerative Colitis, explains that she prefers to avoid toilets at train and subway stations, because they are “not really cleaned properly.” However, she also states that she tends “to go to more secluded bathrooms rather than with a lot of people because sometimes the smell can be a lot and can be embarrassing.” On one hand, Emma herself is avoiding ‘dirt’ by opting for a public toilet that is single-stalled or less trafficked by commuters, and on the other, she is choosing to separate herself from other people who might perceive her bodily odours, and thus cause her feelings of embarrassment and shame.

Also worrying about the sensory perceptions of others, Jason (09/11/23), a 24-year-old from Mississauga with IBS, is more concerned both with potential bodily odours but also bodily sounds. Despite stating that the pain caused by his condition is a top priority for his wellbeing, on a social level, he explained another way his symptoms can negatively impact his mental state. Jason tells me that he suffers from excessive flatulence, and in social settings “everybody says who is farting,” which could evoke feelings of shame and embarrassment for him. Cavanagh (2010, p.106) delves into the sense of sound, as it possesses unique qualities such as being unruly and diffuse, and less likely to be silenced compared to visual stimuli. Acoustic cues allow individuals to visualize objects and perceive even that which is hidden from sight. Cavanagh pinpoints sound as a significant sense in the public toilet environment, where sounds are amplified and turned into noise, which is described as ‘sound out of place.’ Such noise often offends the senses, particularly when what is being heard contrasts with our socio-spatial expectations. Despite flatulence and sounds produced during defecation being ‘in place’ in a toilet setting, they are still deemed ‘noise,’ thus permitting feelings of shame and embarrassment at their production.

Delving into the gendering of public lavatories, Cavanagh (2010) discusses the ways in which acoustics can be employed to apprehend human interiors that are otherwise invisible to the naked eye. A universal aspect of the body is the sounds of elimination, which are considered offensive as they blur gendered distinctions (Cavanagh, 2010), for example, one cannot readily discern male flatulence from female flatulence. Thus, Cavanagh states that the gendering of lavatory design aims to ensure 'acoustic purity' where it would not otherwise exist. In Cavanagh's studies, interviewees expressed a desire to disassociate themselves from noises associated with menstruation, which despite being a natural process that ensures procreation and the continuation of humanity, is socially coded as pollution, and thus evokes feelings of loathing, fear, and disgust. Like the sound of a menstrual pad wrapper being opened or the smell associated with the blood in a used feminine hygiene product, sounds of flatulence or stool splashing into a toilet bowl are 'in place' in public toilets, and yet they are still deemed inappropriate, or worthy of shame, most especially for feminine-identified individuals.

Figure 5.1: Public Toilet Stall in Ueno, Tokyo, Japan with 'privacy' sound button. (Source: Nikki Mary Pagaling, with permission).

Overall, shame and embarrassment appear to be ever-increasing when it comes to toileting, and the sounds of our bodies natural processes. Many individuals may opt to 'hold it' until they are home or deem it acceptable to urinate in public but never to defecate or flatulate. For those with chronic gastrointestinal illnesses, it can be impossible to leave one's home without having to rely on public facilities and face the potential shame and embarrassment that can follow. Some countries, like Japan, have adopted a multitude of high-tech solutions to ward off these negative emotions, such as options to play music or noise as sonic cover (Figure 5.1). Should these solutions become common place, or do they simply work to amplify the already existing social stigmas surrounding our bodily needs? I suggest that the answer to this lies in another question: should individuals be responsible for managing their bodily odours and sounds to avoid 'offending' the nostrils or ears of another? While youth in my study expressed shame and embarrassment of their own bodily functions in public, they also expressed unease and disgust towards those of others.

Reflective Surfaces: Unease & Disgust

Feelings of unease and disgust are not unusual in and surrounding conversations of public toilets. Greed (2010) states that society's negative feelings towards toilets and bodily functions undermine and shape all aspects of public toilet design, provision, and general discussion. For example, even the titles given to these spaces, such as restroom, washroom, comfort station, public conveniences, powder room, and bathroom, are euphemisms associated with water, refreshing, and cleanliness, in order to conceal the 'dirtiness' of what occurs within them (Greed, 2010). 'Dirty spaces,' such as public toilets, have been discussed as an extensive metaphor for anything symbolically threatening established sociocultural categories such as divisions between male/female, human/animal, and public/private. In Douglas's (2002) metaphor, dirt is an 'offence

against order,' which prompts society to conceal, eliminate, and purify to preserve order. Sounds, smells, sights, objects, or even people that 'cross boundaries' – such as discussed by Cavanagh (2010) – threaten the purity of social categories and are causes of psychological and social unease. Furthermore, panoptic designs in modern North American public toilets can be allotted through "assemblages of right angles, smooth lines, refractive tiles, glass, and other mirror-like materials," yet they are still meant to maintain a pretence of privacy (Cavanagh, 2010, p. 82). The hard and polished surfaces of panoptic public toilets constructed of stainless-steel doors and sinks, white porcelain toilet seats, reflective glass, and wall-to-wall mirrors can evoke feelings of stress, discomfort, and fear by design, asserting power over the body and its eliminatory practices. For example, Figure 5.2a, may evoke a 'sterile' feeling while Figure 5.2b may evoke caution because of the toilet paper biohazard on the floor. Youth feelings of unease and disgust manifest in space-time diaries and interviews as legitimate health concerns and symbolic preferences. According to Barcan (2005), bodily waste conjoins the literal and the symbolic, making even the cleanest public toilets 'dirty spaces.' However, for youth with chronic gastrointestinal illnesses, feelings of unease and disgust in toilet spaces may be more than simply passing discomfort, rather they can become barriers to health needs and lead to an overall decline in wellbeing.

Figure 5.2a: Women's Public Restroom in Costco, Oshawa, Ontario (Source: Author, 03/5/23).

Figure 5.2b: Single-Stall Public Toilet Floor in Esso Gas Station, Whitby, Ontario (Source: Author, 06/22/24)

Participants Emma and Divya (08/26/23), a 21-year-old from Brampton with Gastritis, demonstrate the ways in which disgust and unease, as apprehended through sight, altered their toileting choices. For Emma, a conservation area toilet appeared "really badly maintained," leading to a situation where she "just had to keep it in." For Divya, a daytrip to the Sunflower Field yielded only portable toilets, causing her to "hold it for the entire duration." Divya tells me that "it was bad, but I made it through." In both these scenarios, the youth made the choice to go against their bodily urges in order to avoid what they perceived as unclean spaces through their visual sense. While for the average individual, 'holding it' may not appear as a harmful decision, for those with gastrointestinal illnesses it can impact health and wellness in a variety of ways, such as pain, discomfort, and anxiety, for milder cases.

It is likely that our feelings of unease and disgust regarding toileting habits and spaces have evolved culturally throughout time and place. From a historical standpoint, Kamash (2010) investigates public toilets of the roman world, where latrines were believed to operate as social spaces for men, with evidence to suggest open conversation flow and good humour. Kamash writes that disgust may have emerged from our evolutionary past as a social function to protect us from health and safety threats; however, we have developed culturally prescribed ways to deal with biological functions we consider disgusting; thus, making disgust simultaneously a social function and cultural construct. In modern public toilets, we may associate shining surfaces and air fresheners with cleanliness, but these are merely constructed material and chemical means to ward off our feelings of disgust, rather than protect us from biohazards. While there are genuine health and safety concerns to watch out for in a public lavatory, it is likely that we place more immediate value on the culturally constructed features of our disgust. For Divya, smell and sight are important indicators of perceived cleanliness; the smell of a facility should be "somewhat pleasant," or have "no smell at all." It is "weird smells" that are particularly off-putting. Further, Divya visually assesses toilet facilities for necessities such as soap, working sinks, toilet paper, and hand-drying equipment with "at least one type of hand dryer" and the appearance of wiped-down surfaces.

Visual cues in general were a popular indicator of cleanliness amongst youth participants, in both symbolic and literal manners. For Divya, a public toilet stocked in necessities was not only practical but indicative of a well-managed and therefore clean space. Other youth looked for more outright signs of contamination; for example, Spencer (10/25/23), a 20-year-old from Toronto with Crohn's, states that a "dirty bathroom" is one that has been "urinated and defecated all over." Similarly, Skye (10/19/23), a 20-year-old living with Ulcerative Colitis, explains:

> It's just disgusting when you're in a place and you see – especially when there's the pee residue on the seat, I have to take the time to clean it myself, which is time I don't necessarily have, right.

Skye's statement raises the element of time, which often presents itself as a battle over not only temporal resources, but space and bodily rhythms too. According to Lefebvre, the body represents the surmounting of divisions between the sensory, the mental, and the social, and the complexity of the body's relationship between space and time is shown through the distinctions and conjunctions between rhythms of the self and of the other, private, and public (Simonsen, 2005). When gastrointestinal symptoms are flaring, individuals can experience extreme urgency whilst enduring discomfort and pain; therefore, making it to the toilet can be a battle between time, space, and the body's own agenda from the moment the urge to use the toilet is felt to the moment it is relieved. For Skye, cleaning a toilet seat adds more time between her urge to use the toilet and being able to use it. If she were unable to make it on time, leading to an accident, the extra time could throw off the rhythm of her entire day, requiring a change of clothes or even a return to home. In both Spencer and Skye's statements, the visual apprehension of human excrements is a priority in assessing a public toilets cleanliness status. However, two participants, Spencer and Felix (10/05/23), a 24-year-old living in downtown Toronto with IBS, tell me that 'dirty' toilets are something they can overlook, while other participants opt to forgo using a space completely, depending on the severity of perceived 'dirt.'

While visual and olfactory cues were fore fronted in youth's discussions of toilet cleanliness, the tactile played a more intimate role. According to Porteous (1990) our sense of touch is fundamental and immediate, and with skin as our largest sensory organ, we are always 'in touch.' Cavanagh (2010) takes a deeper dive into how the senses, combined with panoptic

design, facilitate the policing of gender within public toilets, equating the horizontal with the feminine and the vertical with the masculine. The horizontal is aligned with degeneracy, instability, the leaky, and is ill-defined in the hygienic imagination; the vertical, with the masculine, healthy, and autonomous (Cavanagh, 2010). Despite a preference to sit to use the toilet amongst some men, through one's choice to sit or stand, gender is visually apprehended. The feminine-identifying body is often put in closer proximity or direct contact with the toilet seat, while the masculine-identifying body may opt to use a urinal for urination where no contact with a surface is needed. The chronically ill body is thus coded as feminine, where gastrointestinal illness symptoms specifically create an association with the 'leaky body,' which has trouble to keep its bodily matter contained. Cavanagh (2010, p.142) further states that we can 'touch gender' in the sense that white porcelain toilet bowls and urinals are desirable in their "imaginary defence against exposure to what others have touched." From a social hygiene standpoint, it is evident that the senses can be and are employed as a means to apprehend gender, which has permitted a cultural acceptance of viewing public toilets as dirty, unhygienic places symbolically and literally. For Brian, creating a barrier between himself and the toilet using toilet paper is a must, because "that's just gross, you don't know what that's about." Even if the seat appears clean, a feeling of disgust for the unknown prevails. For Jason, seeking a public toilet with "less footfall" is ideal, as he views busier locations as being "not very hygienic." Jason prefers chain coffee shops like Starbucks to "areas with a lot of public," such as transportation stops, perhaps. There is potentially an economic factor here, as a toilet in Toronto's central Union Station train station, for example, may see less class division in contrast to a Starbucks, which typically offers a 'customer's only' experience, and is less financially accessible.

Evidently, it seems that feelings of disgust and unease prevail in public toilet spaces and are a more regular occurrence for youth with gastrointestinal illnesses, as individuals who rely on their presence, upkeep, and accessibility as an illness management infrastructure. Even in times of extreme urgency, physical, and/or emotional pain, youth demonstrate a heightened awareness of cleanliness as apprehended through the visual, olfactory, and tactile senses. Our cultural obsession with social hygiene interplays with complimentary panoptic design and combines with our disgust for the human body's natural processes, to make public toilets spaces of disgust and unease. As frequent users, youth with gastrointestinal illnesses have developed ways to swiftly apprehend a 'dirty' public toilet, through sensory cues such as the facilities smell and appearance, for example, the presence of toilet paper or an unmasked scent of fecal matter. While for some, feelings of disgust and unease upon entering a toilet may not prevent their use, all participants reported discomfort in these scenarios, and many said they would rather risk an accident, or 'hold it in,' than use a 'dirty' toilet.

Door Closed, Guard Up: Stress, Discomfort, & Fear

Stress, discomfort, and fear in public toilets are emotions that can emerge for a variety of reasons, such as lack of privacy, safety concerns, and poor functional design, and for youth with gastrointestinal illnesses especially, physical pain, and health concerns. Emotions can be conceptualized as sensory reactions which arise from exchanges between self and world (Hubbard, 2006), and public toilets as spaces are emotionally charged, with their panoptic design not only facilitating unease and disgust, as discussed previously, but also stress, discomfort, and fear. Cavanagh (2010) cites Foucault's panopticon to explain how public toilets are modern-day gendered institutions which embrace the pedagogy of examination, where the body becomes an object of visual inspection. We can observe this with both the spatial design and the publics gaze,

which are invited to inquire about gaps between gender identity and the perceived sex of the body, in contrast to the binary signage on toilet doors. Spatially, toilet designs facilitate the ease of the invasive and persecutory gaze, such as through large mirrors, fluorescent lighting, and metallic surfaces which invite 'voyeuristic attention' (Cavanagh, 2010, p. 43). For Brian, the large gaps (Figure 5.3c) between, above, and below toilet stalls stands out, as he explains that they do not block out smells, and "if you look hard enough, you'll see me." These gaps are a widely adopted standard as a means for surveillance of in-stall behaviours across North America (Greed, 2007). Consequently, these design choices compromise the privacy of individuals in a vulnerable state. For Brian, privacy is not just visual, but olfactory, and the possibility of others smelling his bodily odours or looking into his stall brings him significant discomfort. For youth with gastrointestinal illnesses, privacy – and the discomfort that accompanies a lack thereof – takes on a deeper meaning. In contrast to pre-diagnosis or periods of remission, the frequency and urgency that comes along with toilet needs during a flare-up of gastrointestinal illnesses evidently alters the emotions youth feel and associate with toilet spaces. For example, during flare-ups of her Ulcerative Colitis, Emma prefers single-stalled accessibility or gender-neutral toilets for their privacy and extra space:

> Sometimes, especially when it was painful for me, you just need that kind of space to kind of breathe as well because it's sometimes quite painful to pass through… There's blood coming, then you just kind of get – and especially when I had severe diarrhea – I remember I was exhausted after every bathroom.

For Emma, privacy and space are deeply emotional, with the physical and mental pain she experiences during flare-ups of her illness. The inscription of bodies with gendered, classed, aged, and sexed meanings profoundly shape the relationship between people and places,

resulting in some bodies being coded as 'out of place' in certain sites (Hubbard, 2006). Longhurst (1998) suggests that pregnant women experience profound anxiety and stress in leisure and consumption spaces they routinely visited before pregnancy, indicating that bodily conditions can alter emotions and perceptions of space. Similarly, gastrointestinal illness can change how youth perceive and feel in toilet spaces, with the same space evoking different emotions during and outside of illness flares, or before and after diagnosis, in addition to the increased duration of time spent inside them. Work from feminist geographies (Crooks, Chouinard, and Wilton, 2008) have focused attention on how changing senses of self after the onset of illness or impairment are central to the processes through which disabled people are placed by themselves and others in society and space. Some works have pointed to the fluidity of ill women's senses of self over space and time, stressing the importance of recognizing that identities do not necessarily develop according to binaries such as healthy/ill or abled/disabled. Their research reaffirms the sentiment that "renegotiating one's sense of self and one's relationships to people and places in response to experiencing ill womanhood was clearly an emotionally charged process" (Crooks, Chouinard, and Wilton, 2008, p.322). For youth with gastrointestinal illnesses, feelings of comfort in contrast to discomfort may be altered by the proximity of and access to a toilet, or the type of facility offered. See Skye, who explains her preference for single-stalled public toilets during flare-ups of her Ulcerative Colitis:

> I had a huge amount of pain, so sometimes I'd cry because of it and other people hearing that and seeing that I'm in pain isn't really... enjoyable is a weird word, but I think it's the most fitting word.

For Skye, using the toilet can be a painful and emotional experience; however, infrastructure which facilitates more privacy, both in the visual and audible senses, avoids her further stress and

discomfort. Another participant who placed emphasis on feelings of privacy in the audible sense was Felix. It is apparent that noise can contribute to discomfort while using the toilet; however, differing from Skye's account, Felix's feelings emerge from hearing others as opposed to being heard. Felix who describes himself as easy-going when it comes to public toilets, tells me that even "the good bathrooms are occupied by oftentimes homeless people." While Felix is understanding of different uses for public toilets, such as shelter, he explained that he has difficulty navigating these circumstances because while he is defecating "someone next to you is hollering or whatever the case is" and "it's just not a cozy experience."

Beyond feelings of privacy, the auditory realm – in addition to the visual – proved to be significant to youth in conversations of safety, and consequently fear. In my research, participants identifying as women expressed unique fears emerging from certain spaces and circumstances. For example, Yara writes in her space-time diary that she finds Greater Toronto Area restaurants toilets are often in basements, and she gets an "extremely unsettling feeling going down in these spaces." She also notes that these tucked-away toilets are typically quiet, making them both visibly and audibly out of range, in case she needed to call for help. Yara's diary entries demonstrated the emotional element of her day-to-day toilet usage, where she frequently stresses over her safety. She visually assesses how secluded a toilet location is, in addition to its capacity for sound to carry, for instance, with sealed off walls and doors in contrast to structural gaps or a lack of background noise. According to Porteous, hearing enhances our perception of environment as a multidirectional sense, evaluated in magnitude, clarity, relaxation, familiarity, and mood dimensions. While the visual sense may be restricted at both close and far distances, the sonic environment can extend from the most intimate distances to the farthest at which sense data can be perceived, making auditory space a sphere without

fixed boundaries (Porteous, 1990). Sound is also more likely to be episodic in time than sight and can readily allow identification of what even the eye cannot see. While some individuals like Skye and Emma prefer a quieter and more secluded toilet space, a design which allows sound to flow freely may be more comforting for others, like Yara, who values her perceived safety over privacy, at least audibly. On the visual side of things, Yara looks out for signs of cameras installed for voyeurism purposes, with the knowledge that the toilets she frequents have had instances of this before, stating that this fear impacts her wellbeing through the need to be vigilant and feeling unsafe. Many women have thus adopted the habit of performing a visual sweep before using the toilet, looking for any obvious signs of cameras, such as peculiarly placed hooks, air fresheners, or electrical outlets.

Another obstacle triggering stress and discomfort was queue times; however, this was disproportionately brought forward by youth who use women's facilities: toilet designs and the fact that women generally take longer to urinate than men mean women are regularly subjected to longer line-ups and wait-times (Barcan, 2006). Yara explains how in busy public toilets, it can be mentally and physically taxing to feel rushed, as she can experience more bleeding and strain during her already difficult to pass bowel movements from the pressure to hurry. When stores have just one toilet, this pressure can be even more stressful, according to Skye:

> One person, she was in there for 15 minutes and I don't know what to do with that situation. I can't just knock, like, "hurry up" …then I also relate to being on the other end. Like if I'm like, in the bathroom having a hard time, I'm like, 'oh my God', there's probably people waiting… You feel pressured and it's not nice.

Despite the general knowledge that queuing issues are more prevalent for women's facilities, men's facilities pose their own obstacles for individuals seeking a toilet as opposed to a urinal, which is often the case for those with gastrointestinal illnesses needing to defecate. According to Ontario's Building Code, for example, an employer is permitted to substitute urinals for up to two-thirds of toilets in men's facilities. Martin (09/12/23), an 18-year-old living in New Toronto with IBS, points out that in men's public toilets, there can be as little as one stall which also doubles as the accessible stall, and "if there was somebody in there, there was nowhere else to go." Furthermore, toilets are typically coded as feminine spaces, given that they are places where bodily boundaries are broken, and nonconforming to the taught 'solidity' of men. According to Longhurst (1998, p. 90), "these sights/sites threaten to spill, soil, and mess up, clean, hard, masculinist geography." Thus, the feminine-coded chronically ill body combined with the feminine coded public toilet doubly threaten masculinist underpinnings in public space, simply by existing.

In addition to the structural differences between men and women's toilet facilities, there are also disparities between the social dynamics of these spaces. In Barcan's (2005) study, ideas of vulnerable masculinity and homosociality were explored, revealing some of the unwritten rules and social contracts existing within men's public toilets. Barcan cites the perception of cleanliness in contrast to contamination, and how these 'health' threats influence behaviors, and even negotiate the identities of individuals through their interactions with others in the space. For example, non-verbal cues and spatial arrangements – such as not using a urinal directly beside another that is in use – operate to maintain social order (Barcan, 2005). Performances of masculinity, power dynamics, hierarchy, and exclusion are elevated within toilet spaces, and

Barcan argues that these dynamics can influence the broader public toilet use experience and our understandings of gender and space.

Also ‘threatening’ amongst public toilet spaces is the concept of social hygiene, in a broader urban context, the emotions and anxieties surrounding public spaces extend beyond the public toilets themselves, and into external aspects like time of day and social and cultural contexts. Hubbard (2006) delves into emotions from the spatial sense, regarding navigating the city during the hours of darkness in contrast to daylight. For some individuals, ‘going out’ at night can induce anxiety-like symptoms and uncertainty, leading them to avoid such activities; however, most people engage with nighttime recreation by using their practical knowledge of the city to avoid undesirable situations while seeking out pleasurable and stimulating experiences (Hubbard, 2006). For youth with gastrointestinal illnesses, challenges of night-time recreation are coupled with the challenge of night-time public toilet closures and, for the locations that are open, less than ideal circumstances. Take Felix’s explanation:

> Every time I go to the gay club, I have to use the bathroom. Every single time. And it’s like the worst experience. The locks don’t lock and so you put your feet up on the door to hold the bathroom.

For Felix, using the toilets in clubs leads to uncomfortable circumstances. While it’s true that sometimes locks are simply broken, the pattern of faulty equipment recounted by Felix is likely indicative of the ‘unwanted’ bathroom behaviors that often take place in nightclubs and bars, namely sex and drug-use. In these instances, a ‘broken’ lock may serve to ward off these behaviors by making it more difficult to obtain privacy; but for those simply wishing to use the toilet for its intended purpose, this can pose a challenge. Individuals must then resort to

uncomfortably propping a foot up against the door to keep it shut as in Felix's example, have a friend guard their door, or brainstorm any number of strategies – such as wedging a bag between the floor and the base of the door – just to obtain privacy. Public toilets being multifaceted spaces which present these obstacles for privacy can be challenging for individuals who rely on their accessibility and functionality for urination and defecation purposes, as Felix goes on to explain:

> I remember I used to go to school at Innis, and Innis was like a cruising spot for a lot of gay men…So, that can make me apprehensive. But also, it's more of a safety thing about who's in there and just level of comfortability with just how private it is and all that kind of stuff…And the thing is, I don't want to yuck someone. I have no problem with cruising… but it does conflict with people like us, who yeah, it's very complicated.

Felix's narrative highlights the complex dynamics at play in public toilet spaces, where conflicting uses and needs can create discomfort and apprehension. For him, utilizing the toilet facilities at Innis, a college located within the University of Toronto campus, complicated his school experience by making him feel unsafe or uncomfortable depending on who might be inside the facility – and potentially approach him – seeking sex.

Tensions between public toilet uses and functions are further complicated by the increasing implementation of automated features in public toilets, which police and regulate behaviours. Features such as movement-triggered lighting, automatic flush, and timed faucets can inadvertently marginalize those who rely on these facilities the most. Through attempts to control and limit certain activities, these technologies can produce accessibility challenges, in addition to creating barriers for individuals who rely on them most.

Figure 5.3a: Toilet Automatic Flush Sensor (Source: Author, 07/05/24). Figure 5.3b: Dyson 2-in-1 sink and hand dryer at Toronto's Union Station (Source: Author, 12/09/23). Figure 5.3c: Gap between stall door in toilet at Kensington Eye Institute (Source: Author, 07/05/24).

Braverman (2010) states that automated washrooms can intensify emotional responses, such as anger towards being controlled and watched by infrared eyes. In the automated public toilet, the morality of the human as in control of their own environment is at stake. It has come to a point where automation is a threat to autonomy, where the individual is not subject to decide how long to wash their hands, when to flush, or how long to dry their hands. While some features can be manipulated by the user, such as triggering the sink sensor for another wash cycle or covering the toilet sensor (Figure 5.3a) with a hand or sticky note to stop automatic flushing, these automations still facilitate control which can cause a simple annoyance to a health hazard. For Brian, the dominate feeling is frustration:

> The school has them, they're stupid: they have the soap, the water, and the dryer all on the same sink, and I always mess up and I put the soap on my hand, and I put it underneath the – this has nothing to do with bowels – but then the soap goes everywhere.

The 2-in-1 sink and dryer that Brian mentions (Figure 5.3b) and the multitude of new toilet space fixtures that have no standard across facilities can make simple tasks like handwashing confusing, stressful, and frustrating. Similarly, Yara points to the increase in controlled-access toilets, such as in the Toronto Eaton Centre, or the Oshawa Centre (Figure 5.5). These are usually for the accessible and family toilets, where "there's a camera on the door, and you need to request access." With gastrointestinal illness being an invisible condition, and often not recognized as a real accessibility need, Yara was not permitted to use the toilet. For Martin, these features can also facilitate ableism, when they are taking a longer time on the toilet, and motion is undetected:

> It's also really weird when they have the lights that turn off if you've been in there a while…Being shamed by lights…I understand the need for them. I just really don't like them… it's like timing you and I don't like that part.

Furthermore, auto-flushing can pose as a health challenge as many individuals with chronic gastrointestinal illnesses need to monitor their fecal matter, such as for signs of blood, mucus, and inflammation. This automatic feature can prevent this health need by flushing before individuals have the chance to inspect. In times of need, individuals could cover the sensor in attempt to avoid triggering it, such as with a tape, a sticky note, or even their hands, but this is less than ideal. Ultimately, the imposition of automated features in public toilets not only undermines personal autonomy, but fails to accommodate diverse needs of all users, like those with gastrointestinal illnesses such as a Brian, Yara, and Martin. It is likely that these features create more problems than they solve, highlighting the need for more thoughtful and inclusive design in public toilets. These features, combined with panoptic design choices, and inadequate provisions, influence a range of feelings such as stress, fear, and discomfort. Although youth

with gastrointestinal illnesses encounter a range of negative emotions in public toilet spaces, they also have developed effective coping mechanisms that make living with these challenges easier.

Potty Mouth: Humour, Acceptance, & Coping

For youth with gastrointestinal illnesses, humour, acceptance, and coping mechanisms are crucial to maintaining a positive attitude and overall wellbeing while managing chronic illness symptoms. Crooks, Chouinard, and Wilton (2008) explore the emotional renegotiation of disabling places and its impact on mental wellbeing. They highlight the tension between embracing disability as an integral part of one's identity in contrast to being categorized as disabled by others. They argue that chronically ill bodies fracture social protocols as their embodied performance is scrutinized. In my study, most of the youth did not self-identify as disabled, but they described certain situations, such as experiencing chronic pain or encountering a lack of accessible public toilets, as disabling. However, conflict between self-identification and external categorization of disability can arise when institutions like the government or schools require the disability label to provide accommodations or funding support. Embracing or rejecting disability as an identity is an emotionally charged process that revolves around renegotiating one's understandings of body and place (Crooks et al., 2008), and this is further complicated in the liminality of youthhood. Whether youth identified as disabled or as encountering disabling circumstances, humour, acceptance, and coping skills facilitated a more positive outlook on difficult experiences. Humour, for example, allowed participants to laugh in times of symptom flare-ups, such as those causing frequent bowel movements which detracted from the ability to feel fully present in a work or social situation, or even when accidents occurred. Take Spencer, describing an instance where he could not reach a toilet on time:

> I wouldn't say I managed it, but that's happened…There's nothing else to do but laugh, really. Just a funny story to tell friends afterwards. How can you not [laugh at it]? It's embarrassing when it happens…You just got to keep moving forward.

One thing to note is that there may be a significant gendered difference in comfortability surrounding defecation humour. Interestingly, Cavanagh (2010) points to the gendered difference in emotions surrounding defecation: for feminine gender identification, leaving behind or being surrounded by the smell of stool is a threat, whereas for the masculine there may be pride in one's creation. On the other hand, communication behaviours may be more acceptable in women's facilities, which are known for being social spaces, perhaps more closely related to the roman latrines outlined by Kamash (2010), which were ironically exclusive to men. According to Serlin (2010), mutually supportive activities in public toilets, beyond small talk and perhaps passing a toilet roll to the next stall, are often disdained in able-bodied culture. Yet, while still taboo, youth with gastrointestinal illnesses push these boundaries by employing openness and humour as coping mechanisms which revolt against able-bodied and masculinist ideals. Take Felix for example:

> A coping strategy for me is being so open about it. So again, the way I socialize with others, the fact that it's become so normalized for me…I've only kind of slightly mentioned it at work a few times. I'm apprehensive because I feel like I'm always known to be an oversharer, so I'm trying to not overshare that part of me.

For Felix, openness about his illness and its symptoms is a primary coping mechanism. Aside from sharing funny stories with friends, Felix finds humour within the built environment and finds himself entertained by toilet-stall graffiti which he even considers contributing to (Figure

5.4). Yet, he still battles with feelings that he may be oversharing, especially in the workplace where we are meant to maintain an air of professionalism, which often means a 'polite' distancing from our embodied selves and the natural functions that make us human.

Figure 5.4: Photo taken of bathroom graffiti in Ronnie's Local 069 Bar in Toronto, Ontario – submitted through Felix's Space-Time Diary, captioned: 'took this pic of bathroom wall at the bar. Thought about adding a tick mark to the right-hand column.'

Aside from a good old poop joke, youth employ dietary methods to assert control over their bodies. For Jason, his favoured coping method is control through dietary changes, particularly when leaving his home, he will "try to eat less," otherwise, he opts for foods that soothe his stomach, such as tea. Besides diet, Jason finds exercise helpful, to aid in digestion and overall health. Similarly, Spencer also chooses to cope through dietary decisions, stating that if he's "ever having such a bad time, I can always just fast, so essentially starve myself." While Spencer may not find it ideal to fast, in doing so, he is able to manage his time in public and assert control over his own body. Other youth placed greater importance on the mental

component of symptom management. Stress and anxiety are known to intensify gastrointestinal symptoms, and Brian employs strategies to combat this when in search of a toilet:

> I would just add, like, self-talk as well. Just be like, 'you'll get to one. There will be one. You can use one. You're going to be okay. There's not going to be any accidents. Like, you're a grown man. You can handle it. You'll be okay. It's just uncomfortable. And soon, you'll be fine. You'll figure it out.'

For Brian, 'self-talk' and breathing techniques aid his anxiety-induced flare-ups of irritable bowel syndrome. Besides diet, exercise, and mental techniques, many youths thought ahead of time as a coping method and expressed being prepared for unequipped toilets as a significant element. Emma dislikes the thin toilet paper typically used in public facilities and opts to carry her own wipes. Similarly, Felix states that carrying wipes is "a huge coping strategy" as it makes him feel more comfortable leaving his home. Whether it be cracking a joke, open communication, dietary methods, stress and anxiety relief, or keeping wipes handy, youth with gastrointestinal illnesses are not passive to the challenges presented to them through inadequate public toilet infrastructure and a society that still views natural bodily needs as taboo.

The Go-To Toilet Spot: Relief & Comfort

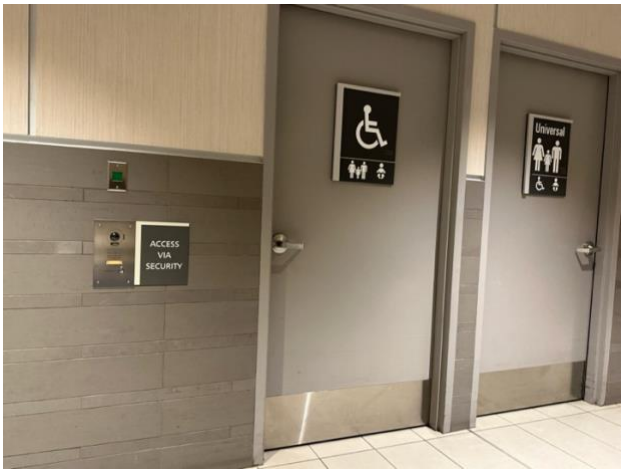

Figure 5.5: Two Single Accessible Toilets with Security Monitored Access in the Oshawa Centre (Source: Author, Date).

With so much discussion on what evokes negative feelings for youth in toilet spaces, it is important to turn to emotions of relief and comfort, to demonstrate that youth want to create a positive toileting experience which supports rather than hinders their wellness. While public toilets may be inevitable contested spaces (Barcan, 2005), there are things we can learn from individuals who rely on their usage, such as youth with chronic gastrointestinal illnesses. Public toilets are more than just places to urinate and defecate, they often act as quasi-medical spaces, such as for taking medication or emptying a colostomy bag. From a mental repository of positive and negative toileting experiences, youth in my study were confident and ready to explain what they look for in an ideal facility. First and foremost, accessibility; Martin explains the various factors that can make or break a public toilet space from their perspective of experiencing both disability and chronic illness. Topping Martin's checklist is a light door that is easy to open, – or an automatic door – multiple stalls, grab bars, and a call button. Beyond these necessities, Martin places importance on accessible toilet awareness:

> …single stall washrooms with signs on the outside saying, *these are accessible, gender-neutral washrooms, please be considerate of those who need them*. So, it's not like excluding anyone explicitly, but it also has people think for a second of if they actually need to use that one or one of the ones with more stalls.

Additionally, Martin points out that facilities should convey if their toilets are out of order so that those who might rely on them for their visit can be made aware and adjust their plans. Many youths also pointed to the lack of public toilets in outdoor parks and hiking trails, which would make this type of recreation – which is often therapeutic and critical to wellness – more accessible to them. Not only is it important to simply have public toilets, but their location within a venue can be critical when it comes to accessibility, with toilets ideally located somewhere visible, easy to access, and on a main level. When asking Skye where she wishes toilets would be located, she states that the "easiest is from the entrance…so that when you walk in, it's there that you can see it."

In addition to easy-to-locate public toilets, participants also noted the benefits and drawbacks of the type of facilities offered. The toss-up was typically between single-stalled and multi-stalled facilities. Both appeared to have their own advantages, but most youth stated that they prefer singles for their privacy. Divya explains the rationale behind both options:

> My first ranking would be the stalls. Just because you don't have to stand in much of a line, you have plenty of them that you can use and they're usually stocked up with toilet paper, so I tend to use the ones with multiple stalls and then one-stall are also fine, but I don't typically lean towards it. But I would absolutely never use portable washrooms because I hate them so much.

Divya's statement emphasizes the debate of privacy versus options which was the common narrative among youth when deciding on their preference. For most, privacy won out, but Divya's stance on portable toilets was a common sentiment. Privacy extends beyond the visual and tactile senses, into the auditory realm. Participants expressed comfort at the presence of music to mask bodily sounds. Certain music can induce focus or relaxation (Porteous, 1990, p. 52). According to Porteous, an unpleasant sound is deemed noise, and youth with gastrointestinal illnesses evidently coded sounds of defecation and urination noise as matter out of place; thus, in need of masking. Similarly, some participants noted appreciation of air fresheners to disguise unpleasant smells. Overall, for youth with gastrointestinal illnesses, feelings of relief and comfort came from their ideal toilet facility. Whether it be a single or multi-stall establishment, the sensory world is critical for creating a positive experience. Sight, sound, smell, and touch all play roles in providing a pleasant space to relieve oneself. Whether it be music for audible privacy, an aerosol for olfactory privacy, a top-to-bottom stall door for visual privacy, or enough space to move around freely, it is evident that the senses account for individual levels of comfort and wellness and should be considered when designing and maintain public toilet spaces.

Conclusion

Returning to Molotch's (2010) argument that toilets can act as a tool for uncovering a society's values and how it separates some people from others, it has become clear that youth in this study have shown truth to this statement. For example, the need to create hard boundaries between gender and to eliminate threats to masculinist geographies become apparent through structural design and unspoken social rules, from the obvious men and women's signage binaries to the disgust one feels at the sight, sound, smell, our touch of the unknown other in a toilet space. Further, it becomes quite clear the desire for 'cleanly,' efficient toilet spaces overrule their

accessibility, through automated features which leave disabled users in the dark – literally – when no movement is detected, or automatic flush which erases any trace of fecal matter before a user can examine for health concerns. It is apparent that a society which does not value access to – or the accessibility of – toilet spaces must be one that consequently does not value that which is aligned with the feminine – the horizontal body, the leaky body, the ill body, the queer body, that which is coded as 'other' – because this threatens order, and with it the hard masculinist geographies that the built form attempts to enforce. Further, it is demonstrated that our societal and cultural obsession with order, hygiene, and cleanliness are so ingrained within us that we have become alienated from our own bodies such that we feel shame, embarrassment, unease, disgust, and discomfort at any sign of a natural function or bodily substance – whether it be our own or that of others.

Overall, it is evident that youth with chronic gastrointestinal illnesses interact with public toilets as sense-driven environments which elicit a range of emotions informed by societal standards and culturally constructed taboos which contribute to their overall physical and mental wellbeing. Masculinist and cisheteropatriarchical geographies and western ways of knowing have long neglected the validity of emotions and embodied experiences, despite the very real possibility that our senses and emotions may be the most honest and insightful knowledge that we can have. Writing and speaking candidly about our bodies and their functions, fluids, surfaces, senses, and feelings can be uncomfortable and vulnerable, yet it is crucial if we are to forefront bodies that often go ignored or neglected in space.

Chapter 6: Concluding Thoughts on Time, Space, and the Future of Toilets

This research has been as much about understanding the landscapes of public infrastructure and chronic illness as it has been about navigating the intimate terrain of my own embodied experiences. The process was not merely academic but profoundly personal – marked by moments of struggle, adaptation, and self-discovery. Each word written and every analysis conducted carries the weight of the pressure I feel to give justice to the narratives of myself, the participants of this study, and everyone who has faced similar biopsychosocial challenges, as these stories often live in the dark – just as invisible as the illnesses themselves. This work, deeply rooted in my lived reality, is not just a contribution to academic discourse; it is a testament to resourcefulness, vulnerability, and the power of making space for stories that challenge societal taboos, traditional timelines and expectations, and institutional and public infrastructure that further marginalizes individuals. Through it, I have sought healing and understanding, not just for myself but for others navigating similar journeys.

Another personal layer to this research is that it is situated in my home city-region, the Greater Toronto Area (GTA). Although the nation's largest city, in a liberal democracy, its public infrastructure has proven to be inadequate, failing those who rely on it most. Public toilets are fundamental for all, and while this study has shown it is difficult for youth with gastrointestinal illnesses in the GTA, there is a global privilege here, as the burden of health management is greater in places with little to no public provisioning or provisioning complicated by other concerns. For example, in India, toilet access has been central in conversations of sexual assaults, where the increasing risk of violence for women and girls has made facilities generally unsafe

(Kern, 2019). It is important to view public toilet access as a global issue, with varying struggles by region; however, in all circumstances, the simple truth is that public toilets are neglected infrastructures necessary to perform basic bodily functions and should be viewed as vital spaces in any city.

Filling the Literary Gaps of Chronically Ill Youth

Examining the experiences of youth with chronic gastrointestinal illnesses offers critical insights into the unique intersection of health, age, and spatial justice, addressing significant gaps in the literature. Youth are at a pivotal life stage, balancing transitions in education, work, and social development, yet their perspectives are often overlooked in favour of research on older adults or more generalizable adult populations. Further, the invisibility of gastrointestinal illnesses exacerbates stigma, making it difficult for youth to publicly advocate for their needs or seek community. Compounding these issues, systemic factors such as the privatization of public spaces, fragmented transportation, disparities between urban and suburban landscapes, and economic barriers disproportionately impact youth with chronic illnesses, further limiting their mobility and access.

Moreover, existing literature shies away from topics of defecation and toilet use, meaning that there is limited understanding of how the unpredictability of gastrointestinal symptoms intersects with urban planning, transportation, and public infrastructure, leaving the unique spatial and temporal constraints faced by these youth under-explored. Yet, a recent UK survey found that the second biggest impact on quality of life for those with Crohn's and Ulcerative Colitis (two of the most common gastrointestinal illnesses), following bodily fatigue, is the psychological experience of anxiety about toilets and accessing them, underscoring the

importance of the topic (IBD UK, 2024). Greed (2003) highlights how research on toilets was viewed as a low-status topic among scholars when she began, and while the topic has expanded considerably over the last two decades, toilets, urination, defecation, and menstruation still carry a stigma of impropriety. Rooted in societal discomfort with bodily functions, cultural norms, and the marginalization of vulnerable populations, the avoidance of these 'taboo' topics disproportionately impacts groups such as women, chronically ill, and disabled individuals. Further, sanitation and hygiene have historically been associated with 'feminized' spaces, reinforcing public toilet provisioning as not a serious urban planning issue (Penner, 2009). Thus, the barriers marginalized groups face due to infrastructural inadequacy persist and are not made political priorities.

Broadly, from a feminist geographical perspective this thesis contributes to debates on spatial justice by demonstrating how public spaces, particularly toilets, are sites of exclusion shaped by societal norms and inaccessible infrastructure, a topic often overlooked for those with invisible illnesses and youth. This research seeks to add an additional youth vantage point to health geography, which has traditionally been adultist, by emphasizing the unique health and spatial needs of young people, who often experience compounded barriers due to age and illness. While feminist scholarship critiques the gendered and exclusionary nature of public spaces, it often neglects more specific intersections with age, sometimes subsuming children and youth needs within the social reproductive responsibilities of women, without addressing them directly and differently. Similarly, youth studies frequently focus on active, mobile, and carefree dimensions of young adulthood, overlooking how chronic illnesses redefine social roles and geographic lifeworlds.

My research also contributes to time geography by addressing how youth with chronic illnesses must navigate the intersecting temporalities of their own bodies and rigid societal structures, such as linear work schedules or public transportation timetables – an area where existing work often fails to consider the bodily rhythms and temporal constraints of those with illnesses and was traditionally based on an able-bodied male specimen. Similarly, the psychological stress and social isolation stemming from inaccessible environments and social stigma are often neglected, as embodied knowledge is often invalidated. This thesis enriches sensuous and emotional geographies by utilizing them to map out a physical infrastructure where sights, sounds, smells, and tactile sensations of toilet spaces evoke powerful emotions like shame, discomfort, and relief, which shape how youth interact with these spaces. This sensuous and emotional mapping was particularly crucial from a chronically ill youth lens as these individuals have unique relationships with these spaces and have to grapple with their health struggles at a young age. Chronically ill youth also experience particular challenges posed by the privatization – often placing financial stress on younger populations and offering limited opening hours – and fragmentation of public toilet infrastructure, particularly in suburban contexts, where access is even more limited compared to urban centres. Putting all of these different bodies of geographical scholarship in dialogue, this thesis bridges theoretical and practical concerns, advocating for systemic changes to create more inclusive environments for youth with chronic illnesses, and for more research and scholarship that addresses these topics.

Summarizing the Key Findings: Toilets & Taboos

This thesis began with an introduction outlining my personal struggle with the autoimmune disease, Ulcerative Colitis, and how inadequate public toilet infrastructure subsequently contributes to physical and mental stresses in my everyday life. To continue to

illuminate the importance of this research, the literature review chapter capaciously engaged and connected literature on time geography, sensuous and emotional geographies, health geographies, children and youth studies, urban and suburban geographies, feminist, queer, and disability studies perspectives. I utilized these fields to analyze foundational scholarship that this research draws upon to address chronically ill youth bodies in public spaces, spatially, temporally, sensuously, and emotionally.

The subsequent methods chapter outlined the feminist research framework I adopted which prioritized the embodied experiences of youth and the vulnerabilities around discussing intimate health issues. It detailed a methodological approach that combines lived experience with data collected through space-time diaries and semi-structured interviews. The multi-method approach to this research challenged the mind-body split and emphasized the connections between the body – the process of digestion, excretion, pain – and emotions, all whilst layering these feelings onto a tangible, material landscape. To appeal to sectors such as health policy, it is useful to quantify information such as the high number of toilet-needs youth with gastrointestinal illnesses experienced on a daily basis, or the contrast between private and public facilities visited. However, these statistics are brought to life by the emotional registers discussed in semi-structured interviews and analyzed through the senses. The methods chapter also described the data analysis process, incorporating both qualitative and quantitative methods, and explained the thematic coding by sensory and emotional responses inspired by Douglas Porteous's *Landscapes of the Mind* (1990). This methodological foundation enabled a nuanced exploration of youth experiences, setting the stage for the subsequent empirical chapters.

Chapter 4 outlined the journey of renegotiating space and time for chronically ill youth and how it reveals a complex interplay between symptoms, societal structures, and personal

agency. Youth with gastrointestinal illnesses must navigate a world where their natural bodily rhythms often clash with the linear structures of daily life, demanding constant adaptation and creativity in managing time and space. From the very start of the day, morning routines become a site of negotiation, where the rhythms of chronic illness prompt adjustments to waking hours, eating habits, and modes of productivity. This tension extends into public and semi-public realms, particularly during commutes. The misalignment of natural rhythms with rigid transportation systems highlights the spatial and temporal constraints these youth face. The lack of accessible toilet infrastructure exacerbates these challenges, making each journey an exercise in strategic planning, wayfinding, and coping strategies. This struggle intensifies within the structured environments of work and school, where the linear demands of attendance, productivity, and social conformity conflict with the unpredictability of gastrointestinal flare-ups, fatigue, and overall wellness. In these spaces, we saw how youth are often forced to advocate for accommodations such as working from home or altering their long-term goals to navigate systemic and social barriers.

Chapter 4 also delved into how the privatization of public spaces further underscores difficulties faced by chronically ill youth, particularly as ‘public’ toilets are increasingly commercialized and exclusive. This commodification of basic human needs, compounded by COVID-19-related closures, amplifies barriers for youth with chronic illnesses, who frequently encounter stigma and exclusion. These barriers are not merely physical but also temporal and seasonal, as limited hours of operation and harsh winters further restrict access and coping mechanisms. The result is a profound shrinking of social and geographic lifeworlds, echoing findings from previous health geographic work (Moss and Dyck, 1995, 2002; Crooks and Chouinard, 2006) with an added youth perspective. Far from the idealized image of youth as

socially vibrant and physically boundless, many of these individuals experience isolation, heightened anxiety about venturing into unfamiliar or far-off spaces, and a stress cycle that worsens both physical symptoms and mental wellbeing. Yet, amidst these constraints, there is agency: youth employ wayfinding tools, renegotiate goals, and create adaptive routines to reclaim control over their lives.

The coping mechanisms of 'the journey' were also reflected in 'the destination' of toilets. Chapter 5 emphasized how toilets are not neutral spaces; they are emotionally charged, shaped by societal taboos, sensuous perceptions, and structural inequalities that profoundly impact those with heightened bodily needs. This chapter revealed how deeply physical environments and cultural attitudes shape the lived experiences of youth with chronic gastrointestinal illnesses. Narrowing in on emotions felt from within toilet spaces, shame, embarrassment, disgust, and fear emerged as dominate within the experiences of youth with gastrointestinal illnesses due to the cultural stigmatization of bodily functions. Youth in the study internalized these taboos, heightened by sensory cues such as sounds and smells, which reinforced feelings of alienation from their own bodies. For example, embarrassment at the sound of one's flatulence, or shame at the amount of time spent in a toilet stall. This aversion is compounded by the societal framing of toilets as 'dirty' spaces (Barcan, 2010), a perception that persists even in the face of design choices meant to convey cleanliness, like metallic finishes or air fresheners (Cavanagh, 2010). These visual and olfactory cues, alongside tactile discomforts such as a warm toilet seat, highlight how deeply cultural attitudes toward cleanliness and bodily waste have evolved to shape emotional responses such as disgust and fear of the bodily presence of ourselves and others.

Chapter 5 also found how privacy and safety concerns further intensify stress and discomfort within toilet spaces, particularly for women, who experience fears of voyeurism or unsafe encounters. Poor design – broken locks, crowded stalls, automated features, and ableist layouts – adds layers of frustration for youth navigating these spaces. These inadequacies underscore how public toilets fail to accommodate the physical and emotional needs of individuals with chronic illnesses, whose experiences of pain and urgency make functionality and accessibility non-negotiable. Amid these challenges, humour, acceptance, and coping strategies emerge as essential tools. Youth often use humour to defuse the stigma surrounding toilet-related experiences, fostering a sense of community and acceptance. Practical strategies, such as carrying personal supplies and openly discussing their needs, further enable them to navigate disabling environments with a degree of agency. Aside from personal coping mechanisms, youth evidently find solace and relief in well-designed, accessible toilets. Spaces that provide sensory privacy, cleanliness, and adequate facilities offer not just physical comfort but also emotional refuge, underscoring the importance of intentional design in fostering positive embodied experiences. Chapter 5's findings illustrated how toilet spaces act as microcosms of broader societal values, revealing the ways in which cultural taboos, sensory perceptions, and design decisions perpetuate inequities for marginalized groups.

In dialogue, Chapters 4 and 5 explored how youth with chronic gastrointestinal illnesses navigate and experience the interconnectivity of space and time in their daily lives, with a focus on public toilets as pivotal infrastructures both as nodes in these youth's journeys and as structures themselves. Together, these chapters revealed how the constraints of societal structures and cultural taboos intersect with personal, embodied experiences, shaping the ways these youth adapt to and renegotiate their environments. While Chapter 4 focused on the broader

spatial and temporal challenges these youth face in their daily routines – commuting, working, studying, and engaging socially – Chapter 5 narrowed in on the specific emotional and sensuous geographies of toilet spaces. These narratives revealed how the physical and emotional negotiations surrounding public toilet spaces encapsulate the broader themes of agency, constraint, and adaptation. Both chapters illuminated how public toilets highlight the tension between societal structures and personal needs. For instance, the shame and embarrassment youth feel in public toilet spaces (Chapter 5) is directly connected to the societal rhythms and expectations (linear time, workplace structures, urban design) discussed in Chapter 4. These societal structures not only fail to accommodate the unpredictability of their symptoms but also reinforce cultural taboos around bodily functions, further isolating these youth. Similarly, the sensory discomforts and safety concerns explored in Chapter 5 – such as the fear of dirty or unsafe toilets – are compounded by the limited accessibility and fragmented infrastructure identified in Chapter 4. Both chapters emphasized how these barriers heighten stress and restrict mobility, ultimately shrinking the spatial and social lifeworlds of chronically ill youth. Yet, amidst these challenges, both chapters also showcased the resourcefulness and agency of these youth. The creative coping strategies they use to navigate commutes, workplaces, and social settings in Chapter 4 mirror the humour, acceptance, and practical adaptations they bring into toilet spaces in Chapter 5. This parallel demonstrated how youth actively reclaim some degree of control over environments that are often hostile to their needs. Together, these chapters have illustrated the profound and often invisible ways in which chronic illness reshapes everyday life for youth. They have also highlighted the pressing need to challenge societal norms and redesign physical spaces to accommodate diverse bodily experiences. By connecting the systemic and the intimate, this thesis as a whole underscores the inseparability of physical infrastructure, cultural

attitudes, and personal wellbeing in the lives of youth with chronic gastrointestinal illnesses. This interconnected analysis urges a rethinking of both policy and design to create a world where public spaces – including toilets – foster dignity, inclusion, and accessibility for all.

Going Forward: Toilets Spaces of the Future

This research has shown that youth with chronic gastrointestinal illness take immense measures to manage their bodies and renegotiate space and time through their everyday lives to cope with inadequate public toilet infrastructure. It is thus clear that as a society we are placing the burden on these young people instead of shifting some of it to the infrastructure. This research calls for a move beyond the individual to the collective, so that we might minimize the strain that is placed on these already marginalized youth. With supportive rather than restrictive infrastructure, we might see that individuals such as those in this study feel more ease in their daily commutes, their social lives, their school and work settings, and thus overall wellness. This research has made evident the amount of mental and physical space taken up by coping mechanisms and strategies necessitated through the daily barriers and obstacles put forth by managing chronic gastrointestinal symptoms in a landscape without adequate public toilet infrastructure. With the knowledge offered by the youth in this study, we can conceive of changes to infrastructure, policy, and attitudinal changes that have the power to reduce the individual strain placed on this group.

This research has policy resonance for urban planners, architects, and facility managers to inform the design of accessible public spaces and inclusive policies that accommodate diverse bodily needs. It is equally relevant to urban and public health advocates, researchers, and youth advocacy groups seeking to address systemic barriers and amplify the voices of youth with

chronic illnesses. Furthermore, gastroenterologists may utilize these insights to better understand the experiences of their patients in community beyond the limited frame of the medical model. Employers and educational institutions can use these insights to implement flexible accommodations, while the general public may benefit from increased awareness and empathy toward invisible illnesses. By engaging these audiences, this research can drive systemic change, promote accessibility, and foster greater inclusion in everyday environments.

In dialogue with different public toilet stakeholders this research invites improvements to public toilet infrastructure to increase the availability of accessible, single-stall, gender-neutral toilets that prioritize privacy and sensory comfort (e.g., floor-to-ceiling doors, music). However, it also offers consideration of how some measures (which may provide greater comfort to users) such as masking defecation noises with music, or odor-control through fragrances, may also further alienate us from our bodies, contributing to the reason we feel these emotions of shame and embarrassment in the first place. Additionally, these are not universal solutions; for example, some may be sensitive to fragrance, or prefer less audible barriers for safety – as feminine-identifying participants in the study noted. Moreover, there are also public toilet redesign implications, inviting the avoidance of panoptic or overly automated designs which this research showed to exacerbate the stress and discomfort for chronically ill users through invasive and ableist design such as large gaps between stall doors or timed sensors. Youth also expressed the financial barrier of using toilets in privately owned public spaces (POPS), which prompts a call for more true public toilet spaces that can be accessed without a purchase, or to adopt zoning policies which require new developments and POPS to include publicly accessible toilets (not just for customers). There are some initiatives to encourage businesses to allow the public to use their toilets, but these are typically voluntary. For example, Crohn’s and Colitis Canada offers

"Just Can't Wait" Cards (Crohn's and Colitis Canada, 2024) to those with chronic illnesses or disabilities that require urgent toilet access; however, there is no policy or law to enforce these projects.

The youth with gastrointestinal illnesses in this study also pointed to a need to embed public toilets in transportation hubs, parks, and other high-traffic areas as essential infrastructure. Out of Toronto's 75 TTC Subway stops, only 13 are equipped with public toilets (TTC, 2024). At public parks, the few public toilet facilities available operate seasonally and within a temporal window which – in a 24-hour city – restrict access for those participating in recreational activities outside of peak windows; thus, necessitating the need to not only increase infrastructure in these areas but to expand the operation of those that already exist.

Through this research, I urge the inclusion of and engagement with chronically ill youth in design and policy-making processes surrounding public toilets. By actively involving these youth – in addition to other groups marginalized by toilet spaces – and implementing their recommendations, urban environments can become more accessible, equitable, and inclusive for not only youth with chronic gastrointestinal illnesses, but the population at large, as everyone needs to use the toilet. Universal design and city-wide planning, as suggested by Greed (2003), can work to incorporate public toilets into strategic urban planning and macro and local levels to ensure equitable distribution.

In addition to the above measures, the overarching issue of societal taboos, stigmas, and lack of awareness through education campaigns requires collective tackling so as to further a normalization of discussions around toilets and bodily functions. Moreover, this awareness should validate the existence and severity of invisible illnesses to foster empathy and inclusivity

in public spaces, and spaces of work and school. The insights shared by youth with chronic gastrointestinal illnesses reveal how tackling the taboos of natural bodily functions and designing with empathy can not only benefit those with immediate needs but contribute to a more accommodating society for all that fosters wellbeing in public space.

Final Takeaways

While the youth in this research demonstrate agency and resourcefulness, their experiences reveal significant gaps in public infrastructure. These barriers contribute to a shrinking of their social and geographic worlds, exacerbating physical and mental challenges. These challenges have illuminated the need for more inclusive urban and social infrastructures that account for the lived realities of youth with chronic illnesses. By reimagining accessibility, there is greater scope to begin to dismantle the barriers that constrain chronically ill youth's participation in everyday life, fostering spaces that enable – not hinder – their autonomy and wellbeing. The experiences of youth with chronic gastrointestinal illnesses reveal critical insights into the interplay between bodies, space, time, and societal structures, highlighting the systemic exclusions and inequities embedded in public spaces and infrastructure. By examining how these youth navigate and renegotiate spatial, temporal, and emotional barriers in their everyday lives, this thesis underscores the urgent need for inclusive and empathetic urban and social environments, particularly in the accessibility, design, and presence of public toilets as vital public infrastructure. More broadly, this research seeks to challenge dominant narratives, disrupting adultist and ableist frameworks by centering the voices and lived realities of chronically ill youth as they move through space and time differentially to their 'healthy' counterparts. Through the perspectives of these youth, this research reveals how public toilets are not neutral but are shaped by societal taboos, privatization, and inequitable design, which

exclude and stigmatize natural bodily functions. Thus, this research calls for a reimagining of space – specifically public toilets – and policy to prioritize accessibility, equity, and dignity, while also advocating for greater awareness and empathy toward diverse bodily needs. Ultimately, the narratives throughout this research indicate the potential for more inclusive urban and suburban futures by addressing the intersections of age and health through space and time, the societal taboos that permeate public toilet spaces, and the burden that is placed on marginalized individuals as opposed to infrastructure and the broader collective.

Bibliography

Amato, S. E., O'Connor, H., & Jewitt, S. (2022). Public toilets have reduced enteric pathogen hazards in San Francisco. *PLOS Water*, 4(1), e0000152. https://doi.org/10.1371/journal.pwat.0000152

Ansloos, J., Zantingh, D., Ward, K., McCormick, S., & Bloom Siriwattakanon, C. (2021). Radical care and decolonial futures: Conversations on identity, health, and spirituality with Indigenous queer, trans, and two-spirit youth. *International Journal of Child, Youth and Family Studies*, *12*(3), 74-103.

Bain, A. (2013). *Creative margins: Cultural production in Canadian suburbs*. University of Toronto Press. https://doi.org/10.3138/9781442666825

Barcan, R. (2005). *The politics of public toilets: An introduction. Geoforum, 36*(3), 327–331. https://doi.org/10.1016/j.geoforum.2004.10.002

Barcan, R. (2006). *Public toilets and the politics of gender. Gender, Place & Culture: A Journal of Feminist Geography, 13*(1), 15–32. https://doi.org/10.1080/09663690500424962

Barcan, R. (2010). Dirty spaces: Separation, concealment, and shame in the public toilet. In H. Molotch & L. Noren (Eds.), *Toilet: Public restrooms and the politics of sharing* (pp. 25–42). New York University Press. https://doi.org/10.18574/nyu/9780814759646.003.0006

Bartram, R (2003). 'Geography and the Interpretation of Visual Imagery', in Key Methods in Geography (London: Sage, 2003), pp. 131–40

Black, C. J., Yiannakou, Y., Houghton, L. A., & Ford, A. C. (2020). Epidemiological, clinical, and psychological characteristics of individuals with self-reported irritable bowel syndrome based on the Rome IV vs Rome III criteria. *Clinical Gastroenterology and Hepatology, 18*(2), 392–398.e2. https://doi.org/10.1016/j.cgh.2019.05.037

Brassley, P. (1998). *The social construction of rural space: Gender and geography in the countryside. Gender, Place & Culture: A Journal of Feminist Geography, 5*(3), 257–273. https://doi.org/10.1080/09663699825245

Braverman, I. (2010). Potty Training: Nonhuman Inspection in Public Washrooms. In H. Molotch & L. Norén (Eds.), *Toilet: Public Restrooms and the Politics of Sharing* (pp. 65–90). NYU Press. http://www.jstor.org/stable/j.ctt9qfpkj.7

Browne, K. (2004). Genderism and the bathroom problem: (Re)materialising sexed sites, (Re)creating sexed bodies. *Gender, Place and Culture: A Journal of Feminist Geography, 11*(3), 331–346. https://doi.org/10.1080/0966369042000258668

Butler. (2012). *Henri Lefebvre: Spatial politics, everyday life and the right to the city.* Routledge.

Cahill, C. (2007). Including excluded perspectives in participatory action research. Action Research, 5(3), 295–315. https://doi.org/10.1177/1476750307085815

Cavanagh, S. L. (2010). *Queering bathrooms: Gender, sexuality, and the hygienic imagination.* University of Toronto Press.

Chey, W. D., Kurlander, J., & Eswaran, S. (2015). Irritable bowel syndrome: A clinical review. *JAMA, 313*(9), 949–958. https://doi.org/10.1001/jama.2015.0954

Connor, D. J., Ferri, B. A., & Annamma, S. A. (Eds.). (2016). *DisCrit: disability studies and critical race theory in education*. Teachers College Press.

Cowen, D., Lehrer, U., & Winkler, A. (2005). *The secret lives of toilets: A public discourse on "private" space in the city.* In J. Caulfield & S. Peake (Eds.), *UTOpia: Towards a new Toronto* (pp. 193–203). Coach House Books.

Crohn's and Colitis Canada. (2022). *Impact of inflammatory bowel disease in Canada.* Retrieved from https://crohnsandcolitis.ca/IBD-Impact-Report-2022

Crohn's and Colitis Canada. (2023). *Impact of inflammatory bowel disease in Canada: 2023 report.* Retrieved from https://www.crohnsandcolitis.ca

Crooks, V. A., & Chouinard, V. (2006). An embodied geography of disablement: Chronically ill women's struggles for enabling places in spaces of health care and daily life. *Health & Place, 12*(3), 345–352. https://doi.org/10.1016/j.healthplace.2005.02.006

Crooks, V. A., Chouinard, V., & Wilton, R. D. (2008). *Geographies of disability and the right to the city. Progress in Human Geography, 32*(3), 343–361. https://doi.org/10.1177/0309132507088899

Digestive conditions archive. (n.d.). Canadian Digestive Health Foundation. Retrieved from https://cdhf.ca/en/digestive-conditions/

Douglas, M. (2002). *Purity and danger: An analysis of concepts of pollution and taboo.* Routledge.

Dyck, I. (1995). Hidden geographies: The changing lifeworlds of women with multiple sclerosis. *Social Science & Medicine, 40*(3), 307–320. https://doi.org/10.1016/0277-9536(94)E0091-6

Ellegård, K. (1999). A time-geographical approach to the study of everyday life of individuals – a challenge of complexity. *GeoJournal* 48, 167–175. https://doi.org/10.1023/A:1007071407502

Ellegård, K. (2020). *Thinking time geography: Concepts, methods, and applications.* Routledge.

Ettorre, E. (2017). *Autoethnography as Feminist Method: Sensitising the feminist "I."* Routledge. https://doi.org/10.4324/9781315626819

Evans, B. (2008). Geographies of Youth/Young People. *Geography Compass*, *2*(5), 1659–1680. https://doi.org/10.1111/j.1749-8198.2008.00147.x

Fernandez, M., Harris, B., & Black, K. (2020). Engaging racially and ethnically marginalized youth as stakeholders of outdoor public environments. In J. Loebach, S. Little, A. Cox, & P. E.

Ford, A. C., Lacy, B. E., & Talley, N. J. (2017). Irritable bowel syndrome. *The New England Journal of Medicine, 376*(26), 2566–2578. https://doi.org/10.1056/NEJMra1607547

Gastrointestinal Society. (2016). *2016 survey report: Irritable bowel syndrome.* Retrieved from http://badgut.pdf

Gershenson, O. (2009). *Ladies and gents: Public toilets and gender.* In O. Gershenson & B. Penner (Eds.), *Ladies and gents: Public toilets and gender* (pp. 1-16). Temple University Press.

Greed, C. (2003). *Inclusive urban design: Public toilets.* Architectural Press.

Greed, C. (2007). *Gender and the city: The impact of public space on the gendered experience of urban life.* Urban Studies, 44(3), 489-510.

Greed, C. (2010). Creating a nonsexist restroom. In H. Molotch & L. Noren (Eds.), *Toilet: Public restrooms and the politics of sharing* (pp. 117–141). New York University Press. https://doi.org/10.18574/nyu/9780814759646.003.0014

Greed, C. (2019). Join the queue: Including women's toilet needs in public space. *The Sociological Review (Keele)*, *67*(4), 908–926. https://doi.org/10.1177/0038026119854274

Grosz, E. (1994). *Volatile bodies: Toward a corporeal feminism.* Indiana University Press.

Hägerstrand, T. (1970). *What about people in regional science? Papers of the Regional Science Association, 24*(1), 7–21. https://doi.org/10.1007/BF01936872

Hägerstrand, T. (1975). *Space, time and human conditions.* In A. Carlstein, D. Parkes, & N. Thrift (Eds.), *Timing space and spacing time* (pp. 3–14). Edward Arnold.

Hägerstrand, T. (1991). *Time-geographic concepts.* In T. Carlstein, D. Parkes, & N. Thrift (Eds.), *Geography and the environmental challenge* (pp. 99–116). Edward Arnold.

HealthLink BC. (2023). Gastritis. Retrieved from https://www.healthlinkbc.ca/illnesses-conditions/bowel-and-gastrointestinal-conditions/gastritis

Holloway, S. L., & Valentine, G. (2000). Spatiality and the New Social Studies of Childhood. *Sociology (Oxford)*, *34*(4), 763–783. https://doi.org/10.1177/S0038038500000468

Holt, L. (2024). *The Space and Power of Young People's Social Relationships: Immersive Geographies* (First edition.). Routledge.

Serlin, D. (2010). Pissing without Pity: Disability, Gender, and the Public Toilet. In H. Molotch & L. Norén (Eds.), *Toilet: Public Restrooms and the Politics of Sharing* (pp. 167–188). NYU Press. http://www.jstor.org/stable/j.ctt9qfpkj.11

Hellgren, M. (2014). Extracting More Knowledge from Time Diaries? *Social Indicators Research*, *119*(3), 1517–1534. https://doi.org/10.1007/s11205-013-0558-6

Hubbard, P. (2006). *The cultural politics of hygiene: Gender, sexuality and the 'bathroom problem'. Gender, Place & Culture: A Journal of Feminist Geography, 13*(2), 119–137. https://doi.org/10.1080/09663690600597160

IBD UK Report. IBD UK. (n.d.). Retrieved from https://ibduk.org/

Jewitt, S. (2011). Geographies of shit: Spatial and temporal variations in attitudes towards human waste. *Progress in Human Geography*, *35*(5), 608–626. https://doi.org/10.1177/0309132510394704

Kafer, A. (2013). *Feminist, queer, crip.* Indiana University Press.

Kamash, Z. (2010). Which Way to Look?: Exploring Latrine Use in the Roman World. In H. Molotch & L. Norén (Eds.), *Toilet: Public Restrooms and the Politics of Sharing* (pp. 47–64). NYU Press. http://www.jstor.org/stable/j.ctt9qfpkj.6

Keil, R. (2020). The density dilemma: there is always too much and too little of it. *Urban Geography*, *41*(10), 1284–1293. https://doi.org/10.1080/02723638.2020.1850025

Kern, L. (2009). Gendering urban revitalization: Women, condominium development and the neoliberalization of urban citizenship. *Library and Archives Canada*

Kern, L. (2019). *Feminist City: A Field Guide* (1st ed.). Between the Lines.

Lefebvre, H. (1992). *The production of space* (D. Nicholson-Smith, Trans.). Blackwell.

Lefebvre, H. (2004). *Rhythmanalysis: Space, time, and everyday life* (S. Elden, M. Moore, D. N. Kofman, & E. Lebas, Trans.). Continuum.

Little, S. (2020). Experiential accessibility: A therapeutic approach to the design of the public realm. In J. Loebach, S. Little, A. Cox, & P.E. Owens (Eds.), *Routledge Handbook of*

Designing Public Spaces for Young People: Processes, Practices and Policies for Youth Inclusion. Routledge.

Loebach, J., Little, S., Cox, A., & Owens, P. E. (Eds.). (2020). *The Routledge handbook of designing public spaces for young people: processes, practices and policies for youth inclusion* (1st ed.). Routledge, Taylor & Francis Group.

Longhurst, R. (1998). *The body and geographical thought: (Re)figuring the corporeal. Progress in Human Geography, 22*(2), 227–244. https://doi.org/10.1191/030913298671374214

Longhurst, R. (2001). *Bodies exploring fluid boundaries*. Routledge.

Longhurst, R., Ho, E., & Johnston, L. (2008). Using "the body" as an "instrument of research": kimch'i and pavlova. *Area (London 1969)*, *40*(2), 208–217. https://doi.org/10.1111/j.1475-4762.2008.00805.x

Lynch, K., Banerjee, T., & Southworth, M. (1990). *City sense and city design: writings and projects of Kevin Lynch*. MIT Press.

MacKinnon, D., & Derickson, K. D. (2013). From resilience to resourcefulness: A critique of resilience policy and activism. *Progress in Human Geography, 37*(2), 253–270. https://doi.org/10.1177/0309132512454775

Madge, C., & O'Connor, H. (2002). Internet-based interviewing. *Sociological Research Online*, 7(4). https://doi.org/10.5153/sro.748

McDowell, L. (1992). Doing gender: Feminism, feminists, and research methods in human geography. *Transactions of the Institute of British Geographers, 17*(4), 399–416. https://doi.org/10.2307/622707

McDowell, L. (1997). *Capital culture: Gender at work in the city.* Blackwell.

McRuer, R. (2006). *Crip theory: Cultural signs of queerness and disability.* NYU Press.

McQuoid, J., Welsh, J., Strazdins, L., Griffin, A. L., & Banwell, C. (2015). Integrating paid work and chronic illness in daily life: A space-time approach to understanding the challenges. *Health & Place, 34*, 83–91. https://doi.org/10.1016/j.healthplace.2015.04.001

Moiseeva, A., Rooij, R., & Timmermans, H. (2018). The meaning of public space in the context of space-time behaviour in the 'network city': From socialist to sociable public space. In *Public Space* (pp. 123–132). Routledge. https://doi.org/10.4324/9781315603018-10

Molotch, H. L., & Norén, L. (Eds.). (2010). *Toilet: Public restrooms and the politics of sharing.* New York University Press.

Molotch, H. (2010). Introduction: Learning from the Loo. In H. Molotch & L. Norén (Eds.), *Toilet: Public Restrooms and the Politics of Sharing* (pp. 1–22). NYU Press.

Moris, M., & Loopmans, M. (2019). De-marginalizing youngsters in public space: critical youth workers and local municipalities in the struggle over public space in Belgium. *Journal of Youth Studies*, *22*(5), 694–710. https://doi.org/10.1080/13676261.2018.1535172

Moss, P., & Dyck, I. (1995). *Women, body, illness: Space and identity in the everyday lives of women with chronic illness.* Social Science & Medicine, 40(3), 307–320. https://doi.org/10.1016/0277-9536(94)E0091-6

Moss, P., & Dyck, I. (1999). *Body, corporeal space, and legitimating chronic illness: Women diagnosed with M.E. Antipode, 31*(4), 372–397. https://doi.org/10.1111/1467-8330.00106

Moss, P., & Dyck, I. (2002). *Women, body, illness: space and identity in the everyday lives of women with chronic illness*. Rowman & Littlefield.

Mount Sinai. (n.d.). Gastritis. *Mount Sinai Health Library.* Retrieved from https://www.mountsinai.org/health-library/condition/gastritis

Orban, K., Edberg, A.-K., & Erlandsson, L.-K. (2012). Using a time-geographical diary method in order to facilitate reflections on changes in patterns of daily occupations. *Scandinavian Journal of Occupational Therapy*, *19*(3), 249–259. https://doi.org/10.3109/11038128.2011.620981

Palang, H., Soovali, H., & Printsmann, A. (2007). *Seasonal landscapes* (1st ed. 2007.). Springer. https://doi.org/10.1007/1-4020-4990-0

Paterson, M. (2009). Haptic geographies: ethnography, haptic knowledges and sensuous dispositions. *Progress in Human Geography*, *33*(6), 766–788. https://doi.org/10.1177/0309132509103155

Penner, B. (2009). (Re)Designing the "Unmentionable": Female Toilets in the Twentieth Century. In O. Gershenson & B. Penner (Eds.), *Ladies and Gents: Public Toilets and Gender* (pp. 141–150). Temple University Press.

Perkins, C. (2010). *Cartography: Mapping theory*. *Progress in Human Geography*, 34(2), 213–222. https://doi.org/10.1177/0309132509348770

Podmore, J. A., & Bain, A. L. (2021). Whither queer suburbanisms? Beyond heterosuburbia and queer metronormativities. *Progress in Human Geography*, *45*(5), 1254–1277. https://doi.org/10.1177/0309132520979744

Porteous, J. D. (1990). *Landscapes of the mind: Worlds of sense and metaphor*. University of Toronto Press.

Rodaway, P. (1994). *Sensuous geographies body, sense and place*. Routledge.

Rose, G. (1993). Progress in geography and gender. Or something else. *Progress in Human Geography*, *17*(4), 531–537. https://doi.org/10.1177/030913259301700407

Rose, G. (1997). Situating knowledges: positionality, reflexivities and other tactics. *Progress in Human Geography*, *21*(3), 305–320. https://doi.org/10.1191/030913297673302122

Simonsen, K. (2005). Bodies, sensations, space and time: The contribution from Henri Lefebvre. *Geografiska Annaler. Series B, Human Geography, 87*(1), 1–14. https://doi.org/10.1111/j.0435-3684.2005.00174.x

Simrén, M., Barbara, G., Flint, H. J., Spiegel, B. M., Spiller, R. C., Vanner, S., Verdu, E. F., Whorwell, P. J., Zoetendal, E. G., & Rome Foundation Committee. (2013). Intestinal microbiota in functional bowel disorders: A Rome foundation report. *Gut, 62*(1), 159–176. https://doi.org/10.1136/gutjnl-2012-302167

Skelton, T., & Gough, K. V. (2013). Introduction: Young people's im/mobile urban geographies. *Urban Studies, 50*(3), 455-466. https://doi.org/10.1177/0042098012468900

Skelton, T. (2022). Absent-Presence Present-Absence: Places, Spaces, Rights for Young People. *The Geographical Journal*, 188(1), 1–11. https://doi.org/10.1111/geoj.12445

Sunnqvist, C., Rämgård, M., & Örmon, K. (2020). Time Geography, a Method in Psychiatric Nursing Care. *Issues in Mental Health Nursing*, *41*(11), 1004–1010. https://doi.org/10.1080/01612840.2020.1757795

Valentine, G., & Skelton, T. (2003). *Finding oneself, losing oneself: The lesbian and gay 'scene' as a paradoxical space. International Journal of Urban and Regional Research, 27*(4), 849–866. https://doi.org/10.1111/j.0309-1317.2003.00487.x

Vanderbeck, R. M. (2007). Intergenerational geographies: Age relations, segregation, and re-engagements. *Geography Compass, 1*(2), 200-221. https://doi.org/10.1111/j.1749-8198.2007.00007.x.

Scholten, C., Friberg, T., & Sandén, A. (2012). Re-Reading Time-Geography from a Gender Perspective: Examples from Gendered mobility. *103*(5), 584–600. https://doi.org/10.1111/j.1467-9663.2012.00717.x

Slater, J., & Jones, C. (2021). Toilet Signs as Border Markers: Exploring Disabled People's Access to Space. *International Journal of Disability and Social Justice, 1*(1), 50–72. https://doi.org/10.13169/intljofdissocjus.1.1.0050

Skelton, T., & Valentine, G. (2007). *It feels like being deaf is normal: An exploration into the complexities of defining D/deafness and young D/deaf people's identities. Canadian Geographer, 51*(4), 468–485. https://doi.org/10.1111/j.1541-0064.2007.00190.x

Washrooms at TTC subway stations. TTC.ca. (n.d.). https://www.ttc.ca/riding-the-ttc/Washrooms-at-TTC-subway-stations

Wood, N. (2018). *Planning For Privately Owned Public Space In The Greater Toronto Area*

Appendix A

Blank Space-Time Diary (For one Day)

Day 6 - Date:							
Time	Activity	With Whom	Location (Departing – Destination)	Mode of Transportation	#of toilet visits/needs	Toilet Location(s)	Wellness Rating (1-10)
	Comments:						

Appendix B

Interview Questions

Introduction

Tell me about yourself?

What made you want to participate in this study?

Health Conditions

How would you describe your health journey from diagnosis to now?

How do symptoms or attributes of your illness impact your everyday life, especially how you access public space for your daily activities?

Can you walk me through your space-time diary and discuss any barriers to mobility and access you encountered while making it?

Constraints

Have you altered your lifestyle (i.e. where you live, work, go to school, or socialize) based on frequent or urgent needs to access a toilet? If yes, how so?

Do you feel that your need for timely access to public toilets detracts from your ability to move through space efficiently? If yes, how so?

How might distance from home, time of day, or familiarity of place impact how you view or move through space in terms of your toilet access needs?

Coping Strategies

What coping mechanisms have you employed to navigate public space with your illness (especially during flare ups)?

How do you manage times where you need a toilet in public and cannot find or access one?

What attributes of public toilets are most important to you? or what type of public toilets do you feel most comfortable using?

Appendix C

Informed Consent Form

Informed Consent Form

Date: August 10th, 2023

Study Name: Chronically Excluded? Public Toilet Access for Youth with Chronic Gastrointestinal Illnesses

Researcher name: Stefanie Kiriazis (Principal Investigator), Geography Department, M.A. Candidate, York University. Email: stefkiri@yorku.ca. Supervised by Dr. Alison Bain.

Purpose of the Research:

- The purpose of this research is to identify the ways in which youth with gastrointestinal illnesses are constrained by – and cope with – the lack of public toilet access in the Greater Toronto Area. •This research will be conducted through space-time diaries and semi-structured interviews and be presented in conferences and reported in a thesis dissertation. Quotations, non-identifying aspects of space-time diaries, general findings and statistics may be used in academic papers and presentations relating to this research.

What You Will Be Asked to Do in the Research:

- As a participant you will be asked to complete a space-time diary (est. 2.5 hours) which can be accessed digitally or in print. The space-time diary is filled out over the course of seven days to track your daily activities as reported through the categories of: time, with whom, location, transportation, #of toilet visits/needs, toilets used (location), and a general wellness rating from 110 during that activity.
- You will additionally be asked to participate in a one-one-one interview (1 hour) over zoom or in a public place of your choosing and answer questions and discuss your illness, how you navigate public space, and how you cope with a lack of toilet access.
- You will be committed to an estimate of 3.5 hours in total and will be offered an inducement of $40 for your time.

Risks and Discomforts: There is potential to feel emotional discomfort during this research process due to the discussion of personal and health related topics. As a participant you may choose to not answer

certain questions or participate in certain aspects of the research, and during the interview you may end the process at any time.

Benefits of the Research and Benefits to You: This research aims to bring awareness to the lack of toilet access in the Greater Toronto Area and suggest ways to improve the daily lives of not only youth with gastrointestinal illnesses but all those who are constrained by this issue. As a participant, you may potentially experience the benefit of feeling more involved in your community by helping to produce data that can be beneficial to the larger population. You may also feel that it is an opportunity to learn more about yourself through the process of diary entries and interview discussion.

Voluntary Participation and Withdrawal: Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer, to stop participating, or to refuse to answer particular questions will not influence the nature of the ongoing relationship you may have with the researchers or study staff, or the nature of your relationship with York University either now, or in the future.

If you decide to stop participating, you may withdraw without penalty, financial or otherwise, and you will still receive the promised inducement.

In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible. Should you wish to withdraw after the study, you will have the option to also withdraw your data up until the analysis is complete.

Confidentiality:

- Data will be documented through hard copies in writing, digital audio files, and digital documents.
- Hard copy data will be stored in a locked filing cabinet and digital data will be stored on a password protected device with a secure network.
- The principal investigator will keep a link that identifies you to your coded information, but this link will be kept secure and available only to the principal investigator. Any information that can identify you will remain confidential.
- Recordings (audio) will be saved in a password protected file to research team members' local computer, not the cloud-based service.
- Please note that it is the expectation that participants agree not to make any unauthorized recordings of the content of a meeting / data collection session.
- Data will be stored until July 1st, 2028.
- At the end of storage physical data will be shredded and discarded and electronic data will be deleted and wiped from computer storage.

Unless you choose otherwise all information you supply during the research will be held in confidence and unless you specifically indicate your consent, your name will not appear in any report or publication of the research. Data will be collected through audio recording, handwritten notes, and your physical or digital space-time diary. Your data will be safely stored in a locked cabinet, and electronic data will be password protected on a secure network and only the researcher will have access to this information. The data will be stored for approximately five years and will be destroyed on July 1st, 2028. Confidentiality will be provided to the fullest extent possible by law.

The data collected in this research project may be used – in an anonymized form - by members of the research team in subsequent research investigations exploring similar lines of inquiry. Such projects will still undergo ethics review by the HPRC, our institutional REB. Any secondary use of anonymized data by

the research team will be treated with the same degree of confidentiality and anonymity as in the original research project.

Questions About the Research? If you have questions about the research in general or about your role in the study, please feel free to contact the principal investigator (Stefanie Kiriazis at stefkiri@yorku.ca) or Supervisor (Dr. Alison Bain at abain@yorku.ca). You may also contact the Program in Geography at gradgeog@yorku.ca and/or 416-736-5988

This research has received ethics review and approval by the Delegated Ethics Review Committee, which is delegated authority to review research ethics protocols by the Human Participants Review SubCommittee, York University's Ethics Review Board, and conforms to the standards of the Canadian TriCouncil Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Director, Research Ethics in the Office of Research Ethics, 3rd Floor, Kaneff Tower, York University (telephone 416-736-5914 or e-mail ore@yorku.ca).

Legal Rights and Signatures:

I_____consent to participate Chronically Excluded? Public Toilet Access for Youth with Chronic Gastrointestinal Illnesses
conducted by Stefanie Kiriazis. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature _____ **Date** _____
Participant

Signature _____ **Date** _____
Principal Investigator

Additional consent (where applicable)

1. Audio recording

☐ I consent to the audio-recording of my interview(s).
☐ I consent to the use of quotations in my final reports/ publications of the research.

Signature _____ **Date** _____
Participant Name:

Appendix D

Digital Poster for Recruitment

YORK UNIVERSITÉ UNIVERSITY

PARTICIPANTS NEEDED FOR RESEARCH ON YOUTH (18-25) LIVING WITH CHRONIC GASTROINTESTINAL ILLNESSES IN THE GTA

Looking for volunteers to participate in research on inadequate public toilet provisions in the Greater Toronto Area and the impacts on youth with chronic gastrointestinal illnesses. Volunteers should be:

- Youth aged 18 to 25 years old
- Diagnosed with chronic (lasting <1 year) gastrointestinal illness
  - Including but not limited to: Crohn's, Ulcerative Colitis, Irritable Bowel Disease, Celiac, Colon Cancer
- Live, work, or attend school in the GTA

If you are interested and consent to participate, you will be asked to complete a space-time diary over the course of one week and take part in a one-on-one hour-long interview (virtual or in person). In appreciation of your time, you will receive a $40 honorarium.

For more information or to volunteer please contact:

Stefanie Kiriazis
M.A. Candidate in Geography, York University
stefkiri@yorku.ca
905-431-0469