UNCOVERING TRAUMA PATTERNS AT A COMMUNITY CLINIC:

LINKS TO MENTAL HEALTH NEEDS

WESTCOAST CHILDREN'S CLINIC

Uncovering Trauma Patterns at a Community Clinic: Links to Mental Health Needs

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WestCoast Children's Clinic, located in Oakland, California, is a non-profit community mental health clinic that has provided services to Bay Area children since 1979. Our mission is to provide mental health services to youth and families; to train the next generation of mental health professionals and caregivers; and to improve services to children and families by conducting research on the impact of clinical services and utilizing findings to advocate on behalf of the children we serve.

Learn more at www.westcoastcc.org.

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The information presented in this series of papers is based on the insight and experiences of children and youth, who come to WestCoast Children's Clinic for services, and their direct service providers, who bear witness to clients' experiences every day.

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EXECUTIVE SUMMARY

Approximately 50% of children in the U.S. will experience some form of childhood adversity by the time they reach adulthood. For the over 2,000 youth receiving mental health services at WestCoast Children's Clinic (WestCoast) between 2013 and 2017, the rate was even higher as most had experienced physical or sexual abuse, neglect, disrupted attachments to caregivers, and community violence by the time they entered our programs. To improve services and advocate on behalf of the young people we serve, we seek to better understand how patterns of early trauma impact their mental health needs. By moving beyond counting traumas and adopting a youth-centered approach, we can better understand how combinations of adverse experiences impact life needs, thus improving our own practice as well as influencing the various systems (e.g., behavioral health, child welfare, education, juvenile probation) with which our clients interact.

OBJECTIVES

Focusing on how youth from a community sample of young people seeking mental health services experience similar traumas can provide important insights for intervention and prevention programs that address trauma symptoms. Thus, our objectives for this study are threefold:

1. To explore patterns of trauma experienced by our clients;
2. To examine whether these patterns, or trauma profiles, are explained by client demographics, such as gender identity, ethnicity, and foster care involvement;
3. To understand how mental health needs are impacted by youths' experiences.

METHODOLOGY

Study sample: 2,376 clients receiving community based mental health services at WestCoast between 2013 and 2017. All clients met criteria for Medi-Cal Early and Periodic Screening, Diagnostic, and Treatment (EPSDT).

- Just over half of our clients (55%) identify as female.
- Most of our clients are young people of color: 37% are African-American; 31% Multiracial, 13% Latinx, 9% Caucasian, and 4% Asian and Pacific Islander.
- The youth in this study range in age from 6 to 24; most are between ages 10 and 17, with the average age being 12.5 years.
- Most have experienced maltreatment or deprivation, with 63% having been involved with the foster care system.

Measure: We used the *Child and Adolescent Needs and Strengths* (CANS), a validated comprehensive instrument used widely in public systems, to assesses the child's history of trauma exposures and trauma symptomology, behavioral and emotional health, risk behaviors, needs related to everyday life, internal and external strengths, and caregiver needs.

Data analyses: We used Latent Class Analysis (LCA), a person-centered approach, to identify distinct subgroups of youth who experience similar types of trauma. LCA helps us identify the more common patterns of trauma exposures in the population of kids WestCoast serves.

KEY FINDINGS

We identified four patterns of trauma among youth seeking mental health services, resulting in the following trauma profiles:

1. *Low Exposure* (22% of youth; *N* = 523). The children and youth in this group had relatively low probabilities of experiencing the traumas we measured.
2. *Caregiving Disruption* (49% of youth; *N* = 1,164). The primary characteristic distinguishing this group of youth is their experience of caregiving disruption, with relatively low probabilities of experiencing the other types of traumatic events.
3. *Community Violence Exposure* (12% of youth; *N* = 283). The experiences that distinguish youth in this group are exposure to community violence and victimization or witnessing criminal activities. While youth in this group also experience some interpersonal trauma, it is not the defining feature of youth in this group.
4. *Multiple Interpersonal Trauma* (17% of youth; *N* = 404). Youth in this group are characterized by experiences of multiple interpersonal traumas. More than half of youth in this group experienced emotional abuse, physical abuse, neglect, or caregiving disruption.

We also find that youth demographics relate to the trauma profiles. Girls are more likely than boys to be in the high trauma profiles, including *Community Violence Exposure* and *Multiple Interpersonal Trauma*. Compared to African American youth, Latinx youth are less likely to be in the high trauma profiles, whereas White youth are more likely to be in the *Caregiving Disruption* and the *Multiple Interpersonal Trauma* groups. Multiracial youth more closely resemble African American youth. Unsurprisingly, youth with past or current involvement with the foster care system are over 30 times more likely to be in the high trauma profiles as those without this history.

Finally, trauma profiles are linked to youth mental health needs. Specifically, youth with *Low Exposure* and *Caregiving Disruption* profiles have relatively low mental health needs, whereas youth with *Multiple Interpersonal Trauma* and *Community Violence* profiles have relatively higher needs. In fact, the *Community Violence* group has the highest level of mental health needs of all four groups, suggesting the overwhelming impacts of community violence exposure.

CLINICAL AND POLICY IMPLICATIONS

Our findings suggest that we need to shift our focus toward building healthy communities in which youth live: providers need to look beyond the interpersonal level when caring for youth and focus on systemic factors, such as aspects of the community, public systems, and the wider society in which youth are embedded. Public systems and other agencies making up the children's system of care must attend to societal level factors in order to reduce trauma exposure and intervene effectively after trauma has occurred.

New and different funding sources or changes to how funding can be used can help reduce the impact of trauma. Experiments with resource reallocation, funding flexibility initiatives (e.g., blended or braided funding), and place-based interventions are potential modifications that could benefit newer models of care and expand access to supportive services.

INTRODUCTION

As a community mental health clinic that aims to improve the well-being of children and youth, WestCoast Children's Clinic (WestCoast) sees 1,500 children and youth each year who experience numerous adversities early in life. Each young person we support has a unique account to tell about their life that is unlike any other. We listen to each child describe their life story as we carry out our mission of providing community-based mental health services to young people and their families. Though the life experiences of our clients differ in various ways, our clients also share much in common, especially with regards to systemic issues that shape and constrain their lives. For example, all of our clients live at the intersection of racism, poverty, and systemic indifference. Most have experienced physical or sexual abuse, neglect, disrupted attachments to caregivers, and community violence. Most of our children have been removed from their families due to abuse or neglect; 63% have been in foster care, with the remaining at risk of entering the system.

In addition to providing supportive mental health services to children, youth, and their families, our mission also includes learning from our practice to improve services and advocate on behalf of young people. To that end, we sought to better understand how patterns of early trauma impact the mental health of our clients. There is a well-documented scientific literature on how the number of adversities children and youth experience can impact them for the rest of their lives. While this highlights the public-health importance of studying the impact of adversity, this strategy comes up short when the goal is to develop effective interventions. Moving beyond counting traumas and instead adopting an approach that is youth-centered, we want to better understand how combinations of adverse experiences impact life needs. Our goal is to improve our own understanding and our practice, as well as to influence the systems with which our clients interact, including behavioral health, child welfare, education, and juvenile probation, among others.

In this paper we first address the importance of studying how children are impacted by adversity, and then advocate for studying how trauma experiences are interrelated. We then explore the patterns of trauma experienced by our clients and how certain demographic characteristics that impact life experiences, such as gender, ethnicity, and foster care experience, may explain those patterns of trauma. Next, we also seek to understand how youth mental health needs are impacted by these early experiences. Our hope is that this work can provide important insight for intervention and prevention programs addressing trauma symptoms. Finally, we end by considering future directions for both research and practice on early adverse experiences. Given the high rate of unmet mental health needs in California, lack of coordination between systems of care, and limited information about what works and for whom,[1] a better and more youth-focused examination of how early experiences impact a young person's mental health is necessary to improve the quality of care and better serve prevention efforts.

CHILDHOOD ADVERSITY CAN HAVE LIFELONG IMPACTS, BUT RECOVERY AND GROWTH ARE POSSIBLE

Childhood adversity, sometimes called adverse childhood experiences (ACEs), refers to any environmental circumstance or event that may have a negative effect on a child's health and development. Commonly observed forms of childhood adversity are child maltreatment (e.g., physical and emotional abuse, physical and emotional neglect, sexual abuse), poverty, violence exposure (in the family, school, or community), oppression, and other forms of disadvantage or social marginalization. ACEs—especially those that are severely harmful, threatening, or chronic and that often result in trauma—can overwhelm the body's stress response and cause bodily disruptions that may have long-term impacts on a child's various systems (e.g., immune, endocrine, and respiratory), brain development, as well as general well-being. We note here that the ACEs our clients experience are often among the more severe forms and often generate trauma. Consequently, even though ACEs and traumas are related but different concepts, we use the terms interchangeably, as the ACEs we examine are among those considered to be trauma experiences.[2]

While much attention has been devoted to understanding the detrimental effects of ACEs and especially those that result in trauma, adversity does not predestine children to poor outcomes. Indeed, certain factors, such as the child's optimism and guidance from trusted

adults, can lessen the negative effects of adverse experiences and protect the child from further vulnerability. More importantly, even after experiencing ACEs or trauma, children can heal and experience post-traumatic growth.[3] With the right supports from caregivers and communities, children are not only able to recover from adversities, but also overcome them and thrive.[4-6]

ADVANCING HOW WE STUDY CHILDHOOD ADVERSITY AND TRAUMA IS NECESSARY TO IMPROVE CLINICAL AND OTHER INTERVENTIONS

We know from several decades of research on ACEs that their effects are cumulative. The more ACEs a young person is exposed to, the greater the potential impact of those experiences on that person's physical and mental health, a finding well documented in the landmark ACEs study and in subsequent studies.[7] This insight underscores the importance of understanding the cumulative effects of multiple adversities since examining individual forms of adversity in isolation (e.g., only studying the impacts of emotional abuse) is likely to limit the effectiveness of clinical and other types of interventions. For this reason, screening for ACEs, especially among vulnerable populations, has become routine in many medical and behavioral health settings—with California being the first state to lead the public-health initiative of universal screening for ACEs in children on Medi-Cal (https://www.acesaware.org).

Counting the number of different types of early life adversities that a young person experiences is a simple, yet profound, method to highlight the cumulative effects of ACEs and trauma. At the individual level, knowing an ACE score can prompt the delivery of trauma-informed services to children. Still, experiences impact children very differently. The biological response to stress is not a standardized response, and reactions to such adverse experiences can vary significantly from child to child. Some may experience trauma reactions while others do not, and trauma reactions and symptoms may themselves differ greatly. This is often the main critique of opponents of universal ACE screening, namely that an ACE score is not diagnostic and effective interventions are challenging when an ACE score does little to guide us.[8]

Simply tallying the number of adverse experiences to create a total ACE score is insufficient for developing effective interventions. This method assumes that all adversities have the same impact on children's health and development regardless of type and thus does not account for how distinct forms of adversity may influence developmental outcomes differently.[9] For example, two children can have an ACE score of three despite one experiencing sexual abuse, caregiving disruption, and family violence while the other is exposed to substance abuse, neglect, and poverty. Not only might those individual experiences generally result in different reactions—as we might expect violence exposure and neglect to impact young people differently—but the combinations of those experiences might have different impacts as well.

This underlying assumption that all types of adversity are more or less equal across all children is intuitively difficult to accept, especially when evidence from multiple studies examining single traumas suggest that different adverse experiences, at least when they occur alone, are likely to have different impacts. Consequently, it stands to reason that different clusters of adverse experiences may also have different impacts. A more complete understanding of how adversity affects children is necessary to improve our efforts to mitigate the impacts of trauma.

INTERVENING HELPFULLY AFTER TRAUMA REQUIRES UNDERSTANDING HOW TRAUMA EXPERIENCES ARE RELATED

Recent scientific advancements suggest that the underlying mechanisms linking childhood adversity and trauma to later outcomes differ by type of ACEs experienced.[10] For instance, children exposed to threatening environments (such as violence or sexual and physical abuse) are more sensitive to negative environmental signals and thus are more likely to experience intense emotions, whereas those experiencing deprivation (e.g., neglect and poverty) miss critical sensory and social learning opportunities that are crucial for healthy brain development.[10, 11] With studies increasingly showing that different types of ACEs exert different impacts on children's mental and physical health, simply tallying the number of adverse experiences is not enough.[12]

Since adverse experiences are likely to co-occur, examining how types of potentially traumatic experiences cluster together in young people's lives can be more useful.[13, 14] Looking at adversity this way not only allows us to identify common trauma profiles but also allows us to explore

how these profiles are linked to different outcomes. This approach can ultimately help develop effective prevention and intervention plans that could disrupt the pathways linking adverse experiences with the physical and mental health challenges that typically ensue.[15]

STUDY METHODOLOGY

Our objectives for this study are threefold: (1) explore patterns of trauma experienced by our clients; (2) examine whether these patterns are explained by client demographics, such as gender identity, ethnicity, and involvement with the foster care system; and (3) understand how youth mental health needs are impacted by these early experiences. Children experience a multitude of adverse experiences. Understanding the patterns and interactions among those experiences—especially the kinds of experiences that result in trauma—is a critical step for understanding their clinical impact on children. Focusing on how trauma experiences occur together in a community sample of young people seeking mental health services can provide important insight for intervention and prevention programs that address trauma symptoms.

STUDY SAMPLE

Between 2013 and 2017, WestCoast provided community-based mental health services to 2,376 clients meeting eligibility criteria for Specialty Mental Health Services (SMHS) under Medi-Cal's Early and Periodic Screening, Diagnostic and Treatment (EPSDT) benefit. EPSDT is a Medicaid entitlement benefit that provides coverage for a broad range of mental health services. The demographic characteristics of our sample are described in Table 1. Just over half of our clients (55%) identify as female. Most of our clients are young people of color: 37% of our clients are African-American; 31% are Multiracial, 13% are Latinx, 9% are Caucasian, and 4% are Asian and Pacific Islander. The youth included in this study range in age from 6 years to 24 years; most are between ages 10 and 17, with the average age being 12.5 years. Most have experienced maltreatment or deprivation, with 63% having been involved with the foster care system. That is, they may be in foster care during or prior to receiving mental health services from WestCoast, or they may have had other contact with or interventions from the child welfare system even if they did not formally enter foster care.

WestCoast provides intensive outpatient mental health services in the community. That means that clinicians and case managers will meet clients where they are—at school, home, or in some instances if there is no other safe or private space, in a park or the clinician's car. The study sample includes clients from all of WestCoast's therapy programs: (1) our Outpatient Therapy Program, which provides individual and family-based therapy and case management; (2) Catch-21, which serves transition age youth who are exiting psychiatric or other residential facilities and needing support in their transition to living independently in the community; (3) C-Change, which serves youth experiencing commercial sexual exploitation; and (4) our STAT program, which provides mental health screening, stabilization, and transition services to children and youth who are removed from their home or experiencing a change in their foster care placement. The prevalence of maltreatment in all four programs is high.

MEASURES

To examine how trauma experiences are related to each other and to mental health needs, we used the *Child and Adolescent Needs and Strengths* (CANS[16]) assessment. The CANS is a validated comprehensive instrument used widely in public systems.[17] The CANS assesses the child's history of trauma exposures and trauma symptomology, behavioral and emotional health, risk behaviors, needs related to everyday life, internal and external strengths, and caregiver needs and strengths with a goal of increasing communication among stakeholders (including the client, their family, and the systems with which they interact).

The CANS defines a need as an area in which a youth requires help or serious intervention. Each CANS item is rated on a four-point scale: 0 = no evidence of need on this item; 1 = monitoring or watchful waiting around this need; 2 = this item interferes with daily life and requires action to address it; and 3 = the need is severe and requires immediate or intensive action. If an item has a score of 2 or 3, it is said to be actionable and should be addressed in the client's treatment plan.

The CANS serves as a treatment planning tool as well as a measure of progress in treatment. As such, it

Table 1. Sample Characteristics and Distribution of Trauma Experiences (*N* = 2,376)

Gender	***N***	**%**
Male	1,055	44%
Female	1,317	55%
Others	4	0%
Race/Ethnicity	***N***	**%**
African American/Black	868	37%
Latinx	318	13%
White	205	9%
Multiracial	737	31%
Other Ethnicities[a]	248	10%
Foster Care Involvement	***N***	**%**
Yes	1,491	63%
No	885	37%
Age	***N***	**%**
6–12	1,093	46%
13–15	633	27%
16–17	449	19%
18+	201	8%
Cumulative Number of Trauma Types	***N***	**%**
0	429	18%
1	627	26%
2	565	24%
3	338	14%
4	225	9%
5+	192	8%
Trauma Indicators	***N***	**%**
Maltreatment		
Emotional abuse	452	19%
Neglect	700	29%
Physical abuse	460	19%
Sexual abuse	322	14%
Familial Factors		
Caregiving disruption	1,397	59%
Family violence	559	24%
Parental crimes	272	11%
Community Factors		
Community violence	252	11%
School violence	81	3%
Witness/victim of crimes	280	12%

[a]Other Ethnicities is a combined category of racial or ethnic backgrounds with small sample sizes, including Native American, Middle Eastern, Asian and Pacific Islander, and Unknown

is completed at baseline (within the first 30 days of intake), every six months or if there have been significant changes in the child's circumstances, and when treatment is terminated. For this study, we only used the initial CANS assessment for clients to focus on the experiences and needs that clients have prior to receiving services at our clinic.

Indicators of Trauma. Trauma exposure is measured using items from the Trauma Experiences Domain in the CANS. This includes emotional abuse, physical abuse, sexual abuse, neglect, family violence, caregiving disruption, parental crimes, witnessing or being a direct victim of a crime, exposure to school violence, and exposure to community violence. Our indicator for trauma exposure is whether the child or youth has an actionable score on the CANS (a score of 2 or 3), signifying that the child has experienced multiple incidents, the experience was chronic, or the incidents were severe, resulted in physical consequences, or triggered immediate safety concerns for the young person. Table 1 below shows the distribution of trauma experiences in the sample.

Mental Health Needs. Mental health needs are measured using 44 items from the domains of Behavioral/Emotional Needs (11 items), Life Domain Functioning (13), Risk Behaviors (11), and Symptoms of Trauma (9) on the CANS. The list of items is presented in Table 2 below and the full item descriptions are in Appendix A. We first identified whether each need was present for a child by counting the number of items that are actionable (i.e., have a CANS score of 2 or 3). We then tallied up the total number of needs. This score represents the client's cumulative mental health needs. Table 2 shows the distribution of needs across the sample.

DATA ANALYSIS PROCEDURES

We used Latent Class Analysis (LCA) to address the three main objectives of this study. LCA is a person-centered approach that helps identify distinct subgroups of youth who experience similar types of trauma. This stands in contrast to variable-centered approaches, which may better identify categories of trauma (e.g., factor analysis) or which individual traumas contribute to mental health needs (e.g., regression analysis). In this study, we are treating trauma exposure as a property of a person's environment. We expect that these trauma

Table 2. Distribution of Mental Health Needs (*N* = 2,376)

CANS Item	Actionable	Non-actionable	Missing
Adjustment to trauma	1,163	1,213	0
Affective/physical dysregulation	651	1,722	3
Anger control	546	1,568	262
Anxiety	1,151	1,225	0
Attachment difficulties	601	1,515	260
Avoidance	387	1,987	2
Conduct problems	91	2,283	2
Danger to others	157	2,217	2
Delinquency	90	2,284	2
Depression	1,115	1,001	260
Developmental functioning	94	2,282	0
Dissociation	182	2,191	3
Eating disturbance	43	2,071	262
Family relationships	1,276	1,100	0
Fire setting	18	2,096	262
Hyperarousal	543	1,831	2
Impulse control/ hyperactivity	476	1,531	369
Job functioning	81	2,293	2
Judgment	514	1,600	262
Legal difficulties	113	2,001	262
Living situation	559	1,448	369
Medical/health management	74	2,040	262
Numbing	257	1,857	262
Oppositional behaviors	358	1,649	369
Other self-harm	90	2,024	262
Physical management	47	2,329	0
Psychosis	85	2,289	2
Recreational functioning	548	1,566	262
Re-experiencing	218	2,156	2
Regression in behavior	96	1,911	369
Running away	259	1,781	336
School achievement	457	753	1,166
School attendance	140	1,070	1,166
School behavior	282	928	1,166
Self-injurious behavior	88	2,026	262
Sexual aggression	24	2,090	262
Sexual reactivity	65	1,186	1,125
Sleep	309	1,805	262
Social functioning	765	1,349	262
Somatization	28	1,224	1,124
Substance use	206	2,168	2
Suicide risk	123	1,991	262
Traumatic grief	508	1,866	2

experiences bundle differently across individuals. Our focus is on identifying those bundles and understanding which youth are more likely to experience which pattern of trauma experiences.

Providers working with vulnerable children know that no single approach fits the needs of all youth who have experienced trauma. There is great heterogeneity in the experiences children have and in how kids are impacted by those experiences. As there are 10 different trauma experiences measured in the CANS, there are over 3.5 million potential combinations of trauma exposures that can show up in our clients' lives. Consequently, it is impossible to detect meaningful patterns of trauma exposures in a systematic way without the right analytic tools to help us. Using LCA helps us identify the more common patterns of trauma exposures in the population of kids that WestCoast serves.

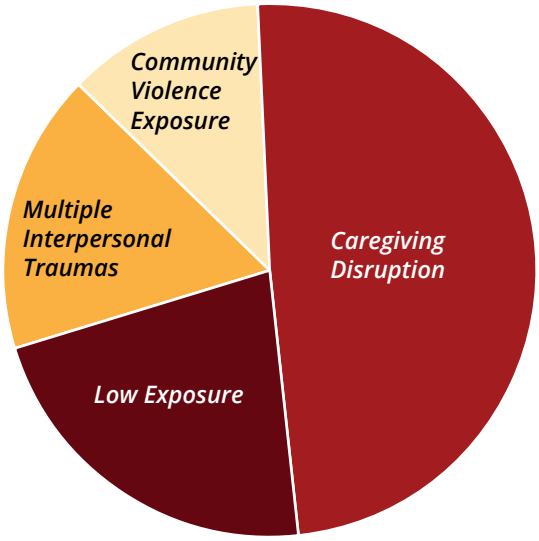
Detailed information about our data analysis procedures is included in Appendix B.

MAIN FINDINGS

FOUR PATTERNS OF TRAUMA AMONG YOUTH SEEKING MENTAL HEALTH SERVICES

Our analysis revealed four classes or subgroups of youth trauma, each of which is described below. Figure 1 displays prevalence rates, or the estimated number of youth belonging to each of the latent classes.

Figure 1. Distribution of Clients by Latent Trauma Profiles (*N* = 2,376)



Caregiving Disruption	49%
Low Exposure	22%
Multiple Interpersonal Traumas	17%
Community Violence Exposure	12%

For example, 22% of youth (*N* = 523) in our sample are estimated to be in the *Low Exposure* group; 49% of youth (*N* = 1,164) are estimated to belong to the *Caregiving Disruption* group, the largest group; 12% of youth (*N* = 283) are in the *Community Violence Exposure* group, the smallest group; and 17% (*N* = 404) are in the *Multiple Interpersonal Traumas* group.

We selected these labels to describe each trauma group based on the shared patterns of experiences that youth in each group have had (see Appendix B for detailed rationale). These experiences are displayed in Table 3 below. The numbers in Table 3 show the item-response probabilities, or the probability of reporting an actionable score (CANS rating of 2 or 3) on each of the 10 trauma experiences. For example, 10% of the 523 youth in the *Low Exposure* group experienced caregiving disruption, whereas 69% of the 1,164 youth in the *Caregiving Disruption* group, 78% of the 283 youth in the *Community Violence Exposure* group, and 77% of the 404 youth in the *Multiple Interpersonal Traumas* group reported this experience.

Class 1: *Low Exposure* Group. Because youth in this latent class have a low likelihood of reporting any of the trauma indicators, we refer to this class as the *Low Exposure* group. Their item-response probabilities indicate that they are the least likely to experience most of the trauma experiences, most notably the interpersonal traumas (abuse and neglect), caregiving disruption, and exposure to violence. Even though this group does not stand out as having experienced multiple forms of trauma, this does not mean that they did not experience any adverse experiences. This group still shows some trauma exposure in each of the 10 types of potentially traumatic experiences measured here. The most prevalent experiences are witnessing family violence (18%) and community violence (10%).

Class 2: *Caregiving Disruption* Group. Similar to the *Low Exposure* group, youth in this group have a low likelihood of experiencing violence in their communities and within their family. However, they experience more interpersonal trauma—most notably neglect—than youth in the *Low Exposure* group and are more likely to experience caregiving disruption, with 69% of youth in this class reporting that experience. In fact, experiencing separation from primary attachment figures—whether through a caregiver's death or detention, or due to the child's placement in foster care, juvenile detention, or other residential facility—is the distinguishing characteristic of this group. For this reason, we refer to this class as the *Caregiving Disruption* group. Almost half of the total study sample falls into this group.

Class 3: *Community Violence* Group. In addition to experiencing a high level of caregiving disruption, the experiences that distinguish youth in this latent class are exposure to community violence and victimization or witnessing criminal activities. Exposure to community violence describes experiences outside the home. While youth in the *Community Violence* group also experience some interpersonal trauma, these experiences are not the defining features of youth in this group, as shown by the probabilities less than 50%. Still, this group reports the highest levels of sexual abuse (27%) relative to

Table 3: Four Profiles of Youth Trauma (*N* = 2,376)

Latent Class Labels	Class 1: Low Exposure	Class 2: Caregiving Disruption	Class 3: Community Violence Exposure	Class 4: Multiple Interpersonal Traumas
Proportion of Sample	22% *N* = 523	49% *N* = 1,164	12% *N* = 283	17% *N* = 404
Emotional abuse	3%	3%	31%	**77%**
Neglect	6%	34%	45%	**60%**
Physical abuse	4%	10%	30%	**58%**
Sexual abuse	4%	12%	27%	21%
Caregiving disruption	10%	**69%**	**78%**	**77%**
Family violence	18%	13%	46%	45%
Parental crimes	9%	11%	32%	22%
School violence	4%	0%	16%	4%
Witness/victim of crimes	5%	4%	**61%**	9%
Community violence	10%	2%	**58%**	4%

the other three profiles. This group of youth primarily exposed to violence is a relatively small proportion of the study population, with 12% of youth falling into this group.

Class 4: *Multiple Interpersonal Traumas* Group. Youth in this group are characterized by their experiences of multiple interpersonal traumas. More than half of the youth in this group experienced emotional abuse, physical abuse, family violence, neglect, and caregiving disruption. When these interpersonal forms of trauma exposure occur within the primary caregiving system, they are thought to contribute to complex developmental trauma.[18, 19] In addition, this group of children is most likely to experience caregiving disruption and family violence. Consequently, we refer to this class as the *Multiple Interpersonal Traumas* group. About 17% of the study sample falls into this group.

The trauma profiles that emerge from our analysis are not deterministic; rather they reflect general patterns of trauma exposures and they help us identify the distinguishing features of clients in each latent class. The types of trauma exposure that are most common in any given class are by no means the only type of trauma experienced by youth in that class. For example, exposure to violence is the most common form of adversity for youth in the *Community Violence* profile, but it does not mean that youth in that class have only experienced community violence, as some had exposure to other forms of interpersonal trauma (e.g., abuse and neglect). Similarly, even though the *Community Violence Exposure* profile has the largest prevalence of violence exposure of all four classes, that does not mean that only youth in this profile are exposed to violence. For example, about one in 10 youth in the *Low Exposure* group have also experienced violence. Still, identifying these common patterns of trauma experiences helps us consider interventions that address these combinations of traumas together.

YOUTH GENDER, ETHNICITY, AND FOSTER CARE INVOLVEMENT EXPLAIN TRAUMA PROFILES

After identifying the four trauma profiles, we explored whether demographic factors such as gender identity, ethnicity, and foster care involvement are meaningfully related to those profiles. To do so, we compared each trauma profile to a reference group. The aim was to better understand how these demographic factors influence the patterns of trauma that youth experience.

In examining the relationship of ethnicity to the trauma profiles, we departed from the standard approach in the scientific literature of using the White group as the reference group. Instead, in this paper we are using African American as our reference group. We do this both for normative and practical reasons. First, people of color are frequently evaluated against a standard of whiteness, where White is the norm and every other ethnicity is understood in terms of how it differs from White. This likely occurs due to a desire to address potential

Table 4: Odds Ratios for the Association between Youth Demographics and Trauma Profiles (*N* = 2,376)

	Low Exposure	Caregiving Disruption	Community Violence Exposure	Multiple Interpersonal Traumas
Female (***p* < 0.05**)	reference	1.3	1.8	1.7
Latinx (***p* < 0.001**)	reference	0.2	0.2	0.2
Multiracial (***p* = 0.05**)	reference	0.7	0.9	1.2
Other Ethnicities (***p* < 0.001**)	reference	2.2	0.5	4.3
White (***p* < 0.01**)	reference	2.6	0.9	3.2
Foster Care (***p* < 0.001**)	reference	59.6	48.8	34.5

disadvantage that people of color may experience relative to those who identify as White, and because the sample size of the White group is often larger than any other group. Despite the well-intentioned reasons for this approach, it nonetheless reinforces the centrality of whiteness, especially when the sample of White youth is significantly smaller than other ethnicities.

We want to shift this perspective. As a community psychology clinic that primarily serves youth of color, it is important that we center the experiences of our clients. We are using African American youth as our reference to center the needs of the largest group in our sample. In so doing, our analysis compares how the experiences of all other ethnicities in our sample differ from the experiences of African American youth.

As with the trauma profiles, the odds ratios reported below represent likelihoods—they are not deterministic statements about the experiences of youth. However, they tell us whether groups of youth are more likely to experience these particular patterns of trauma histories.

Gender. The results in Table 4 show that gender identity explains the patterns of trauma experienced by youth seen at WestCoast. The odds ratios for girls—or the odds that girls will end up in the four trauma profiles relative to boys—are higher for those in the *Community Violence Exposure, Multiple Interpersonal Traumas*, and *Caregiving Disruption* profiles. For instance, the odds ratio for girls is 1.8 times that for boys in terms of ending up in the *Community Violence Exposure* profile relative to the *Low Exposure* profile. Similarly, the odds of girls being in the *Multiple Interpersonal Traumas and Caregiving Disruption* profiles are 1.7 times and 1.3 times that for boys, relative to the *Low Exposure* profile. This evidence suggests that for our clinical population, gender seems to predict the trauma profiles, with girls generally more likely to be in the higher risk profiles as compared to boys.

The literature examining trauma types by gender suggests there are few clear patterns. Some studies find significant differences by gender (more for girls [20]; more for boys[21]), while others find no differences at all.[22] While it seems that girls in our study are more at risk for trauma than boys, which is consistent with past research,[20] this finding may reflect the nature of our clinical programs, especially our C-Change program, which serves primarily girls who experience repeated and severe victimization and attachment losses. Still, the fact that the odds ratios for girls are consistently greater than for every other profile except *Low Exposure* suggests further study of gender effects is warranted.

Ethnicity. Ethnicity is a significant predictor of trauma profiles. Latinx youth are less likely than African American youth to be in the higher risk profiles relative to the *Low Exposure* group. The odds ratio of 0.2 for Latinx youth means that this group is 20% as likely as African American youth to fall in these trauma profiles. Or conversely, African American youth are five times more likely than Latinx youth to fall into these higher risk trauma profiles. These results may reflect the population of youth to whom we provide services, the communities in which they are embedded, and a reflection

of the services we are able to provide. For example, it is possible that language barriers, cultural differences in how people discuss personal traumas, and fear of reporting experiences that may involve one's own or others' criminal activity explain the underreporting of trauma experiences among Latinx clients. In addition, even though Latinx ethnicity does not equate to immigration, many of our clients are immigrants and may have experienced trauma resulting from that experience, whether from forced dislocation, separation from loved ones, or other aspects of the immigration experience itself. These experiences are not measured on the CANS and therefore remain unobserved in our measures. Also, even though WestCoast provides services in Spanish to some clients and their families, language and cultural barriers may still exist that undercount the number or types of trauma exposures Latinx youth experience. Finally, a social-political environment that is hostile to Latinx families may also inhibit openness about their experiences.

Multiracial youth more closely resemble African American youth. The results for Multiracial youth just reach the threshold for statistical significance ($p = 0.05$) but substantively, the odds ratios are not as different from African American as they are for Latinx youth. For example, Multiracial youth are 90% as likely to be in the *Community Violence* profile. The closer the odds ratio is to 1, the more similar are the groups.

The pattern for Other Ethnicities and for White youth are similar—the trauma profiles for both of these groups are significantly different, both substantively and statistically, from those of African American youth. Compared to African American youth, these two groups are more than twice as likely to end up in the *Caregiving Disruption* profile relative to the *Low Exposure* profile, and they are more than three times more likely to end up in the *Multiple Interpersonal Trauma*s group.

How do we understand the experience of African American youth given these results? This group of young people is the most likely of any group in our sample to be in the *Community Violence Exposure* profile. While African American youth are more likely than Latinx youth to be in the *Multiple Interpersonal Trauma*s group, they are less likely to be so than the other ethnicities in our sample, including White, Multiracial, and Other Ethnicities; they are also less likely than White youth and youth of Other Ethnicities to be in the *Caregiving Disruption* group. As noted above, belonging to the *Community Violence* group does not mean that youth in this group have not experienced interpersonal trauma or caregiving disruption. In fact, as Table 3 shows, some youth in this group have experienced several of these traumas. However, as a group these youth have also been exposed to violence outside their home at significantly higher rates.

It is important to note that ethnicity should not be considered an intrinsic causal reason for elevated risks of trauma and the resulting negative health outcomes. While the scientific literature provides evidence for elevated risks associated with some ethnicities, it would be an oversight to ignore how inequality contributes to those risks. Moreover, the trauma profiles we uncover in our sample and their relationship to ethnicity are highly dependent on the types of trauma experiences that are measured. Potentially traumatic experiences such as discrimination or racial oppression or immigration are not measured on the CANS instrument used in this study. If we had measures of youths' experiences of racism, for example, our profiles would surely look different.

Foster Care Involvement. Having experience with the foster care system is also a significant predictor of the trauma profiles. Our results indicate that youth who have been involved with the foster care system have elevated risks of experiencing caregiving disruption, multiple forms of maltreatment (neglect, physical, and emotional abuse), community violence, or any combination of those events. The odds of being in the *Caregiving Disruption* group rather than the *Low Exposure* group are nearly 60 times greater for youth with foster care involvement than for those without this history. Additionally, foster youth are 35 times more likely to be in the *Multiple Interpersonal Trauma*s group as compared to youth not in foster care. These findings are not surprising as youth in foster care have been shown to display high prevalence of multiple interpersonal traumas and caregiving disruptions.[19]

Notably, youth in foster care are also nearly 49 times more likely than non-foster youth to be in the *Community Violence Exposure* group relative to the *Low Exposure* profile. It is possible that the experiences that lead youth to end up in foster care—abuse, neglect, and family violence—are also related to other challenges

Table 5: Average Number of Mental Health Needs Associated with Each Trauma Profile (*N* = 2,376)

	Mental Health Needs	Standard Error	95% Confidence Interval
Low Exposure	5.40	0.21	[5.00, 5.81]
Caregiving Disruption	5.09	0.16	[4.79, 5.39]
Multiple Interpersonal Traumas	8.26	0.32	[7.64, 8.88]
Community Violence Exposure	9.56	0.42	[8.73, 10.39]

that families experience. Lack of safety in the home may be mirrored outside of the home; perhaps the lack of safety in one of those contexts contributes to the lack of safety in the other. Violence in the community could be a stressor that impacts how a family functions inside the home. Conversely, lack of safety in the home may impact whether the youth is exposed to violence outside of it. It is not clear from our data which form of adversity preceded the other, nor whether exposure to community violence occurred before or after the child's foster care experience. It is also possible that foster care involvement, by compounding trauma, impacts a youth's risk-taking behavior, and thereby indirectly results in increased exposure to violence. More studies in this area are needed to elucidate these complex relationships.

TRAUMA PROFILES ARE LINKED TO YOUTH MENTAL HEALTH NEEDS

To better direct intervention after trauma has occurred, we must also understand how trauma profiles relate to mental health needs. Table 5 displays the estimated cumulative mental health needs for each trauma profile. Table 6 provides further detail about whether the differences between the mental health scores for each trauma profile are statistically significant. As described in the measurement section above, our measure of mental health needs in this study is a cumulative count of the number of actionable items each child has on their CANS assessment. These needs are not limited to items describing the young person's emotional state but also include behaviors and daily life challenges that result from the child's mental health status (see Table 2).

Table 6: Difference in Mental Health Needs Among Trauma Profiles (*N* = 2,376)

Mean Differences	Estimate	Standard Error	*WALD* Statistic	Degree of Freedom	*p*-value
CD vs LE	0.06	0.05	1.25	1	0.26
CD vs MIT	0.48	0.05	86.42	1	< 0.001
CD vs CVE	0.63	0.06	126.69	1	< 0.001
LE vs MIT	0.42	0.05	60.90	1	< 0.001
LE vs CVE	0.57	0.06	91.88	1	< 0.001
MIT vs CVE	0.15	0.06	5.29	1	< 0.05
Omnibus Test	—	—	209.37	3	< 0.001

Note: CD=Caregiving Disruption; CVE=Community Violence; LE=Low Exposure; MIT=Multiple Interpersonal Traumas. The estimate value represents the mean difference in mental health needs between two profiles in each row. For example, the first row shows the mean difference in number of mental health needs between the Caregiving Disruption and Low Exposure groups to be close to zero and not statistically significant. The Wald tests along with the p-values indicate whether the expected values of the mental health needs between each pair of the trauma groups are equal or statistically different. The Omnibus test represents a simultaneous comparison of all of the expected values of the mental health needs.

In general, we observe that cumulative mental health needs can be grouped into two categories: youth with the *Low Exposure* and *Caregiving Disruption* profiles who have relatively lower needs, and youth with the *Multiple Interpersonal Traumas* and *Community Violence* profiles who have relatively higher needs. For this latter group, their estimated mental health needs are significantly higher than those in the lower-need category, illustrating the overwhelming impacts of multiple interpersonal traumas and violence relative to other types.

For the lower-need groups, we note that having lower relative needs does not mean low absolute needs. Taking any combination of five needs listed in Table 2 (e.g., depression, trauma symptoms, challenging family relationships, difficulty at school, and difficulty with sleep) makes plain how much youths' lives are impacted by their experiences. In addition, within the lower-need category, the similar number of needs among the *Low Exposure* group and their counterparts in the *Caregiving Disruption* group suggest that the impacts of exposure to a single trauma can be as significant as attachment disruptions or losses. However, it is also likely that our finding reflects the population of youth receiving mental health services at our clinic. For instance, because all of our youth are eligible for Medi-Cal, which provides health coverage for low-income Californians, they are also most likely struggling with economic hardship,

a well-known risk for various negative outcomes.[23, 24] Thus, the combination of a single trauma exposure and poverty may have resulted in the high number of mental health needs that youth in the *Low Exposure* group exhibit. Moreover, other factors that remain unmeasured in our study—such as language barriers, cultural differences, oppression, and other forms of social marginalization—could also engender more needs for youth in this profile.

With respect to the high-need category, predictably youth in the *Multiple Intrapersonal Trauma* group have significantly greater mental health needs—about 35% more on average—than youth in the *Low Exposure* and *Caregiving Disruption* groups. This finding is consistent with what we know about multiple traumas, especially when they are repeated and occur within the primary caregiving system.[18, 25, 26] There is a significant body of literature describing how children experiencing multiple traumas are negatively impacted in a wide range of life domains and are vulnerable to experiencing complex developmental trauma. Some of the impacts of complex trauma include difficulties with regulating emotions and impulses, memory and attention problems, low self-regard, difficulties with attachment and relationships, somatization and physical health problems, and difficulties with systems of meaning.[18, 26] The increased understanding of how multiple interpersonal traumas impact children has led to screening for trauma in certain child welfare settings in order to connect youth to trauma-informed services more quickly.

The striking finding here is that youth in the *Community Violence Exposure* group have a higher level of mental health needs compared to those in the *Multiple Interpersonal Trauma*s group—a finding that is statistically significant (see Table 6), thus making this the group with the highest mental health needs of all. This finding is consistent with evidence in the literature that community violence poses tremendous risk to a young person's mental health and well-being. Notably, we find that the impact of violence exposure surpasses that of familial conflict and loss (e.g., caregiving disruption and family violence) and even maltreatment (e.g., abuse and neglect).

CLINICAL AND POLICY IMPLICATIONS

We now turn to the main reason why we undertook this study: to improve our own service delivery to clients and inform our advocacy efforts. Before we discuss potential implications for service providers and policy makers, let us summarize what we learn from our investigation. First, we find that for youth receiving mental health services at our clinic, more than one in two have experienced some form of caregiving disruption. Approximately one in five youth have dealt with or are experiencing maltreatment, caregiving disruption, and family violence. Moreover, one in 10 have been exposed to community violence or have been a victim of criminal activities, or both. Remarkably, these same trauma profiles are also observed in a nationally representative sample of over 10,000 youth.[27]

Second, we discover that the four distinct trauma patterns can be explained by a youth's gender identity, ethnicity, and involvement with the foster care system. Specifically, girls are more likely to experience trauma than boys, whereas African-American and Latinx youth appear to be less at risk for encountering several of the traumas we measured compared to other ethnicities—which is inconsistent with what we know from numerous other studies (for review[21]). Additionally, involvement with the foster care system seems to greatly increase a young person's chance of experiencing many types of traumatic events. While involvement with the foster care system has long been known to be linked to many risks,[28–30] the evidence here is alarming as the risk for trauma reactions is greatly amplified for youth in the system.

Third, we observe two categories of cumulative mental health needs: lower-need (those experiencing low levels of trauma exposure or caregiving disruptions) and higher-need (those exposed to maltreatment and violence). Furthermore, youth with low trauma exposure (e.g., only experienced a single trauma) have the same level of mental health needs as those experiencing more caregiving disruptions or losses. Other types of environmental factors not measured here, such as poverty and oppression, may be contributing to the mental health needs of these youth, and thus should be further explored in future research. More importantly,

the finding that youth experiencing community violence also have similar needs as those with multiple types of trauma underscores the profound impacts of community violence on a youth's health and development.

Taken together, our findings suggest the need to shift our focus toward building healthy communities in which youth live. It may seem a truism to advocate for healthier communities and greater public system collaboration to support the well-being of children, but understanding how trauma experiences cluster together for the youth in our care—and especially understanding how those trauma profiles impact the needs of children—changes our own individual behavior as providers, our work as an agency, and the public systems that serve children and youth, even as we work to eliminate violence, poverty, and racism.[31]

While we acknowledge the deleterious effects of trauma on youth mental health, mental healthcare providers ought to look beyond the interpersonal level when caring for youth and focus more broadly on systemic factors such as aspects of the community, public systems, and the wider society in which youth are embedded. This means not just addressing experiences commonly labelled as "traumas" that might stem from family problems or psychological issues, but also experiences related to community or societal factors such as violence, poverty, and racial oppression. These powerful dynamics are inextricable from interpersonal traumas as they challenge families struggling to cope. Though addressing the specifics of clinical practice is beyond the scope of this study, failing to appreciate how these society-level ills are in fact personal to those impacted by them is to miss an opportunity to support healing. Unmasking these sources of pain and making them a focal point of intervention can help to heal the wounds caused by these experiences.

Beyond the mental health system, other public systems that shape and constrain the lives of young people ought to consider how community- and society-level factors affect the young people they serve. A truly accountable continuum of care would take into account how, for example, community violence affects the choices and opportunities that children and youth have, and respond with restorative practices instead of punitive ones; or how multiple interpersonal traumas affect a child's ability to learn and tailor interventions to support the child's brain development; or how removal from the home can impact a young person's ability to manage difficult emotions and ability to negotiate difficult and potentially further abusive relationships in the future; or how race is entangled with suffering, and can impact a young person's sense of self and their place in the world.

Supporting young people's well-being in these and other ways may require new and different funding sources, or blending and braiding of funds from multiple public systems to implement proactive approaches to support children's mental health. Additionally, in areas where community violence exposure is high, mental health support, as defined by the community, should be available for all children and families, regardless of symptomatology. We need to ensure that our funding streams and policies incorporate peer-based and community driven models of support.

There are efforts currently underway in California to facilitate access to SMHS for youth who have experienced trauma, rather than waiting for symptoms to become severe, as has traditionally been the case. However, as part of the state's Medi-Cal reform initiative, California Advancing and Innovating Medi-Cal (CalAIM), the Department of Health Care Services (DHCS) has updated eligibility criteria for EPSDT SMHS to include trauma exposure. One of the ways that youth can meet eligibility criteria under this provision includes "scoring in the high-risk range under a trauma screening tool approved by the department (California Welf. & Inst. Code, § 14184.402(c))." As DHCS considers which trauma screening tools will be used, our research findings indicate that a simple count of traumas is not sufficient to indicate high-risk. Requiring a certain number of traumas does not take into consideration that the patterns of trauma or that a single type of trauma exposure (e.g., community violence) can have a significant impact on a child's mental health.

STUDY LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

In this section, we briefly discuss our study limitations and provide suggestions for future research. First, our assessment of youth trauma lacks information about

other forms of adverse and potentially traumatic experiences stemming from social, economic, and political marginalization such as poverty, racism, and systemic oppression, among others our clients may have experienced. Including a more comprehensive and consistent list of adverse experiences in standard measurement tools such as the CANS can help with generalizability.[32] This is particularly important because all of the youth in our sample are Medi-Cal EPSDT eligible, which presupposes many of these hardships. In addition, the vast majority of our sample are youth of color who experience a disproportionate burden of these problems. With the recent surge in discriminatory tendencies toward people of color, it is more important than ever to include these experiences when assessing for trauma. This also reminds us that demographic factors do not cause patterns of trauma; rather, these patterns of trauma are linked to demographic characteristics because these characteristics shape life experiences.

Second, language and cultural barriers (broadly defined) may also contribute to underreporting of trauma exposure. In addition, our indicators of trauma history come from the youth's initial assessment, often conducted within the first 30 days of intake with the young person and their family. Though comprehensive, this initial assessment may not represent the entirety of adverse experiences that a young person has gone through. As the therapeutic relationship develops, the young person may be more likely to disclose more of their life experience and the challenges that result. Consequently, future studies should consider the effect of language and cultural barriers or assessments of trauma exposure taken at a later stage during therapy, when more trust between client and therapist has been established.

Finally, because person-centered analytic approaches, such as LCA, are highly dependent on the sample upon which they are based, it is worth considering how our population of clients might explain our results. For instance, our clinical sample is primarily composed of youth who have experienced severe adversities early in life; for a majority of our clients, these experiences are severe enough to result in entry into foster care. Insofar as the impact of trauma is the most common reason youth are receiving services at WestCoast, trauma exposure can be thought of as a precondition to inclusion in the study population. Still, many of our findings are consistent with the literature studying the general population.[27] It would be important for future work to examine how other clinical populations result in trauma patterns that are similar to or different from ours. Replication helps build confidence in what we learn, allows us to dive more deeply into differences between groups of young people, and expands the community of children whose needs are being addressed.

Though it is well beyond the scope of this paper, future work should also explore not just the patterns of trauma but how traumas are interrelated. For example: How is neglect related to exposure to community violence? Which precedes the other? Can one type of trauma be prevented (e.g., violence exposure) when intervening for another trauma that has already occurred (e.g., neglect)? The questions raised by the patterns of trauma findings are numerous and have large implications for prevention science and for public agencies charged with protecting children and youth. In addition, just as counting traumas has limited our understanding of trauma patterns, counting mental health needs limits our understanding of those needs. Future work should consider profiles of mental health needs as well.

CONCLUSION

Our community sample is not a niche population, and our findings are not limited to the children we see at WestCoast. Our clients share a lot in common with children and youth more broadly. The widespread prevalence of ACEs highlights the importance of improving our understanding. The prevalence of adverse experiences among our sample is certainly higher than among the general population of children and youth. However, half of the children in many countries across the world, including the United States, experience some form of childhood adversity, including interpersonal loss (e.g., parental divorce or death), parental challenges with mental or behavioral health (such as mental illness, substance use, or criminal activities), child maltreatment or victimization, deprivation (neglect, poverty), or other adversities, such as physical illness, war, or natural disasters.[33-35]

Focusing on the more severe forms of adversity and on multiple victimizations also shows just how common they are. More than one in five children (22%),

experience four or more types of victimization.[36, 37] In child welfare samples, approximately three in four children experience multiple types of victimization, and about half of children experience four or more types.[38] This high prevalence of multiple forms of potentially traumatic experiences makes it a priority to better understand the impacts of multiple traumatic experiences.

Better understanding trauma profiles and their relationship to mental health needs is not just a priority for WestCoast—it is important more generally for the field as well. Doing so helps us operationalize some of the principles of trauma-informed care, which instruct us to look at the whole child. By looking at the entirety of a child's experience and how they have been impacted—not just focusing on one type of adversity—we move one step closer to effectively addressing their needs.

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APPENDIX A

List of CANS mental health items and their descriptions:

Adjustment to trauma
This item is used to describe the child who is having difficulties adjusting to a traumatic experience. Symptoms include sleeping or eating disturbances, intrusive thoughts, flashbacks, numbing, and other signs associated with PTSD.

Affective/physical dysregulation
Child/youth has difficulties with arousal regulation or expressing emotions and energy states.

Anger control
This item captures the child/youth's ability to identify and manage their anger when frustrated.

Anxiety
This item rates symptoms associated with anxiety disorders characterized by excessive fear and anxiety and related behavioral disturbances (including avoidance behaviors). Panic attacks can be a prominent type of fear response.

Attachment difficulties
This item documents the extent to which a child/youth experiences difficulties with attachment, such as such as problems with separation, avoidance of contact with caregiver, and difficulties with physical or emotional boundaries with others.

Avoidance
These symptoms include efforts to avoid stimuli associated with traumatic experiences. These symptoms are part of the DSM criteria for PTSD and Acute Stress Disorder.

Conduct problems
This item rates the degree to which a child/youth engages in behavior that is consistent with the presence of a Conduct Disorder.

Danger to others
This item rates the child/youth's violent or aggressive behavior. The intention of this behavior is to cause significant bodily harm to others.

Delinquency
This item rates criminal behavior (law breaking behavior and juvenile justice issues) for which the child may or may not have been caught. If the has not been caught, but clinical staff are aware of the behavior it should be rated.

Depression
Symptoms included in this item are irritable or depressed mood, social withdrawal, sleep disturbances, weight/eating disturbances, and loss of motivation, interest, or pleasure in daily activities. This item can be used to rate symptoms of the depressive disorders as specified in the DSM-5.

Developmental functioning
This item describes the child/youth's development as compared to standard developmental milestones, as well as rates the presence of any developmental or intellectual disabilities. It includes Intellectual Developmental Disorder (IDD) and Autism Spectrum Disorders.

Dissociation
This item rates the level of dissociative states the child/youth may experience. It may include emotional numbing, avoidance or detachment, and difficulty with forgetfulness, daydreaming, spacing or blanking out.

Eating disturbance
This item rates problems with eating, including disturbances in body image, refusal to maintain normal body weight, recurrent episodes of binge eating, and hoarding food.

Family relationships
This rates the child/youth's relationships with those who are in their family. It is recommended that the description of family should come from the child/youth's perspective (i.e. who they describe as their family). In the absence of this information, consider biological and adoptive relatives and their significant others with whom the child/youth is still in contact. For children/youth involved with child welfare, family refers to the persons fulfilling the permanency plan. When rating this item, take into account the relationship the child/youth has

with their family as well as the relationship of the family as a whole.

Fire setting
This item refers to behavior involving the intentional setting of fires that might be dangerous to the child/youth or others. Malicious or reckless use of fire should be rated here, however fires that are accidental should not be considered fire setting.

Hyperarousal
This includes difficulty falling asleep, irritability or outbursts of anger, difficulty concentrating, hyper vigilance and/or exaggerated startle response. Child/youth may also show common physical symptoms such as stomachaches and headaches. These symptoms are a part of the DSM-5 criteria for Trauma-Related Adjustment Disorder, Posttraumatic Stress Disorder and other Trauma- and Stressor-Related Disorders.

Impulse control/ hyperactivity
Problems with impulse control and impulsive behaviors, including motoric disruptions, are rated here. This includes behavioral symptoms associated with Attention-Deficit Hyperactivity Disorder (ADHD) and Impulse-Control Disorders. Children with impulse problems tend to engage in behavior without thinking, regardless of the consequences.

Job functioning
If the youth is working, this item describes their functioning in a job setting.

Judgment/Decision Making
This item describes the child/youth's age-appropriate decision-making process and understanding of choices and consequences.

Legal difficulties
This item indicates the individual's level of involvement with the justice system. Family involvement with the courts is not rated here.

Living situation
This item rates how the child's/youth's behaviors impact his/her current living environment.

Medical/health management
This rating describes both health problems and chronic/acute physical conditions or impediments.

Numbing
This item describes child/youth's reduced capacity to feel or experience and express a range of emotions. These numbing responses were not present before the trauma.

Oppositional behaviors
This item rates the child/youth's relationship with authority figures. Oppositional behavior is generally displayed in response to limits or structure set by a parent, caregivers, or other authority figure with responsibility for and control over the child/youth.

Other self-harm
This rating includes reckless and dangerous behaviors that, while not intended to harm self or others, place the child/youth or others in some jeopardy. Suicidal or self-injurious behaviors are not rated here.

Physical management
This rating describes both health problems and chronic/acute physical conditions or impediments.

Psychosis
This item rates the symptoms of psychiatric disorders. The primary symptoms include hallucinations (experiencing things others do not experience), delusions (a false belief or an incorrect inference about reality that is firmly sustained despite the fact that nearly everyone else thinks the belief is false or proof exists of its inaccuracy), or bizarre/idiosyncratic behavior.

Recreational functioning
This item rates the youth's access to and use of leisure activities.

Re-experiencing
This item rates the frequency with which the child/youth experiences thoughts of their trauma that they cannot control and how much/how little these thoughts impact their ability to function.

Regression in behavioral
These ratings are used to describe shifts in previously adaptive functioning evidenced in regressions in behaviors or physiological functioning.

Running away
This item describes the risk of running away or actual runaway behavior.

School achievement
This item rates the child/youth's grades or level of academic achievement.

School attendance
This items rates issues of attendance.

School behavior
This item rates the behavior of the child/youth in school or school-like settings.

Self-injurious behavior
This rating includes repetitive, physically harmful behavior that generally serves as a self-soothing function to the child/youth (e.g., cutting, carving, burning self, face slapping, head banging, etc.). This rating also includes reckless and dangerous behaviors that, while not intended to harm self or others, place the child/youth or others in some jeopardy.

Sexual aggression
This item is intended to describe both aggressive sexual behavior and sexual behavior in which the child/youth takes advantage of a younger or less powerful child/youth. The severity and recency of the behavior provide the information needed to rate this item.

Sexual reactivity
This refers to high risk sexual behavior (including with partners who are abusive or physically dangerous) beyond what is developmentally appropriate, and may or may not involve multiple partners.

Sleep
This item rates the child/youth's sleep patterns. This item is used to describe any problems with sleep regardless of the cause, including difficulties falling asleep or staying asleep as well as sleeping too much. Both bedwetting and nightmares should be considered sleep issues.

Social functioning
This item rates social skills and relationships. It includes age appropriate behavior and the ability to make and sustain relationships. Social functioning is different from Interpersonal (Strengths Domain) in that functioning is a description of how the child/youth is doing currently. Strengths are longer-term assets.

Somatization
These symptoms include the presence of recurrent physical complaints without apparent physical cause or conversion-like phenomena (e.g., pseudoseizures).

Substance use
This item describes problems related to the use of alcohol and other drugs, the misuse of prescription medications, and the inhalation of any substance. This rating is consistent with DSM Substance-Related and Addictive Disorders. This item does not apply to the use of tobacco or caffeine.

Suicide Risk
This item is intended to describe the presence of thoughts or behaviors aimed at taking one's life. This rating describes both suicidal and significant self-injurious behavior. This item rates overt and covert thoughts and efforts on the part of a child or youth to end their life.

Traumatic grief
This rating describes the level of traumatic grief the child/youth is experiencing due to death or loss/separation from significant caregivers, siblings, or other significant figures.

Traumatic grief
This rating describes the level of traumatic grief the child/youth is experiencing due to death or loss/separation from significant caregivers, siblings, or other significant figures.

APPENDIX B

Indicators of Trauma

Trauma was measured using items from the Traumatic/Adverse Childhood Experiences Domain in the CANS at the initial assessment (within the first 30 days of intake). All items except medical trauma, war/terrorism, and natural/manmade disaster were selected. We relied on actionable scores—defined as having a score rating of 2 or 3 for each CANS item—as an indicator of trauma exposure. In other words, we classified a particular trauma item as positively endorsed (i.e., clients experienced trauma) if a client had an actionable score for that item. The final list of trauma exposures included 10 traumatic events: emotional abuse, neglect, physical abuse, sexual abuse, caregiving disruption, family violence, parental crimes, school violence, witness/victim of criminal activities, and community violence. Medical trauma, war/terrorism, and natural/manmade disaster were endorsed very infrequently so we excluded them from analysis.

Youth Demographics

Gender identity: We dummy-coded gender identity so that "female" was coded as "1" and male and others were coded as "0".

Ethnicity: Youth ethnicity was dummy-coded as binary variables for each of the following categories: "Latinx" (i.e., Latinx youth were coded as "1" vs. "0" for everyone else), "Multiracial," "White," and "Other Ethnicities."

Foster care involvement: We dummy-coded foster care so that "involved with the foster care system" was coded as "1" if the child or youth had any experience with the child welfare system, including family maintenance or kinship care, whether or not the child formally entered foster care, whereas no involvement was coded as "0."

Mental Health Needs

We measured mental health needs using items from these core CANS domains: Behavioral/Emotional Needs, Life Domain Functioning, Risk Behaviors, and Symptoms of Trauma Module. We coded all items from each of these domains as a positive endorsement (i.e., the mental health need is present) if a client had an actionable score (2 or 3 rating) for that particular item. We then created a composite mental health needs score by summing all items that were positively endorsed, with this score representing each child's cumulative mental health needs.

Data Analysis Procedures

First, we fit a series of models with one through six latent classes using the 10 indicators of trauma identified in our study. All LCA models were fitted with 100 different sets of random starting values; if they consistently converged to the same solution, we could be confident of a maximum likelihood solution.[39] We then relied on various fit indices including the G^2 statistic and corresponding degrees of freedom and information criteria (AIC, BIC, and sample size-adjusted BIC) to narrow down the set of plausible models. To aid with model selection, we also used the LCA Bootstrap Stata function[40] to perform the Bootstrap Likelihood Ratio Test. Finally, we took into consideration how well a solution could be interpreted (i.e., whether the latent subgroups in a solution showed meaningful patterns, were distinct from the other subgroups, and could readily be labeled) before selecting the optimal model.

Next, we refit the optimal model and added the other variables of interest—being female, Latinx, Multiracial, Other Ethnicities, White, and in foster care—as covariates to examine the extent to which these variables predict trauma group membership. Specifically, using the likelihood ratio χ^2 test, the LCA with covariates tests whether each covariate of interest contributes significantly to the prediction of latent class membership above and beyond the contribution of other covariates in the model. Furthermore, the LCA with covariates model also produces regression coefficients and odds ratios, representing the odds of membership in a trauma latent class in relation to the reference trauma group.[39] Finally, given the limitation of other classify-analyze approaches in predicting distal outcome from latent class memberships, we followed the model-based method[41]—whereby classification error was adjusted in the model—to examine the association between trauma patterns and youth mental health needs.

All analyses were performed using Stata 15.[42] The base LCA and LCA with covariates models were conducted using the LCA Stata Plugin Version 1.2[43] developed by

researchers at the Methodology Center at Pennsylvania State University based on their PROC LCA procedure in SAS.[44] The LCA with distal outcome model was estimated using the LCA_Distal_BCH Stata function.[45] All software packages to conduct LCA are available for download free of charge at http://methodology.psu.edu.

Latent Class Labels

We relied on the overall pattern of item-response probabilities for a particular class (listed in Table 3) to inform the choice of label for that latent class. For instance, for youth in the *Community Violence Exposure* latent class, the probability was 0.61 of having an actionable rating (2 or 3) on the Witness or Being Victim of Criminal Activities item in the CANS—that is 61% of youth in this class have an actionable score on the Witness or Being Victim of Criminal Activities item. Looking at the overall pattern of item-response probabilities for youth in this class, we could see that they were more likely to have an actionable score on Caregiving Disruption, Witness/Being Victim of Crimes, and Community Violence items from their CANS assessment. Conversely, they were less likely to have an actionable score on the other items, including Emotional Abuse, Neglect, Physical Abuse, Sexual Abuse, Family Violence, Parental Crimes, and School Violence. This overall pattern suggests that this latent class could be labeled *Community Violence Exposure*.