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# Extrafamilial Stressors and Family Functioning in Families of Transgender and Non-Binary Youth Receiving Gender-Affirming Care: A Latent Class Analysis

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A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Epidemiology and Biostatistics

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## Abstract

Families often experience extrafamilial, transgender-specific social stressors as they accompany their transgender or non-binary (TGNB) youth through the gender-affirming care process. Guided by family systems theory, family life cycle perspective, and queering family perspective, we explored whether these stressor experiences were quantifiable as a latent variable, and whether such a latent stressor variable might have a relationship with family functioning. We conducted a latent class analysis using parent-report of stressor experiences in a Canadian sample of TGNB youth under 16 years of age who received gender-affirming care for the first time. Families fell into one of 4 stressor groups: “Low Disruption, Policy Advocacy”, “Social Disruption, Social Advocacy”, “Low Disruption, Low Advocacy”, and “Major Disruption, High Advocacy”. Family functioning was strong across all stressor groups, and there was no association between stressor group and family functioning score.

## Keywords

Transgender youth, gender affirming care, family functioning, latent class analysis, family systems, family life cycle, queer theory, minority stress

## Summary for Lay Audience

Gender dysphoria occurs when individuals feel distress because their gender identity does not align with their sex assigned at birth. Gender affirming care involves medical procedures such as puberty blockers, hormone therapy, and surgical procedures that can help to alleviate such distress. The demand for gender affirming care is increasing among transgender and non-binary (TGNB) youth in Canada. TGNB youth and their families may experience stressful social interactions with individuals or institutions outside of their immediate family that are specific to the youth's identity as a TGNB person; we refer to these as stressors.

Family functioning refers to how well members of a family unit work together to function through both stress and positive experiences. According to different family theories, individuals within a family unit can each influence the dynamic and experiences of the rest of the family unit, and challenges that families face differ depending on the age of the youth. It is possible that influences such as stressors outside of the family can also create stress in TGNB youth' families and impact family functioning; however, few studies have explored this possibility.

This thesis used data from the largest study of Canadian TGNB youth and families, with youth under 16 years of age, accessing gender-affirming care for the first time. We categorized families' experiences of stressors outside of the family into 4 different groups, with varying degrees of social disruption experienced alongside advocacy efforts. These groups generally did not differ in their experiences of family functioning, and overall, families were doing well. Stressor group was not linked to rating of family functioning, but youth age group, whether parents had a partner, and whether a co-parent was living apart from the family unit appeared to play a potential role in family functioning.

This study reaffirms that families accompanying their TGNB youth through clinical care in Canada are doing well, regardless of the challenges they face from outside the family. The discovery of distinct stressor groups affirms parents' experiences and contributes to family functioning research in this population.

## Co-Authorship Statement (where applicable)

Each thesis chapter was written by Laura Douglas as partial fulfillment of Master of Science degree requirements in the Department of Epidemiology and Biostatistics. As her advisory committee, Dr. Greta Bauer, Dr. Kathy Speechley, and Dr. Annie Pullen Sansfaçon provided feedback on this thesis, which Ms. Douglas incorporated at various stages. All data used in this thesis came from the Trans Youth CAN! (TYCAN) study; data access was granted to Ms. Douglas by the TYCAN Steering Committee.

The research question was developed through discussion between Ms. Douglas and Dr. Greta Bauer, with feedback provided by Dr. Kathy Speechley, and Dr. Annie Pullen Sansfaçon. All background research was completed by Ms. Douglas, with feedback incorporated from Dr. Greta Bauer, Dr. Kathy Speechley, and Dr. Annie Pullen Sansfaçon. Statistical methods and analyses were planned by Ms. Douglas and Dr. Greta Bauer and approved by the TYCAN Steering Committee.

All data cleaning and coding for the present analyses were conducted by Ms. Douglas, with some portions in consultation with Dr. Greta Bauer. All results were interpreted by Ms. Douglas, alongside consultation with Dr. Greta Bauer, Dr. Kathy Speechley, and Dr. Annie Pullen Sansfaçon

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# Table of Contents

Abstract .....	ii
Summary for Lay Audience .....	iii
Co-Authorship Statement (where applicable).....	iv
Acknowledgments.....	v
List of Tables .....	ix
List of Figures .....	x
List of Appendices .....	xi
Chapter 1 .....	1
1 Introduction .....	1
1.1 Study Rationale and Theoretical Overview .....	1
1.2 Study Objectives .....	3
1.3 Positionality Statement .....	4
Chapter 2.....	6
2 Literature Review.....	6
2.1 Gender-Affirming Care.....	6
2.1.1 Gender-Affirming Care and Youth Well-Being .....	7
2.1.2 Gender-Affirming Care as Source of Family Support.....	9
2.2 Extrafamilial Stressors and Social Support.....	10
2.2.1 Stressors Across Social Domains.....	11
2.2.2 Stigma Against Youth and Family Members.....	12
2.2.3 Social Support for Youth and Families.....	14
2.3 Family Functioning.....	15
2.3.1 Family Functioning in Families of TGNB Youth.....	18
2.4 Intersectionality in Family Experiences.....	22

2.4.1	Intersectionality and Parent/Family-Centered Variables .....	22
2.4.2	Intersectionality and Youth/Family-Centered Variables .....	25
Chapter 3	.....	28
3	Methods.....	28
3.1	Sample.....	28
3.2	Measures .....	30
3.2.1	Parent, Youth, and Family Characteristics .....	30
3.2.2	Exposure Variable/Indicator Items for Latent Class Analysis.....	33
3.2.3	Outcome Variables.....	33
3.3	Statistical Analyses .....	35
3.3.1	Latent Class Analysis.....	35
3.3.2	Descriptive analysis of individual latent classes.....	39
3.3.3	Mean scores of family functioning domains across classes.....	39
3.3.4	Linear Regression models.....	39
Chapter 4	.....	42
4	Results .....	42
4.1	Latent Class Analysis.....	42
4.2	Descriptive analysis by LCA classes .....	48
4.3	Family Functioning Subscales .....	53
4.3.1	Objective 3 .....	53
4.4	Family Functioning Linear Regression Analyses .....	60
Chapter 5	.....	65
5	Discussion .....	65
5.1	Summary of Results .....	65
5.1.1	Latent Class Analysis of Extrafamilial Stressors .....	65
5.1.2	Descriptive Characteristics by LCA Group .....	68

5.1.3	Mean Differences in Family Functioning Subscales Across Stressor Classes.....	70
5.1.4	Linear Regression Analyses of Stressors and Family Functioning .....	71
5.2	Strengths and Limitations .....	73
5.3	Future Research .....	76
5.4	Conclusion .....	77
	References.....	79
	Appendices.....	96
	Appendix A. Supplemental Materials for Bauer et al. (2020, submitted) .....	96
	eMethods. Sample Weighting Methods.....	96
	Trans Youth CAN! Study Survey Weights.....	96
	Derivation.....	97
	Confirmation .....	98
	Appendix B. Descriptive tables of family functioning subscales for each latent class (weighted). .....	100
	Appendix C. Pairwise Comparisons (Bonferroni) Between Stressor Classes on the Leadership scale. ....	102
	Appendix D. Results for conflict subscale with one outlier removed from Class 4.....	103
	Appendix E. Multicollinearity Diagnostic Results from Linear Regression Analyses ..	104
	Appendix F. Sensitivity Analysis of Step 4 Linear Regression Model .....	105
	Curriculum Vitae .....	106



## List of Tables

Table 1. Fit Statistics for Latent class Models with 2 to 7 Classes.....	43
Table 2. Gamma Parameters (Expected Class Sizes) – Models with 2-7 Classes .....	43
Table 3. Scaled AIC Values.....	44
Table 4. Four-class Model - Rho parameters (Item-Response Probabilities).....	45
Table 5. Four-class Model – Mean Posterior Probabilities of Class Membership .....	47
Table 6. Descriptive statistics of parent-participant characteristics by stressor latent class...	48
<b>Table 7. Descriptive statistics of youth and family characteristics by stressor latent class.....</b>	<b>51</b>
Table 8. Step 1 and 2 Linear Regression Models .....	60
Table 9. Step 3 and 4 Linear Regression Models .....	61
Table 10. Step 5 Linear Regression Model.....	62

## List of Figures

Figure 1. Diagram of Extrafamilial Stressors' Impact on the Family Unit .....	21
Figure 2. Overall Family Functioning - Boxplot of Means by Stressor Class.....	54
Figure 3. Family Health/Competence - Means by Stressor Class .....	55
Figure 4. Family Conflict - Boxplot of Means by Stressor Class.....	56
Figure 5. Family Cohesion - Boxplot of Means by Stressor Class.....	57
Figure 6. Family Leadership - Boxplot of Means by Stressor Class .....	58
Figure 7. Family Expressiveness - Boxplot of Means by Stressor Class.....	59
Figure 8. Family Connectedness - Boxplot of Means by Stressor Class .....	60

## List of Appendices

Appendix A. Supplemental Materials for Bauer et al. (2020, submitted) .....	96
Appendix B. Descriptive tables of family functioning subscales for each latent class (weighted). .....	100
Appendix C. Pairwise Comparisons (Bonferroni) Between Stressor Classes on the Leadership scale.....	102
Appendix D. Results for conflict subscale with one outlier removed from Class 4.....	103
Appendix E. Multicollinearity Diagnostic Results from Linear Regression Analyses .....	104
Appendix F. Sensitivity Analysis of Step 4 Linear Regression Model .....	105

# Chapter 1

## 1 Introduction

This chapter will explain the study rationale and provide an overview of theoretical perspectives, study objectives, and a positionality statement.

### 1.1 Study Rationale and Theoretical Overview

Transgender and non-binary (TGNB) youth are increasingly seeking gender-affirming clinical care in Canada (Lawson et al., 2017). Parents and caregivers may accompany them during this process, but Canadian data about the experiences of these youth, parents, and their families is sparse. Qualitative studies utilizing community samples in North America demonstrate that youth and their families experience a variety of trans-specific stressors (Ehrensaft, 2011; Kuvalanka, Allen, et al., 2018; Kuvalanka et al., 2014; Kuvalanka, Mahan, et al., 2018; Pullen Sansfaçon et al., 2015). Youth and their parents often deal with stressors originating outside of their immediate family unit. Such stressors occur in a variety of social environments, extending from the sphere of healthcare to schools, extended family, and the larger community. It seems likely that such stressors may pose a strain on the family unit, possibly influencing how the family functions. Despite the growing evidence that these stressors occur, few studies measure them quantitatively, and there are few studies quantitatively assessing family functioning in this population at all.

The Canadian Institutes of Health Research (CIHR)-funded Trans Youth CAN! (TYCAN) study is the largest pan-Canadian cohort study to collect the experiences of TGNB youth accessing clinical care and their accompanying caregivers. This provides an opportunity to assess extrafamilial stressor experiences using a data-driven approach, latent class analysis, to determine if there are underlying groupings of common experiences. Using an intersectional framework is crucial in understanding the complexity of membership in underlying stressor groups, and the diversity of families accessing gender-affirming clinical care in Canada. Intersectionality is a concept that acknowledges that lived experiences differ at the intersection of different social identities

(Crenshaw, 1989). Acknowledging this complexity is particularly important in family studies research with lesbian, gay, bisexual, transgender, or queer (LGBTQ+) members, in which other social identities are sometimes overlooked; latent class analysis might be one method for observing the intersection of identities and oppression (Fish & Russell, 2018).

Assessing family functioning for TGNB youth using quantitative measures can help clarify how family units are functioning at different phases of their youth's journey through gender-affirming care. The TYCAN study measures family functioning at 3 different time points, but for this thesis, analyses were focused on baseline measurements of family functioning, assessed at the start of youths' clinical care. Rather than contribute to a pathologizing narrative that stigmatizes families of TGNB youth, we hope to provide clarity surrounding the potential influence of extrafamilial stressors on family functioning and relationships with youth and parent-related factors, such as presence of siblings, youth age group, presence of parental partner, and presence of co-parent living elsewhere. The experiences and influence of siblings on family functioning represent a gap in the current literature of TGNB family experiences, as does the influence of youth age group. Siblings, parent partners, and co-parents can all play a role in family functioning in general, according to family systems theory (see Bowen, 1978), and age of youth can impact family experiences, as it affects challenges and developmental tasks a family may experience, according to family life cycle perspective (Carter & McGoldrick, 1999).

Intersectionality, family systems theory, and family life cycle theory can all be contextualized alongside transfamily theory and the "queering" family framework. The queering framework acknowledges that some individuals and families do gender, sexuality and family in ways that differ from the cisnormative, heteronormative, and family structural expectations of 20<sup>th</sup> century family studies (Oswald et al., 2005). Transfamily theory highlights how families that support their TGNB youth may end up queering the family in specific ways, including grappling with new gender roles, gender presentations, and definitions of sexual orientations, challenging ideas about how and when gender develops, and what meaning families create together as they alter

boundaries to protect their youth (McGuire et al., 2016). While family functioning as a construct is rooted in traditional ideas about gender, sexuality, and family structure, we aim to contextualize all of our findings within transfamily theory and the queering framework, to acknowledge the diversity and resilience present in families of TGNC youth.

## 1.2 Study Objectives

This thesis will address the following exploratory study objectives:

1. Assess whether there are underlying patterns of experience with extrafamilial trans-specific stressors among families, using latent class analysis of parent-reported stressor experiences.
2. Describe parent, youth, and family characteristics in each grouping of stressor experiences.
3. Compare mean responses for each grouping of stressor experiences across several subscales of family functioning.
  - a. Assess differences between means of stressor groups for six different family functioning subscales and overall family functioning.
  - b. Follow up any significant differences between means with pairwise comparison tests to determine which groups differ from one another.
4. Assess the relationship between stressor groupings, parent and youth factors, and overall family functioning.
  - a. Step 1 model – stressor groupings as predictor of overall family functioning (unadjusted).
  - b. Step 2 model – stressor groupings as predictor of overall family functioning, adjusting for youth factors (presence of siblings and youth age group).

- c. Step 3 model – stressor groupings as predictor of overall family functioning, adjusting for youth factors (presence of siblings and youth age group) and parent factors (parent partner status and co-parent-living-elsewhere status).
- d. Step 4 model – stressor groupings as predictor of overall family functioning, adjusting for covariates that remained significant in previous steps and dropping nonsignificant covariates.
- e. Step 5 model – stressor groupings as predictor of overall family functioning, adjusting for covariates that remained significant in previous steps and dropping nonsignificant covariates, and adding an interaction term between stressor groupings and youth age group.

### 1.3 Positionality Statement

I am a cisgender woman conducting research with transgender individuals, and my research is shaped by the disciplines of epidemiology, psychology, and family studies. My interest in studying the health and wellbeing of transgender youth stems from hearing the experiences of transgender friends and acquaintances, who described to me experiences of navigating adolescence and the healthcare system as young trans persons. Studying psychology and family studies during my undergraduate degree also stoked a strong interest in social work, counselling, and social justice for people experiencing marginalization. As a result, I wanted to pursue epidemiological research that could respectfully capture the experiences of trans individuals, and hopefully contribute to better healthcare provided to this population in Canada.

However, I recognize that all the academic disciplines I have been trained in contain harmful biases regarding normality: biases surrounding the definition of “normal” gender, “normal” family, and “normal” health and wellbeing. Furthermore, these academic disciplines have at times contributed real harm toward the trans community, via stigmatizing research and healthcare practice. And, crucially, I do not have the lived experience of navigating a cisnormative society as a transgender person. I am grateful for

the guidance of experienced researchers on the Trans Youth CAN! study team, who are allies to this community and some of whom are trans themselves; with that in mind, I caution that I cannot, as a cisgender person, comment on the experiences of trans folks as authentically as they themselves do.



## Chapter 2

### 2 Literature Review

This chapter will review the current body of work describing the extrafamilial stressor experiences of TGNB youth, parents, and families and their family functioning. It will provide an overview of gender-affirming care, and briefly explore family theories and family functioning as a construct, minority stress and courtesy stigma, and provide justification for the variables used in this thesis' analyses.

#### 2.1 Gender-Affirming Care

Sex assigned at birth refers to a person's designated sex, usually determined by one's genitalia at birth. This can differ from gender, which is the social identity and lens through which an individual experiences themselves and their social world. For most Canadians, sex and gender are aligned, i.e., a person assigned as female at birth (AFAB) usually experiences their gender as female, or as a woman, with assigned males often identifying as men (AMAB). This alignment of sex and gender identity in an individual designates a person as being *cisgender* (*GLAAD Media Reference Guide*, 2016). For a minority, sex designation and gender identity are not identical, and such individuals may identify themselves as falling under the transgender umbrella. Transgender individuals may strongly identify with the gender that society deems opposite to their designated sex, or they may not identify with a strict gender binary at all, and may consider themselves to be non-binary, agender or genderfluid (*GLAAD Media Reference Guide*, 2016).

For some transgender or nonbinary (TGNB) individuals, experiencing their gender as being different from the gender usually associated with their assigned sex can lead to distress, clinically referred to as gender dysphoria (*GLAAD Media Reference Guide*, 2016). It is unknown how large the TGNB population is in Canada, due to low quality national data and lack of questions addressing gender identity in the 2016 Canadian Census (Waite & Denier, 2019). In the United States, the adult TGNB population is estimated to be about 0.6% (Flores et al., 2016), while the youth TGNB population (aged

13-17 years) represent approximately 0.7% (Herman et al., 2017). It is also unknown what proportion of Canadian youth are TGNB.

Gender-affirming care refers to clinical care that affirms and supports a TGNB person's affirmed gender identity. It can include treatments such as puberty blockers (e.g. GnRH agonists), which delay onset of secondary sex characteristics and are generally believed to be reversible, as well as hormone replacement therapy or cross-sex hormones, which involves administering hormones to produce desired secondary sex characteristics that align with the individual's affirmed gender (Coleman et al., 2012). For some individuals, it may also involve surgical procedures that alter the face or other sexed characteristics (e.g. genitalia, breasts) to align more with their affirmed gender (Coleman et al., 2012). It is important to note that not all TGNB individuals desire receiving all or any such procedures, and that a person does not "become" their affirmed gender while transitioning through physical treatments or expressing their affirmed gender. Their affirmed gender is valid regardless of how they choose to express it.

### 2.1.1 Gender-Affirming Care and Youth Well-Being

Access to gender-affirming care is crucial for the wellbeing of TGNB individuals, particularly youth. Referrals for gender-affirming care across Canada have dramatically increased over the last 15-20 years, with estimated referrals more than doubling in 2016 to more than 1200 referrals (Lawson et al., 2017). In the last five years, the trend of increased referrals has been observed nationally in other countries as well (Pullen Sansfaçon, Temple-Newhook, et al., 2019). This spike in demand results in longer wait times, which can be distressing while coping with gender dysphoria. Research using Canadian clinical samples suggests that TGNB youth may be at heightened risk for several adverse mental health outcomes. One Vancouver clinic retrospective chart review reported prevalence of mood disorders (35%) and anxiety disorders (24%) among their patients, with prevalence of both considerably higher in AFAB than AMAB youths (Khatchadourian et al., 2014). A Toronto sample reported similar numbers, reporting 37.4% of participants with depressive disorder, 28.1% anxiety disorder, 33.0% suicidal thoughts, 30.5% self harm, as reported by youth in declaring previous diagnoses

(Chiniara et al., 2018). They also observed a discrepancy with more severe levels of depression and anxiety among AFAB youths than AMAB youths.

Clinical studies of TGNB youth in other countries also report youth presenting to clinic with mental health challenges. A Dutch cohort study reported that almost one third of their sample had at least one psychiatric disorder present 12 months before presenting to clinic (de Vries, Doreleijers, et al., 2011). An American study noted that nearly one quarter of their youth and young adult patients had mild or moderate levels of depression, while 11% fell into a range of severe depression (Olson et al., 2015). Jarin et al. (2017) noted that 30% of youth patients in their American study who were receiving hormones were also treated for depression at the same time, while Spack et al. (2012) reported that 44.3% of patients in their study had a history of mental health challenges.

Community samples also point to high levels of adverse mental health outcomes among TGNB youth. A large study comparing adolescents aged 14-18 years of age in Canada indicated that TGNB youth were much more likely to have suicidal thoughts and have self-harmed than their cisgender peers (Veale et al., 2017). A large scale New Zealand study comparing TGNB and cisgender students in schools also yielded large differences in mental health outcomes, with TGNB youth having over 5 times the odds of having significant depressive symptoms, compared to their cisgender peers (Clark et al., 2014). Similarly, American community samples show great health disparity between TGNB and cisgender youth. In Reisner et al.'s (2015) retrospective cohort study at a community clinic service, young TGNB individuals aged 12-29 years of age were at considerably higher risk for depression, anxiety, and both suicidal ideation and attempts, compared to matched cisgender controls. Katz-Wise et al. (2018) noted that among TGNB youths 13-17 years of age in their American study, 61% met the clinical threshold for depression symptoms, and close to half of youth had self-harmed previously.

Clinical studies published using the data of youth receiving gender-affirming care over the last 2-3 decades support the hypothesis that gender-affirming care provides many benefits to TGNB youth. TGNB youths' use of puberty blockers and gender-affirming hormones has been associated with improvements in mental health outcomes, including

reduction in depressive and emotional concerns with puberty suppression (de Vries, Steensma, et al., 2011) and improvement in gender dysphoria and psychological wellbeing, after hormone treatment and surgical procedures (de Vries et al., 2014). Khatchadourian et al. (2014) reported that prevalence of suicide attempts by patients dropped after receiving clinical care, from 12% prior to their first appointment to 5%. With gender-affirming care, TGNB youth not only match well-being levels of age-matched cisgender peers and move past some of the adverse mental health outcomes they are at high risk for, but they may thrive even more than their general population peers (de Vries et al., 2014). One Canadian qualitative study recently reported that youth in their study attributed gender-affirming medical interventions to improvements in their well-being and mental health (Pullen Sansfaçon, Temple-Newhook, et al., 2019).

Gender-affirming care also appears to be safe for youth physiologically, both in short-term studies (Jarin et al., 2017) and studies assessing youth up to a few years after initial treatment (Olson-Kennedy et al., 2018). Furthermore, access to gender-affirming care needs to be available and accessible to younger youth so that they can prevent irreversible secondary sex characteristics that onset in puberty. The use of blockers can help achieve this, which may aid in reducing gender dysphoric distress (Khatchadourian et al., 2014). Delayed access to such care is an issue present in Canadian clinics, as mentioned by Chiniara et al. (2018), with youth on average presenting to clinic at nearly 16 years of age in their study. Delaying access to hormones until youth are older (e.g. age 16) may also cause distress, as not all youth want to remain frozen in a prepubertal state with blockers for long periods of time (Ehrensaft, 2016; Gridley et al., 2016).

### 2.1.2 Gender-Affirming Care as Source of Family Support

Gender-affirming care also plays an important role in offering support to families of TGNB youth, as clinicians come into contact with youth and their families. While it is not their main role when providing gender-affirming care, it is still a professional issue that clinicians navigate. Around half of parents in the cross-country Canadian Trans Youth CAN! study reported their youth's care provider as source of support (Pullen Sansfaçon et al., 2020). Care providers also have the challenging position of balancing the needs of TGNB youth in their care as well as that of the youths' parents. This can

include encouraging care for the youth when parents are unsupportive (Clark et al., 2020) and supportively, collaboratively guiding youth and families through the decision-making process (Pullen Sansfaçon, Kirichenko, et al., 2019). Parents may seek out clinicians and mental health professionals for reassurance that they are making appropriate choices in supporting their child receiving gender-affirming care (Johnson & Benson, 2014; Pullen Sansfaçon, Kirichenko, et al., 2019), and some studies have recommended that such clinics make a more focused effort to support parents and families for better family and youth outcomes (Lawlis et al., 2017; Pullen Sansfaçon, Kirichenko, et al., 2019). One quantitative study reported that both parents and patients age 12 years or older reported lowered levels of severe distress after using gender-affirming clinic services, compared with their recollection of distress prior to beginning care (Tollit et al., 2018). Knowing that clinicians support gender-affirmative parenting practices can help boost parents' confidence as they advocate for their youth and challenge people in their life who criticize their parenting (Ehrensaft, 2016).

Despite the important role that clinicians and mental health professionals play in supporting the families of TGNB youth, not all of them provide care that satisfies parents. Ehrensaft (2011) suggested that some mental health workers have a desire to reinforce gender binaries, which is not helpful to TGNB youth. Even professionals who truly want to support families may be unable to do so, due to being too uninformed about the needs of TGNB youth (Johnson & Benson, 2014), making parents feel unheard during therapy and assessments (Ehrensaft, 2016), and sometimes even judging parents for their support of their child (Johnson & Benson, 2014).

## 2.2 Extrafamilial Stressors and Social Support

There are many unique challenges that parents of TGNB youth face that occur outside of their immediate families. Research on this topic, which is largely qualitative in nature, suggests that domains of extrafamilial stressors can include the larger community, friends, extended relatives, schools, and healthcare providers. Gray et al. (2012) argued that it is important to consider the TGNB child in various contexts that may impact their wellbeing, rather than creating research that focuses on the child as an individual whose gender identity and experiences are inherently pathological. We argue the same here and

apply this line of thought to the experiences of TGNB parents, who experience diverse stressors across multiple social environments.

### 2.2.1 Stressors Across Social Domains

Research exploring the experiences of parents of TGNB youth indicates that community stressors are common. Parents may face judgement (Kovalanka et al., 2014) or disagreement (Pullen Sansfaçon et al., 2015) from those in their local community regarding their choices to affirm their child's gender identity. They may be rejected by peers and friends, internalize damaging societal beliefs about gender roles and associated behaviours, and face the anxiety of expecting community members to behave in ways that are stressful for the TGNB youth and their family, even before such behaviours occur (Hidalgo & Chen, 2019).

Extended relatives can be another source of transphobic stress. Multiple studies have noted the impact of extended relatives expressing judgement toward parents for their approach in raising their TGNB youth. Lawlis et al. (2017) noted that family acceptance was a major issue of concern for parents of TGNB youth attending one gender clinic. One case study (Johnson & Benson, 2014) also described a single mother being accused of child abuse and neglect because she affirmed her youth's gender, being uninvited to family events, and having her own parents disregard her own parenting values and practices when visiting with her youth. Hidalgo & Chen (2019) noted that family rejection is a concern, and that even if family does not totally reject the TGNB youth and their supportive parent, they may still not support the child's gender in full. Parents sometimes may find themselves in custody battles with ex-spouses and partners, driven by the ex-partner's displeasure with a supportive parent's attempts to affirm their youth's gender (Ehrensaft, 2011), or have child protective services called by an angry ex (Kovalanka et al., 2014). Judgement toward parenting practices can occur from extended family (Kovalanka et al., 2014), including grandparents (Kovalanka, Allen, et al., 2018).

School represents another common social environment where parents experience stressors as they advocate for their youths. They may lack support from their youth's school (Pullen Sansfaçon et al., 2015), be othered by teachers (Kovalanka et al., 2014),

face conflict with teachers (Kovalanka, Mahan, et al., 2018), and hear messages blaming gender-affirming parents echoed by teachers (Ehrensaft, 2011). Parents may be concerned about judgement they might face from teachers (Nealy, 2017), and even face harassment from other parents at school (Kovalanka et al., 2014).

Finally, parents may face adversity while navigating the healthcare system. Ehrensaft (2011) noted that gender-affirming parents can face stressors, such as being pathologized with clinical diagnostic terms, and that professionals in the mental health field and academia sometimes misuse their influence and power by placing blame upon parents of TGNB youth. Similarly, Lev (2004) described scenarios where clinical experts can harm families of TGNB youth. Whether through attempting “treatment” where youth are restricted into gendered roles based on their assigned sex, which is harmful to TGNB youth, or lack of awareness and recognition of how their role as a professional may disproportionately influence course of treatment, experts must take care in how they treat TGNB youth and families. Lev (2004) acknowledged that parents who resist harmful suggestions by experts are actually protecting their youth, but may be treated as if they are a problem by the professional, which is one more stressor that parents face. As mentioned previously, some mental health professionals are not supportive to issues faced by TGNB youth and their families (Ehrensaft, 2011; Johnson & Benson, 2014), and even well-meaning but uninformed professionals may fail at helping parents (Johnson & Benson, 2014). Not only can it be financially difficult for parents to access helpful healthcare, but an emotional burden may fall onto parents to educate professionals about TGNB issues (Pullen Sansfaçon et al., 2015).

### 2.2.2 Stigma Against Youth and Family Members

Stigma can affect parents of TGNB youth, regardless of the social domain in which stressors occur. Rogers (2017) conceptualized abuse and rejection by family members of TGNB individuals toward their TGNB relatives as a form of honour-based abuse. This qualitative study showed a common theme of family members committing transphobic abuse and rejection, partially as an attempt to prevent potential stigma against the family and the family’s honour. Even if family members of TGNB youth are supportive and do not shame their youth, they may still experience transphobic stigma even if they

themselves are cisgender, and this can be understood through two similar phenomena. Mehta & Farina (1988) and Mak and Cheung (2008) described the experience of associate stigma and affiliate stigma respectively, both drawing on Goffman's (see Goffman, 1963) work on courtesy stigma. Associate stigma refers to how others stigmatize an individual due to their association with a person who may be socially stigmatized. Mehta and Farina (1988) demonstrated that college students may not only assume that their fictional roommate will be less likely to succeed in their life when they find out that the roommate's father has a stigmatizing condition, but that the degree of assumed failure and in which areas of life this will occur varies depending on the type of condition (e.g. father with depression versus incarcerated father versus father with a visible physical disability).

Mak and Cheung (2008) studied the impact of self-stigmatization among those associated with individuals with stigmatizing conditions and referred to this as affiliate stigma. In their sample, they found that caregivers of those with intellectual disabilities or mental illnesses tended to internalize feelings of stigmatization because of their caregiving position with a stigmatized individual, leading to feelings of burden, and potentially shame and inferiority. This self-stigmatization, or affiliate stigma, seemed to raise their sense of being burdened more so than how much time they spent giving care or how much stress they felt because of caregiving duties. They noted that caregivers may try to hide their status and avoid socializing to limit potential discrimination.

TGNB youth are impacted by transphobia in a more direct way than caregivers. Minority stress model (Meyer, 2003) has been used to describe the impact of stress on the health of lesbian, gay, and bisexual (LGB) individuals, and can also be applied to describe the stressor experiences of TGNB individuals. The model proposes that minorities experience extra, unique stress due to stigma associated with their social identity, that is chronic in nature, and rooted in social structures. Members of a minority sexual group are theorized to experience both external stressful events from others and society, as well as more internalized stress, including expecting future stressful events to occur and internalization of homophobia or transphobia. The need to hide one's sexual orientation or status as a TGNB person represents another aspect of minority stress in this model, and



these stressors, along with the degree of identification with their minority identity may also impact stress. Despite these daily stressors, individuals cope and receive social support that may help mitigate negative health outcomes.

TGNB youth face stigma and discrimination from Canadian society due to their TGNB identity, which can be framed using the minority stress model. Studies published from non-clinical Canadian Trans Youth Health Survey data (Veale et al., 2015) suggest that mental health and physical health are a concern for TGNB adolescents and young adults (Clark et al., 2018), with TGNB youth reporting poorer mental health than cis youth of the same age (Veale et al., 2017). Watson et al. (2017) linked higher ratings of stigma experienced by TGNB adolescents with greater likelihood of reporting disordered eating behaviour; however, having at least two sources of social support (e.g. family, school, peers) reduced this likelihood of disordered eating. Canadian TGNB adolescents also reported experiences missing or refraining from use of mental healthcare services when needed (68.4%) and physical healthcare when needed (33.5%) (Clark et al., 2018). In the latter study, youth reported avoiding healthcare because they felt uncomfortable with doctors, who often were not well-informed about issues facing TGNB patients. This suggests that some TGNB youth experience an expectation of stress due to their TGNB identity, leading them to avoid healthcare. TGNB adolescents beginning clinical care were also more likely to meet diagnostic criteria for mental illnesses such as major depressive disorder and generalized anxiety disorder if they also had strongly internalized transphobia (Chodzen et al., 2019).

### 2.2.3 Social Support for Youth and Families

As the minority stress model suggests, social support is associated with reduction in negative mental health outcomes. In community studies, TGNB youth whose parents accepted and facilitated their child's social transition tended to have good mental health outcomes, generally showing depression at levels equivalent to their cisgender peers, with slightly higher levels of anxiety (Durwood et al., 2017; Olson et al., 2016).

Kuvalanka et al. (2017) also speculated that the many children in their study on problem behaviours among TGNB youth that showed healthy functioning in their lives may have been able to thrive due to supportive parents. Kuper et al. (2018) also reported that family

support may be protective for past year suicidal ideation in TGNB youth, but the effect was very small.

Parent sources of support are important for parent wellbeing too. Parents report using online and in person support groups for parents of trans youth (Katz-Wise et al., 2017; Kuvalanka, Mahan, et al., 2018; Pullen Sansfaçon et al., 2015; Pullen Sansfaçon, Kirichenko, et al., 2019), as well as internet informational resources, supportive mental health professionals (Pullen Sansfaçon, Kirichenko, et al., 2019), supportive doctors (Pullen Sansfaçon, Kirichenko, et al., 2019), and friends and family. The consequences of loss of support differ for parents and youth. Youth often rely on their parents for access to doctors and finances that can help pay for gender-affirming care; this loss of support can potentially impact TGNB youths' ability to successfully access gender-affirming care. While parents may be able to care for themselves independently, loss of their support system is detrimental to their wellbeing as well. It is possible that parents who support their youth's gender may be at greater risk of losing social support than less supportive parents, as the act of support itself may trigger social backlash toward parents from those who do not affirm the gender identities of TGNB youth. Parents supporting youth's clinical care therefore may feel a loss of support and presence of judgement from others. Family support is important for both youth and parents.

## 2.3 Family Functioning

Family functioning encompasses many constructs. Overall, it describes a family's communication and interaction with members of the family (Rescorla, 2016). Diverse family and human development theories can be considered when studying family functioning, including family systems theory, in which each family member's experiences have the potential to impact other family members of that family unit (see Bowen, 1978). This theory seems to have impacted development of instruments and methods to assess family functioning (Beavers & Hampson, 1990; Walsh, 2003), and can also be used by mental health professionals in supporting TGNB youth and their families through transition (Healy & Allen, 2019). The expanded family life cycle perspective is another theory that attempts to explain family functioning and experiences. This perspective, as described by Carter and McGoldrick (1999), attempts to contextualize

family experiences in multiple settings, starting at the individual person level, and expanding to include the contexts of immediate family, extended family, community, and larger society. Each context contains potential stressors that may influence the individual and their family (e.g. extended family may perpetuate certain stressful or counter-productive family emotional patterns, larger society perpetuates racism, etc.). Stressors can also occur horizontally across each context, happening at different time points.

While both theories can be useful for family-based research, McGuire et al. (2016) argued that researchers should be aware of limitations of mainstream family theories and how they may apply to families of transgender individuals. For this reason, we will use both family systems and family life cycle perspectives, and center them using the “queering” framework (Oswald et al., 2005) and McGuire et al.’s (2016) work on transfamily theory.

Ideally, family functioning research should capture multiple family members’ perspectives to obtain a well-rounded view of functioning and identify where discrepancies lie between members’ perspectives. This is particularly relevant in families with adolescents because parents and adolescents tend to have discrepant perceptions of family functioning (Beavers & Hampson, 1990; De Los Reyes & Ohannessian, 2016). Older research suggests that patterns of family functioning may differ between clinical versus nonclinical families. Beavers and Hampson (1990) reported that clinical families with lower functioning may show less parent-adolescent divergence, and that adolescents’ perspectives in such families may agree more with third party (researcher) observers of family dynamics. The opposite pattern can be observed when families in clinical samples have higher functioning, with parental self-report better corresponding to a researcher’s outside observations (Beavers & Hampson, 1990).

Family functioning is often examined in relation to youth psychosocial variables, such as youth mental health (De Los Reyes & Ohannessian, 2016). However, there is a historic tendency to frame parents, especially mothers, as partly responsible for related variables, like poor youth wellbeing (Ehrensaft, 2011, 2016); this is sometimes in conjunction with measuring family functioning. Wolf’s (2016) work critiquing the association of maternal

psychopathology with measures of child wellbeing highlights a problematic bias in research involving parenting and children – the assumption inherent in some studies and measures that mothers are the only parent that can have major influence on their child, and that variables involving fathers need not even be measured. Ignoring fathers, highlighting mothers' problems in relation to their youth's wellbeing, and using maternal measures as a substitute to represent "parents" overall does not provide a helpful image of family constructs and youth wellbeing (Wolf, 2016).

In the case of TGNB youth and their families, both youth and their families often face blame related to the youth's gender from the greater community. The role of blame is often assigned to parents (Ehrensaft, 2011, 2016), especially mothers (Ehrensaft, 2011; Johnson & Benson, 2014). Thus, it needs to be stated clearly in research involving families of TGNB youth that youth, parents, and families overall do *not* cause poor family functioning. From an empirical standpoint, families are not having their family functioning levels tested prior to youth coming out and then re-tested afterward; it does not make sense to suggest that there is a baseline of family functioning that trans youth have the power to jeopardize. Even in best-case research scenarios where family functioning is measured from the perspectives of multiple different family members, it is still challenging to objectively measure as a construct. Finally, while families do face unique challenges related to having a TGNB family member, there is variation in how well families are functioning across this population – "transness" does *not* equal dysfunction.

It is also important to make clear that poor family functioning, parenting actions, and parent mental illness do *not* cause a youth to be trans. The development of a TGNB gender identity is a highly complex process. It can include diverse influences such as the youth's own internal thoughts and feelings about their gender, biological influences such as puberty, as well as access to support, and parent, family, and society's reactions, (including impact of sociocultural ideals around gender) (Katz-Wise et al., 2017). Finally, there is nothing inherently pathological or wrong about having a TGNB identity.

### 2.3.1 Family Functioning in Families of TGNB Youth

As traditional family methodologies and theories were not designed with the intention of studying families with LGBTQ+ individuals, it is helpful to use theory to redirect framing of traditional theories in family research. This redirection can be referred to as “queering” methodologies and studies (Fish & Russell, 2018; Oswald et al., 2005). The queering perspective by Oswald et al. (2005) originally focused on shining a light on heteronormativity in family studies research and examining how some families “queer” the family by disrupting heteronormative expectations. While this framework is particularly useful in exploring the experiences of LGBTQ+ couples and families, it does not refer exclusively to individuals with LGBTQ+ social identities. Any family that breaks social norms in how they live their gender, sexuality, and family life can “queer” the family.

Oswald et al. (2005) referred to West and Zimmerman's (1987) concept of “doing” gender to describe how individuals and families construct and live their experiences of gender, but expand this concept to consider how such families queer the family by “doing” sexuality and family in ways that break norms, as well. This framework serves as an excellent tool to contextualize the experiences of families of TGNB youth and is further tailored to such families by McGuire et al. (2016) in their writings about transfamily theory. Transfamily theory further critiques the field of family studies research by highlighting how cisnormativity is built into major family theories, and how the existence of families with TGNB members challenges assumptions about gender development and how families create meaning together. Ultimately, families of TGNB youth often learn to advocate on behalf of their youth, something which may not be relevant to all families captured under the queering framework, but is regularly observed in research with families with TGNB members (McGuire et al., 2016).

For families of TGNB members, “doing” family often includes changing boundaries within and around the immediate and extended family. A youth’s decision to disclose their gender identity to parents or siblings can indicate trust and expanding their personal boundaries (McGuire et al., 2016). Changed boundaries and closer bonds can also result from supportive family members banding together in support of their TGNB relative. In

contrast, family members' rejection of their TGNB youth relative can lead to a response of pushing away the non-supportive members, by the youth and/or by those who support the youth (McGuire et al., 2016). This fluid changing of boundaries is observed throughout the qualitative literature, as parents of TGNB youth describe the challenges and support they have found in their family unit after their youth comes out. The need to alter family boundaries after experiencing an extrafamilial stressor leads us to believe that such stressors may impact family functioning in families of TGNB youth.

The literature describing family functioning in families of TGNB youth is sparse. One study suggested that youths' perception of family functioning is associated with their own mental health outcomes, and that higher family functioning may predict fewer mental health adversities and better youth self-esteem and resilience (Katz-Wise et al., 2018). Another study linked youth report of lower family functioning with challenges to psychological functioning (Levitan et al., 2019). Poor family functioning may also be associated with TGNB youth internalizing more frequently, such as withdrawing socially, crying, or feeling anxious. However, even good family functioning is associated with more internalizing when there are also peer problems (Munroe et al., 2020). In the latter study, family functioning was not associated with externalizing behaviour problems, such as lying or aggressiveness. The literature overall suggests that family functioning could be an important construct for TGNB youth and their wellbeing, but it is less clear how family functioning may be impacted by extrafamilial stressors unique to the families of TGNB youth.

Furthermore, parent-adolescent relationships are complex, and research exploring the experiences of TGNB youth needs to move beyond simple dichotomizing of their experiences, such as parental support versus parental rejection (Catalpa & McGuire, 2018). Similarly, studying familial relationships and familial context among families of TGNB youth presents its own challenge, and should not be over-simplified. From a family systems perspective, one can view the transition of a TGNB youth as a transition of the whole family (Katz-Wise et al., 2017). Youth and parents' perspectives and reactions to a youth's TGNB identity feed off each other. First, a youth comes out; their parents have their own feelings and reaction to this revelation, and parents who then react

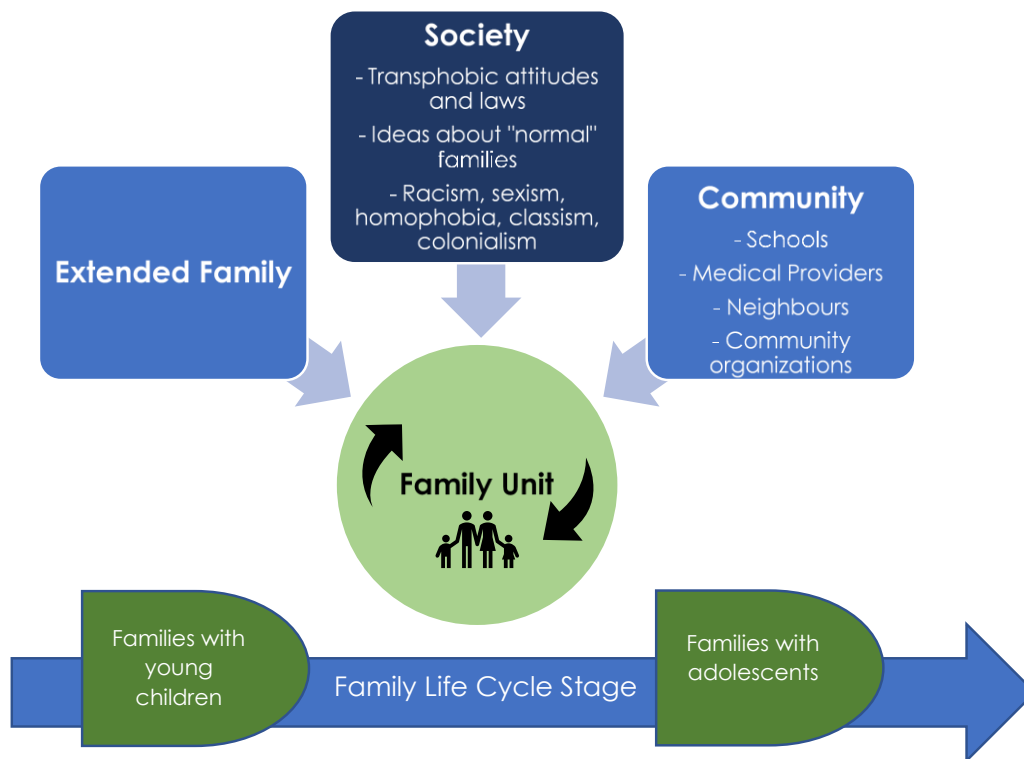
with support may impact a youth's future personal development by helping them to access resources (Katz-Wise et al., 2017). Parental reactions in families of TGNB youth vary but are noticed by youth, even when the parent's reaction appears ambiguous. Such ambiguity can be stressful for the youth (Catalpa & McGuire, 2018).

The expanded family life cycle perspective can also be used to explore family functioning and the impact of trans-specific extrafamilial stressors on the family. The horizontal stressor of most interest in this thesis is the developmental stressor of family life cycle stages, which change over time. There are two family life cycle stages that families experience in our sample: families with young children (such as the younger youth in our sample, aged 11 or younger) and families with adolescents (such as the older youth in our sample). These two different phases require families to accommodate changes and adapt to challenges: in the young children stage, parents must learn to make space for their new family members, negotiate child-rearing and household responsibilities and changes in familial roles outside of the immediate family, such as their own parents becoming grandparents (Carter & McGoldrick, 1999). The adolescent phase, in contrast, requires parents and the family unit to negotiate boundaries as adolescents gain independence, and prepare to care for grandparents as they age (Carter & McGoldrick, 1999).

These life cycle stage-specific developmental tasks co-occur alongside extrafamilial stressors experienced in each environmental context, including extended family, community, and larger societal contexts. While Carter and McGoldrick (1999) acknowledge the impact of stress from stigmatization of families that do not fit the norms of heterosexual, married parental dyads raising children, like most family theories, the family life cycle perspective is rooted in heteronormative and cisnormative assumptions. We would also like to note that in at least one Canadian clinic historically, family systems perspectives informed damaging therapy that encouraged younger TGNB youth to conform to their sex assigned at birth by encouraging the influence of children's same-sex parent (Ehrensaft, 2016). Despite this, we believe that both theories can help to contextualize the trans-specific extrafamilial stressors that families in our sample experience without contributing to transphobic rhetoric. Building off the family life cycle

perspective, family systems theory, and transfamily theory, we present a visualization of trans-specific stressors on the family unit in Figure 1.

**Figure 1. Diagram of Extrafamilial Stressors' Impact on the Family Unit**



The arrows within the family unit represent how each family member has the potential to influence another family member's experiences, thereby influencing the experiences of the overall family unit, as described in family systems theory. The extended family, community and societal contexts impact the family unit with trans-specific stressors, adapted from the family life cycle perspective. Finally, the family life cycle stage arrow represents how life cycle stage changes over time and highlights the two stages relevant to families of TGNB youth.



## 2.4 Intersectionality in Family Experiences

For the analyses in this thesis, we assess whether there are latent stressor experience groupings associated with parent report of trans-specific extrafamilial stressors, and the characteristics of parents in each stressor grouping. We also examine whether stressor grouping status is associated with degree of family functioning in various family functioning subscales, and whether stressor grouping predicts overall family functioning while controlling for covariates (presence of siblings, youth age group, parent partner and co-parent status), and an interaction term between stressor grouping and youth age group. In considering the characteristics of parents in stressor groupings and the family functioning analyses, we emphasize the importance of including principles of intersectionality theory. Intersectionality theory posits that individuals can experience oppression from multiple sources, leading to complex experiences of marginalization at the intersection of various aspects of identity or social position (e.g. race, gender, sexual orientation). Rather than presuming that marginalization occurs uniformly for all members of an oppressed group, it is important to consider how different marginalized aspects of identity interact together (Crenshaw, 1989). Fish and Russell (2018) also noted the importance of building intersectionality into queer family research, noting that latent class analysis has the potential to capture intersectional identities.

### 2.4.1 Intersectionality and Parent/Family-Centered Variables

Many variables in the analyses address intersectional identities, specifically from an intracategorical approach. Per McCall (2005), TGNB youth represent a social group, defined by their age and status as a gender minority, and we aim to explore the complexity and diversity of experiences within this group by studying how other social identities intersect at the point of age and gender minority status. We consider ethnoracial background in the descriptive analyses because the current literature of families of TGNB youth is largely made up of white participants; this suggests that there may be barriers to care in clinical studies and lack of representation in community studies (Chiniara et al., 2018; Gridley et al., 2016; Pullen Sansfaçon, Temple-Newhook, et al., 2019; Singh et al., 2014). Whiteness can represent a privilege among parents of TGNB youth, even if parents are facing other stressors, such as being a single mother (Johnson & Benson,

2014). When families of colour do not accept their TGNB youth, it may be due to additional fears around their youth's safety and future, since they already face societal oppression for being a person of colour (Nealy, 2017). In some cultures, family and community take precedence over the individual. Some communities of ethnic minorities may believe that a youth coming out suggests they are turning their back on their heritage, which can be painful to come to terms with (Nealy, 2017). In a small qualitative study of the experiences of parents of TGNB youths, Pullen Sansfaçon et al. (2015) cautiously noted that some parents belonging to a cultural minority seemed to experience extra stressors associated with race.

However, some communities of colour may also be more accepting of gender identity complexity that goes beyond the male/female binary than white, Western communities, as historically, many cultures and societies affirmed or acknowledged more than two genders. Hijras of India and māhū of pre-Western-colonized Hawaii are two examples of identities that fell outside of the male/female binary, and individuals with these gender identities played important roles in their communities (Devor & Haefele-Thomas, 2019). Furthermore, some Indigenous nations throughout North America historically held more than two genders. Today, Indigenous folks whose identities do not conform to Western ideas of gender or sexuality may use the term Two-Spirit to relate to this history, embrace their role in their community, and relearn traditions that existed prior to colonization (Pruden, 2019). Finally, families of colour and immigrants may have immediate family structures that prioritize the role of grandparents, aunts, uncles, and cousins more than white, Western nuclear families (where such relatives are often considered to be “extended” family). Grandparents can play a special role and support in the life of a TGNB youth, sometimes garnering community respect and connections due to their age that younger parents may lack; this can help grandparents advocate for their youth when they are primary caregivers (Kovalanka et al., 2020). These are all strengths that families of colour or cultural minorities might experience or draw on when raising a TGNB youth.

Caregiver role is another variable relevant to descriptive analyses. In the TYCAN sample, biological mothers made up most of the parent-participants (Pullen Sansfaçon et al., 2020). The role of mothers is explored throughout the literature of parents of TGNB

youth. Alongside a disproportionate amount of blame being placed upon mothers for their child being TGNB (Ehrensaft, 2011; Johnson & Benson, 2014), mothers often end up shouldering the burden of taking care of their youth's transition (Pullen Sansfaçon, Kirichenko, et al., 2019). In a study of mothers of transgender girls, Kuvalanka et al. (2014) reported that their participants often took on the role of advocate for their TGNB youth, even if the father of the child was not accepting of the youth's gender identity. Fortunately, most of the fathers in this small sample eventually accepted their TGNB youth, even if it took them more time than the mothers. Rahilly (2015) also reported mothers being more involved in their study than fathers. Grandparents can play an important role in lives of TGNB youth and may face less direct pressure than parents when supporting their trans youth; they may even support the youth before parents do (Ehrensaft, 2011). We expect that caregiver role could impact the type and severity of stressors experienced, and possibly even influence family dynamic.

Immigrant status is another variable of consideration. Immigrant families may face unique challenges. Some immigrant parents who feel closer to their home culture may view a youth's coming out as TGNB as being a phenomenon of Western acculturation, and they might take issue with this (Nealy, 2017). Immigrants may also face xenophobia in Canada, which can add a layer of stress to their experiences. Parent partner status is also of interest, as partners who are part of the family unit will influence the family dynamic, according to family systems theory. Conflict can also arise if a partner's extended family interferes with how parents may want to raise their TGNB child. We also expect that single parents may face more and/or different challenges and stressors than those who have a partner for support. Single parents of TGNB youth may face extra discrimination (Johnson & Benson, 2014) and unique stresses due to challenging social norms surrounding the idea of nuclear families being the ideal family structure (Nealy, 2017). Parents who are separated from their child's other parent but co-parent with them sometimes face challenges even when their co-parent supports the TGNB youth receiving gender-affirming care (Pullen Sansfaçon, Kirichenko, et al., 2019). Not all co-parents will contribute support equally, sometimes leaving a burden of labour that falls on one parent's shoulders. Similarly, this has also been observed among single mothers facing the burden of childcare (Pullen Sansfaçon, Kirichenko, et al., 2019).

Parents whose sexual orientation is part of a sexual minority group may also face unique stressors while raising their TGNB youth. As with single parents, gay couples may face judgement related to breaking social norms that dictate that being straight and raising children with a mother and father are the norm (Nealy, 2017). In a study of sexual minority mothers of TGNB youth, some mothers reported blame for their child's gender identity being tied to their queer identities. Some women found that others blamed them and judged them over feminist parenting, over their youth growing up with lots of women around, and use of fertility drugs. Some mothers also felt sadness, inadequacy and worry for their TGNB youth that stemmed from their own experience with stigma as a sexual minority (Kupalanka, Allen, et al., 2018). Pullen Sansfaçon et al. (2015) also reported that although their sample was small, they also had participants that belonged to a sexual minority group that discussed others blaming them for raising a TGNB youth, and associated this blame with their status as a sexual minority.

#### 2.4.2 Intersectionality and Youth/Family-Centered Variables

Youth factors, such as youth age, are also relevant to the stressors experienced by families and family functioning. Families with younger TGNB youth may face different challenges than older TGNB youths. Katz-Wise et al. (2017) noted that developmental pathways of youth developing their TGNB identity and how this process is impacted by parents can differ depending on whether youth are younger or older. Parents of younger TGNB youth may also have particular concerns about their youth's safety and future (Katz-Wise et al., 2017). Family interference may also be predicated on youth age. One 14-year old Canadian transgender boy had his decision to receive gender-affirming care appealed by his father, who disapproved of such treatment. One of the justices in the appeal case acknowledged that the boy's age and maturity might determine whether the court decision would be upheld, and whether said maturity allowed the youth to be capable of making his own medical decisions (Baker, 2019). The boy later had his right to access care affirmed by the court (Baker, 2020), but the scenario illustrates challenges TGNB youth may face when attempting to autonomously make medical decisions.

Younger youth seeking treatment may also run into uncertainty and poorly informed health providers, with some care providers lacking clear instructions describing how

younger youths' transitions should move forward (Gridley et al., 2016). Furthermore, younger youth seeking gender-affirming care may face access barriers due to their younger age. Often, TGNB youth must wait until age 16 to receive hormones, which can mean years spent waiting while receiving puberty blockers (Gridley et al., 2016). Pullen Sansfaçon, Temple-Newhook, et al. (2019) recommend flexibility and increased autonomy for young TGNB youths in care decisions. Restrictions on care received due to age and parental interference in the care decisions of younger youth pose challenges both for youth and their families, which could be a factor in family functioning.

The presence of siblings in a TGNB youth's family also has the potential to impact family functioning and extrafamilial stressors. The influence of sibling relationships can differ by culture, race, and class, but by adolescence, sibling relationships may be important sources of support for gay and lesbian youth (McGoldrick et al., 1999), and can be a source of protection for TGNB youth (Ehrensaft, 2016). Siblings and extended family are relevant both to potential strengths and limitations of families (Walsh, 2003), and having a TGNB family member can shape the experiences of siblings as well (Lev, 2004). Working through a TGNB youth's gender identity and tackling transphobia are processes that must engage family members beyond parents alone (Ehrensaft, 2011), and some siblings may struggle with accepting their TGNB sibling (Ehrensaft, 2016).

A youth's perception of their own family's functioning seems to matter for their own well-being, as well (Katz-Wise et al., 2018). If siblings are bullying or unaccepting of their TGNB family member, or somehow altering the family environment in such a way that the youth perceives the family's functioning to be poor, then this could impact the youth's wellbeing. In such scenarios, parents may need to step in and advocate for the youth (Ehrensaft, 2016). Siblings can also extend a family's social network, with siblings' peer network potentially interacting with the TGNB youth family member or parents, providing an opportunity for supportive relationships but also for stressors. Finally, parents may feel conflicted in affirming their youth's gender because they worry that it may affect the youth's siblings, such as potentially exposing them to bullying at school (Ehrensaft, 2016). Research considering the perspectives or influence of siblings

in families of TGNB youth is a gap in the current literature, so we hope to address this by examining the presence of siblings in our analyses.

## Chapter 3

### 3 Methods

This chapter outlines sample recruitment and data collection, variables used in analyses and their measures, as well as statistical analyses for each objective.

#### 3.1 Sample

In this thesis baseline data were analyzed from the CIHR-funded, 2-year cohort study Trans Youth CAN!, a cross-country effort examining transgender youth receiving gender-affirming clinical care and their families. Eligible participants were TGNB youth at or beyond onset of puberty and under 16 years of age seeking prescriptions for puberty blockers and/or hormone therapy for the first time. Youth who enrolled in the study also had the option of enrolling a parent or caregiver figure to participate as well; this was often the parent accompanying the youth to clinic. Youth were recruited at 10 gender-affirming clinics across 10 cities in Canada in Vancouver, Calgary, Edmonton, Winnipeg, London, Hamilton, Toronto, Ottawa, Montreal, and Halifax. Length of recruitment period differed at each clinic, dependent on obtaining research ethics board (REB) approval for each clinic's participation, and with some newer clinics being established after the study was initiated. Some clinics recruited baseline participants for more than one year and others for as few as six months. Data collection for 12 and 24-month follow-up surveys is currently in progress across clinics, and analyses in this thesis used only baseline data.

Each clinic site had one or more designated clinicians providing gender-affirming care to youth, and a trained research assistant (RA). For baseline recruitment, site staff obtained permission from eligible youth to be contacted by the RA for more information about the study, prior to or at the youth's first appointment at clinic. With permission, RAs contacted each interested youth by phone or email to provide more information, after which the RA made plans to meet the interested youth and any accompanying family members in person either before or after their first appointment at clinic. Many youth were recruited at their first clinic visit, however. Upon meeting, informed consent was obtained by the RA from parents and older youth, while informed assent was obtained

from younger participants, with parents providing consent for the latter. The age at which youth were able to consent for themselves varied by REB requirements across locations.

RAs explained the purpose of the study, activities that participants would complete as part of the study (three questionnaires for parents and youth each, nine short youth checklists, and permission for the study to access clinical records), and steps taken to ensure participant safety and confidentiality. Participants agreed to participate knowing that they could drop out of the study at any time and skip any questions that they did not want to answer. REB study approval was obtained for each site: Children's Hospital of Eastern Ontario REB for the Ottawa location, Health REB at University of Manitoba for the Winnipeg site, IWK-REB for the Halifax site, Hamilton Integrated REB for the Hamilton location, McGill University Health Centre REB for the Montreal site, SickKids REB for the Toronto location, Health REB – Health Panel at University of Alberta for the Edmonton site, Conjoint Health REB at University of Calgary for the Calgary location, University of British Columbia Children's and Women's REB for the Vancouver site, and Western University Health Science REB for the London location.

Parent-participants were asked to complete an online parent questionnaire on a study-provided tablet in a nearby location (for example, a hallway or clinic waiting room), while the RA interviewed the youth verbally, using the youth questionnaire. All questionnaire data responses were entered into a secure study server on REDCap (Harris et al. 2019; Harris et al. 2009). Parents also had the option of completing the questionnaire online at a later time. Parents and youth were each offered a \$20 gift card upon completion of each questionnaire, and youth received a \$10 gift card each time a follow-up short checklist was completed. The study also covered the cost of parking on the day in which questionnaires were completed and gave participating families a \$10 voucher for snacks and beverages on-site. Baseline data collection ended on July 3<sup>rd</sup>, 2019. Participants that later moved to a different clinic for gender-affirming care or stopped receiving gender-affirming care completely had the option to remain in the study and complete questionnaires over the telephone.



At the end of baseline data collection in July 2019, there were 178 youth and 164 parents enrolled in the study. Four youth along with four parents were excluded from the baseline sample, as they were youth that met the original eligibility screening requirements but were determined to be pre-pubertal (and thus ineligible) during the course of medical care. This left the baseline sample with 174 youth and 160 parents, as 14 youth did not have parent or caregiver participants joining them in the study. This thesis uses data from both the parent and youth baseline questionnaires, and since one of the main measures of interest is parental report of external stressors on the family, the analyses were limited to the 160 parent-youth dyads where data were available for both youth and parent.

## 3.2 Measures

### 3.2.1 Parent, Youth, and Family Characteristics

Both the youth and parent questionnaires collected a range of information describing parent, youth, and family characteristics of all participants. This included questions assessing parent and youth age, gender, sexual orientation, ethnoracial background, religion, and presence of siblings and other family members in youth's life. The parent questionnaire also asked about parent partner status, immigrant status, household income, parent education, parent low-income status, number of people supported on household income, and parent caregiver role toward youth (e.g. biological parent, step-parent etc.). Variables used in analyses are described in more detail below.

**Parent gender.** On the baseline parent questionnaire, parents selected their gender as “male”, “female”, or “non-binary”, and had the option to write-in their preferred word for their gender identity. These items were developed by the TYCAN team. In this thesis, the categorical variable was used to assess parent gender instead of the write-in response.

**Parent sexual orientation.** Parents had the option to select multiple sexual orientations on the questionnaire, with options including “Two-spirit”, “Heterosexual or straight”, “Lesbian”, “Gay”, “Bisexual”, “Pansexual”, “Queer”, and “Asexual”. Sexual orientation was later dichotomized as “heterosexual” and “sexual minority.” Checklist items that fell under the LGBTQ+ umbrella were categorized as sexual minority unless participants also indicated that they were heterosexual (e.g. asexual and heterosexual) and/or did not

identify strongly with a sexual minority identity (e.g. some participants selected heterosexual and other identities, and indicated in a write-in question that they identified as straight but “open”). This item was developed by the TYCAN team.

**Ethnoracial background.** Parents had the option to select multiple ethnoracial backgrounds on the questionnaire, with options: “Indigenous”, “Latin American”, “East Asian”, “Indo-Caribbean”, “Black Caribbean”, “South Asian”, “Middle Eastern”, “South East Asian”, “White Canadian or White American”, “White European”, “Black Canadian or African-American”, “Black African”, and “Other, please specify.” Participants were later coded as being Indigenous if they self-identified as Indigenous in a separate question asking them if they are Indigenous, coded as a visible minority if they identified a background other than White European/Canadian/American, and coded as white if they selected only White European/Canadian/American or White European/Canadian/American in tandem with Latin American or Middle Eastern only.

**Immigrant status.** Parent-participants were asked if they immigrated to Canada from another country and were coded as “Immigrant” (1) if they responded yes, and “Non-immigrant” (0) if not.

**Parent partner status.** This variable was derived from parent responses to a parent questionnaire item that asked if they had a male and/or female and/or non-binary partner(s). The original items that asked about partners and family structure were developed by the TYCAN team.

**Highest level of education.** The parent questionnaire asked parents to identify their highest level of education from the following options: “Less than high school”, “High school diploma”, “Some postsecondary education, but no degree or diploma (university, college, or Cegep)”, “Postsecondary degree or diploma”, “Some graduate or professional education, but no degree or diploma”, or “Graduate or professional degree.”

**Household income last 12 months.** The parent questionnaire asked parents to identify their household’s total pre-tax income from the following options: “Less than \$10,000”, “\$10,000 to less than \$15,000”, “\$15,000 to less than \$30,000”, “\$30,000 to less than

\$40,000”, “\$40,000 to less than \$50,000”, “\$50,000 to less than \$60,000”, “\$60,000 to less than \$80,000”, “\$80,000 to less than \$100,000”, or “\$100,000 or more”.

**Low income status.** This was derived according to Statistics Canada’s Low Income Measure (Government of Canada, 2017) from a question asking about annual household income on the parent questionnaire. The Low Income Measure compares all participants’ incomes, and determines whether an individual’s income is below the average person’s income, with the average income representing the cut-off point. The median is adjusted to account for the number of people in a household, so there are different cut-offs calculated for different household sizes (Government of Canada, 2017).

**Caregiver role (original variable).** Response options on the original questionnaire included “Parent from birth”, “Adoptive parent”, “Foster parent”, “Step-parent”, and “Other main caregiver.” This item was developed by the TYCAN team.

**Bio-parent status (gendered).** This variable was coded as “Bio mother” (1), “Bio father” (2), “Non-binary parent” (3), or “Other caregiver role” (4). This variable was derived from information on the parent questionnaire about parent gender and the caregiving role they identified themselves as having in their TGNB youth’s life. The original items were developed by the TYCAN team.

**Youth age group.** Youth age was taken from a question in the youth questionnaire that asked how old the youth was in years. For this thesis, youth were coded as being “younger” if they were 11 years old or younger, and “older” if age 12-15 at baseline. This was based roughly on age of youth when starting middle school/later elementary school years, which may differ from province to province.

**Youth gender.** Youth selected their gender as “male”, “female”, or “non-binary”, and had the option to write-in their preferred word for their gender identity. These items were developed by the TYCAN team. In this thesis, the categorical variable was used to assess youth gender instead of the write-in response.

**Youth sibling status.** Youth were asked if they had siblings, responding either “yes” or “no”.

### 3.2.2 Exposure Variable/Indicator Items for Latent Class Analysis

**External Stressors on the Family.** Trans-specific extrafamilial stressors were measured using the Stressors on Families of Trans Youth Checklist, or SFTYC (Bauer, Churchill, et al., 2017). This 18-item checklist developed by the Trans Youth CAN! team with input from parent and youth feedback groups identifies trans-specific scenarios of stress from sources outside of the family, as a similar stressor measurement tool for this population did not exist, to our knowledge. The items cover a variety of social domains where trans-specific stressors occur as described in the literature, including community, external family, friends, schools, and healthcare settings. Each item is a binary variable (1=yes, occurred; 0=no, did not occur) and total count of items can be summed for each individual participant, if desired. This measure has not been evaluated for validity or reliability. This measure appeared in both the youth and parent baseline questionnaires, but only parent data were used from this measure in this thesis. Youth sometimes were not aware of stressors experienced by their parents, so parent report seemed more reliable in collecting data about family stressors. Furthermore, this thesis focuses on the experiences of parents and families, so collecting parent perspectives was key.

### 3.2.3 Outcome Variables

**Family functioning from parental perspective.** The Self-Report Family Inventory or SFI II (Beavers & Hampson, 1990) measure resulted from decades of research involving families receiving therapy in a clinical context. Using a family systems approach in clinical contexts, Beavers and Hampson developed observational measures to assess healthy, functional characteristics versus dysfunctional family behaviours. The SFI II scale is a self-report measure created out of two of Beavers and Hampson's observational measures of family functioning used with clinical samples and used to capture one family member's perspective of a family's dynamic. The SFI II is composed of 35 questions, each asking the respondent to rate how well the question describes their family, using a 5 point Likert-style scale, with response options ranging from 1 = "Yes: fits our family well" and 5 = "No: does not fit our family well". The final question allows the respondent to give their family an overall rating of how well their family unit functions together, but the mean of the 35 items also provides an overall score of a family's functioning. Scores

range from 1-5, and lower scores represent better family functioning, while higher scores may suggest poorer family functioning.

The 35 individual items also comprise 5 subscales that capture different domains of family functioning, including the health/competence subscale (19 items), the conflict subscale (12 items), the cohesion subscale (5 items), the leadership subscale (3 items), and the emotional expressiveness subscale (5 items). A few items are used in more than one subscale, and like the overall family functioning score, each sub-scale's score can range from 1-5. Although Beavers and Hampson (1990) noted the importance of assessing multiple family members' perspectives of family functioning to better understand family dynamics, the TYCAN study only included the SFI II measure in the parent questionnaire, as the youth questionnaire was already very long.

Using a non-clinical college sample, Beavers and Hampson (1990) reported average factor stability across follow-up tests as follows: 0.85 ( $p < 0.01$ ) for the health subscale, 0.54 ( $p < 0.01$ ) for the conflict subscale, 0.60 ( $p < 0.01$ ) for the cohesion subscale, 0.44 ( $p < 0.01$ ) for the leadership subscale, and 0.81 ( $p < 0.01$ ) for the expressiveness subscale. In the TYCAN parent sample, the overall SFI II scale had strong internal consistency, with Cronbach's alpha of 0.91. Most of the individual subscales also had high internal consistency: for health/competence, Cronbach's alpha = 0.89, for conflict, Cronbach's alpha = 0.87, and for expressiveness, Cronbach's alpha = 0.81. The cohesion and leadership subscales showed poor internal consistency in the sample, with Cronbach's alpha of 0.54 and - 0.03, respectively. Although the item scales are ordinal, scores were analyzed as continuous variables in this thesis.

**Family connectedness from youth perspective.** The Family Connectedness Scale from the Minnesota Student Survey (*Reflections of Social Change. Minnesota Student Survey 1989-1992.*, 1992) measures youth perception of how well their family understands and connects with them. It has been validated in a sample of female students and a sample of vulnerable, runaway girls, with strong internal reliability (Saewyc & Edinburgh, 2010). This measure has also been used in a sample of Canadian transgender youth (Veale et al., 2015), and was included in the youth questionnaire, but not the parent questionnaire, in

the TYCAN study. It is intended to provide one aspect of family functioning measured from the youth's perspective in this thesis. It is a 5-item, 5-point Likert-style scale; items are scored from 1-5, and the mean is calculated from responses to the 5 items. Higher scores represent stronger family connectedness. In the TYCAN youth sample, this scale had strong internal consistency, with Cronbach's alpha of 0.85.

### 3.3 Statistical Analyses

All analyses were conducted in SAS version 9.4 (*SAS 9.4.*, 2013).

#### 3.3.1 Latent Class Analysis

Objective 1 was addressed using an unconditional latent class analysis (LCA) of trans-specific stressors from outside of the family that impact the family unit. An unconditional LCA is an analysis that uses individuals' response patterns to a series of binary variables to detect unseen groupings of response patterns, without building other covariates into the analysis (Nylund-Gibson & Choi, 2018). The groupings represent categorical classes, of which each individual can only belong to one class, determined by how similar their response patterns to the binary variables (indicators) are to others in a class.

LCA requires a minimum of two classes be specified in advance, and models are tested several times with differing number of classes specified to determine the best fitting model. Individuals are assigned to classes based on their probability of belonging to each class, reflecting that the classes present are estimations based on overall indicator response patterns, and that one never has absolute certainty that class membership corresponds perfectly to real-world scenarios (Vermunt & Magidson, 2002). Maximum likelihood estimation (MLE) is used to detect latent classes, employing the expectation maximization (EM) algorithm. EM makes it possible for MLE when there are latent variables present, with EM iteratively assessing expected latent variables based on the dataset (expectation step) and maximizing such estimates (maximization step) until model convergence (Dempster et al., 1977; Lanza et al., 2007).

LCA divides individuals into the specified number of classes and presents an estimate of the sample proportion in each class. It also provides a set of item-response probabilities

for each item in each class, allowing the user to assess the likelihood that someone in a given class may answer “yes” or “no” to each individual item. Item-response probabilities at the extreme ends (e.g. 0.9 or 0.1) suggest stronger tendencies of members of a particular class to endorse or not endorse an item, but probabilities closer to 0.5 can be harder to parse, as class members are equally likely to endorse or not endorse such an item. Relative probability for the same item between different classes can provide some information if there are dramatic differences in item-response probability values for the same item between classes (McCutcheon, 2002). The item-response probabilities do not present a literal breakdown of how many sample participants answered yes to an item, but a probabilistic estimate that anyone in a given class may answer yes, based on the overall response patterns of each class (Vermunt & Jay Magidson, 2002).

A variety of fit statistics can be used to assess model fit of an LCA. Akaike Information Criterion, or AIC (Akaike, 1974) and Bayesian Information Criterion, or BIC (Schwarz, 1978) are both commonly used, but one may perform better than the other depending on sample size and how the researcher defines an ideal model (i.e., seeking a true model versus the best model out of the models recorded; (Burnham & Anderson, 2004)). Values decreasing in size suggest improved model fit. Entropy assesses how distinct classes are from each other, and higher values are preferred (Morgan, 2015). It is useful to observe how each fit statistic changes as the number of classes change, model by model. Discretion is left to the user to determine what combination of fit statistics suggest the best model fit, along with a priori knowledge of how the latent classes may manifest. It is also ideal to have classes that are fairly equal in size, as too many small classes may be hard to replicate in other samples and may be limited to the sample at hand. In determining the ideal model and making sense of the latent classes, it helps to consider the item-response probabilities and the qualitative meaning of each item, and what response patterns to certain items suggest about the individuals in each class.

One assumption of an unconditional LCA model is conditional independence, in which indicator items are only related to each other because of the underlying classes, thus accounting for all shared variance (Nylund-Gibson & Choi, 2018). Nylund-Gibson & Choi (2018) cautioned against ignoring this assumption, noting that covariance between

indicator variables may be specific to a particular sample, and such covariance may constitute a violation of the conditional independence assumption. Due to the exploratory nature of this thesis, novelty of the SFTYC measure, and the small sample size ( $n=160$ ), the conditional independence assumption may not be met in this thesis. When moving forward despite the conditional independence assumption, Nylund-Gibson & Choi (2018) recommend using a priori knowledge to guide analyses. In that vein, we know that trans-specific stressor experiences and stress within the family may differ across family demographics, including youth and parent gender (Johnson & Benson, 2014) and whether the parent is single or partnered (Johnson & Benson, 2014). To examine how these factors are observed alongside stressor classes, variation in parent, youth, and family characteristics across classes will be examined in objective 2.

Along with fit statistics, there are two statistical tests that can help users assess model fit. These include the Vuong-Lo-Mendell-Rubin adjusted likelihood ratio test (VLMR-LRT) and the bootstrapped likelihood ratio test (BLRT) (Nylund-Gibson & Choi, 2018). While there is a BLRT macro published by the Penn State Methodology Center available to use alongside PROC LCA in SAS, it is currently only designed to accommodate simple LCA designs, and not LCA models that incorporate clusters or weights (Dziak & Lanza, 2016). The LCA designs in this thesis utilized both clusters and weights, so it did not make sense to use that test, nor is there a VLMR-LRT available for PROC LCA, to our knowledge.

For objective 1, we ran various latent class models, ranging from two to seven classes, using version 1.3.2 of the PROC LCA plug-in available for SAS (*PROC LCA & PROC LTA*, 2015). These models were fitted initially without any clusters or weights and used differing numbers of random starts to improve model fit. Using a number of random starts larger than 500 did not improve model fit, so 500 was the final number of random starts used. We decided to include clinic location as a cluster variable, and to apply weights accounting for differing recruitment times across clinics; see Appendix A (Bauer et al., 2020). The use of weights improved model fit.



Rho (item-response probability) estimates were unstable at first, and PROC LCA was unable to calculate standard errors for the classes; rho prior was set to one, as recommended by the PROC LCA user guide (Lanza et al., 2015), and this solved the issue. When rho estimates are too close to their bounding values of 0 or 1, it can be difficult to calculate standard errors. Use of stabilizing prior values can help correct this, and a prior value of 1 is the standard value recommended (Lanza et al., 2015). We also ran the same models repeatedly using different random seed numbers. Most results obtained were identical or near identical, suggesting good model identification (Lanza et al., 2007).

We looked at the general trend of changes in fit statistics with each subsequent class added, favouring decreases in log likelihood, AIC, BIC, CAIC and adjusted BIC, and increases in entropy and percentage of seeds associated with fitted model. We viewed BIC as a less useful metric given the small sample size, as it tends to under-fit models in smaller samples (Burnham & Anderson, 2004). In case of discrepancies between different criteria, we prioritized AIC, and to a lesser extent, percentage of seeds fitted. A higher percentage of seeds linked to a model suggests that more iterations identified that particular model, lending some confidence to whether a model is well-identified or not (Berglund, n.d.). Three promising models were selected based off these criteria and examined further by calculating AIC information loss scores (Burnham & Anderson, 2004). Traditionally, the “best” model has a score of zero, being the model with the lowest AIC value. Other models’ AIC values are subtracted from the lowest model’s AIC value, and the difference between models is interpreted as a score. A difference score equal to or less than 2 implies that a model is about as strong as the “best” model, while a difference of 4-7 suggests a weaker model with less evidence compared to the “best” model, and a score larger than 10 suggests a model has no support from an AIC standpoint, compared to the “best” model.

Item-response probabilities were compared in each class, in each model, to understand response patterns across items and make qualitative sense of the patterns. Posterior probabilities were then compared across the three models to assess accuracy of class assignment. All three of these strategies were used to pick the final LCA model that

serves as the basis for the remaining analyses. Item-response probabilities suggested the four-class model as best, fit statistics suggested the five-class model, and the posterior probabilities suggested either model was appropriate. AIC was lower for the five-class model than the other models, but class sizes made more sense in the four-class model. Posterior probabilities did not differ greatly between the four-class and five-class models, with both generating strong posterior probabilities.

### 3.3.2 Descriptive analysis of individual latent classes

After selecting the final four-class model, parent, youth and family characteristics are presented in weighted cross-tabulations showing characteristics by each stressor grouping to address objective 2.

### 3.3.3 Mean scores of family functioning domains across classes

To address objective 3, weighted mean scores for overall family functioning and each family functioning subscale were also assessed by each of the four latent classes. These were graphed using boxplots made in Excel for Microsoft 365; more detail can be found in tables in Appendices B-D. For each scale, we first ran Levene's test of homogeneity of variances to flag any heterogeneity of variances that could violate the homogeneity assumption for an ANOVA. Then, for each scale, we ran a one-way ANOVA with weights using PROC GLM to assess for differences in means across stressor classes. Any significant ANOVA results were evaluated further using Bonferroni corrected pair-wise comparisons. For the conflict scale, we ran an unweighted Welch's ANOVA in PROC GLM, because Levene's test of homogeneity of variances determined significant heterogeneity of variances.

### 3.3.4 Linear Regression models

Finally, to address objective 4, we used PROC REG to run multiple weighted linear regression chunk-wise models to assess the relationship between the four latent classes and the outcome of overall family functioning, with Class 3 serving as reference category for the latent classes. Five progressive models were fit, with a new chunk of covariates or an interaction added to each successive model to assess for changes in the association

between stressor grouping and family functioning. Covariates with p-values higher than 0.2 were removed at each step, as restricting variable selection to include only those with a low alpha (e.g. p-values of 0.05 or lower) may lead to important confounding variables being excluded from models (Dales & Ury, 1978; Mickey & Greenland, 1989).

For the Step 1 model, we assessed an unadjusted model with just the stressor grouping variables (each of the four latent classes) and the family functioning outcome. For Step 2, we tested the addition of youth factors (presence of sibling and youth age group variables) next because almost 80% of families in our family sample reported having siblings, and we expected siblings to play an important role in both youth and parent assessment of family functioning. We also expected youth age group to potentially generate family functioning challenges regardless of parent factors such as partner status, due to different family functioning challenges associated with youth age in the family life cycle perspective.

During Step 3, we added parent factors (parent partner status and co-parent-living-elsewhere status) alongside youth factors, because we expected them to impact both exposure and outcome, but not all families in the sample had partners or co-parents. At Step 4, we removed the sibling variable from 4C to assess whether this improved model fit. Finally, during Step 5, we fit a model adjusting for youth factors (minus sibling presence), parent factors, and assessment of potential interaction between the stressor groupings and youth age group variable. We waited until the fifth model to assess for an interaction between youth age and stressor group because we wanted to account for the impact of parent factors, which we expected to be present regardless of any interaction between youth age and stressor group. Furthermore, some of the stressor groups were small in size, and so we expected there may be difficulty in detecting an interaction even if one existed.

Parameter estimates for each of these models are presented in tables, accompanied by p-values ( $\alpha=0.05$ ) and 95% confidence intervals, and model  $R^2$ . For each model, we examined tolerance and variance inflation (VIF) values for potential multicollinearity (see Appendix E). We also considered fit diagnostics for each linear regression model,

particularly examining Cook's D to assess for influential data points. 14 individual data points appeared in the best model, the Step 4 model, that were influential. We re-ran the Step 4 model excluding those individuals, and model fit improved (see Appendix F).

## Chapter 4

### 4 Results

This chapter will first present summarized results of LCAs, including fit statistics and gamma parameters for all models (2-7 classes), and scaled AIC values for the three best-fitting models (3-5 classes). We will also present additional results specific to the final four-class model, including rho parameters, posterior probabilities, and a description of the 4 latent classes. Next, descriptive statistics presenting a breakdown of parent, youth, and family characteristics by stressor grouping (latent class) will be presented. A series of boxplots comparing means between stressor groupings for the overall scale and each family functioning subscale will be described, with corresponding one-way ANOVA tests, and pairwise comparison tests for any significant ANOVA results. Finally, results of five progressive linear regression models assessing associations between latent classes and overall family functioning will be presented.

#### 4.1 Latent Class Analysis

The first objective was to find the optimal latent class model to describe parents' stressor experiences, using the SFTYC items as latent class indicators. Using LCA, a four class model was selected as the final model, with four different classes: Class 1: "Low Disruption, Policy Advocacy" (30.4% of sample), Class 2: "Social Disruption, Social Advocacy" (9.7%), Class 3: "Low Disruption, Low Advocacy" (55.8%), and Class 4: "Major Disruption, High Advocacy" (4.1%).

Table 1 displays fit statistics assessing model fit across models from 2 to 7 classes. While the two-class model had the lowest BIC (597.22) and highest number of seeds linked to the best fitted model (100%), it did not make the most sense qualitatively. The two larger class sizes (class 1=33.3% and class 2=66.7%) did not explain much about the sample participants' experiences of trans-specific extrafamilial stressors. The most optimal models appeared to be those with three to five classes, with a decreasing trend in fit statistic values; at six classes fit statistics began to increase. Percentage of seeds fitted

was poor for all models except for the two-class model; the next highest percentage of seeds fitted was in the four-class model, at 13.6%.

**Table 1. Fit Statistics for Latent class Models with 2 to 7 Classes**

# classes	LL	AIC	BIC	CAIC	Adj BIC	Entropy	% seeds associated with best fitted model
2	-735.96	495.74	597.22	630.22	492.76	0.83	100.0
3	-699.76	457.33	611.09	661.09	452.81	0.85	2.2
<b>4</b>	<b>-676.34</b>	<b>444.51</b>	<b>650.54</b>	<b>717.54</b>	<b>438.45</b>	<b>0.86</b>	<b>13.6</b>
5	-657.55	440.91	699.23	783.23	433.32	0.87	8.4
6	-645.31	450.43	761.03	862.03	441.30	0.87	1.2
7	-633.02	459.86	822.73	940.73	449.18	0.88	0.4

**Fit Statistics for latent class models from 2 to 7 classes, with rho prior restricted to one, 500 random starts, and starting seed= 1362949382.**

Table 2 presents gamma parameter estimates (class sizes) and standard errors for all models, ranging from 2 to 7 classes. Class sizes in models with 3-5 classes appeared reasonably large, with most of the classes containing more than 5-8% of the sample (Nylund-Gibson & Choi, 2018); at six classes onward, classes began to shrink. Note that a small class around 4.0% consistently appeared in all the fitted models, except for the two-class model. All models had relatively high entropy, suggesting highly distinguishable classes, ranging from 0.83 to 0.88. Models with more classes, despite performing more poorly in other fit statistic criteria, tended to have higher entropy, though.

**Table 2. Gamma Parameters (Expected Class Sizes) – Models with 2-7 Classes**

# classes	Class1	Class2	Class3	Class4	Class5	Class6	Class7
2	0.33 (0.07)	0.67 (0.07)					
3	0.36 (0.06)	0.59 (0.06)	0.04 (0.02)				

4	<b>0.30</b> <b>(0.06)</b>	<b>0.10</b> <b>(0.02)</b>	<b>0.56</b> <b>(0.07)</b>	<b>0.04</b> <b>(0.02)</b>			
5	0.09 (0.03)	0.55 (0.07)	0.23 (0.05)	0.10 (0.02)	0.04 (0.02)		
6	0.05 (0.01)	0.09 (0.02)	0.23 (0.04)	0.04 (0.02)	0.49 (0.08)	0.11 (0.05)	
7	0.04 (0.02)	0.08 (0.02)	0.11 (0.04)	0.05 (0.06)	0.04 (0.06)	0.20 (0.05)	0.49 (0.07)

**Gamma parameter estimates (probability of latent class membership, estimating expected class size in the sample) and standard error estimates in parentheses.**

To determine the optimal model among models with 3-5 classes, we scaled AIC values to compare information loss as number of classes changed. AIC scores for the three- to five-class models are presented in Table 3. The four-class model was chosen as best, based on a balancing of both model fit and qualitative assessment. While the five-class model had the lowest AIC score, the four-class model was next best, with an information loss score of 3.6. While not an ideal score, being larger than 2, 3.6 is still smaller than 4, the next cut-off point (Burnham & Anderson, 2004). The four-class model made more sense qualitatively, as the extra class produced in the five-class model resulted from the division of one larger class in a non-meaningful way, after parsing the item-response probabilities. Moreover, the four-class model had a higher percentage of seeds (13.6%) associated with it than any other model, except for the non-informative two-class model, and three out of four classes were reasonably large in size.

**Table 3. Scaled AIC Values**

# classes	AIC	Information Loss (AIC <sub>i</sub> – AIC <sub>minimum</sub> )	Model ranking of AIC information loss (best to least)
3	457.33	16.42	3
4	444.51	3.60	2
5	440.91 (AIC <sub>minimum</sub> )	0.00	1

**See Burnham & Anderson, 2004.**

The item-response probabilities (rho parameters) for the final four-class model revealed which stressor items members in each class were most likely to endorse (Table 4). Class

1 members, estimated to include 30.4% of the sample, were likely to report friends or family giving unwanted advice ( $\rho = 0.91$ ) and somewhat likely to have to get involved at their TGNB youth's school ( $\rho = 0.69$ ). We labelled this class as "Low Disruption, Policy Advocacy". Class 2, with an estimated 9.7% of the sample, was likely to experience other parents preventing parent-participants' TGNB youth from visiting at their houses ( $\rho = 0.93$ ), as well as other parents preventing their own children from visiting parent-participants' children at the parent's home ( $\rho = 0.96$ ). Members of this class were also likely to have gotten involved at their youth's school ( $\rho = 0.85$ ). This class was named "Social Disruption, Social Advocacy".

The largest class was Class 3, with an estimated 55.8% of the sample. Members of this class were not likely to report experiencing any of the stressor items, and so were labelled "Low Disruption, Low Advocacy". Class 4 (labelled "Major Disruption, High Advocacy") was the final class, containing 4.1% of the sample. This class was highly likely to report an array of different stressor experiences and advocacy efforts, including being called a bad caregiver by friends and family ( $\rho = 0.97$ ) and strangers ( $\rho = 0.77$ ), and receiving unwanted caregiving advice from friends and family ( $\rho = 0.98$ ) as well as from strangers ( $\rho = 0.97$ ). They were also likely to have family members ( $\rho = 0.82$ ) and community members ( $\rho = 0.84$ ) stop speaking to them. They were likely to have other parents prevent their children from visiting the parent-participants' and their TGNB youth's home ( $\rho = 0.84$ ), and somewhat likely to have other parents ban parent-participants' youths from visiting at others' homes ( $\rho = 0.63$ ). They were also likely to report having to get involved at their youth's school ( $\rho = 0.98$ ), and potentially having to defend their youth's washroom use ( $\rho = 0.72$ ).

**Table 4. Four-class Model - Rho parameters (Item-Response Probabilities)**

Item "Because of youth's gender..."	Class 1 (Estimated 30.36% of sample)	Class 2 (Estimated 9.74% of sample)	Class 3 (Estimated 55.78% of sample)	Class 4 (Estimated 4.12% of sample)
friends or family called you bad caregiver	0.26 (0.08)	0.19 (0.12)	0.07 (0.03)	0.97 (0.01)
strangers called you bad caregiver	0.15 (0.08)	0.27 (0.10)	0.03 (0.03)	0.77 (0.13)



friends or family gave unwanted caregiving advice	0.91 (0.07)	0.50 (0.14)	0.19 (0.09)	0.98 (0.01)
strangers gave unwanted caregiving advice	0.30 (0.09)	0.14 (0.09)	0.00 (0.00)	0.97 (0.01)
child welfare authorities investigated parenting	0.03 (0.03)	0.00 (0.00)	0.01 (0.01)	0.31 (0.18)
family members don't speak to you	0.07 (0.04)	0.10 (0.07)	0.01 (0.01)	0.82 (0.15)
community members don't speak to you	0.00 (0.00)	0.05 (0.05)	0.00 (0.00)	0.84 (0.13)
other parents stopped letting kids come over	0.13 (0.08)	0.96 (0.06)	0.01 (0.01)	0.84 (0.13)
others stopped letting your children come over	0.07 (0.05)	0.93 (0.12)	0.03 (0.02)	0.63 (0.20)
had to get involved in school	0.69 (0.13)	0.85 (0.09)	0.14 (0.08)	0.98 (0.01)
had to get involved regarding dress code	0.11 (0.04)	0.32 (0.11)	0.00 (0.00)	0.18 (0.15)
had to defend washroom rights	0.54 (0.11)	0.47 (0.14)	0.05 (0.04)	0.72 (0.18)
asked to not participate in religion	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.20 (0.13)
had to defend right to participate in sports/activities as identified gender	0.19 (0.07)	0.06 (0.07)	0.01 (0.01)	0.39 (0.21)
asked to find other health care provider	0.02 (0.02)	0.00 (0.00)	0.00 (0.00)	0.20 (0.13)
asked to find other mental health care provider	0.02 (0.02)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)

**Rho parameters (item-response probabilities). Highlighted cells contain high (above 0.5; see Berglund, n.d.) rho parameters.**

The final step in choosing the four-class model was examining the mean posterior probabilities of class membership, to roughly assess assignment accuracy of the model (Table 5). Individuals were assigned to a “best” class based on their probability of being in a class, and the mean reflects overall how likely members of each class were to be

assigned to their given class. Numbers close to one are ideal, suggesting a high average probability of members assigned to a class. The posterior probabilities for the four-class model were high, with Class 1 members on average having a 0.89 probability of truly being in Class 1, Class 2 members at 0.93, Class 3 at 0.94 and Class 4 at about 1.00. There are, however, limitations present when interpreting class assignment accuracy, or posterior probabilities. The mean posterior probability values for each class in the four-class model were quite high, ranging from 0.89 to 1.00, suggesting high class assignment accuracy on average. However, there were outliers in 3 out of the 4 classes, each with much lower probability than their peers (probabilities closer to but not lower than 0.5).

The mean posterior probabilities for the five-class model were only slightly higher than those of the four-class model, but the outliers in that model had somewhat higher accuracy than those in the four-class model. However, from a qualitative and item-response probability standpoint, the five-class model did not contribute much more information than the four-class model. Given the intention to test stressor groupings from an LCA model as predictors in linear regression models, using the five-class model was not ideal, since it did not contribute substantially new information and would mean smaller, and potentially less stable class sizes being used as predictors. Class sizes after membership was assigned were close to the estimated sizes given in the LCA, with Class 1 having 50 participants (31.3%), Class 2 having 15 participants (9.4%), Class 3 having 87 participants (54.4%), and Class 4 having 8 participants (5.0%).

**Table 5. Four-class Model – Mean Posterior Probabilities of Class Membership**

Class #	N	% of sample	Mean	Std Dev	Std Err	Min	Max
1	50	31.3	0.89	0.14	0.02	0.62	1.00
2	15	9.4	0.93	0.12	0.03	0.51	1.00
3	87	54.4	0.94	0.11	0.01	0.55	1.00
4	8	5.0	1.00	0.00	0.00	1.00	1.00

## 4.2 Descriptive analysis by LCA classes

The second objective was to understand and describe the characteristics of members of each class. We cross-tabulated LCA class assignment status by parent-participant characteristics in Table 6, and by youth and family characteristics in Table 7.

**Table 6. Descriptive statistics of parent-participant characteristics by stressor latent class.**

Variable	Total N		Class 1 "Low Disruption, Policy Advocacy" N = 50		Class 2 "Social Disruption, Social Advocacy" N = 15		Class 3 "Low Disruption, Low Advocacy" N = 87		Class 4 "Major Disruption, High Advocacy" N = 8	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
<b>Parent gender</b>	<b>160</b>	<b>%</b>								
Male	25	13.8	5	7.0	0	0.0	20	20.8	0	0.0
Female	132	85.1	44	91.7	15	100.0	65	77.9	8	100.0
Non-binary	3	1.1	1	1.3	0	0.0	2	1.3	0	0.0
<b>Sexual orientation</b>	<b>160</b>	<b>%</b>								
Heterosexual	135	83.8	40	79.1	11	64.7	79	91.6	5	56.5
Sexual minority	25	16.2	10	20.9	4	35.3	8	8.4	3	43.5
<b>Ethnoracial background</b>	<b>160</b>	<b>%</b>								
Indigenous	15	7.7	6	12.1	1	3.8	4	2.9	4	52.7
Visible minority	9	7.2	2	2.5	2	20.1	5	7.9	0	0.0
White	136	85.1	42	85.4	12	76.1	78	89.3	4	47.3
<b>Immigrant status</b>	<b>160</b>	<b>%</b>								
Immigrant	17	13.1	2	3.2	2	16.7	13	18.5	0	0.0
Non-immigrant	143	86.9	48	96.8	13	83.3	74	81.5	8	100.0
<b>Parent partner status</b>	<b>160</b>	<b>%</b>								
Partnered	108	64.4	35	67.2	7	41.4	60	66.3	6	73.7
Single	52	35.6	15	32.8	8	58.6	27	33.7	2	26.3
<b>Highest level of education</b>	<b>160</b>	<b>%</b>								
Less than high school	5	2.9	0	0.0	0	0.0	5	5.1	0	0.0
High school diploma	12	6.5	3	4.5	1	5.2	7	7.4	1	11.9
Some postsecondary education,	33	24.6	13	26.1	4	38.8	14	20.6	2	34.3
Postsecondary degree or diploma	71	43.5	20	44.7	10	56.1	37	40.5	4	44.7
Some graduate or professional education	7	4.5	1	2.1	0	0.0	6	6.9	0	0.0
Graduate or professional degree	32	18.1	13	22.5	0	0.0	18	19.5	1	9.2
<b>Bio-parent status (gendered)</b>	<b>160</b>	<b>%</b>								
Bio mother	119	75.4	39	76.4	13	91.4	59	70.4	8	100.0
Bio father	19	10.5	4	5.4	0	0.0	15	15.7	0	0.0
Non-binary parent	3	1.1	1	1.3	0	0.0	2	1.3	0	0.0
Other caregiver role	19	13.0	6	16.9	2	8.6	11	12.6	0	0.0
<b>Caregiver role (original variable)</b>	<b>159</b>	<b>%</b>								
Parent from birth	141	87.4	44	83.1	13	96.1	76	87.4	8	100.0
Adoptive parent	12	8.7	5	15.3	0	0.0	7	7.3	0	0.0

Foster parent	1	0.5	1	1.6	0	0.0	0	0.0	0	0.0
Step-parent	3	2.5	0	0.0	0	0.0	3	4.3	0	0.0
Other main caregiver	2	1.0	0	0.0	1	4.0	1	1.0	0	0.0

Class 1 (N = 50, 29.6% when weighted), or the “Low Disruption, Policy Advocacy” group, was mostly female (N = 44, 91.7%) with a minority of male (N = 5, 7.0%) and non-binary parent-participants (N = 1, 1.3 %). About one fifth belonged to a sexual minority (N = 10, 20.9%), and with 12.1% (N=6) self identifying as Indigenous and 2.5% (N=2) as a visible minority. The group was largely non-immigrant (N = 48, 96.8%). 17.9% also had low-income households (N = 7). Most participants in this group were partnered (N = 35, 67.2%), and had a post-secondary degree/diploma (N = 20, 44.7%) or graduate degree (N = 13, 22.5%). While most were birth parents (N = 44, 83.1%), a minority were adoptive parents (N = 5, 15.3%) or foster parents (N = 1, 1.6%). 13.8% (N = 8) of parents in this group had youth aged 11 or younger, and most youths were male (N = 36, 77.5%). Three quarters of the families in this group also reported siblings in the family (N = 38, 75.2%), and most reported their income as supporting 3-4 individuals (N = 31, 67.1%).

Class 2, “Social Disruption, Social Advocacy” group was the second smallest group from the LCA (N = 15, 9.9% when weighted). This class was entirely female (N = 15, 100.0%), and almost entirely birth parents (N = 13, 96.1%). More than one third belonged to a sexual minority group (N = 4, 35.3%), with a minority reporting themselves as being Indigenous (N = 1, 3.8%) or member of a visible ethnic minority group (N = 2, 20.1%). 16.7% (N = 2) were immigrants, and just over half of group members’ had low income status (N = 8, 51.7%), with more than half having a post-secondary degree or diploma (N = 10, 56.1%). Over half of participants in this group were single parents (N = 8, 58.6%), and nearly all had youths in the study aged 12 to 15 years of age (N = 14, 95.1%), with most youths being male (N = 12, 84.1%). Most families also had siblings (N = 12, 85.2%) and supported 1-2 people (N = 3, 17.4%) or 3-4 people (N = 12, 82.6%) on their income.

**Table 7. Descriptive statistics of youth and family characteristics by stressor latent class.**

Variable	Total N		Class 1 “Low Disruption, Policy Advocacy” N = 50		Class 2 “Social Disruption, Social Advocacy” N = 15		Class 3 “Low Disruption, Low Advocacy” N = 87		Class 4 “Major Disruption, High Advocacy” N = 8	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
<b>Low income status</b>	<b>151</b>	<b>%</b>								
Yes	40	27.1	7	17.9	8	51.7	23	27.3	2	23.6
No	111	72.9	37	82.1	7	48.3	61	72.7	6	76.4
<b>Household income last 12 months</b>	<b>156</b>	<b>%</b>								
Less than \$10,000	1	1.2	0	0.0	0	0.0	1	2.1	0	0.0
\$10,000 to less than \$15,000	5	2.2	0	0.0	1	3.8	4	3.1	0	0.0
\$15,000 to less than \$30,000	19	12.9	5	10.8	4	19.0	8	12.1	2	23.6
\$30,000 to less than \$40,000	10	6.4	1	1.4	1	13.8	8	8.0	0	0.0
\$40,000 to less than \$50,000	13	10.0	5	16.4	3	20.4	4	4.9	1	11.9
\$50,000 to less than \$60,000	7	3.7	0	0.0	0	0.0	7	6.5	0	0.0
\$60,000 to less than \$80,000	16	10.0	6	9.0	0	0.0	9	11.4	1	22.4
\$80,000 to less than \$100,000	29	17.0	12	22.8	2	12.3	13	14.8	2	21.1
\$100,000 or more	56	36.6	18	39.7	4	30.9	32	37.2	2	21.1
<b>Number of people supported on income</b>	<b>151</b>	<b>%</b>								
1-2 people	29	18.5	5	10.4	3	17.4	21	23.8	0	0.0
3-4 people	97	62.1	31	67.1	12	82.6	50	57.4	4	44.8
5-6 people	23	18.4	7	20.1	0	0.0	12	18.2	4	55.2
7-8 people	2	1.1	1	2.4	0	0.0	1	0.7	0	0.0
<b>Youth age</b>	<b>160</b>	<b>%</b>								
9-11 years	17	9.4	8	13.8	1	4.9	6	7.3	2	18.4
12-15 years	143	90.6	42	86.2	14	95.1	81	92.8	6	81.7
<b>Youth gender</b>	<b>158</b>	<b>%</b>								
Male	116	75.8	36	77.5	12	84.1	62	72.9	6	81.7
Female	30	16.7	9	13.9	2	11.1	17	19.1	2	18.4
Non-binary	12	7.5	5	8.6	1	4.9	6	8.0	0	0.0
<b>Youth sibling status</b>	<b>160</b>	<b>%</b>								
Has siblings	125	78.6	38	75.2	12	85.2	68	78.4	7	90.8
No siblings reported	35	21.4	12	24.8	3	14.8	19	21.6	1	9.2

The largest class, Class 3 (“Low Disruption, Low Advocacy”) had 87 individuals (56.5%) when weighted. This class was the class that was unlikely to experience the extrafamilial stressors analyzed in the LCA. This class had most of the sample’s male (N = 20, 20.8%) and non-binary (N = 2, 1.3%) parent-participants, but was still majority female (N = 65, 77.9%). Most participants were heterosexual (N = 79, 91.6%) and/or white (N = 78, 89.3%). There was a sizable immigrant minority in this group (N = 13, 18.5%), and most parent-participants were highly educated, with 40.5% (N = 37) with a postsecondary degree or diploma, 6.9% (N = 6) some graduate education, and 19.5% (N = 18) with a graduate degree. Over one quarter had low income status (N = 23, 27.3%), and most parents were birth parents (N = 76, 87.4%), adoptive parents (N = 7, 7.3%), or step-parents (N = 3, 4.3%). About one third of participants were single parents (N = 27, 33.7%). Most parent-participants in this group had TGNB youth who were 12-15 years of age (N = 81, 92.8%), with a minority of youth being female (N = 17, 19.1%) or nonbinary (N = 6, 8.0%). More than one fifth of these families did not have siblings present (N = 19, 21.6%), and there was a range in number of people supported on parent-participants’ income, with over half supporting 3-4 people (N = 50, 57.4%), 23.8% (N = 21) supporting 1-2 people, and 18.2% (N = 12) supporting 5-6 people.

The final class, Class 4, or “Major Disruption, High Advocacy” group (N = 8, 4.1% when weighted) was the smallest class and the most likely to experience diverse extrafamilial stressors. This class was entirely female (N = 8, 100.0%), with over half of participants heterosexual (N = 5, 56.5%) and/or Indigenous (N = 4, 52.7%). All members of this group were also non-immigrant (N = 8, 100.0%), and nearly one quarter were low income status (N = 2, 23.6%). Most parent-participants had some post-secondary education (N = 2, 34.3%) or a post-secondary degree/diploma (N = 4, 44.7%). Over one quarter of parents were single parents (N = 2, 26.3%), and all were birth mothers to their TGNB youth (N = 8, 100.0%). Nearly one fifth of their youths in the study were aged 9-11 years old (N = 2, 18.4%), and/or female (N = 2, 18.4%). Most of these families also reported having siblings present (N = 7, 90.8%), and supported either 3-4 (N = 4, 44.8%) or 5-6 (N = 4, 55.2%) individuals on the parent-participant’s income.

## 4.3 Family Functioning Subscales

### 4.3.1 Objective 3

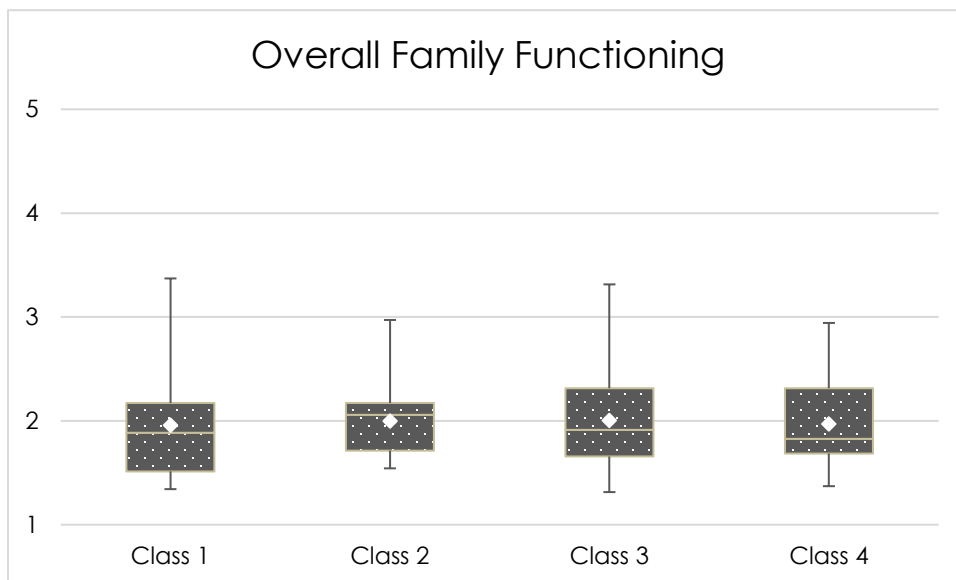
Objective 3 was to assess and compare the mean score of each domain of family functioning among each stressor grouping. For most of the scales, means were similar across classes. Boxplots depict results for parent perspective of overall family functioning (Figure 2), health/competence subscale (Figure 3), conflict subscale (Figure 4), cohesion subscale (Figure 5), leadership subscale (Figure 6), expressiveness subscale (Figure 7), and youth perspective of family connectedness (Figure 8). See Appendix B for more statistics regarding mean scores of each family functioning scale.

#### 4.3.1.1 Overall family functioning scale

Figure 2 indicates much overlap in mean scores of overall family functioning among parents in the four latent class groups. All groups obtained a weighted mean family functioning score around 2.00, which suggests parents perceive their families as doing well (Class 1: Mean=1.96, SD=0.46; Class 2: Mean=2.00, SD=0.38; Class 3=2.00, SD=0.45; Class 4: Mean=1.97, SD=0.45). Levene's test for homogeneity of variances (unweighted) was nonsignificant, so we ran an ANOVA procedure, which showed no significant difference among groups (DF = 3, F = 0.11, p = 0.96).



**Figure 2. Overall Family Functioning - Boxplot of Means by Stressor Class**



#### 4.3.1.2 Health/competence subscale

For the health/competence subscale, groups again showed much overlap and low weighted mean scores of family functioning in this domain, indicating strong family functioning (Class 1: Mean=1.94, SD=0.55; Class 2: Mean=1.98, SD=0.44; Class 3=1.95, SD=0.56; Class 4: Mean=1.98, SD=0.52); see Figure 3. Levene's test for homogeneity of variances (unweighted) was nonsignificant, so we ran an ANOVA procedure, which showed no significant difference among groups (DF = 3, F = 0.03, p = 0.99).

**Figure 3. Family Health/Competence - Means by Stressor Class**



#### 4.3.1.3 Conflict subscale

Figure 4 shows boxplot results for the conflict subscale (Class 1: Mean=1.82, SD=0.62; Class 2: Mean=1.66, SD=0.49; Class 3=1.71, SD=0.58; Class 4: Mean=2.04, SD=0.97). Levene's test for homogeneity of variances (unweighted) was significant, indicating heterogeneity of variances and potential problems with running a regular ANOVA procedure ( $F = 2.98$ ,  $p = 0.03$ ). To account for the heterogeneity of variances, we ran Welch's ANOVA, which can only be used with unweighted data in SAS. The results of the Welch's ANOVA procedure were nonsignificant, showing no significant differences between stressor groups ( $DF = 3$ ,  $F = 0.69$ ,  $p = 0.57$ ). Class 4 showed a large amount of variation in conflict score, with some scores ranging as low as 1.00, which is the lowest possible score and indicates strong functioning in handling conflict, and as high as 3.92, suggesting poorer conflict functioning. This was likely a function of small class size ( $N=8$ ) and the impact of one extreme outlier, as removing the outlier decreased the variance enough that the homogeneity of variances test was no longer significant ( $DF = 3$ ,  $F = 0.44$ ,  $p = 0.72$ ). We then ran a weighted ANOVA to assess the new dataset, and the test was also not significant ( $DF = 3$ ,  $F = 0.19$ ,  $p = 0.90$ ). See Appendix C for full results of dataset with the outlier removed from Class 4.

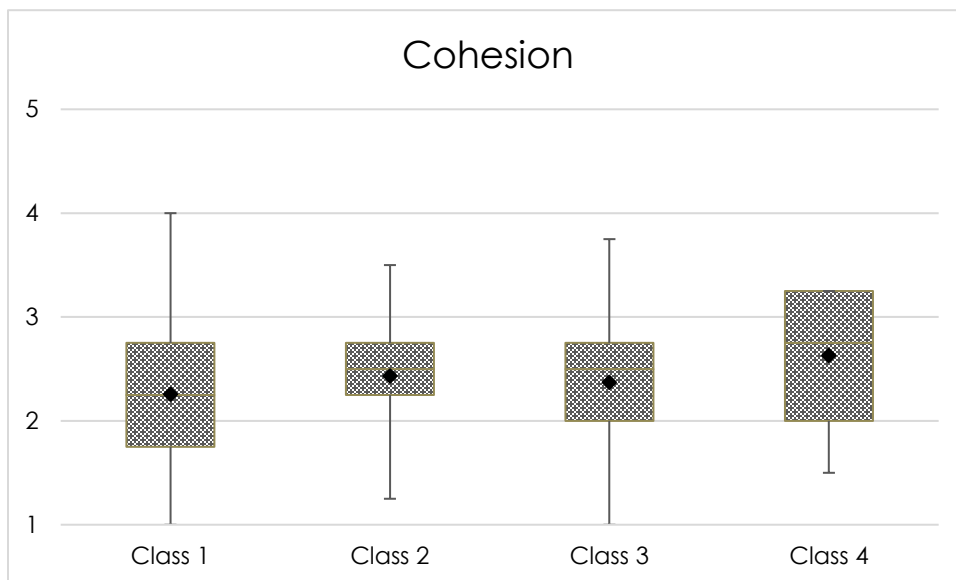
**Figure 4. Family Conflict - Boxplot of Means by Stressor Class**



#### 4.3.1.4 Cohesion subscale

Figure 5 displays boxplots of weighted means for the cohesion subscale, once again showing some overlap between classes but variation within the classes (Class 1: Mean=2.26, SD=0.65; Class 2: Mean=2.44, SD=0.52; Class 3=2.37, SD=0.62; Class 4: Mean=2.63, SD=0.59). These scores are still quite low, but higher than most of the mean scores of the other subscales. It is possible that the domain of family cohesion is a slightly more challenging aspect of family functioning among these families, regardless of degree of trans-specific stressors. This sub-scale did not have strong internal consistency in this sample, which may also be reflected in the higher scores. Levene's test for homogeneity of variances (unweighted) was nonsignificant, so we ran an ANOVA procedure, which showed no significant difference among groups (DF = 3, F = 0.90,  $p = 0.44$ ).

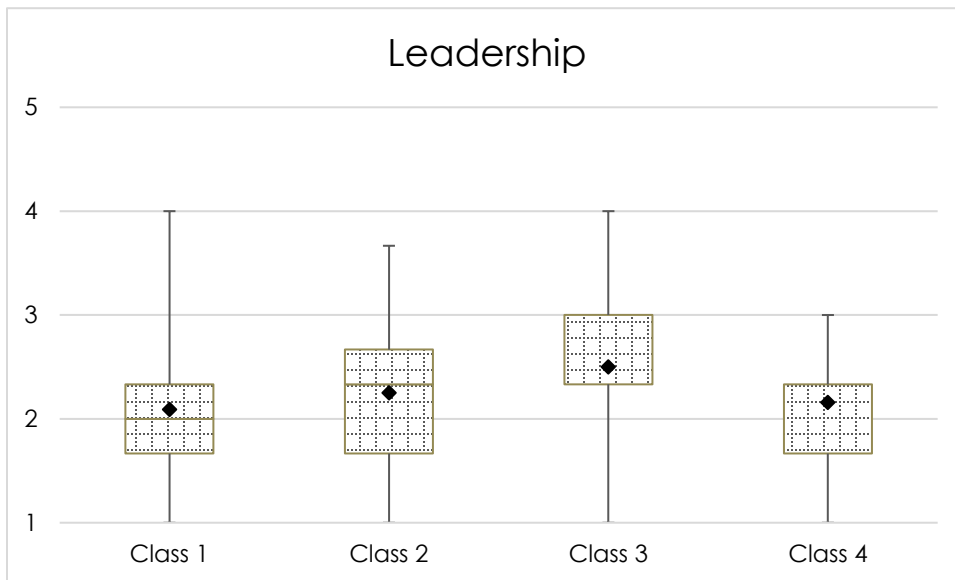
**Figure 5. Family Cohesion - Boxplot of Means by Stressor Class**



#### 4.3.1.5 Leadership subscale

Figure 6 displays boxplots of weighted means for the leadership subscale, showing much variation within classes as well. (Class 1: Mean=2.09, SD=0.58; Class 2: Mean=2.25, SD=0.72; Class 3=2.50, SD=0.59; Class 4: Mean=2.16, SD=0.56. Levene's test for homogeneity of variances (unweighted) was nonsignificant, so we ran an ANOVA procedure, which showed significant differences between groups (DF = 3, F = 5.00, p = 0.00). We then ran Bonferroni correction pair-wise comparisons to further examine this. This analysis showed statistically significant differences between classes 3 and 1 (difference between means: 0.41, 95% CI: 0.12, 0.70,  $p \leq 0.05$ ), suggesting that on average, members of class 1 had a lower score than those in class 3, suggesting higher functioning on the leadership subscale. However, due to the very low internal consistency of this sub-scale in this sample, these results are likely not meaningful. See Appendix D for full results of pairwise comparisons.

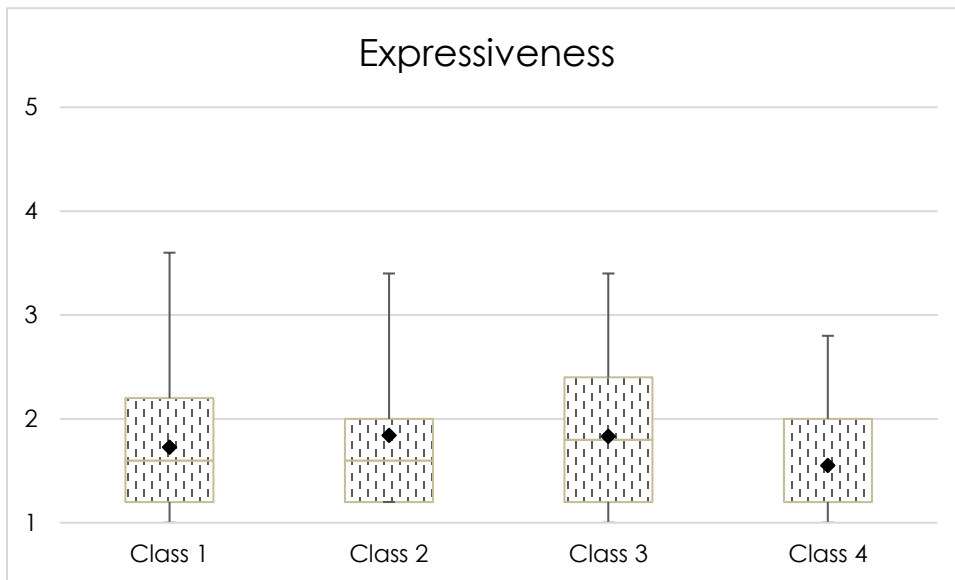
**Figure 6. Family Leadership - Boxplot of Means by Stressor Class**



#### 4.3.1.6 Expressiveness subscale

Figure 7 displays boxplot of weighted means for the final SFI II subscale, the Expressiveness subscale. There seems to be much variation within groups (Class 1: Mean=1.73, SD=0.65; Class 2: Mean=1.84, SD=0.75; Class 3=1.83, SD=0.67; Class 4: Mean=1.55, SD=0.54). Levene's test for homogeneity of variances (unweighted) was nonsignificant, so we ran an ANOVA procedure, which showed no significant difference among groups (DF = 3, F = 0.55, p = 0.65).

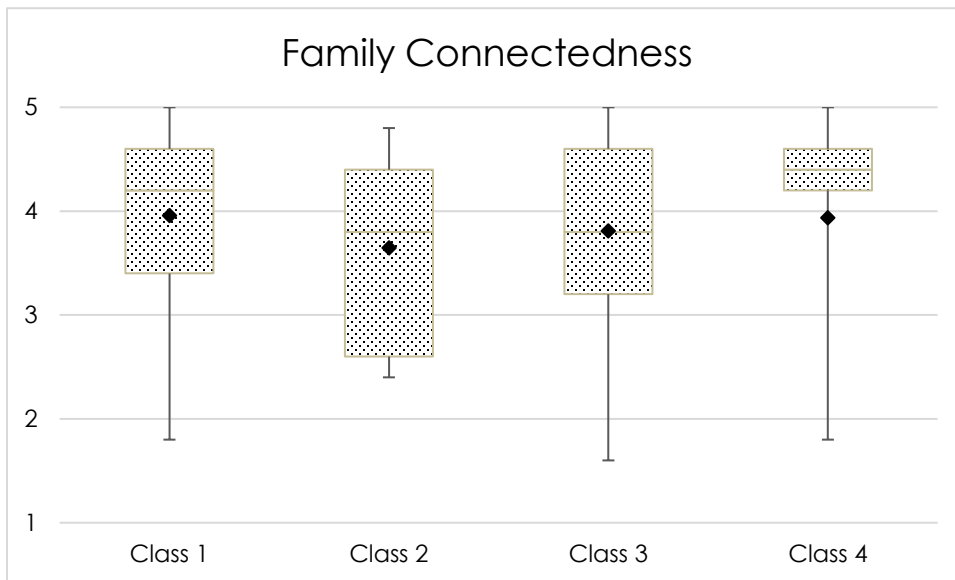
**Figure 7. Family Expressiveness - Boxplot of Means by Stressor Class**



#### 4.3.1.7 Family connectedness subscale

Finally, Figure 8 displays boxplot of weighted means for family connectedness, measured from the youth's perspective of how well they feel connected to their family. All classes scored relatively high, indicating that families can remain connected and strong regardless of experiencing trans-specific stressors (Class 1: Mean=3.96, SD=0.79; Class 2: Mean=3.65, SD=0.91; Class 3=3.81, SD=0.87; Class 4: Mean=3.94, SD=1.07).

Levene's test for homogeneity of variances (unweighted) was nonsignificant, so we ran an ANOVA procedure, which showed no significant difference among groups (DF = 3, F = 0.62, p = 0.60).

**Figure 8. Family Connectedness - Boxplot of Means by Stressor Class**

#### 4.4 Family Functioning Linear Regression Analyses

The final objective was to assess the relationship between stressor class and overall family functioning score. We ran five regression models, separated into blocks based on similarities among covariates and expected influence of certain covariates. The model used in Step 4 was determined to be the best-fitted model. Finally, we ran a sensitivity analysis on the Step 4 model to assess the impact of influential data points (see Appendix F).

**Table 8. Step 1 and 2 Linear Regression Models**

Variable	Step 1 (Unadjusted) <sup>1</sup>			Step 2 (Youth Factors) <sup>2</sup>		
	$\beta$	95% CI	p	$\beta$	95% CI	p
<b>Class 1<sup>3</sup></b>	-0.05	-0.20, 0.12	0.58	-0.03	-0.19, 0.13	0.72
<b>Class 2</b>	-0.01	-0.25, 0.24	0.96	-0.01	-0.25, 0.23	0.94
<b>Class 4</b>	-0.03	-0.39, 0.33	0.86	0.01	-0.36, 0.36	0.98

<b>Sibling</b>				-0.05	-0.22, 0.12	0.54
<b>Youth Age Group</b>				0.27	0.03, 0.51	0.03

1. Step 1 Model  $R^2 = 0.0021$
2. Step 2 Model  $R^2 = 0.0350$
3. Class 3 served as reference category.

Step 1 (Table 8) was fitting the unadjusted model, which was poorly fitted. The independent variables explained little of the model variance ( $R^2 = 0.0021$ ), and the stressor classes had low beta coefficients and high p values. Step 2 (Table 8) added the chunk of youth factor variables, controlling for the presence of siblings in the family and youth age group alongside the stressor classes. The addition of this set of covariates improved model fit, with more of the variance explained by the whole set of independent variables ( $R^2=0.0350$ ). The effect of the stressor classes remained insignificant, as did the sibling variable, but the youth age group variable suggested a modest main effect, with older youth being associated with having modestly poorer family functioning ( $\beta=0.27$ ; 95% CI: 0.03, 0.51;  $p=0.03$ ) when sibling and stressor classes were held constant. There were no issues with multicollinearity as per the tolerance and VIF values (see Appendix E for tolerance and VIF values for each model).

**Table 9. Step 3 and 4 Linear Regression Models**

Variable	Step 3 (Youth and Parent Factors) <sup>1</sup>			Step 4 (Youth and Parent Factors, minus sibling variable) <sup>2</sup>		
	$\beta$	95% CI	p	$\beta$	95% CI	p
<b>Class 1<sup>3</sup></b>	-0.05	-0.21, 0.11	0.53	-0.05	-0.20, 0.11	0.56
<b>Class 2</b>	0.02755	-0.22, 0.28	0.83	0.02	-0.23, 0.27	0.85
<b>Class 4</b>	-0.03	-0.38, 0.33	0.88	-0.04	-0.39, 0.32	0.85
<b>Sibling</b>	-0.10	-0.27, 0.08	0.27			



<b>Youth Age Group</b>	0.28	0.05, 0.52	0.02	0.28	0.04, 0.51	0.02
<b>Parent Partner</b>	0.18	0.02, 0.35	0.03	0.18	0.01, 0.34	0.03
<b>Co-Partner</b>	0.16	-0.01, 0.32	0.06	0.14	-0.02, 0.30	0.09

1. Step 3 Model  $R^2 = 0.0758$
2. Step 4 Model  $R^2 = 0.0679$
3. Class 3 served as reference category.

Step 3 (Table 9) added the next chunk of variables to the model in Step 2, accounting for parent factors such as parent partner status and co-parent status. Again, model fit improved, with model  $R^2$  of 0.0758. The stressor classes and sibling variable remained nonsignificant, while the youth age group ( $\beta=0.28$ ; 95% CI: 0.05, 0.52;  $p=0.02$ ) and parent partner status ( $\beta=0.18$ ; 95% CI: 0.02, 0.35;  $p=0.03$ ) variables were significant when all other variables were held constant. Co-parent status ( $\beta=0.16$ ; 95% CI: -0.01, 0.32;  $p=0.06$ ) was nonsignificant but only marginally so. Tolerance and VIF values were acceptable. In Step 4 (Table 9), we re-ran the analysis from Step 3 but excluded the sibling variable, as it was consistently nonsignificant and had a p-value above 0.2. Model fit did not change considerably in Step 4, as the stressor classes remained nonsignificant, youth age group and parent partner status main effects remained significant, and co-parent status remained nonsignificant, but marginally so.  $R^2$  shrank slightly, from 0.0758 to 0.0679. There were no concerns with multicollinearity identified by the tolerance or VIF values.

**Table 10. Step 5 Linear Regression Model**

Variable	Step 5 (Youth and Parent Factors, minus sibling status, and interaction terms (Stressor class*Youth age group))			
	$\beta$	95% CI	p	$R^2$
<b>Class 1<sup>1</sup></b>	-0.42	-0.90, 0.06	0.09	0.0870
<b>Class 2</b>	-0.37	-1.42, 0.69	0.49	

<b>Class 4</b>	-0.41	-1.28, 0.45	0.35	
<b>Youth Age Group</b>	0.05	-0.30, 0.40	0.79	
<b>Parent Partner</b>	0.19	0.03, 0.36	0.02	
<b>Co-Partner</b>	0.14	-0.02, 0.30	0.09	
<b>Interaction: Age*Class 1</b>	0.42	-0.09, 0.93	0.11	
<b>Interaction: Age*Class 2</b>	0.42	-0.66, 1.51	0.44	
<b>Interaction: Age*Class 4</b>	0.43	-0.52, 1.38	0.37	

1. Class 3 served as reference category.

Finally, for Step 5 (Table 10), we took the modified model from Step 4 and included interaction terms to assess for effect modification between the youth age group variable and stressor class.  $R^2$  increased, likely because of the extra terms in the model, to 0.0870. There was no significant evidence of effect modification between the youth age group and stressor class variables. Some of the tolerance values were below 0.1 and some VIF values above 10, indicating potential multicollinearity (O'Brien, 2007).

After confirming that there did not appear to be effect modification in Step 5, we decided that the model that best explained the relationship between stressor classes and family functioning was the model in Step 4. We then ran a sensitivity analysis by removing influential points from the Step 4 model to assess whether the effects were driven by individual influential points (see Appendix F). After removing 14 influential points from the data,  $R^2$  increased from 0.0679 to 0.1474, and the main effects of the youth age group, parent partner status, and co-parent status remained significant, more-so than in Step 4. As in the original Step 4 model, tolerance and VIF values did not identify major concerns of multicollinearity. The sensitivity analysis results might suggest that a handful of data points were obscuring the strength of the effect and pushing the results toward the null in Step 4, but it might simply be a result of already small stressor class sizes

shrinking even more with influential points removed, making the effects seem more significant in the sensitivity analysis.

## Chapter 5

### 5 Discussion

This chapter will discuss and integrate results into the literature surrounding transgender youth, their families, gender-affirming care, and family theories.

#### 5.1 Summary of Results

##### 5.1.1 Latent Class Analysis of Extrafamilial Stressors

Extrafamilial stressors and concerns experienced by families of transgender youth have been explored in qualitative studies (Ehrensaft, 2011; Kuvalanka, Allen, et al., 2018; Kuvalanka et al., 2014, 2017; Kuvalanka, Mahan, et al., 2018; Pullen Sansfaçon et al., 2015) and to a lesser extent, in quantitative research (Lawlis et al., 2017). However, this thesis is the first to our knowledge to use LCA to assess whether groupings of stressor experiences exist among parents of TGNB youth accessing clinical care (Objective 1). The LCA model that best reflected diversity of stressor experiences in the qualitative literature while also preserving model fit was a four-class model. Interestingly, this model suggested that more than half (56.5%) of parent-participants in the TYCAN sample were unlikely to report experiencing any of the stressors provided on the SFTYC checklist; however, 22.3% of youths whose parents were in this “Low Disruption, Low Advocacy” grouping only lived in their gender some of the time, and 0.7% none of the time. This might reflect that some families do not experience trans-specific extrafamilial stressors because others outside the family are not aware of the youth’s gender.

This does not mean that more than half of families are unlikely to experience any trans-specific extrafamilial stress ever, as only 24.4% actually reported experiencing “none of the above” stressors on the checklist (Pullen Sansfaçon et al., 2020). Rather, the response patterns of those experiencing few stressors may have been too dissimilar to fit into single groups, regardless of whether LCA models had a smaller or greater number of classes. The results may suggest that for parents of TGNB youth in clinical care, who appear to represent a heterogeneous group, that: 1) experiences are too diverse to be adequately captured in 2-7 classes, particularly with a small sample size; 2) having 16

stressor items in the analysis provided more opportunities for participants to express having different experiences, and thus different response patterns; and 3) families accessing clinical care may live in more supportive communities than some of the families observed in community-based qualitative studies.

There are families described in the literature that reported positive experiences with some schools (Kovalanka et al., 2014; Kovalanka, Mahan, et al., 2018) and family members (Ehrensaft, 2011; Kovalanka et al., 2014), which could reflect members of Class 3 who were unlikely to endorse any stressor items. Class 3 being so large may also represent some parents and families who have not disclosed their youth's gender to people in all areas of their social life, or are learning to balance actively advocating for their youth's needs while also knowing when it may be safer not to disclose their youth's gender. Rahilly (2015) described some parents of TGNB youth navigating these choices. For example, strangers in public do not need to know that a child falls under the transgender umbrella, as such a disclosure does not protect the child, and such strangers are unlikely to become part of a family's social life. It may be important, however, to disclose that information when a child attends a sleepover, if there is a risk that someone else in the community may out them before or during the sleepover (Rahilly, 2015).

Other classes showed response patterns with stressors being more likely to be endorsed than that of the "Low Disruption, Low Advocacy" (56.5%) class. Class 1 ("Low Disruption, Policy Advocacy"), or an estimated 29.6% of the sample, were highly likely to report receiving unwanted parenting advice from friends and family and having to get involved in their youth's school. These two items having likelihood of being endorsed together is interesting, as there does not appear to be an immediate link between the two, with one item reflecting the social sphere of extended family and the other reflecting the youth's school environment. Also interesting is that despite potential family influence in parenting affairs, members of this stressor class were not very likely to report receiving unwanted advice from strangers nor be called a bad parent by strangers or family. This implies that such parents may not be dealing with outright hostility from strangers or family around their parenting, but still receive unwanted advice from well-meaning relatives. The likelihood of getting involved in the youth's school due to gender issues

also serves as a reminder that even if parents are not perceiving many stressors in other areas of their lives (e.g. extended family, strangers), they may still have environments in which they need to intervene to advocate for their TGNB youth.

The next largest class was Class 2, with an estimated 9.9% of the sample (“Social Disruption, Social Advocacy”). This class was highly likely to endorse items involving other children’s parents ostracizing TGNB youth from visiting with their youth peers, whether at another child’s home or the TGNB youth’s home. As this class was the most likely to experience socially disruptive stressors in the youth’s life, and also more likely to report needing to intervene at their youth’s school than Class 1, it is possible that the social disruption in peer relations could be linked to stressor experiences at school. Given the social disruption that could directly impact a youth’s life, (as opposed to other stressors, such as parents receiving unwanted parenting advice), it is not surprising that parents in this class would also be likely to intervene at school, where peer interactions happen frequently.

The smallest class was Class 4, representing an estimated 4.1% (“Major Disruption, High Advocacy”). This class was highly likely to endorse many items on the checklist, reflecting a tendency to experience major social disruption as well as strong advocacy efforts for their youth. This class was very small, but studies have described parents in such scenarios (Manning et al., 2015; Pullen Sansfaçon et al., 2015). Parents’ response patterns in this group suggested they were highly likely to experience parenting harassment or interference by strangers and family alike, ostracization by family and community members, some parental peers blocking their children from socializing with TGNB youth study participants, and parents needing to advocate for school and washroom rights. Other items of note include some items which members of this class were unlikely to endorse (less than 50% probability endorsement), yet were noticeably more likely to endorse than parents in other classes. This includes the item about child welfare authorities investigating families and advocating for youths’ rights to take part in activities and sports as their identified gender. Finally, one item was unlikely to be endorsed regardless of stressor class membership; being asked to find a new mental

healthcare provider. Some of our participants probably did not have a mental healthcare provider, though, other than through gender-affirming clinic services.

### 5.1.2 Descriptive Characteristics by LCA Group

For Objective 2, we displayed parent, family, and youth characteristics by stressor class grouping. Class 1 (“Low Disruption, Policy Advocacy”) was largely female, non-immigrant, highly educated, and birth, adoptive or foster parents. Several parents were Indigenous and/or belonged to a sexual minority group. This group also showed the most diversity in terms of number of individuals depending on parent-participant’s income and had a sizable proportion of younger youth. Given the low likelihood of social disruption and the tendency to advocate for their youth at school, it is possible that members of this group are somewhat “out” in supporting their youth’s gender, and potentially have good support systems. It is also possible that members of a marginalized minority group may have more experience or awareness in advocating for minority rights due to their own lived experience as a member of a minority group. Kusalanka et al. (2018) described how belonging to a sexual minority may help parents be more open to accepting their TGNB child, because they know how it feels to be perceived as different by society. Manning et al. (2015) also highlighted how already having ties to queer and feminist activism, inspired by one’s own lived experience as a member of a sexual minority group, can lay groundwork for advocating and being an activist while parenting a TGNB youth.

Class 2 (“Social Disruption, Social Advocacy”) was entirely female, nearly all birth parents, with a minority of immigrants. A minority also belonged to a visible ethnoracial minority group and/or a sexual minority group. More than half of parent-participants in this group were single parents, had a post-secondary degree, or qualified as a low-income household. Nearly all the TGNB youths in these families identified as male and were age 12 or older. This group was likely to experience both social disruption and social advocacy for their youth’s wellbeing. TGNB youth being banned from socializing with peers at their own house or their peers’ houses, as was likely to be reported by members of this stressor class, represents a scenario that may prompt minority stress reactions in youth. If this social exclusion extended to their cisgender siblings, it may also represent an example of associate stigma, in which siblings are treated differently because of peers’

transphobic attitudes. That this scenario was likely to be reported in this group suggests that families belonging to this group have disclosed their youth's gender to others to a certain degree, as well as likely advocating for them at school.

Like the sample, Class 3 ("Low Disruption, Low Advocacy") was largely female; however, it had the largest proportion of male parent-participants. This group was largely white, heterosexual, and highly educated, with a sizable proportion of immigrants. One third of parents were single, and most parents were birth parents, adoptive parents or step-parents. This group also had sizable proportions of female-identified youth, who may be less likely to be living in their gender full-time, and thus less likely to be out to people outside of their family, and nonbinary youths. It is possible that this group may be less likely to experience extrafamilial stressors because they have strong support systems, or they may not be as out to their social network and community as families in other stressor classes. As this group had the highest proportion of certain privileged social identities (white, heterosexual, and male), it is also possible that privilege alters the kind of stressors they may face. In contrast, though, Rahilly (2015) noted how race and class privilege may facilitate parental advocacy.

While very small in size, Class 4 ("Major Disruption, High Advocacy") was the most likely to experience many diverse stressors. All members of this class were birth mothers and non-immigrant. Nearly all members' youths had siblings present in their family, and more than half of members were Indigenous. Over 40% belonged to a sexual minority group, and one quarter were single parents. That the most advocacy class was entirely female reflects Rahilly's (2015) observation of the high level of involvement of female caregivers in their study, and indeed, this is observed across our sample with the high number of female parents. It is also possible that relatively high proportions of Indigenous and sexual minority parents in this class may contribute to their high levels of advocacy, due to their lived experiences as part of a minority group. This may even contribute to their experiences of encountering more stressors, if such aspects of their social identity are interacting with the type of stressors experienced.



One point to note is that across all stressor classes, parent-participants were generally highly educated and high-income earning, despite our sample also having a large proportion of participants below the low-income measure (more than 25%). These traits could facilitate aspects of advocacy for their youth in ways that lower income-earning and less educated parents may not experience. For example, as noted by Manning et al. (2015), supporting TGNB youth can require many financial resources, and having a reputation as an academic, which requires much education, can lend legitimacy to advocacy work that other parents may not experience. The diversity in stressor experiences as suggested by the stressor groupings indicates that even in a parent sample that was largely white, heterosexual, female, highly educated, high income-earning, and non-immigrant, interaction with stressors and engagement with advocacy can differ.

### 5.1.3 Mean Differences in Family Functioning Subscales Across Stressor Classes

The lack of significant differences between stressor classes' mean scores across most of the family functioning scales, as well as the mean scores consistently having showed strong family functioning, may reflect the resilience of these families. Regardless of likelihood of experiencing stressors, and regardless of which social environment such stressors occurred in, families in our sample generally remained strong in their family unit across a variety of aspects of family functioning. This is especially interesting given that the family functioning measures used were created when expectations of nuclear families and heterosexual parental unions were even more common than the current era, and our sample reflects diversity in family structure (e.g. single parents, parents co-parenting with former partners, parents belonging to a sexual minority).

One subscale where mean scores differed significantly was the leadership subscale, as Class 1 scored better functioning scores when compared with Class 3. Since item content of this scale was somewhat outdated in asserting that families should only have one clear leader, and had very poor internal reliability in our sample (Cronbach's alpha = -0.03), it is unclear how one should interpret these results; it is possible that families in Class 1 conform more to traditional ideas about family leadership than families in Class 3. The variation in results could also be an example of how "queering" the family leads to

modern family structures that may not be adequately captured by older measures such as this subscale. Beyond challenging cisnormativity in families by affirming their youth's gender, parents who divide leadership tasks in the family in an egalitarian manner, parents in same-gender unions who defy heteronormative assumptions about gender roles, and parents who accommodate family leadership complexity by co-parenting alongside both former and current partners may all be "queering" the family. While these interpretations make sense given that families who support their trans youth challenge cisnormativity, we caution that not much can be inferred from the leadership results due to the sub-scale's poor internal consistency in our sample.

Another interesting finding was the general trend of both parents and youth in our sample reporting family functioning as strong across stressor classes. Beavers and Hampson (1990) noted that adolescents tend to perceive family functioning more poorly than their parents; although family connectedness as measured here by youth report is not part of those authors' SFI II measure, it is relevant to family functioning from a youth perspective. Like the other subscales, however, there was considerable variation within classes, reflecting that some youths felt disconnected from their family, while others felt strongly connected.

#### 5.1.4 Linear Regression Analyses of Stressors and Family Functioning

For Objective 4, we tested 5 different linear regression models to assess the potential relationship between stressor classes, family functioning and various youth and parent covariates. The unadjusted model, in which only the stressor groupings were predictors, showed very little relationship between stressor class and global family functioning score. This may be an indication that the stressor classes are not well defined, or it may simply indicate that there is no relationship between extrafamilial stressor class and overall family functioning. The lack of relationship in the unadjusted model could also be related to unaccounted for heterogeneity, or confounding. When youth factor covariates, including youth age group and sibling status were included, there was a small but significant main effect for youth age group, suggesting that youth age group may be a relevant influence on family functioning across stressor groups.

When parent factors, including parent partner status and co-parent status were added to the model, both parent factors and the youth age group variables were significant. Sibling status and stressor classes remained nonsignificant. This suggests that parenting an older youth, presence of a parental partner and/or co-parent living elsewhere may all contribute to parents perceiving overall family functioning as poorer across the 4 stressor classes, but whether youth have siblings or not might not play a strong role. It would be interesting to assess whether the relative lack of importance of sibling status would be maintained when measuring youth perspective of overall family functioning, which was not measured in our study. When removing the sibling variable in the step 4 model, the strength of these main effects decreased marginally, but remained significant. The lack of significant interaction between youth age group and stressor class in the step 5 model implies that the impact of youth age group on global family functioning might not differ substantially between stressor classes. It is also possible that the interaction terms were nonsignificant due to small class size and small number of younger youths.

The consistent main effect of youth age group across models 2-4, in which younger, pre-adolescent youths' parents reported slightly better family functioning, makes sense since our operationalization of youth age group categories is compatible with two different stages described in the family life cycle perspective. The life cycle stage of raising adolescents presents very different challenges than that of the stage with young children. The stage with adolescents requires parents to expand their boundaries so their adolescent children can have more flexibility in moving in and out of the family unit. It can also involve parents' focuses shifting to career and relationship concerns as they enter midlife and caring for their own aging parents (Carter & McGoldrick, 1999). Besides the potential for conflict between parents and adolescents as they renegotiate boundaries in the family unit, the latter two tasks hold potential for stress from a family systems perspective, as well. The strain of raising adolescents and caring for elderly grandparents, as well as coping with relationship and work stressors, can impact other family members in the unit, thereby influencing overall family functioning.

It is possible that the presence of parent partners and co-parents impact family functioning and dynamics via the implied position of power such a family member may

have in the family. Whereas siblings are likely to be on somewhat of an equal footing with the TGNB youth in this study, parent partners and co-parents both have potential for disciplining youth and siblings and managing family life and activities. If youth and/or siblings do not get along well with such power figures, there could be family conflict or less cohesive functioning of the unit. Family conflict could also extend from parent-participants experiencing conflict with or lack of support from partners and/or co-parents, which could also impact the overall family dynamic.

## 5.2 Strengths and Limitations

The first strength of this thesis is that it represents to our knowledge, the first time LCA or a similar data-driven approach has been used to classify groupings of extrafamilial stressor experiences in families of TGNB youth. It also used a novel measure designed to capture a broad range of these stressors. The sample used is also the first and only pan-Canadian prospective cohort of families of TGNB youth receiving clinical care, and one of the largest samples of such families world-wide. Previous Canadian studies of TGNB youth in clinical care were record reviews, and thus unlikely to be capable of assessing extrafamilial stressors using a standardized measure like the SFTYC. The analyses also contribute to the small quantitative literature assessing family functioning in this population, and to our knowledge is the first quantitative study to assess the relationship between trans-specific extrafamilial stressors and family functioning. It also captures this relationship from a variety of different aspects of family functioning via the use of subscales, rather than relying only on a global measure of family functioning. Similarly, we built consideration of multiple family members into our descriptive and linear regression analyses to account for the impact of different family members on family units, as guided by family systems theory. This included using variables representing presence of siblings, parent partners, and co-parents in families.

Due to the exploratory nature of this thesis, there are limitations present. Although Wurpts and Geiser (2014) stated that including more and better quality items in an LCA may improve models with small sample sizes (i.e., where  $N > 70$  but  $< 500$  participants), there were still issues with all of our LCA models, regardless of number of classes. The best fitted model from the standpoint of percentage of seeds matching was the two-class

model, with 100% of seeds matching the model, but the two classes provided very little information about the sample. Other models with better AIC fit statistics also had higher entropy but much lower percentage of seeds fitted. The challenges with achieving optimal model fit and qualitative information from the models was likely due to the small sample size and the high number of items increasing the possibility of numerous different response patterns. While restricting rho parameters to 1 aided in improving item-response and standard error estimates, and weights improved overall model fit, the generalizability of our LCA models outside of this sample is limited.

Another limitation of the latent class analyses in this thesis is the statistical interpretability of PROC LCA results when weights and/or clusters are built into the model. Lanza et al. (2015) noted that PROC LCA relies on the pseudo-log-likelihood function to calculate fit statistics in such scenarios, but that the literature surrounding fit statistics tends to be based in assumptions that the true log likelihood is being measured. True log likelihood assumes that all observations are equally weighted, which is obviously not the case when adding weights to the analyses as we did. Lanza et al. (2015) cited Vermunt & Magidson (2007) in recommending caution when interpreting such fit statistics, and Wedel et al. (1998) in reassuring readers that such fit statistics can still be helpful. Furthermore, LCA is exploratory in nature, since it is data driven and provides probability estimates of pattern responding. Since model fit was not as ideal as desired, it is possible that our use of stressor classes from the LCA as exploratory predictors limited generalizability and interpretability of outcomes for Objectives 3 and 4.

Another limitation of our results reflects a common problem in clinical research with TGNB youths and families. In many ways, our sample was largely white, highly educated, and with families earning high income. While it is useful to consider the experiences of such parents and youth, they are already overrepresented in clinical research with TGNB youth, possibly because they are more likely to access clinical care. This may reflect that there are still privilege barriers to accessing gender-affirming care in Canada. It could also, however, reflect sampling bias, in that youth and parents who participated in our study may not reflect most families accessing care. Even if families sampled do represent most of those receiving clinical care, there is still sampling bias in

our parent sample, since many of the parents in our study were partnered; only one parent could participate, leaving other parents and partners' experiences unrepresented. Furthermore, it may also reflect that we were not able to study heterogeneity across families in this population due to the limitations of our small sample size.

Our analyses were also limited by the applicability of the measures used. The lack of reliability and validity measures available to assess the new SFTYC measure may be a limitation, for example. Similarly, while the SFI II is a highly validated measure, it was originally created out of observational measures for clinical assessment (Beavers & Hampson, 1990). It was also designed primarily to screen for problems in families, rather than assess positive qualities (Beavers & Hampson, 1990). It is therefore not an ideal measure of family resilience, which we would prefer to measure in this population, as families of TGNB youth are already at risk of being marginalized in academic and popular discourse. Some of its items and subscales may not adequately capture modern day family dynamics. This suggests that our study may have measurement bias, as these family functioning measures may not measure family dynamics accurately in our population, regardless of families' stressor experiences. This could lead to nondifferential misclassification of the outcome, possibly biasing results to show a weaker relationship between stressor group and family functioning outcome than actually exists.

The leadership subscale, for example, relies on questioning that suggests a family must have one member that leads and guides, a notion that may not apply to couples in egalitarian relationships, where multiple partners may lead together, or in families where youth are encouraged to collaborate in family decisions. The negative Cronbach's alpha value of -0.03 when measuring reliability of this subscale in our sample suggests that the items were not correlated in our sample, as the subscale items were coded correctly as per Beavers & Hampson's (1990) coding scheme for this measure, yet produced an unexpected negative value. The standardized alpha value for this subscale was positive but still very low (0.07), and we decided to present raw alpha values instead of standardized since we did not standardize items prior to scoring, as per Falk & Savalei (2011). The poor internal reliability values, regardless of standardization of alpha values,

reflect that this scale was not ideal in our sample; we decided to include the scale in our analyses despite this due to the exploratory nature of this study.

Family functioning as a construct is also best measured when multiple family members' perspectives are recorded (Beavers & Hampson, 1990). The SFI II was too long to include in the already lengthy youth questionnaire in the TYCAN study, so our analyses were limited mostly to parental perspective of family functioning and one youth subscale assessing family connectedness. Finally, it is difficult to establish causality between the predictors and the outcome due to temporality limitations of using cross-sectional data in linear regression analyses. Furthermore, given the limitations of the LCA analysis that served as the basis for the stressor predictors, the small stressor class sizes, and the small number of younger aged youth, we urge caution when interpreting the relationship between these variables and the family functioning outcome, particularly the interaction terms between stressor class and youth age group. Despite study limitations, this exploratory study raises important questions for additional research.

### 5.3 Future Research

Both the latent class and family functioning analyses can serve as a starting point for more research on trans-specific extrafamilial stressors and family functioning. Validation of the latent classes found in this thesis would be helpful, alongside latent class analysis assessing stressors in a larger sample, and potentially collapsing some indicator items into single items to reduce the possibility of too many different response patterns. Research assessing youth report of stressor experiences with youth perspective of family functioning would also be interesting. Since covariates such as youth age group, partner, and co-parent status were significant in some of the linear regression analyses that assessed family functioning, it may be useful to consider these variables in future analyses of family functioning in this population. Future research exploring the experiences of TGNB youth and families of colour would be useful, both in clinical and community samples. Furthermore, exploring the clinical care experiences of both trans girls and non-binary youth in depth would help provide a better understanding of gender-affirming care experiences in Canada.

While we included siblings in our descriptive and linear regression analyses, future research should focus more on the experiences and perspectives of siblings of TGNB youth. They are underrepresented in the literature and may play an important role in family dynamics and experiences, according to both family systems and family life cycle perspectives. It would be useful to explore their perspectives in qualitative studies, as well as study their perceptions of family functioning using quantitative measures. Younger youth (i.e., under 12 years of age) are also under-represented in both our sample and the clinical literature (Coleman et al., 2012), perhaps because international standards of care recommend that youth wait until the very beginning of puberty prior to commencing puberty blockers (Coleman et al., 2012).

## 5.4 Conclusion

This thesis used latent class analysis to assess underlying clusters of experiences with trans-specific extrafamilial stressors in families of TGNB youth accessing clinical care. The model that best explained the qualitative literature while preserving model fit had 4 classes: Class 1: “Low Disruption, Policy Advocacy” (30.4% of sample), Class 2: “Social Disruption, Social Advocacy” (9.7%), Class 3: “Low Disruption, Low Advocacy” (55.8%), and Class 4: “Major Disruption, High Advocacy” (4.1%). Some groups were more likely than others to report experiencing certain stressors, with stressors covering a range of different social environments (extended family, school, community, etc.). Descriptive analyses provided a detailed breakdown of demographic and family characteristics in each class. The overall sample of parent-participants was largely female, white, heterosexual, highly educated, high earning, and birth, adoptive or foster parents, but some classes had larger proportions of male and non-binary, sexual minority, Indigenous participants, and participants meeting the low income measure threshold. The youth participants in this sample were mostly trans boys, age 12 or older, and reported having siblings in their family.

There were largely no differences between stressor groups for overall family functioning and several family functioning domains. The only exception to this was the leadership domain, in which pair-wise comparisons suggested that members of Class 1 had better mean scores than Class 3. This might be explained by differences in how some families



queer the family by defying heteronormative and cisnormative family expectations, although the leadership results may be largely meaningless due to the sub-scale's low internal consistency in our sample. Chunk-wise linear regression models that tested stressor group as predictors of overall family functioning pointed to youth age group, parent partner status and co-parent status as significant covariates in this relationship. There was no statistically significant interaction observed between youth age group and stressor class. While the effect of stressor class on family functioning was not statistically significant across the regression models, parenting a TGNB youth in the older age group, presence of parent partner and/or co-parent living elsewhere modestly predicted poorer family functioning scores. This small deficit in functioning scores may be a consequence of complex family dynamics between youth and other parents or parent-like authority figures, and the potential for family conflict when families enter a new life cycle stage as youth become adolescents. Results should be interpreted with caution, however, due to temporality limitations present in cross-sectional data, measurement limitations, and small sample size in our study.

Future quantitative research should attempt to validate the stressor classes we found, as well as examine whether our stressor classes are replicable in other, and if possible, larger samples of TGNB youth and their families. Qualitative research that further unpacks differences in stressor experiences, potential presence of stressor classes, and applies an intersectional lens to understand such experiences would also be useful. Future research should also examine the role that youth age group, sibling, parent partner, and co-parent status have in family functioning in this population, as well as produce or update quantitative family functioning measures to reflect modern day family dynamics and structures (i.e., single parent households, egalitarian leadership styles, having multiple caregivers).

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## Appendices

### Appendix A. Supplemental Materials for Bauer et al. (2020, submitted)

#### eMethods. Sample Weighting Methods

#### Trans Youth CAN! Study Survey Weights

Weighting is based on youth participants ( $n=174$ ) recruited at 10 medical clinics in Canada. Recruitment starts were staggered across clinics but data collection was completed on the same date, creating different lengths of recruitment time for each clinic. To make results more generalizable to the population of youth who are patients at these clinics, we assigned weights to each youth participant (and corresponding parent/caregiver participant) to adjust for differential recruitment periods.

We have participants  $i= 1$  to 174 in clinics  $j= 1$  to 10

$w_{ij}$  = weight for each participant  $i$  in clinic  $j$

$N$  = total number of youth participants

$N_j$  = total number of youth participants in clinic  $j$

$m_j$  = months of data collection for clinic  $j$

Eq 1. 
$$w_{ij} = \frac{N}{m_j(\sum_{j=1}^{10} \frac{N_j}{m_j})}$$

Equation 1 is the formula for our sample weights  $w_{ij}$ . Weights will be the same for all participants within a clinic, as there is no individual component to this weighting.

Weighting is to remove the effect of differential lengths of recruitment. The sum of all weights will equal the sample size ( $n=174$ ).

## Derivation

For each clinic, the weighted proportion of participants needs to equal the mean monthly recruitment for their site divided by the sum of average monthly recruitments for the 10 clinics (for active recruitment months at each clinic only), which is shown in Equation 2. In other words, if a study recruited 30/month with all sites at an average level of active recruitment, and one site averaged 6/month over its own active recruitment period, that site should end up with 20% of the total weighted sample.

Eq 2. 
$$\frac{N_j(w_{ij})}{N} = \frac{N_j/m_j}{\sum_{j=1}^{10} \frac{N_j}{m_j}}$$

The denominator (Equation 3) represents the total recruits/month across all 10 sites in a hypothetical average month where all clinics were recruiting.

Eq 3. 
$$\sum_{j=1}^{10} \frac{N_j}{m_j}$$

In solving Equation 2 for  $w_{ij}$  we get:

Eq 4. 
$$w_{ij} = \left(\frac{N}{N_j}\right) \left(\frac{N_j}{m_j}\right) \left(\frac{1}{\sum_{j=1}^{10} \frac{N_j}{m_j}}\right) = \frac{N}{m_j \left(\sum_{j=1}^{10} \frac{N_j}{m_j}\right)}$$

## Confirmation

Weights correctly sum to 174. Total recruits/month across all sites in a hypothetical average month where all clinics are recruiting at average monthly levels = 13.6147. Note that number of youth in the clinic ( $N_j$ ) is not part of the final weight formula, but is part of the estimation as the weights will be applied to a different number of participants from each clinic. Using the numbers below, we can confirm that Equation 2 holds true.

Clinic	# youth	Month, first recruit	# recruit-ment months	Recruits per month	Weight
1	67	Sep-17	22	3.04545	0.580923213
2	3	Feb-18	17	0.17647	0.751782982
3	18	Feb-18	17	1.05882	0.751782982
4	12	Mar-18	16	0.75000	0.798769418

5	14	May-18	14	1.00000	0.912879335
6	16	Jun-18	13	1.23077	0.983100822
7	11	Oct-18	9	1.22222	1.420034521
8	6	Nov-18	8	0.75000	1.597538836
9	5	Dec-18	7	0.71429	1.825758669
10	22	Jan-19	6	3.66667	2.130051781
Total	174		129	13.61469	

## Appendix B. Descriptive tables of family functioning subscales for each latent class (weighted).

### Appendix B 1. Means for Family Functioning Scales - Stressor Class 1.

Family Functioning Domain	N	N Miss	Mean	Std Dev	Std Error	Min	Max
Overall	50	0	1.9598101	0.4589677	0.0675550	1.3428571	3.3714286
Health/Competence	50	0	1.9363553	0.5512807	0.0811425	1.1666667	3.6111111
Conflict	50	0	1.7941539	0.5743185	0.0845334	1.0000000	3.5000000
Cohesion	50	0	2.2584974	0.6528346	0.0960901	1.0000000	4.0000000
Leadership	50	0	2.0935268	0.5820663	0.0856738	1.0000000	4.0000000
Expressiveness	50	0	1.7275121	0.6510229	0.0958234	1.0000000	3.6000000
Family Connectedness	50	0	3.9597442	0.7908484	0.1164042	1.8000000	5.0000000

### Appendix B 2. Means for Family Functioning Scales - Stressor Class 2

Family Functioning Domain	N	N Miss	Mean	Std Dev	Std Error	Min	Max
Overall	15	0	1.9984138	0.3841721	0.0976962	1.5428571	2.9714286
Health/Competence	15	0	1.9768598	0.4374858	0.1112540	1.3888889	2.8888889
Conflict	15	0	1.6779804	0.5160750	0.1312395	1.0000000	2.7500000
Cohesion	15	0	2.4351595	0.5242044	0.1333068	1.2500000	3.5000000
Leadership	15	0	2.2508576	0.7181687	0.1826325	1.0000000	3.6666667
Expressiveness	15	0	1.8426131	0.7490487	0.1904854	1.2000000	3.4000000
Family Connectedness	15	0	3.6465078	0.9104361	0.2315267	2.4000000	4.8000000

### Appendix B 3. Means for Family Functioning Scales - Stressor Class 3

Family Functioning Domain	N	N Miss	Mean	Std Dev	Std Error	Min	Max
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<b>Overall</b>	85	2	2.0042562	0.4446524	0.0476428	1.3142857	3.3142857
<b>Health/Competence</b>	85	2	1.9476526	0.5554003	0.0595090	1.1176471	3.5000000
<b>Conflict</b>	85	2	1.7331500	0.5938560	0.0636294	1.0000000	3.2500000
<b>Cohesion</b>	84	3	2.3728969	0.6196342	0.0667693	1.0000000	3.7500000
<b>Leadership</b>	84	3	2.5027301	0.5939826	0.0640052	1.0000000	4.0000000
<b>Expressiveness</b>	86	1	1.8320315	0.6724388	0.0718102	1.0000000	3.4000000
<b>Family Connectedness</b>	87	0	3.8103866	0.8645500	0.0920216	1.6000000	5.0000000

#### **Appendix B 4. Means for Family Functioning Scales - Stressor Class 4**

<b>Family Functioning Domain</b>	<b>N</b>	<b>N Miss</b>	<b>Mean</b>	<b>Std Dev</b>	<b>Std Error</b>	<b>Min</b>	<b>Max</b>
<b>Overall</b>	8	0	1.9727847	0.4489744	0.1784367	1.3714286	2.9428571
<b>Health/Competence</b>	8	0	1.9785574	0.5150141	0.2046830	1.4444444	3.1111111
<b>Conflict</b>	8	0	1.9528144	0.8024502	0.3189193	1.0000000	3.9166667
<b>Cohesion</b>	8	0	2.6318326	0.5852107	0.2325814	1.5000000	3.2500000
<b>Leadership</b>	8	0	2.1588131	0.5571140	0.2214149	1.0000000	3.0000000
<b>Expressiveness</b>	8	0	1.5529644	0.5345995	0.2124669	1.0000000	2.8000000
<b>Family Connectedness</b>	8	0	3.9361035	1.0696627	0.4251181	1.8000000	5.0000000



### Appendix C. Pairwise Comparisons (Bonferroni) Between Stressor Classes on the Leadership scale.

Class Comparison	Difference Between Means	Simultaneous 95% Confidence Limits	
<b>3 – 2</b>	0.25187	-0.19188	0.69562
<b>3 – 4</b>	0.34392	-0.31768	1.00552
<b>3 – 1</b>	0.40920	0.11612	0.70229***
<b>2 – 3</b>	-0.25187	-0.69562	0.19188
<b>2 – 4</b>	0.09204	-0.66603	0.85012
<b>2 – 1</b>	0.15733	-0.31476	0.62942
<b>4 – 3</b>	-0.34392	-1.00552	0.31768
<b>4 – 2</b>	-0.09204	-0.85012	0.66603
<b>4 – 1</b>	0.06529	-0.61565	0.74622
<b>1 – 3</b>	-0.40920	-0.70229	-0.11612***
<b>1 – 2</b>	-0.15733	-0.62942	0.31476
<b>1 – 4</b>	-0.06529	-0.74622	0.61565

Comparisons significant at the 0.05 level are indicated by \*\*\*.

## Appendix D. Results for conflict subscale with one outlier removed from Class 4

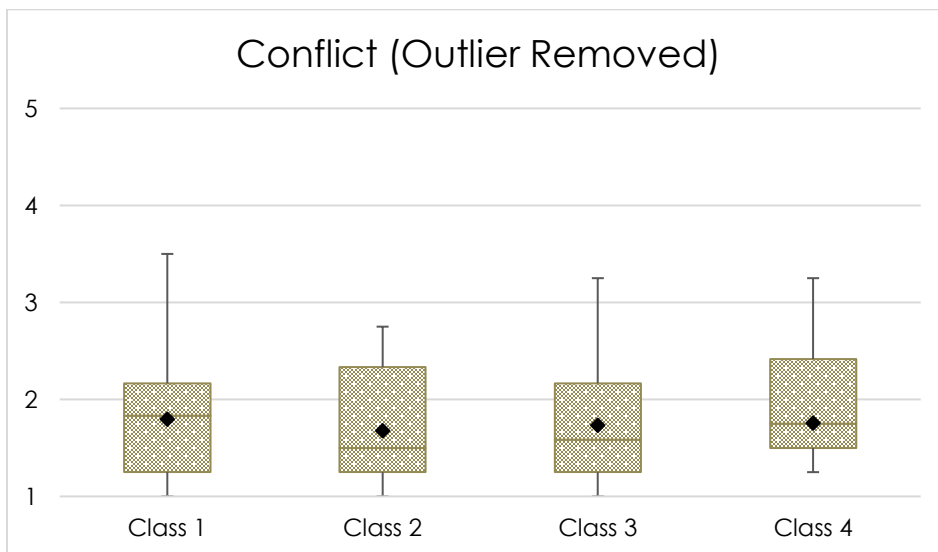
### Appendix D 1. Homogeneity of Variances and One-Way Weighted ANOVA Tests

Test	DF	F Value	P Value
Levene's Test (unweighted)	3	0.44	0.7214
ANOVA (weighted)	3	0.19	0.9023

### Appendix D 2. Updated Means for Conflict Scale

Conflict	N	N Miss	Mean	Std Dev	Std Error	Min	Max
Class 1	50	0	1.7941539	0.5743185	0.0845334	1.0000000	3.5000000
Class 2	15	0	1.6779804	0.5160750	0.1312395	1.0000000	2.7500000
Class 3	85	2	1.7331500	0.5938560	0.0636294	1.0000000	3.2500000
Class 4	7	0	1.7544100	0.5831923	0.2432057	1.0000000	3.0000000

### Appendix D 3. Updated Weighted Means for Conflict Scale



## Appendix E. Multicollinearity Diagnostic Results from Linear Regression Analyses

Variable	Step 1		Step 2		Step 3		Step 4		Step 5	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
Class 1	0.93068	1.07448	0.92109	1.08567	0.92014	1.08679	0.92200	1.08459	0.09879	10.12255
Class 2	0.94331	1.06009	0.94047	1.06330	0.92066	1.08617	0.92147	1.08522	0.05161	19.37552
Class 4	0.97193	1.02888	0.96282	1.03861	0.95595	1.04608	0.95792	1.04393	0.16077	6.22018
Sibling			0.99036	1.00973	0.95549	1.04659				
Youth Age Group			0.98300	1.01730	0.97753	1.02299	0.97917	1.02128	0.44487	2.24786
Parent Partner					0.79227	1.26220	0.79639	1.25566	0.77659	1.28768
Co-Partner					0.78424	1.27511	0.81336	1.22946	0.79892	1.25168
Interaction Age*Class 1									0.09624	10.39047
Interaction Age*Class 2									0.05088	19.65270
Interaction Age*Class 4									0.16291	6.13845

## Appendix F. Sensitivity Analysis of Step 4 Linear Regression Model

Variable	$\beta$	SE	p value	95% CI	Model R <sup>2</sup>	Tolerance	VIF
<b>Intercept</b>	1.44139	0.13882	<.0001	1.16679, 1.71599	0.1474		
<b>Class 1<sup>1</sup></b>	-0.02943	0.07334	0.6888	-0.17450, 0.11564		0.91006	1.09883
<b>Class 2</b>	0.02162	0.11683	0.8535	-0.20947, 0.25271		0.93367	1.07104
<b>Class 4</b>	-0.25242	0.20844	0.2280	-0.66473, 0.15988		0.94743	1.05548
<b>Youth Age Group</b>	0.34161	0.11144	0.0026	0.12117, 0.56206		0.92656	1.07926
<b>Parent Partner</b>	0.22323	0.07920	0.0056	0.06656, 0.37990		0.74144	1.34872
<b>Co-Partner</b>	0.22959	0.07583	0.0030	0.07960, 0.37959		0.74700	1.33869

1. Class 3 served as reference category.

N=146 (139 because 7 are missing)

## Curriculum Vitae

**Name:** Laura Douglas

**Post-secondary Education and Degrees:** University of Guelph  
Guelph, Ontario, Canada  
2012-2017 B.A.

University of Western Ontario  
London, Ontario, Canada  
2018-2020 M.Sc.

**Honours and Awards:** Governor General Award, Bronze  
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Board of Governors Scholarship  
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College of Social and Applied Human Sciences Dean's  
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2014

**Related Work Experience** Data Coordinator  
Historical Data Research Unit, University of Guelph  
2017-2018

Graduate Research Assistant  
Health Equity in Epidemiology Research Group, University of  
Western Ontario  
2018-2020

### Articles (In progress)

Pullen Sansfaçon, A., Temple Newhook, J., Douglas, L., Gotovac, S., Feder, S., Raiche, J., Speechley, K. N., Lawson, M. L., & Bauer, G. R. (2020). Experiences and stressors of parents of trans and gender diverse youth in clinical care from Trans Youth CAN! Unpublished Manuscript.

### Presentations

Panel Speaker, *Parents, Caregivers, and Families of Trans and Non-binary Youth in Clinical Care: New Research from the Stories of Care Project and Trans Youth CAN!* Rainbow Health Ontario Conference 2020. Presentation was accepted but conference cancelled due to COVID-19.