Investigating Severe Mental Illness, Trauma, PTSD, Substance Use, and Gender Differences in Clients Served by Assertive Community Treatment Teams: Testing the SMI-PTSD Model and Exploring Providers' Perspectives

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”جبار هو الذي يكون شعاره في الحياة: قد أتألم, ولكني لن استسلم“
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Preface

This dissertation follows a multiple-article format and is divided into two studies: (1) how gender differences affect the relationship between Severe Mental Illness (SMI), trauma, Post-Traumatic Stress Disorder (PTSD), substance use, psychosocial factors, and in the SMI-PTSD model; and (2) understanding ACT providers perspectives on working with trauma and PTSD in clients. I took the lead in every aspect of this dissertation, including the literature review, conceptualization of the project, development and implementation of study procedures and methods, ethics review board applications, data collection, analysis, and writing of the thesis. For both manuscripts I am first author. Study 1, *One Size Doesn't Fit All: Gender Differences in Trauma, PTSD, Substance Use, and the SMI-PTSD Conceptual Model in Persons with Severe Mental Illness in Assertive Community Treatment* has been published in the journal *Psychosis* and Study 2, *"We're Working in a Trauma Avoidant Culture": A Qualitative Study Exploring Assertive Community Treatment Providers Perspectives on Trauma and PTSD in Clients with Severe Mental Illness* has been published in *Community Mental Health Journal*. Vasilae Karasavva was a master's student at Carleton University in the Masters of Psychology program and aided in data collection and providing input and revisions to the introduction and discussion of both manuscripts and is listed as co-author. Helen Thai was an undergraduate student at Carleton University in the Psychology program who contributed to literature search and providing revisions to the second manuscript and is listed as a co-author. Dr. Susan Farrell provided an advisory role throughout the process, oversaw all abovementioned activities, and facilitated the link to ACT teams allowing this project to be conducted and is listed as co-author on both manuscripts.

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General Abstract

Research shows that people with severe mental illness (SMI) have extensive trauma histories and higher rates of post-traumatic stress disorder (PTSD) than the general population. However, research also shows that both the trauma history and PTSD in people with SMIs are vastly unrecognized and untreated. Additionally, the relationships between SMI, trauma, PTSD, substance use, and other psychosocial factors is still not well understood, as there has been limited experimental research examining these relationships despite an awareness of their connections. The SMI-PTSD descriptive model was originally proposed by Mueser et al. (2002) to better understand these variables, and is often referenced in the literature, yet there is very little empirical evidence and understanding of how this model may differ by gender in people with SMI. Assertive Community Treatment (ACT) is an evidence-based treatment for those with SMI, yet the extent to which trauma is addressed within the ACT model is not consistently known, nor how the team's practitioners work with their clients on trauma-related issues and PTSD. By definition, all ACT clients have an SMI and represent a population with complex and intensive needs; therefore, a better understanding the population ACT serves, as well as how the teams work with the trauma present in their clients, will aid in providing better and more consistent treatment and care. This dissertation examines gender differences in the relationship between SMI, substance use, trauma, PTSD, psychosocial factors, the SMI-PTSD descriptive model, and attempts to ascertain the perspectives of ACT providers in working with trauma and PTSD in clients. In Study 1, I conducted retrospective chart reviews to extract information on trauma histories, PTSD, substance use, and psychosocial factors in 282 clients from four ACT teams (178 men, 104 women) to assess the gender differences in types of trauma, instances of PTSD, substances of choice, problematic substance use, and the SMI-PTSD model. Findings indicate that rates of sexual trauma, emotional abuse, serious suicide attempts, rates of trauma in adulthood, and PTSD are higher among women, whereas rates of alcohol, marijuana, and stimulant use as well as lifetime problematic substance use are higher among men. For the SMI-PTSD model, results suggest that the model better corresponds to the experiences and possible trajectory of men with SMI. In Study 2, I employed thematic analysis through interviewing ACT providers to better understand their perspectives on working with trauma and PTSD in clients. Five overarching themes with 21 sub-themes emerged. The five themes were the role and scope of ACT teams and model regarding trauma; discussions of trauma with clients; current treatment of trauma; barriers to working with trauma; and recommendations for enabling trauma discussions and treatment. These two studies have important implications for further research. Research should take gender identity into consideration when proposing and testing models, as Study 1 has demonstrated that two genders experience a well-accepted proposed model differently; this finding may be applicable to people of all genders, as well as other models. Further research could be done to gather perspectives from workers on the strengths and challenges of the ACT model. Future work should also include the views of ACT clients to get a fuller picture of their experience with receiving care for their trauma experiences. Clinically, health care providers should better recognize and treat PTSD and traumatic-stress symptoms of people with SMI. Doing so will ensure that health-care is moving towards trauma-informed practice on a systemic level.

KEYWORDS: *Assertive Community Treatment, Post-traumatic Stress Disorder, Trauma, substance use, gender, Severe Mental Illness, provider perspectives, community mental health, barrier to treatment*

Use of Terms Gender and Sex within this Dissertation

The terms gender and sex are defined in the Canadian Institutes of Health Research (2020) as the following:

“**Sex** refers to a set of biological attributes in humans and animals. It is primarily associated with physical and physiological features including chromosomes, gene expression, hormone levels and function, and reproductive/sexual anatomy. Sex is usually categorized as female or male but there is variation in the biological attributes that comprise sex and how those attributes are expressed.

Gender refers to the socially constructed roles, behaviours, expressions and identities of girls, women, boys, men, and gender diverse people. It influences how people perceive themselves and each other, how they act and interact, and the distribution of power and resources in society. Gender identity is not confined to a binary (girl/woman, boy/man) nor is it static; it exists along a continuum and can change over time. There is considerable diversity in how individuals and groups understand, experience and express gender through the roles they take on, the expectations placed on them, relations with others and the complex ways that gender is institutionalized in society.”

Gender is not binary, however, gender-diverse people and those that are non-binary are not referred to in this dissertation nor in Study 1 in which gender is a variable. This dissertation uses the terms men and women, and these two genders are discussed and referred to only. This is because it is only very recently that there has been advances in our knowledge and acceptance of more than two genders in society and in research. As previous research has only referred to and used two genders as variables, a more in-depth discussion on the research related relationship between SMI, trauma, PTSD, substance use, psychosocial on gender diverse peoples has not yet been possible. In addition, the charts and records that were used for data in Study 1 only differentiated between men and women and did not refer to other gender diverse peoples i.e. indicating if someone was non-binary by having another option other than “man” or “woman” to indicate gender. I discuss this more fully as a limitation and future directions in Study 1.

General Introduction

According to research done by the National Institute of Mental Health (2011), mental illnesses are common in the general population with an estimated one in five adults currently living with mental health-related issues. Mental illness is broadly classified into two categories: 1) Any Mental Illness (AMI); and 2) Serious or Severe Mental Illness (SMI), the latter of which is a smaller and more severe subset that affects roughly 4% of the population. Despite the growing awareness of mental health disorders and a positive shift towards community-based outpatient treatment, the needs of people with SMI are still not being met. Specifically, research, diagnoses, and treatments have overlooked and under-documented trauma histories, PTSD symptoms, and unique stressors that individuals with SMI face.

Research by Mueser et al. (1998) shows that 43% of people with SMI also have PTSD, and between 61% and 98% of persons with SMI have experienced a traumatic event that has contributed to comorbid diagnoses, substance dependence, and poor treatment prognosis. Evidence of persistent underdiagnosing of trauma-related disorders is readily apparent. For example, Mueser et al. (1998) noted that 98% of assessed persons with SMI had experienced trauma in their lifetime, yet PTSD diagnoses were only recorded for 2% of this population.

According to Mauritz et al. (2013), there are several reasons why trauma-related issues continue to be under-recognized in the SMI population. First, clinicians are hesitant to identify and treat trauma due to fears that asking about trauma will exacerbate and increase the severity of symptoms. Second, a majority of clients with SMI entered the system a very long time ago when the awareness and knowledge of the impact of trauma on the course and onset of SMI was limited (Mauritz et al., 2013). Furthermore, there is a considerable overlap between trauma, substance use, and SMI symptoms, which makes clear diagnoses difficult (Mauritz et al., 2013). In many cases, overlapping symptoms can contribute to treatment provider's negative beliefs about recovery rates of persons with SMI, program adherence, and willingness to cooperate. For example, this can be seen when individuals who experienced trauma and also are a person with SMI isolate themselves and refuse services because of underlying trust problems (Mauritz et al., 2013). It should be noted that there is very little research on the perspectives of community mental health providers on working with trauma-related symptoms specifically in people with SMI, and any available research will be discussed throughout as this is an area of much needed investigation.

Severe Mental Illness

Research conducted by the National Institute of Mental Health (1987) broadly defines severe mental illness as a "diagnosed mental, emotional, or behavioural disorder of sufficient duration it that impedes major life activities, or otherwise causes functional impairment of the individual." There is, however, a lack of consensus on precisely what defines SMI in the literature. A study conducted by Zumstein and Riese (2020) found over a dozen varying conceptualizations and definitions of SMI in the literature, many of which included a lack of consensus on its meaning within its definition. The authors identified five definitions that were most impactful on the SMI literature and discussed the pros and cons of each. They concluded that the NIMH definition is the most useful, with the broadest measure of consensus, represents most of the middle range of prevalence, and most subsequent definitions includes or refers to the NIMH conceptualization. In terms of the NIMH specific criteria, its categorised individuals as having SMI if they met three measures. First, a diagnosis of non-organic psychosis or personality disorder. Second, a length of illness characterised as involving “prolonged illness and long-term treatment” and is operationalised as at least two years or longer history of mental illness or treatment. Third, disability, which was defined as including a minimum of three of the eight criteria of the following: behaviours necessitating a mental health intervention; limited ability for the individual to obtain financial assistance; impaired activities of daily living and basic needs and requires support; difficulty maintaining or establishing a personal social support system; impaired or poor performance in employment; unemployed; vulnerability to stress; and/or disability that causes dependency (NIHM, 1987; Ruggeri et al., 2000).

Covarrubias & Han (2011) observed that the vast majority of people with an SMI have a diagnosis of schizophrenia with at least one but usually many co-occurring disorders. However, SMI covers a broad range of disorders that affect an individual’s daily living, independence, and desired quality of life. Given the variable nature of SMI diagnoses and their impacts on the individual, mental health providers should develop an understanding of the unique barriers and difficulties faced by their clients. This requires comprehensive research, as well as diverse treatment options that are tailored to the individual and offered for indefinite periods. This both improves treatment outcomes and creates further opportunities for study.

SMIs by in large begin during adolescence and as such will have an effect on the individuals’ perceptions in life and functioning from a young age (Pelletier, 2016). While symptoms are frequently observed during adolescence the exact causes of SMI remain unknown. Researchers agree that there is no singular, universal catalyst for SMIs, but numerous elements have been connected to the manifestation of these disorders. Kessler (2000) argues that causal factors for SMIs seem to be highly complex and unique to each individual, consisting of a mix of biological, psychological, or social components. This can be further complicated when taking into consideration the possible role of gender where life events may be different for people based on gender identity. Similarly, the course of SMI is highly dependent on individual variables; the disorders may be chronic and severe for some, but temporary and highly treatable for others (Pelletier, 2016). When considered together, all combine to invalidate the “disease model.”

SMI Stigma

Currently, researchers recognize social stigmatization and negative attitudes as two of the most common barriers that persons with SMI face (Covarrubias & Han, 2011). Members of the general population frequently associate SMI with violence, instability, and disjunction. Indeed, research conducted in the general population regarding stigma showed that, based on all the mental health disorders, schizophrenia has the strongest correlations with the worst mental representation such as incompetency, violence, and dangerousness (Angermeyer & Dietrich, 2006; Vallery & Prouteau, 2020). Stigma of people with SMI has also shown to have an effect on the public’s view about the allocation of social benefits and healthcare costs (Sharac et al., 2010; Vallery & Prouteau, 2020) These negative attitudes produce harmful effects that pervade the individual’s life and affect their social, economic, and personal well-being. Stigmatized persons with SMI experience major decreases in self-esteem, quality of living, willingness to seek treatment, and quality of health care (Covvarrubias & Han, 2011). Furthermore, recent research on self-stigma showed that more than 40% of people with schizophrenia feel extremely stigmatized and experience stigma as a “second illness” (Brohan et al., 2010; Schulze & Angermeyer, 2003; Vallery & Prouteau, 2020). These individuals also experience higher rates of rejection or dismissal from housing and employment because of, in part, the belief that people with SMI are unable to reliably retain jobs and be able to consistently pay for rent (Sharac et al., 2010).

Mental health providers can also hold negative beliefs about people with SMI, which can adversely affect the quality of care being provided (McGorry & Mei, 2021). They interact with so many high-risk clients and thus many providers overestimate the duration and severity of SMIs overall, referred to as the clinician illusion (Pelletier, 2016). The concept of the “clinician’s illusion” was developed to help understand that health providers biases they acquire are a natural result of their clinical experiences, and how this can warp their views of the larger clinical population, which includes recovery and intervention outcomes (Cohen, 1984). This concept helps to understand the propensity for providers to be swayed by the large number of more severely mentally ill patients that they see who do not characterize the full range of mental illness outcomes (McGorry & Mei, 2021). The clinician illusion is described to be a type of cognitive bias that leads to mental health providers preserving a distorted and markedly pessimistic views of an illness, despite current evidence demonstrating increased hopeful prognosis and ability for recovery (McGorry & Mei, 2021). It is not just a cognitive bias however, it can also have a significant impact on the morale of providers. This may be especially the case in the current depleted landscape of mental health services that are overwhelmed with demands. In extreme cases, mental health providers may be unwilling to dedicate resources, attention, and time to supporting people with SMI, whom they believe will be unresponsive to treatment (McGorry & Mei, 2021). Providers may spread these beliefs to friends, family, and colleagues who value their professional and experiential authority (Pelletier, 2016). Unsurprisingly, this form of stigmatization creates considerable barriers to help-seeking for people diagnosed with SMIs, who may internalize the illusion and lose hope in their treatment (Covarrubias & Han, 2011).

Given the prevalence of SMIs and the pervasive negative effects they have on untreated individuals, the current lack of effective treatment options and positive attitudes related to support-seeking for men and women is a major area for necessary improvement (Pelletier, 2016). There is a need for increased mental health awareness to combat stigma; the expansion of mental health approaches that can treat a broad spectrum of clients and disorders; and a more nuanced understanding of how different genders are affected by SMI stigma.

The Diathesis Stress Model

Broerman (2017) defines the diathesis-stress model as “a model of psychopathology in which the emergence of psychological disorders results from an interaction between an individual’s inherent vulnerability for developing the disorder and the individual’s experience of stressful events”. In this overarching model, every person has a degree of inherent vulnerability (i.e., diathesis) for developing a psychological illness (Broerman, 2017). The start of a psychological disorder can be initiated by environmental stress but, the amount or intensity of stress needed to trigger an illness is dependent on the degree to which the person is inherently vulnerable (Broerman, 2017). In sum, the larger a person’s vulnerability to a particular disorder is, the smaller the amount of stress is needed to trigger the development of the disorder. The interface between diathesis and stress can aid in understanding the reasons why some people develop a disorder while some others do not (Broerman, 2017).

In terms of genetic vulnerability, the risk of development of SMI runs in families and is based on the degree of biological relatedness (Gottesman et al., 2010; Shih et al., 2004). Likewise, a meta-analysis investigated the impact of genetic and environmental factors on the development of schizophrenia and found a heritability of 81% (Sullivan et al., 2003). The global influence of genetic features seems to be greater for the development of an SMI than for common mental disorders (Shih et al., 2004).

In terms of environmental risk, the following experiences and exposures have all been shown to contribute to the development of SMI: exposure to infection in utero, decreased supply of nutrients, stress of the mother, complications during pregnancy, social disadvantage/isolation, urban dwelling and upbringing, ethnic minority status (i.e. experiences of racism), childhood trauma, traumatic events in adulthood, bullying during childhood/adolescence, and cannabis use (Uher, 2014). Some of these exposures can be responsible for more of a considerable proportion of SMI development. For example, 33% of cases of the development of schizophrenia are due to childhood trauma and bullying. Likewise, being born and brought up in an urban area may be responsible for 35% of cases. Finally, cannabis use during adolescence may account for 14% of cases (Varese et al., 2012; Moore et al., 2007; Moretensen et al., 1999; Uher, 2014).

These data support the interpretation that the development of schizophrenia is impacted by genetic and environmental factors together. However, there are some limitations to the diathesis-stress model, namely critics find that it oversimplifies the development of psychological disorders, especially as it relates to severe mental illness (Monroe & Simons, 1991). Therefore, more comprehensive models have been conceptualized to better understand the development of SMI and its relationship to trauma, PTSD, and substance use more fully (Mueser et al., 2002; Subica et al., 2011). That being said, Grubaugh et al., (2011), summarizing the literature, concluded that the diathesis-stress model can partially explain the complex relationship between trauma and SMI. Traumatic experiences and vulnerability can provide an understanding for the severe symptoms, high exposure to trauma, and low functioning experienced by people with SMI and therefore trauma likely plays a large role in the development, exacerbation and course of SMI (Grubaugh et al., 2011).

Current treatment models of SMI

Before discussing in depth people with severe mental illness, trauma, and Assertive Community Treatment (ACT), current treatment models, services, and modalities that exist for SMI will be summarized herein. These are Intensive Case Management (ICM), Assertive Community Treatment (ACT), Housing First, Supportive Housing, Supportive Employment and Strengths/Recovery Based Model/Approach. There are of course variations in each of these models and it should be noted that there is considerable overlap between these services, models and approaches and they rarely operate on their own. For example, Housing First is supported by ACT and ICM, and ACT and ICM are both community services, strengths-based approaches are used within many services as it’s an approach to recovery, supportive housing and employment are at times carried out by ICM and ACT as well. Additionally, different regions and areas have different services, modalities, and approaches that are used and this is summary not exhaustive of all the services available. A comprehensive discussion on each of these approaches, services, and models except ACT, is not possible here and can be found elsewhere.

Intensive Case Management is a model wherein case workers, who either work alone or part of a team with numerous staff members and organizations, help clients connect with clinical, housing, and other relevant supportive resources (Kakuma et al., 2017). It usually has 1 case manager to 15 or 20 clients which may permit for an increase in intensive support and work compared to traditional case management. Case managers can deliver outreach and cultivate relationships and coordination with other services in the community to support access to needed services. It can be and at times, is, a team approach which can include housing, support workers, and connections to clinical services. A Cochrane review by Dieterich et al (2017) assessed how effective ICM is on patient outcomes. Drawing from 40 studies from the USA, Canada, Europe, and Australia which represented over 7,500 participants, it was found that ICM had superior improvements compared to standard care in general functioning, finding a job, securing housing, decreasing the length of hospital stay, and decreasing hospital readmissions (Dietrich et al., 2017).

Assertive Community Treatment is a care model that is recovery-oriented given by a professional multidisciplinary team that usually involves psychiatry, nursing, substance use specialties, and peer support on an individual team. Everyone on the team serves all the client's needs. Intensive Case Management is not usually a team model, whereas ACT is by design a team model. ACT teams deliver client-centered, flexible, community and home-based intensive care for people with SMI who have complex mental health or substance use issues and are at risk for recurrent hospitalizations (Kakuma et al., 2017). The case load of ACT is typically 1 to 10 which is lower than ICM. ACT is well-researched and well-defined with robust evidence of engagement with clients, cost effectiveness, acceptability among clients, particularly for those that are frequently in inpatient care (Kakuma et al., 2017). ACT has also demonstrated attaining improvements in social and health outcomes like decreasing symptom severity and frequency of symptoms, increasing functioning, gaining employment and decrease homelessness compared with standard care. ACT has shown to result in less hospital admissions, visits emergency department, and days as an inpatient, having an impact on decreasing the cost of mental health care (Kakuma et al., 2017). Support for ICM is similar to ACT as it relates to client outcomes and costs, however, ACT models have been found to be better to ICM models in their effectiveness for clinical, social, housing, engagement, and cost outcomes (Kakuma et al., 2017). A more in-depth and thorough discussion of the literature surrounding ACT will be presented later.

Housing First is a consumer-driven model for people that are homeless with mental health and/or problematic substance use issues by providing them with rent supplements to access scattered-site housing in the community with unlinked and recovery-oriented support services (Aubry et al., 2015). It works by housing people straightaway to permanent housing in the community without needing to meet any conditions or prerequisites such as maintaining sobriety or psychiatric treatment compliance. This is done prior to working with them collaboratively to address any mental health, health, substance use, social, familial, employment etc. needs. Contrasting supported accommodation, housing and clinical services are distinct in the Housing First model therefore tenants are able to preserve their clinical services if they move or their housing is lost for any reason. Once housed, individuals can access supports based on their own needs and preference, at times it can be more and others it may be less. Housing first has been shown to be effective in housing most homeless people with mental illness in a stable way (Baxter et al. 2019; Richter & Hofmann 2017; Woodhall-Melnik & Dunn 2016). There is evidence that Housing First increases quality of life, symptom severity of mental illness, and social functioning in comparison to standard care (Somers et al., 2017).

Supportive/supported housing differs from Housing First in that it is attached/linked to, and usually administered through, existing service (i.e. other clinical services and housing are not separated like they are in Housing First) and refers to a variety of types of housing supports. However, there is considerable lack of clarity on the precise nature of what constitutes supportive/supported housing as at time some include Housing First principles within this definition (Tabol et al., 2010). Generally speaking, supportive/supported housing does not house people as an immediate step before providing other services. In some instances, individuals need to meet some pre-conditions before being housed and usually other services are provided at the same time as housing support. Housing support usually includes receiving support in securing short-term or long-term housing. Housing is usually congregate housing that are dedicated for these types of services which that are shared among many people. It also can include scattered or cluster housing units with rental supplements or private rooming in housing. Since supportive/supported housing includes a vast array of types of services provided it is difficult to report on its effectiveness. However, one systemic review found that studies on permanent supportive housing for people with mental and substance use disorders, contrasted with treatment as usual, decreased homelessness, increased housing tenancy over time, and resulted in less emergency room visits and hospitalizations (Rog et al., 2014).

Supported employment is a model whereby programs try to place individuals into competitive jobs. Individuals are employed quickly in standard work settings in which they obtain intensive support and training from “job coaches” (Kinoshita et al., 2013). Similar to supportive/supported housing, there are many ways in which this model is offered through various different programs. However, some of the key features are: help finding local jobs, focusing on client choices in what they want from employment services and preferred jobs, working closely between employment and mental health services, ongoing long-term individual support. Employment specialists act to identify people’s job interests, assist with job finding, give job support and engage other support services (Kinoshita et al., 2013). Drawing from 14 studies, a Cochrane review compared supported employment with other approaches for finding employment. It found that supported employment increases the length and time of people’s employment and that they find jobs quicker. However, there is limited information on other important issues for clients such as improving quality of life, impact on people’s mental health, days in hospital and costs (Kinoshita et al., 2013).

Strengths or Recovery Base Model is focused on recovery-oriented methods to supporting those with mental illness. It was created in response to common approaches that centered directly on deficits and what people with mental health issues could not do during the 1990s in the US (Kakuma et al., 2017). This approach encourages modifying the expectations for people with mental health issues to centering strengths and focus on what they can do and accomplish in life (Kakuma et al., 2017). It functions simultaneously as practice philosophy and a variety of tools are made to support people establish meaningful and significant goals in life. It achieves this by concentrating on the capabilities, resources and people’s potentials and their communities (Kakuma et al., 2017). Additionally, by encouraging an increased positive and optimistic approach to supporting individuals with mental health disorders, one of its main tag lines is “focusing on what’s strong not what’s wrong”. The model is more so understood as a larger framework which is imbedded in other programs as a part of their foundational principles as opposed to an operationalized program. Increasingly, more successful programs display an emphasis on strengths-based approaches instead of on deficit improvement and on highlighting psychosocial targets for the individual rather than treatment objectives selected by providers (Kakuma et al., 2017). That being said, the current research on this approach showed a lack of a large effect on clinical outcomes like symptom severity reduction (Kakuma et al., 2017).

Importantly, none of the research on these models, particularly in ACT, includes an acknowledgement of PTSD or trauma-related symptoms experienced by those being serviced which may have differing effects on the outcomes of these studies. This may suggest that trauma symptoms, trauma treatment outcomes, and trauma-informed care have not been a focus in research around ACT or a focus in ACT teams which will be discussed later.

Trauma

Lifetime prevalence rates of PTSD in people who are diagnosed with a psychotic disorder have been estimated at 30% compared with 7% in the general population (Buckley et al., 2009). A review of the literature found that some studies have found rates as high as 43% in people with SMI (Grubaugh, 2011). Furthermore, 75% of those with SMI have experienced a traumatic event compared to those with a non-SMI diagnosis (Shi et al., 2013). Based on the high prevalence of trauma in this population, understanding the variety of trauma, its impacts on SMI and client behaviours, and how it influences genetic and environmental vulnerabilities is important. Attention to trauma histories and being trauma-informed should be imbedded at all stages of treatment, regardless of the clients' presenting issues (Shi et al., 2013). Moreover, as trauma type and severity are strongly influenced by the person's gender, gender considerations would also be beneficial. A more thorough discussion on gender and trauma will be discussed below.

The nature and impact of trauma are unique to every individual. Trauma may refer to a single event or a series of damaging experiences, and its symptoms and effects can vary significantly. Individual responses to trauma range from minor and acute, lasting only a few hours or days, to severe and prolonged, enduring for months or years (SAMHSA, 2012). Given this tremendous variability, it is important to examine trauma and trauma-related disorders as part of a continuum or spectrum of experiences.

Defining Trauma

Trauma can be defined in a variety of ways, this is due to varying different approaches to understanding trauma. Some define trauma narrowly based on the events themselves, other define trauma more broadly based on the impact it has on the individual whereby the effect is traumatizing to them. The DSM- 5 defines trauma as "exposure to actual or threatened death, serious injury, or sexual violence" (American Psychiatric Association [APA], 2013, p. 271). SAMHSA defines trauma as the following: "trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual's functioning and physical, social, emotional, or spiritual well-being" (Substance Abuse and Mental Health Services Administration [SAMHSA], Trauma and Justice Strategic Initiative, 2012). For the purposes of this dissertation, *trauma* refers to experiences that cause intense physical, psychological, emotional stress reactions. Numerous individuals experience a single specific traumatic event, others, particularly people necessitating mental health intervention and intervention, experience and have been exposed to numerous or chronic traumatic events (also known as developmental or complex trauma).

That being said, the definition of psychological trauma is not limited to diagnostic criteria. Moreover, a majority of providers have distanced away from considering trauma-related symptoms as an indication of certain mental disorders and have viewed them as an important aspect of normal human survival instinct instead. These adaptive processes only become pathological if they are inhibited, and most importantly, if they are left unrecognized and consequently untreated (Ford et al., 2015).

Hopper et al (2010) shows how trauma creates a lasting negative impact on a person's social, physical, emotional, and spiritual well-being. They also showed that trauma can decrease emotional control, feelings of safety and personal security, sense of self, and relationship stability. At the same time, not all traumatic events are traumatizing to the individual. The severity of the traumatic event itself, the individual's experience of it, and other genetic and environmental factors determine the event's impact. For example, a man and woman exposed to the same event may experience it in a number of different ways; this is true both in the sense that they may see the event from different angles, and that they may interpret it differently due to various biopsychosocial and cultural disparities (SAMHSA, 2012).

Most people who experience trauma have immediate reactions, but most resolve and recover over time, show little distress, and are functional across a majority of life areas and states of development. This has been attributed to high resilience and development of healthy coping strategies, such as the use of social support to manage the after effects of the traumatic experience or experiences. That being said, people who exhibit no to little impairment may still show other symptoms or have difficulties that do not fit nicely within a diagnostic category or criteria that we currently utilize, such as PTSD (Ford et al., 2015). Some people may experience prolonged issues with anger, being violent, suicidal thoughts and attempts, reduced school and work outcomes, difficult relationships, and serious medical illness (Ford et al., 2015). Only a small percentage of people who have experienced trauma may meet current diagnostic criteria for PTSD. However, the effects of trauma can be insidious and affect the person in ways that our current knowledge may not yet recognize.

In the past few years there has been a push for identifying the effects of complex trauma as a standalone disorder called complex PTSD (C-PTSD) based on the overwhelming evidence that C-PTSD and PTSD, as known in the DSM-5, are different disorders (See Brewin, 2020 for a summary of the literature). In the past, the effects of complex trauma were seen as the same as single-event PTSD (Herman, 1992). However, research has now indicated that complex trauma can affect an individual in terms of attachment, biology, behavioural control, identity and self-concept, brain development, emotional dysregulation, and cognition in ways which do not fit within the single-event PTSD diagnosis (e.g. Brewin, 2013; Brewin et al., 2017, Ben-Ezra et al., 2019). In fact, the new ICD-11 has adopted the disorder of C-PTSD as separate from single-event PTSD. The effects of C-PTSD may manifest in a variety of ways, including disorders related to psychosis, personality, neurodevelopmental, mood, and anxiety which may develop into severe mental illness. It should be noted that trauma and its impact is still not well understood and there are many perspectives and models that attempt to conceptualize its effects on people. To note, a thorough review of these topics is beyond the scope of this dissertation and can be found elsewhere.

Prevalence

Studies have shown that the rates of trauma in the general population are high, as many as 75% of Canadians have reported experiencing at least one traumatic experience in their lifetime (Staniloiu et al., 2021; Van Ameringen et al., 2008). Van Ameringen et al (2008) found that that roughly 9 per cent of their Canadian general population sample had experienced PTSD at some point in their lives. It was also found that men reported more experiences of traumatic experiences, but women had higher rates of PTSD. Likewise, the majority of individuals in North America receiving public mental health and substance use disorder services have histories of childhood trauma, including violence, abuse, and neglect (Cusack et al., 2006).

In terms of the prevalence of trauma in people with SMI specifically, a recent meta-analysis reported that studies found between 25 – 100% of people with SMI experienced trauma (Dallel et al., 2018). A majority of the studies surveyed in the meta-analysis reported a trauma exposure rate of over 90%. This may be because people with SMI are disproportionately victimized by crime, much of which is traumatic; research shows that up to 81% of people with SMI have reported criminal victimization at some point in their lives (O'Hare et al., 2013). Rates of PTSD in people with SMI has shown to be up to 50% (Dallel et al., 2018). In comparison to the general population, prevalence of PTSD in people with SMI are 2 – 8x times higher (Dallel et al., 2018).

In general, the risk of trauma and victimization is higher for women with SMIs compared with their male counterparts (O'Hare et al., 2013) Though men are more likely to experience physical abuse, women are more likely to experience a combination of sexual abuse, physical trauma, and neglect than men (Ford et al., 2015) Furthermore, research has shown that men or boys develop PTSD 10% of the time whereas women do 20% of the time, which may reflect the gendered differences in the types of trauma experienced (Ford et al., 2015). Accordingly, gender considerations will be emphasized in the review of trauma types, and should be factored into any treatment program (Pelletier, 2016).

Given the SMI population's disproportionately high levels of trauma and victimization in people with SMI, mental health providers should develop a good understanding of the different types of trauma and effects on people to avoid misinterpreting client symptoms (Pelletier, 2016). Mental health providers must also understand how trauma histories might influence the efficacy of outpatient recovery models. Further, the role gender plays, both in predisposing individuals to specific types of trauma, and in influencing their responsiveness to treatments, must be understood.

Types of Trauma

There are many forms and types of trauma that can be experienced. It should be noted that due to the great deal of research available on the topic a thorough review of each trauma type is not possible here. Therefore, this section will only cover the types and forms of trauma relevant to this dissertation and will use the SAMSHA and DSM-5 definitions of trauma outlined earlier.

Childhood Trauma

Sweeney et al. (2016) separate childhood traumas into two categories, with the victim as either a witness or as a recipient. Both types of trauma can lead to equally serious health or mental disorders and potentially other effects, either immediately following the trauma, as a manifestation of the trauma later in life, or through retraumatization. Retraumatization can occur via recollection, scent memory, and victim acknowledgment (Adams et al., 2015). Because it occurs during crucial formative years, child abuse is often referred to as developmental trauma or complex trauma, which can affect the individual's adjustment, development, and mental or physical health later in life (SAMHSA, 2012). Indeed, childhood trauma can have more negative effects than adult trauma in terms of how it impacts the individual. Seeking out or repeating similar traumatic behaviours throughout adulthood as a perpetrator or as the victim is possible, although of course it should be noted that a majority of those who experience childhood trauma do not go on to be perpetrators of abuse or display violence (Bruce & Laporte, 2015).

Research by Bruce and Laporte (2015) showed that individuals who experiences childhood trauma are 2.8 times more likely to be in abusive situations as an abuser or a victim in their adult relationships than those without a childhood trauma history (Bruce & Laporte, 2015). Furthermore, those who experienced childhood trauma are more likely to develop more serious psychological disorders than individuals without childhood trauma (Bruce & Laporte, 2015). Children with repeat incidents of trauma are more likely to experience exacerbated mental disorders, including schizophrenia and bipolar disorder, and are more likely to attempt dying by suicide before reaching adulthood (Alvarez et al., 2011). There is a broad spectrum of childhood sexual and physical abuse, ranging from inappropriate touching to sexual assault, from severe spankings to life-threatening beatings, and the rate of childhood physical and sexual abuse remains high in North America (Briere, 2012). This is particularly true of vulnerable

SMI populations, where 82% of individuals report physical violence during childhood and 54% report childhood sexual abuse (Reiff et al., 2012).

According to Hodas (2006) depending on the child, the type of trauma, and the child's immediate reaction to the trauma, certain exposures can lead to impairments in a variety of domains (Hodas, 2006). The duration of exposure to trauma can influence a child’s physiological responses and physical development (Hodas, 2006). Biological features and developing organs can be negatively influenced by trauma. Normal physical and medical functioning can also become impaired (Hodas, 2006). Childhood neglect and abuse can negatively affect individual emotional well-being, development, and behaviours, and often leads to severe psychological maladjustments that can last indefinitely (Briere, 2012).

Childhood abuse has been linked to major depression, PTSD, suicidal thoughts, and dissociation, among others as a means of coping with the trauma (SAMHSA, 2012). When these disorders manifest as a response to trauma experienced in childhood, the individual's risk of further traumatic exposure increases, which often starts a vicious cycle of traumatization and potential risk for developing SMI.

Interpersonal Trauma and Domestic Abuse

In general, interpersonal trauma is understood physical, sexual, and emotional abuse committed by someone who is known to the individual, such as a family member, friend, or partner. The research by SAMHSA (2012) shows that people with SMI frequently report histories of interpersonal trauma, with as many as 81% of individuals indicating they had experienced prior interpersonal abuse that was physical or sexual (Spitzer et al., 2007; Zanville & Cattaneo, 2009). In a more recent systematic review of 42 studies, the median prevalence of domestic violence in adulthood among women mental health patients was 30% (Oram et al., 2013). Furthermore, in a recent study comparing women with SMI and s control group found that 27% of with SMI reported domestic violence compared to 9% of the control group in the last year (Khalifeh et al., 2015). This is further compared to 13% of men with SMI and 5% of control group men, respectively (Khalifeh et al., 2015).

Gender is therefore a strong predictor of trauma type, which again underscores the need for gender-cognizant treatment interventions. For example, a considerable amount of research has revealed that interpersonal abuse disproportionately affects women (Friedmam & Loue, 2007). Friedman and Loue (2007) defined partner violence as "the perpetration of physical or sexual violence on an individual by his or her intimate partner in the context of a romantic or sexual relationship" (p. 472). Their meta-analysis found that 49% of women with SMI had been subject to violence during their marriages, cohabitations, or dating relationships, and 42% of these women indicated that they had suffered over 20 interpersonal assaults each. Increased exposure to interpersonal violence puts women at higher risk of suicide, with a history of interpersonal abuse being identified as a potential link to personality disorder diagnoses and suicidal thoughts.

Sexual Violence or Trauma

Sexual violence is defined as any violence, physical or psychological, conducted through sexual means or by targeting sexuality. Sexual violence takes different forms and can include: sexual abuse, sexual assault, sexual harassment, indecent or sexualized exposure, degrading sexual imagery, voyeurism, cyber harassment, sexual exploitation among others (Government of Ontario, 2021). Because of the disproportionately high rates of victimization in women, research into sexual abuse in the SMI population is largely focused on women. Women with SMI who have experienced sexual abuse tend to experience more severe symptoms, including hallucinations, delusions, suicidal thoughts, hostility, and dissociation compared to men who have been sexually abused (Mueser et al., 2002; Werbeloff, 2021). Khalifeh et al (2015), found that 10% of women SMI reported sexual violence in the last year compared to 2% of women in the control group. Furthermore, the authors found that the reported sexual violence in the last year lead to suicide attempts for 53% of the women with SMI compared to 3% of women in the control group.

Mental health professionals should be aware the gendered effects that sexual trauma has on people with SMI, especially given the fact that these abuses occasionally occur in care settings. Research shows that women also experience elevated levels of abuse while seeking treatment (Muenzenmaier et al., 1993). In studies of in-patient treatment programs for women with SMIs, rates of sexual abuse ranged between 20-54%, with a median of 28%. Friedman and Loue (2007) found that 38% of adult women receiving in-patient treatment experienced sexual abuse while in hospital. Moreover, sexual abuse while in out-patient treatment was also highly prevalent for women with SMIs compared to men, which raises some important concerns for the implementation of community-based outpatient treatment.

Physical Abuse

Jud and Trocome (2012) define physical abuse to be an act of causing pain, as well as the attempt to inflict physical pain or injury, through kicking, biting, punching, slapping, shoving, scratching, etc. or any other physical action. Physical abuse is relatively common in the personal history of individuals who later develop SMIs, with an estimated 11 - 26% prevalence reported in this population reported in one study (Shi, 2013). Furthermore, a systematic review on prevalence of sexual or physical violence against people with a mental illness found that a quarter of individuals with a mental health disorder had experienced recent physical violence which was 4 times higher than those without any mental illness. 6 percent of those with a mental illness who had experienced physical abuse had also experienced recent sexual violence and nearly 40% had experienced recent interpersonal abuse as well (Hughes et al., 2012). Furthermore, a meta-analysis on the experiences of physical abuse in people with SMI found that across all studies the rate of recent physical violence by any perpetrator was 20.7% which is on average a 3-6-fold higher than those without SMI (Khalifeh et al., 2016). Additionally, victimization was strongly related to homelessness, substance misuse, and retraumatization later in life (Khalifeh et al., 2016; Mueser et al., 2002). As with interpersonal violence, this form of trauma is highly gendered, and this reinforces the need for gender-sensitive care. Though men with SMIs are categorically more likely to experience physical violence than women, these figures vary depending on the context (Khalifeh & Dean, 2010).

Psychological/Emotional Abuse.

According to the APA, emotional abuse refers to “a pattern of behavior in which one person deliberately and repeatedly subjects another to nonphysical acts that are detrimental to behavioral and affective functioning and overall mental well-being.” Due to the complexity of this type of abuse, researchers have not yet agreed on a universally accepted definition. However, they have pin-pointed a variety of ways that emotional abuse may manifest, including: verbal abuse; intimidation and terrorization; humiliation and degradation; exploitation; harassment; rejection and withholding of affection; isolation; and excessive control (Norman et al., 2012; Stoltenborgh, 2015; APA, n.d). Psychological trauma can occur after a single traumatic event or in response to failing to provide a supportive environment that play out over time (Norman et al., 2012). Emotionally abusive acts are highly damaging to an individual's physical and mental well-being, particularly during childhood; indeed, the authors showed childhood emotional abuse to be one of the greatest predictors of adult trauma symptoms. Furthermore, research has shown that emotional abuse is related to a range of negative outcomes including depressive symptoms, hopelessness, lower self-esteem, decreased life satisfaction, diminished sense of social support, neurophysiological changes, bipolar disorder, personality disorders, and anxiety disorder (summarized in Stoltenborgh, 2015).

Overlap between SMI and Trauma

Given the high comorbidity rates, of trauma and SMI mental health professionals are often tasked with managing the symptoms of SMI and trauma at the same time. However, research shows that they are ill-equipped to do this (Mueser et al., 1998; Mueser et al., 2002). Even those with robust training and resources often struggle due to overlaps in symptomology, trauma assessment oversights, lack of awareness of how trauma affects SMI symptoms, stigmas, and barriers to treatment (Mueser et al., 2002). Some of the symptoms of SMI and trauma-related disorders are so similar in presentation that they may overlap or parallel one another (Mueser et al., 2002). For example, hallucinations are present in schizophrenia but also in PTSD as well (Dalell, 2018). Another example is avoidance in PTSD which can be confused with negative symptoms in schizophrenia (Dalell et al., 2018). Individuals with comorbid SMIs and trauma disorders typically experience reduced quality of life and greater symptom severity and are at higher risk of substance use, substance dependence, dissociation, and cognitive functionating difficulties in attention and memory (Grubaugh et al., 2011). To improve service delivery, client adherence, and therapeutic outcomes, mental health professionals should have training and research more accessible and available to them to inform their treatment approaches (Pelletier, 2016).

Grubaugh et al., (2011) found that people with comorbid SMI and trauma disorders are also more prone to transience and homelessness. Also, psychological issues, such as negative self-perceptions and experiences of alienation are common. Often, these individuals will also present with somatic symptoms and higher disability ratings. In addition to their overlapping in symptoms, SMIs and trauma-related disorders can have bidirectional effects on each other meaning that trauma may lead to developing SMI or SMI may lead to traumatic exposure through worsening SMI symptoms (Pelletier, 2016). This may make one more vulnerable to experiencing further traumatic exposure and subsequent exacerbation of SMI symptoms thus, the feedback loop continues.

Furthermore, it should be noted that some with psychotic related disorders have described their first episode of psychosis as particularly traumatic due to its novelty (Busewell et al., 2021). However, PTSD may be more prevalent among those who have had multiple relapses of psychosis episodes (Lardinois et al., 2011). Hence, those who have had multiple experiences of psychosis and therefore potentially more trauma incidents, may be at heightened risk of developing PTSD compared to those who have only experienced one instance of psychosis (Buswell et al., 2021).

According to Mueser et al., (2002), people living with comorbid SMI and trauma disorders are highly vulnerable to retraumatization compared to Individuals who have experienced trauma but are otherwise mentally healthy. This may be, in part, explained by the diathesis-stress model, which delineates the equally reinforcing patterns between trauma and SMIs that create damaging cycles of trauma (Pelletier, 2016). As reported by Lommen and Restifo (2009), clients diagnosed with PTSD, or those who have otherwise experienced trauma who re-experience flashbacks and/or nightmares may be misinterpreted or otherwise complicate the experience of SMI-related symptoms such as positive symptoms like hearing voices or visual hallucinations.

The study by Lommen and Restifo (2009) found that individuals diagnosed with schizophrenia who have also experienced trauma reported a clear relationship between the content of their positive symptoms and past traumas. These findings suggest that positive symptoms are influenced by past experiences, which partly explains the mutually reinforcing patterns of SMI disorders and trauma. Moreover, people with SMI experiencing positive symptoms often describe their episodes as dissociative, which put them at greater risk of and vulnerability to environmental threats and experiencing additional types of trauma (Kammerer & Mazeli, 2006).

Comorbid SMI and trauma disorders are also linked to hypervigilance, which includes anxiety, high-stress, and paranoia (APA, 2013). Hypervigilance can exacerbate SMI symptoms in and has been linked to negative treatment prognosis (Mueser et al., 2002). Finally, as will be discussed in the following section, comorbid trauma and SMI disorders have been linked to higher rates of substance use. Use of drugs and alcohol to cope is common and at times can be difficult to address in traditional in-patient and short-term out-patient services.

Substance Use

As mentioned previously, individuals suffering from comorbid SMI and trauma disorders are at higher risk of substance use as a means by which to cope with their mutually reinforcing symptomatology. For example, O'Hare et al. (2010) found that persons with SMI who had endured some type of abuse and were experiencing PTSD were at much higher risk of substance use and high-risk behaviour. According to research done by Kammerer and Mazelis (2006), mental health providers must consider substance use when treating this comorbid population because the presence of addiction may distort presenting symptoms. This, of course, is not the only reason health care providers should consider substance use while treating persons with SMI. However, it should also be noted that it is also possible that trauma can be a common factor that leads to both SMI and substance use. A more thorough discussion on the relationship between substance use, trauma, and PTSD will be presented later. Moreover, substance use often worsened PTSD symptomatology (O'Hare et al., 2010). Similarly, Leeies et al. (2010) found that individuals with comorbid severe bipolar disorder and PTSD were more likely to have substance use issues compared to those suffering from only one of the two disorders.

Irrespective of gender, the most common and comorbid disorder among clients with SMI is substance use disorder (Brunette et al., 2004). The one constant in the literature, is that both men and women struggle with problematic substance use especially those with SMI, though gender differences do exist. The National Comorbidity Survey reported that 51.9% of men and 27.9% of women with PTSD also struggled with alcohol use or dependence (Kessler et al., 1995). Another study that looked exclusively at female populations found that 60% of participants who had experienced trauma reported using more than one substance, while 94%

of those with PTSD reported using two or more substances (Ford & Fournier, 2007). Other research has also found that women are more likely to report experiencing a traumatic event and posttraumatic stress disorder onset prior to the onset of a substance use disorder (Compton et al., 2000; Sonne et al., 2003). Other studies have found that women also report more recurrent use of substances to decrease negative affect (Lehavot et al., 2014; McHugh et al., 2013). Due to cooccurring psychiatric disorders are more common among women with SUDs than their male counterparts, some have reported that mental illness comorbidity may be an particularly critical treatment focus for women with substance use disorders (Greenfield et al., 2007). However, it should be noted that the research regarding rates of substance use in men vs. women has shown mixed results, and there does not seem to be a consensus on the matter. For example, studies by Dudish & Hatsukami, (1996) and Lundy et al. (1995) did not find any difference in cocaine dependence between men and women. Men and women with a comorbid diagnosis of schizophrenia and substance abuse were also found to have similar courses and severities of substance abuse (Brunette et al., 1997).

Overview of Assertive Community Treatment (ACT)

Before community-based approaches were adopted, people with SMI were typically confined to long-stay psychiatric hospitals and asylums, where their treatment was characterized by isolation, excessive dependence and disempowerment via institutionalization, and neglect (Wright, 1997). Rather than improving client’s self-determination and fostering collaborative relationships in treatment which ought to be the primary care goals, these isolating and disempowering practices caused clients to recoil from treatment systems, disengage from caregivers, and become less involved in all parts of their treatment options and decisions (Kreyenbuhl et al., 2009). Moreover, the institution-based care delivery system left countless persons with SMI unable to access the care they needed, either due to socioeconomic barriers or other mobility limitations that prevented their engagement with care facilities (World Health Organization, 2001).

Current ACT Model

According to Allness & Knoedler, (1998), the ACT model emphasizes comprehensive and intensive delivery of treatment, rehabilitation, and support services by a local multidisciplinary team to address a full range of biopsychosocial needs in the community. ACT is geared towards individuals with SMIs and personality disorders, with particular focus on those who have avoided or not responded well to traditional out-patient or in-patient mental health services (Ontario ACT Association, 2018). Unlike institutional approaches of the past, ACT services are designed to be proactive and long-term, meaning they are not time-limited and can be utilized indefinitely (Ontario ACT Association, 2018). Furthermore, ACT services are individualized and focused on the client’s strengths rather than their pathology. Therefore, the individualized nature of ACT may make this program suitable for both genders and all SMIs.

The majority of the services are provided in vivo, in the person's community, by a 24-hour team that consists of a low staff-to-client ratio, usually 1:8 (Ontario ACT Association, 2018). By operating out of the clients' communities rather than isolating them in institutional settings, ACT provides a comfortable and familiar living environment for the individual while creating opportunities to promote clients' community employment and healthy functioning (Ontario ACT Association, 2018).

Stein and Test (1980) pointed out that, by providing daily support and teaching coping strategies in vivo, ACT fosters smoother community integration and improved quality of life. To keep treatments community-based, there are minimal referrals to other mental health programs or providers (Ontario ACT Association, 2018). This is made possible because ACT teams are multidisciplinary, consisting of psychiatrists, nurses, social workers, rehabilitation specialists, and substance use specialists, among others, who can address a wide range of problems from their position within the community.

Effectiveness of ACT

The relative advantage of ACT compared to other case management models is well documented (Dixion, 2000). Studies by the American originators of the ACT program suggest that assertive community treatment programs are highly effective on all counts. Results of their original research showed clients decreased the total amount of time spent homeless, in institutional care, legal settings, and unemployed, while also experiencing fewer psychiatric symptoms, less subjective distress, and created less burden for family or community, These findings were reinforced by Latimer (1999), who tracked decreased hospital stays at around 23% for ACT clients. Furthermore, clients in an ACT program showed higher levels of income, life satisfaction, medication compliance, prosocial contact, and independence when compared to those using traditional, provider-centric in-patient and out-patient resources. The research found no significant difference in terms of suicidality, ability to maintain social relationships, frequency of leisure activities, and quality of environment (Stein & Test, 1980). Nieves (2002) found that housing stability and independent living improved in conjunction with increased access to ACT, which supports Stein & Test’s (1980) initial findings. While assertive community treatment is associated with higher costs to implement than other case management interventions, research shows that ACT is more cost-effective due to reduced utilization of hospitalization, emergency services, has higher intensity of services, and provides multi-disciplinary care (Dixion, 2000; Teague, 1998).

A systematic review of the evidence of ACT in reducing hospitalizations was conducted by Deiterich et al. (2017), which included a review of 40 studies on ACT and ACT-similar programs. They found that in comparison to standard care, higher adherence to the ACT model decreased the number of days in hospital per month by 0.86 days. Additionally, when there was higher baseline hospital use in their clientele, ACT did better at decreasing clients time in the hospital. Dekker et al. (2002) also showed a 66% decrease in admission days in an ACT treatment group compared with a control group where they saw an 34% increase in admission during the same period. Clauson et al. (2016) found that the clients' first two years in ACT showed a reduction of 58.24 days in hospital compared to the two-year period prior to admission to ACT. However, one 10-year study did not find any significant reductions in hospitalizations (Kilaspy et al., 2014).

ACT criteria for eligibility stipulate that the individual requesting or referred to ACT services must be diagnosed with an SMI and has shown a history of treatment resistance and recent hospitalizations (Ontario Act Association, 2018). Therefore, PTSD and problematic substance use rates are more likely to be higher among ACT clients than for those in more conventional community mental health programs. Given that ACT provides services to individuals with frequent hospitalizations who demonstrate high and complex needs and lower functioning, it is likely that this population may also experience substance use issues and traumatic histories given that these both are implicated in mental health issues and contribute to SMI. There is some evidence that adherence to treatment and outcomes are usually worse for individuals with comorbid PTSD and substance use disorders and therefore those in ACT teams are likely to be those that require long-term and intensive support to help recovery and treatment adherence (McGovern et al., 2011).

Research has also shown that ACT programs that have higher adherence to the ACT model are more effective and have better outcomes (McGrew et al., 1994; Latimer, 1999; Teague et al., 1998). ACT has evolved to include more evidence-based services such as peer support, which was not a part of the original model (Salyers et al., 2007; Stein et al., 1975). This evolving process is likely to continue as new evidence-based practices, such as family psychoeducation and wellness management, become part of standard ACT practices (Monroe-DeVita et al., 2018). This leads to the potential for ACT to expand even further and offer higher-quality services to address trauma needs of their clients and make trauma treatment and trauma-informed care a more central part of practice. As shown, there is very little research or acknowledgement of the importance of addressing trauma on ACT teams, and this oversight may be able to be addressed and included in future developments. As such, a better understanding of trauma in people with SMI on ACT teams and how the current ACT model and teams manage trauma with their clients is paramount to address these potential gaps.

Barriers to Care for Trauma-related Disorders in People With SMI

A meta-analysis by Dallel et al. (2018) found that PTSD continues to be underdiagnosed among people with SMI which may be a reason that trauma-related disorders typically go un-or under-treated in this population. Indeed, some researchers report that trauma-related symptoms and PTSD continue to be untreated among people with SMIs (Frueh et al., 2009; Merdith et al., 2009). A profound dearth of recognition and suitable treatment of trauma-related symptoms may decrease the effectiveness of the services delivered to clients obtaining treatment (Mueser et al., 1998; Switzer et al., 1999).

The under-diagnosis and lack of adequate treatment has been established to be related to a lack of documentation and underestimation of traumatic experiences and PTSD within mental health populations (Cias et al., 2000). Some studies have indicated underreporting of major trauma in psychiatric out-patient settings because mental health providers often fail to investigate and identify traumatic experiences (Al-Saffar et al., 2004). One study found that that 82% of new client referrals to out-patient services had experienced at least one traumatic event in their lifetime and that 31% showed prior or present PTSD symptoms however, a diagnosis of PTSD was never provided as one of the reasons referring the client (Davidson & Smith, 1990). It is therefore important for mental health providers to be given improved training regarding trauma and SMIs not just in terms of knowledge but also how to provide proper treatment and care to address trauma-related symptoms (Pelletier, 2016).

According to Van den Akker et al. (2001), general practitioners reported that when working with clients with trauma histories, they have more difficulty providing and inquiring about trauma if the trauma is ongoing; if the client is a man; or if the abuse was sexual. Barriers to engagement with clients about their trauma histories and trauma-related symptoms as well as treatment specific to trauma that were identified most often were insufficient possibilities of referrals (57%), lack of knowledge of the signs and symptoms of trauma and coping (46%), and lack of skills to raise the subject (31%). Additionally, they reported that the client’s attitude, coordination required of different care providers, and difficulties with insurance and legal issues as additional barriers to supporting clients with trauma histories. The authors recommended the following to decrease barriers to care for people with trauma: increasing the number and availability of specialized practitioners, greater cooperation with them, and the ability to have extensive consultation. They also endorse an increase in training and education to recognize and initiate of treatment as paramount.

Even in cases where the provider understands the full context of the trauma, the provider may not believe that the client requires mental health treatment due to lack of knowledge on the potential of traumas impact (Pelletier, 2016). The provider may also have difficulty referring clients for mental health treatment due to any other number of factors; however, higher chances for misdiagnosis occur in emergency settings where the provider must act on only the most immediate of symptoms (Lee et al., 2004) Likewise, the provider may not initially have an appropriate intervention available or want to note that the client experienced trauma in their records (Van den Akker et al., 2001). As the authors explain, providers may not have a system for referral of treatment or may not believe that the client requires a referral and will choose to manage symptoms in-house.

Trauma-Informed Care

Trauma-informed approach services are service delivery which is informed by an understanding of the impact of trauma and victimization on an individual’s life and development (Elliott, et al., 2005; See Appendix for basics of trauma-informed approach, extracted from Substance Abuse and Mental Health Services Administration, 2014). In the last decade, there have been many descriptions of what trauma-informed care (TIC) is, and numerous models for integrating it within organizations have been presented. SAMHSA's definition of trauma-informed care involves three key elements: "(1) realizing the prevalence of trauma; (2) recognizing how trauma affects all individuals involved with the program, organization, or system, including its own workforce; and (3) responding by putting this knowledge into practice" (SAMHSA, 2012, p. 4). In the seminal paper on the creation of trauma-informed services, it proposed a system where administration and staff members appreciate the negative effects of trauma on behaviour in a multitude of ways. In addition, trauma-informed services should be dedicated to responding to the clients' needs through universal trauma screening, staff training and education, and readiness to revise, review, and amend policies and procedures that can contribute to the possible retraumatization of the clients (Harris & Fallot, 2001).

In a review of the literature, Hopper et al., (2010) identified several themes from organizational values for trauma-informed services for homeless individuals. These were: an awareness of the ways in which symptoms and behaviours are related to traumatic experiences, emphasizing safety, the prospect for clients to create or regain a feeling of sense of control over their lives, and a focus on strengths rather than on deficits. With these themes in mind, Hopper et al. (2010) developed a definition of TIC as a strengths-based model which is rooted in an understanding of and responsiveness to the effect of trauma, focuses on physical, psychological, and emotional safety for both providers and survivors, and develops opportunities for survivors to rebuild a sense of control and empowerment.

Despite the literature in support of trauma-informed care, treatment utilizing a trauma-informed framework may be limited by an incongruence between TIC and practice guidelines of the organization or institution for the treatment of mental health disorders (Anyikwa, 2016; Bassuk et al., 2017; Brown et al., 2013; Lu, et al., 2013). Lu et al. (2013) found a disconnect due to the initial focus on treating immediate needs in regards to mental health disorders and substance use issues. This can result in a lack of identification of any past traumatic experiences which may have contributed to the mental disorder, substance use, or intensity of these symptoms. With this focus, past trauma and its potential subsequent symptoms are not addressed.

The Impact of Gender

In cases where a person with severe mental illness experiences abuse, the type of abuse is generally reflective of the person's gender (Khalifeh & Dean, 2010; Schön, 2010). As stated previously, women are more likely to experience sexual violence, while men are more likely to experience physical violence (Khalifeh & Dean, 2010).

Although the prevalence of men who have experienced physical childhood abuse is high, women who have experienced childhood abuse are more likely to experience continued abuse for longer periods of time, including into adulthood (Khalifeh et al., 2016). Khalifeh et al. (2016) further note that while lifetime victimization is not necessarily reflective of gender, there are no studies regarding abuse of adult clients with SMI that report men being abused in domestic situations at higher rates than women. Therefore, in domestic abuse situations, it seems to be the main form of violence experienced by women. However, it should be noted that there exists a stigma against men reporting domestic abuse by their partners in adulthood and this may skew results and research on the topic.

Conceptualization of SMI, Trauma, PTSD, and Substance Use

As an extension of the diathesis-stress model, Mueser and colleagues (2002; Figure 1) developed a conceptual model and theory to explain the relationship between SMIs, PTSD, trauma, and substance use and the interaction between these concepts. This model suggests that PTSD or trauma effects mental health symptoms directly and indirectly (Mueser et al., 2002). PTSD frequently functions as a mediator for the negative effects between trauma on SMIs. PTSD has been related to impaired interpersonal skills, low self-esteem, and persistent feelings of shame, which may lead to social conflicts and isolation (Cias et al., 2000). PTSD effects the progression of SMIs directly by increasing the severity of mental health symptoms, and indirectly through retraumatization, interpersonal problems, and substance abuse (Mueser et al., 2002). A better understanding of trauma allows mental health professional to have a more in depth understanding of the thoughts and behaviors displayed by clients with SMI and consequently may result in improved working alliances (Mueser et al., 2008).

As Muerser's and colleagues' model is known to be a more theoretical and descriptive model, only one study has sought to directly test it. Subica, Claypoole, and Wylie (2012) integrated pertinent results to improve and develop a renewed PTSD-SMI model (see Figure 2). The updated model suggests numerous direct and indirect effects of trauma and PTSD on depression, substance use, and overall mental and physical health for people with SMI. This model demonstrates the present knowledge whereby for people predisposed biologically to SMI, the risk of developing SMI may be influenced by stressors in childhood like a harmful family environment and adverse life events. In individuals who are high-risk, these elements interact with genetic vulnerability to trigger the development of psychosis and potentially schizophrenia (McDonald & Murray, 2000; Bebbington et al., 2004). Comparable experiences of childhood trauma exposure have also been shown to predict depression in adulthood, psychosis, and use of psychiatric medication (Chapman et al., 2004; Whitfield et al., 2005; Anda et al., 2007). Subica et al. (2012) model hypothesized that traumatic experiences in people with SMI leads to increased problems with depression, physical health, mental health and problematic substance use. In this extended SMI-PTSD model, it was conceptualized that PTSD directly mediates the relationship between trauma and depression, substance use, mental health, and physical health. The authors hypothesized that depression is a domain that is different from overall mental health based on consistent findings in the literature which indicated that in people with SMI, PTSD is related to increased symptoms of depression and major depressive disorder (Resnick et al., 2003; McFarlane et al., 2001). The domain of overall physical health was included due to the research demonstrating that trauma exposure, specifically to childhood trauma and PTSD, is related to poorer functioning on many indicators of physical health in the general population and increases in outpatient medical health service usage for people with SMI (Felitti et al., 1998; Anda et al., 1999; Cusack et al., 2006; Mueser et al., 2004). Furthermore, Subica et al (2012) study posited that PTSD leads to physical and mental health deterioration and increased depression, substance use, and retraumatization, all interacting negatively with each other.

The results of Subica et al (2012) study indicated evidence in support of the majority of the PTSD-SMI model's hypothesized relationships. Substantiating past research on the relationship between SMI and trauma, they found that exposure to more traumatic event types was related to an increase in the severity of PTSD and depression increased substance use, and decreased overall mental health and physical health functioning (Briere et al., 1997; Gearon et al., 2003; McFarlane et al., 2001; Cusack et al., 2004; Calhoun et al., 2006). Furthermore, they found that higher severity of PTSD symptoms more strongly related to a higher severity of depression and lower overall mental and physical health functioning than only increases in the number of traumatic experiences alone. Furthermore, they found that higher depression symptom severity was related with lower overall mental and physical health functioning whereas higher substance use was associated with decreased overall mental health. Therefore, the model's projected negative interactive cycle between trauma, PTSD, depression, substance use, mental health, and physical health was partially substantiated.

The findings of Subica et al (2012) study infer that people with SMI and comorbid PTSD have higher chances of problems in one or more areas of health functioning which is expected to adversely affect related domains of functioning. Considering these findings, it is not the experience of trauma alone but more so the development of PTSD that may put people with SMI at higher risk for a more complicated and complex progression of illness. This involves negative interactions between depression, overall mental health and physical health functioning, and substance use.

While Subica et al‘s (2012) study provides the groundwork of evaluating the PTSD-SMI model, derived from an earlier theoretical and descriptive model (Mueser et al., 2002), no study has sought to test this model as it pertains to the SMI clients being serviced by ACT teams. More comprehensive information on illness severity such as diagnoses, hospital utilization rates, and psychosocial functioning are needed. Furthermore, as demonstrated throughout this review, gender differences need to be investigated given that gender differences exist in all these variables and relationships, yet gender has never been a consideration in understanding these models. It is important to recognize that these models may in fact not fit people of all genders. Examining how gender intersects with these models will further our understanding of the factors that influence the complex relationships between trauma, PTSD, substance use, and SMI.

Current Studies

Rationale for Current Thesis

As shown, there are still many challenges and much is yet to be understood regarding the role trauma plays for ACT clients with SMI (e.g., Torrey & Drake, 2010; McGovern et al., 2011). There needs to be a better understanding of this population within ACT in terms of the relationships between SMI, trauma, PTSD, substance use, and gender, as well as how trauma is treated by members of the ACT teams and within the ACT model. Rates of traumatic experiences in people with SMI have been shown to be up to twelve times higher than in the general population; childhood trauma makes someone three times more likely to develop psychotic disorders (Varese et al., 2012); yet practitioners seldom deliver PTSD and trauma-specific treatment to people with SMI, even in ACT teams (Grubaugh et al., 2007). PTSD and traumatic stress are still under-diagnosed and under-investigated in people with SMI (Torrey & Drake, 2010; Mueser et al., 2002; Mueser et al., 2008). Additionally, and most crucially, unrecognized and untreated PTSD and traumatic stress increases the burden of illness amongst people with SMI (Read et al., 2008; Subica et al., 2012; O'Hare, et al., 2012).

Many people with SMI are diagnosed with schizophrenia experience psychosis and have complex needs as well as additional stressors such as homelessness/insecure housing, frequent hospitalizations, and high medical needs. Providers frequently feel the need to address those more evident needs first and throughout treatment (Freuh et al., 2009). Therefore, providers may become so preoccupied with immediate needs and disregard the possibility of a PTSD diagnosis or inquire about trauma. This may be even more probable in community mental health organizations where providers have not been adequately trained to identify trauma or be aware of the possible severe effects on people (Freuh et al., 2001). This is to the detriment of the clients, seeing that many of the symptoms and life stressors that providers observe may be likely related to untreated PTSD or trauma related symptoms. (Cusack et al., 2004).

Regardless if trauma screening and treatment occur, the community mental health practitioners are not universally equipped to deliver trauma treatments because of no or inadequate training in trauma interventions, and misconceptions about providing trauma treatment in people with SMI (Freuh et al., 2009). Treatments of trauma-related symptoms are not routinely accessible in community mental health settings, partially due to under-diagnosis, but also due to worries that treating PTSD and trauma symptoms in people with SMI may lead to a resurgence of mental health issues – even though the research evidence points to the contrary (Mueser et al., 2008). Providers have traditionally perceived clients as delicate and vastly favour providing medication management to address core and pressing symptoms instead of psychosocial treatments like psychotherapy (Cusack, et al., 2006).

Lack of PTSD and trauma treatment gives rise to increases in substance use, physical health problems, ongoing mental health symptoms, decreased functioning, and increased hospitalizations (Mueser et al., 2002; Mueser et al., 2004; & Subica et al., 2012). Exposure to traumatic experiences, and PTSD, specifically, are linked to some of the highest amounts of healthcare use and costs when compared to the general population (Hidalgo & Davidson, 2000;

Kessler, 2000). Consequently, not treating trauma-related issues and PTSD only negatively impacts those receiving treatment, as well as the health care system in general (Summerfield, 2010). Clarifying how ACT assesses, treats, and understands these issues will ensure people with SMI receive adequate care and access to appropriate services that addresses their needs better.

The aims of this thesis are, therefore, to fill gaps in the literature by better understanding the population served by ACT and shedding light on how ACT teams work with trauma in the teams. More specifically, to better comprehend the potential gender differences that exist in the relationship between SMI, trauma, PTSD, substance use, and psychosocial factors in addition to the SMI-PTSD model. Additionally, a better understanding of the assessment, knowledge base, training, trauma treatment, and the trauma-informed approach being provided to those with SMI in ACT teams will be sought. Finally, the last goal is to get a better understanding of ACT worker perspectives, barriers, and recommendations around trauma-informed care in ACT teams.

Overview of the Current Studies

This thesis consists of two studies. In the first study, a chart review was conducted on the clients of four ACT Teams in Ottawa; these data were used to assess gender differences in trauma experiences, PTSD, substance use, and the SMI-PTSD model in the SMI population receiving services from ACT teams. The second study was a qualitative study where ACT team members (social workers, mental health workers, psychiatrists, mental health nurses) were interviewed to ascertain their perspectives on working with trauma in their clients. Both studies were approved by the Research and Ethics board of the University of Ottawa and The Royal Ottawa Mental Health Research Institute.

Study 1: Exploring Gender Differences in Trauma, PTSD and Substance Use and the SMI-PTSD Interactive Model in Persons with Severe Mental Illness in ACT teams

The purpose of this study was to better understand the gender differences in the relationship between SMI, trauma, PTSD, substance use and other psychosocial factors broadly. The first objective was to assess if there are any gender differences in trauma experiences, PTSD, and substances of choice and problematic substance use in the clients. The second objective was to assess if there are any gender differences in the SMI-PTSD model which was first described and introduced by Mueser at al. (2002), then tested and expanded by Subica et al. (2012). The following psychosocial information was gathered from the patient's charts: age, gender, education, ethnicity, home situation, marital status, employment, hospital use, diagnoses, substance use, physical health information from the Ontario Common Assessment of Need (OCAN), and trauma information such as trauma types, trauma experienced in adulthood or childhood, and the presence or absence of PTSD diagnoses. This information was then used to compare men and women on trauma, PTSD, substance use and the SMI-PTSD model using chi-square and multi-group structural equation modeling.

Study 2: "We're Working in a Trauma Avoidant Culture": Exploring Assertive Community Treatment Teams' Perspectives of Trauma and PTSD in Clients with SMI

The purpose of this study was to gather and understand ACT team members' perspectives on working with trauma and PTSD in their clients. Specifically, I inquired about perspectives on investigating trauma experiences in clients, comfort in discussing trauma, knowledge of the impact of trauma, responding to trauma information, ability to distinguish traumatic stress reactions from other symptoms, importance of treating traumatic stress in clients, barriers and facilitators to working with traumatic stress in clients, and possible recommendations of changes for the purpose of providing better care to those clients with traumatic stress needs. To do so, I interviewed members of ACT teams whose roles facilitate possible discussion on trauma. Psychiatrists, nurses, social workers, peer support workers, and mental health workers were invited to a one-on-one structured interview; in total, sixteen interviews were conducted. The audio recordings of the interviews were transcribed and the data was analyzed using a thematic analysis approach.

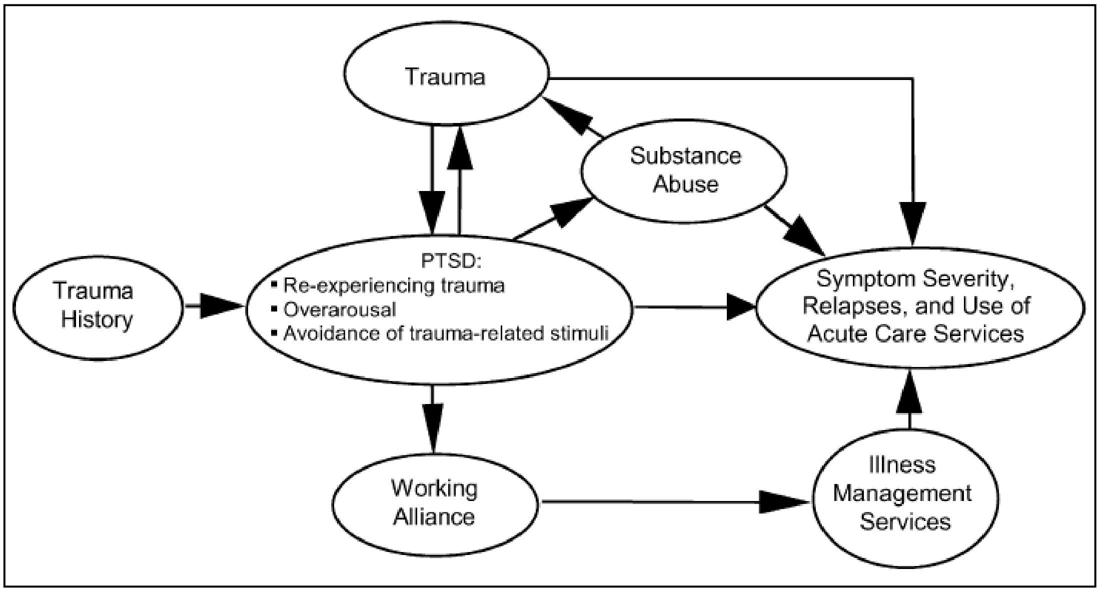

Figure 1. Mueser, Rosenberg, Goodman, & Trumbetta (2002) original SMI-PTSD interactive model

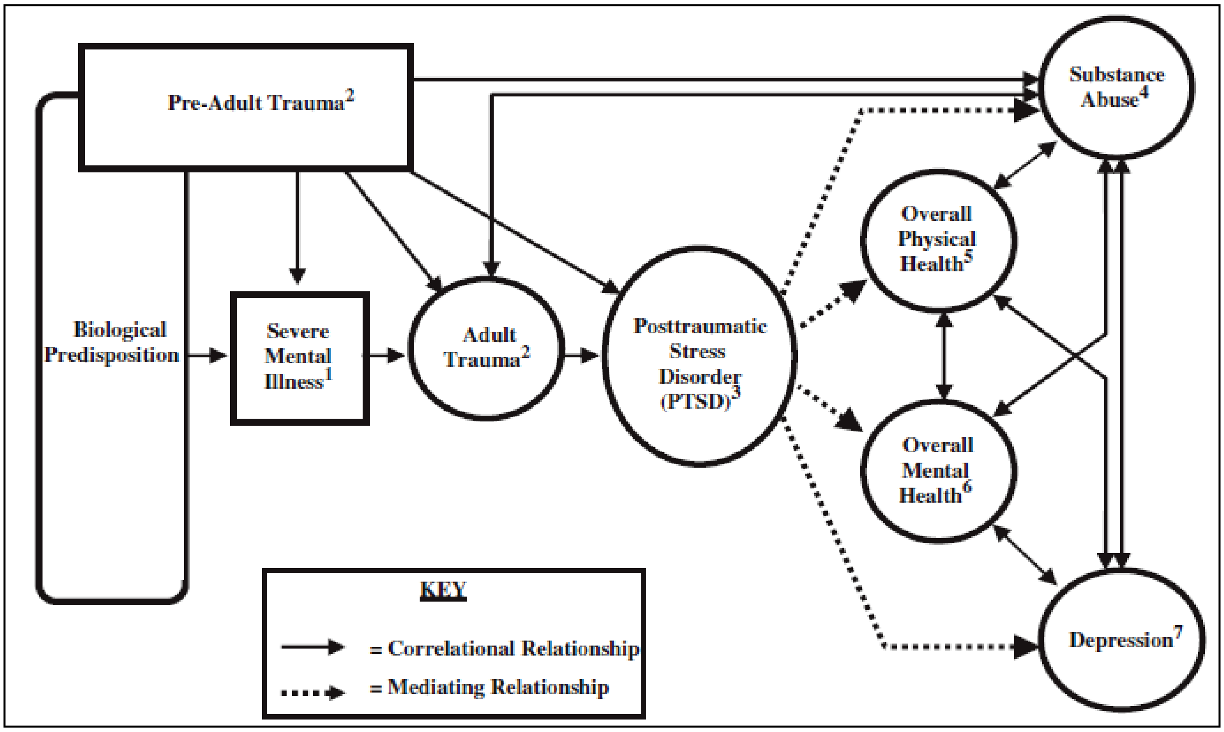

Figure 2. Subica, Claypoole, and Wylie (2011) extended PTSD-SMI model

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Study 1: One Size Doesn't Fit All: Gender Differences in Trauma, PTSD, Substance Use, and The SMI-PTSD Conceptual Model in Persons with Severe Mental Illness in Assertive Community Treatment

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Abstract

The literature on severe mental illness (SMI), trauma, PTSD, and substance use is expansive, yet no research exists examining the specific population served by Assertive Community Treatment (ACT) concerning these relationships and particularly the SMI-PTSD model proposed in the literature. In this paper, we employed retrospective chart reviews to extract information on trauma histories, PTSD, substance use, and psychosocial factors in a sample of 282 clients from four ACT teams (178 males; 104 females) to assess the gender differences in types of trauma, instances of PTSD, substances of choice, problematic substance use, and the SMI-PTSD model. Results indicated that rates of sexual trauma, emotional abuse, serious suicide attempts, rates of trauma in adulthood and PTSD were higher among women, whereas rates of alcohol, marijuana, and stimulant use as well as lifetime problematic substance use were higher among men. In terms of the SMI-PTSD model, results suggest that the model fits the experiences and possible trajectory of men with SMI better. Future work should investigate gender differences and gendered trajectories around the complex relationships between SMI, trauma, PTSD, substance use and examine how the SMI-PTSD model applies to persons of diverse backgrounds.

KEYWORDS: *Assertive Community Treatment, post-traumatic stress disorder, Trauma, substance use, gender, severe mental illness*

Introduction

In recent years, there have been efforts in both clinical practice and empirical research to bring awareness and garner a greater understanding of the ways trauma deeply affects and shapes a person's life trajectory (e.g. Sampson & Read, 2017; Lewis-O'Connor et al., 2019). A traumatic event may take place at any point in a person's life, and both childhood and adult trauma can have far-reaching impacts on mental as well as physical health, development, and behaviour (SAMHSA, 2012; Vibhakar et al., 2019). However, not all traumatic exposure is traumatizing, as the severity of the traumatic event itself, the individual's experience of it, and other genetic and environmental factors determine an events' unique traumatic impact on every person (Brock, 2002; Carlson, 1997). In addition to these varied reactions, specific trauma-related disorders such as Posttraumatic Stress Disorder (PTSD) can develop following exposure (APA, 2013).

By all accounts, the prevalence of lifetime trauma in the general population is high, with research suggesting that approximately half of all adults may have experienced at least one traumatic event in their lives (Kessler et al., 2005). Nonetheless, persons with Severe Mental Illness (SMI) appear to be even more likely to have experienced trauma, with research suggesting that prevalence in this vulnerable population is as high as 90% (O'Hare et al., 2013). SMI is defined as a diagnosable mental, emotional, or behavioural disorder of sufficient duration that impedes major life activities or otherwise functionally impairment of the individual. SMI diagnoses are characterized by prolonged non-organic mental health or personality disorders that fit three of eight disability criteria and require long-term treatment (see NIMH 1987). Covarrubias & Han (2011) observed that Bipolar Disorder, Obsessive-Compulsive Disorder, Major Depression, and Schizophrenia are the most common SMIs.

Research has shown that the presence of SMI could leave the person vulnerable to future traumatization (Gilmoor et al., 2020). Additionally, those living with comorbid SMI and trauma disorders are highly vulnerable to re-traumatization compared to individuals who are otherwise mentally healthy (Mueser et al., 2002; Anderson et al., 2016). At the same time, exposure to trauma has been shown to be associated with the presentation of SMI (Mandavia et al., 2016). Persons with SMI who had endured trauma and were experiencing PTSD were also shown to be at much higher risk of substance use, with this bidirectional relationship between PTSD and substance use often worsening the presentation of PTSD symptomatology (Kuksis et al., 2017; O'Hare et al., 2017; Note for the remainder of the dissertation in all places where "substance abuse" is referenced as a variable in the literature will be referred to as such but everywhere else will be referred to as substance use, problematic substance use, or substance use disorder). Crucially, we must also acknowledge that trauma prevalence is intertwined with gender, as women report higher rates of traumatization (Mills et al., 2011; Tolin & Foa, 2008).

The interaction between gender and SMI is also meaningful as for women with SMIs, the risks of trauma and victimization are invariably higher compared to men with SMI (Tolin & Foa, 2008). Women have also been shown to be at higher risk of co-occurrence of traumatic abuse, they are more likely to experience a combination of sexual abuse, physical trauma, and neglect than men (Meyer et al., 1996). Finally, there may be gender differences when disclosing trauma, with men more reluctant to do so, especially when dealing with sexual trauma, due to feelings of shame (Alaggia, 2005).

Mueser's (2002) model is a well-accepted approach towards conceptualizing the relationship between SMIs, trauma, PTSD, and substance use. This model, which is an extension to the stress-diathesis model, postulates that PTSD may serve as a mediating role for the adverse effects of trauma on SMIs. For instance, as PTSD has been associated with generally low self-esteem, impaired interpersonal skills, and pervasive feelings of shame, it could influence the course of SMIs, both directly by worsening psychiatric symptoms and indirectly through re-traumatization, substance abuse, and interpersonal problems (Mueser et al., 2002). Understanding trauma may allow mental health professionals to, in turn, better understand the client resulting in better working alliances (Mueser et al., 2008). Subica, Claypoole, and Wylie (2012) integrated relevant findings to develop an updated PTSD-SMI model which proposes multiple direct and indirect effects of trauma and PTSD on depression, substance use, and overall mental and physical health for individuals with SMI. In this expanded model, PTSD is conceptualized as directly mediating trauma's relationships with depression, substance use, mental health, and physical health (Subica et al., 2012). There is empirical support for the majority of the PTSD-SMI model's hypothesized relationships (Cusack et al., 2004; Mandelli et al., 2015), however, more detailed data on illness severity such as diagnoses, hospitalization and care utilization rates, as well as measures of employment and psychosocial support to further our understanding of the factors that influence the complex relationships between trauma, PTSD, substance use, and SMI is needed.

Assertive Community Treatment (ACT) represents one of the most widely studied and disseminated evidence-based practices for individuals living with SMI (Dixon, 2000; Marshall & Lockwood, 1998; Phillips et al., 2001; Stein & Test, 1980). Although variations in implementation may exist regionally, at its core, the ACT model remains a service-delivery model with the ultimate goal of providing long-term, comprehensive, community-based treatment that is utilized in one form or another across the globe (Johnson, 2017). In North America, ACT teams consist of members from the fields of psychiatry, nursing, and social work, as well as professionals with other types of expertise, such as substance abuse treatment and vocational rehabilitation. These teams are required to meet specific staff credentials and maintain low caseloads of only ten ACT clients to one staff member. After receiving a comprehensive assessment, each client is provided whatever services they require: medication, housing, food and clothing, substance abuse treatment, and/or support. Additionally, ACT strives to lessen or eliminate the debilitating symptoms of mental illness every individual client experience and to minimize or prevent recurrent acute episodes of the illness. ACT also seeks to enhance each client’s quality of life, improve functioning in adult social and employment roles, promote independence, and alleviate the client’s family’s burden of providing care (Johnson, 2017). Although ACT provides comprehensive support, it may be that the capacity of an ACT team to adequately assess and provide proper treatment to clients with trauma histories and

PTSD is lacking, given their lack of adequate recognition or awareness of trauma in the population they serve (Frueh at al., 2002; Lewis-O'Connor et al., 2019). In fact, no standardized tools for trauma assessment is used during the initial ACT intake, which suggests that the trauma symptoms and needs of clients are not met or even recognized (Frueh at al., 2002). This is particularly concerning given the over-representation of trauma in the populations that ACT serves, i.e. persons with SMI (Subica et al., 2012). Given the negative impact on diagnosis, prognosis, and treatment failure to address trauma can have, it is imperative for members of the ACT team, but also mental health professionals in general, to appreciate how trauma histories might impact the efficacy of modern outpatient recovery models (Fratto, 2016). Furthermore, the role of gender, both in predisposing individuals to specific types of trauma, as well as in influencing their responsiveness to treatments, needs to be acknowledged.

Thus, although ACT services are one of the most commonly employed community mental health model in Ontario, little is known about the population it serves in regards to their experience with trauma and the complexities related to it, and whether or not their unique needs born from trauma are being met. This paper aimed to fill this gap in the empirical literature surrounding people with severe mental illness being serviced by ACT teams. We investigated the relationship between severe mental illness, trauma, PTSD, and substance use in a sample of persons served by ACT teams in Ottawa while taking into consideration gender differences using retrospective chart reviews. The SMI-PTSD model was expanded by assessing the role of psychosocial functioning, service use, and physical health, to get a better understanding of these complex relationships.

Methods

Participants

Inclusion criteria was being a current ACT client. In total there were 282 clients from 4 English-speaking ACT teams (178 males; 104 females), ranging from 20 to 87 years of age (*M* = 46.93), and length of time in ACT ranging from 1 to 20 years (*M* = 7.93). A majority of clients lived in a group home or supported living (61%), were White Canadian or European (46%) and had a primary diagnosis of schizophrenia disorder (68%). Table 1 indicates all demographic characteristics.

Procedure

Data was abstracted from client charts through retrospective chart review from August 2019 to November 2019. Additionally, a short questionnaire about clients' trauma exposure, type and experience in childhood/adulthood was distributed to each client's case worker to ensure more in-depth information about the client's trauma history that may not have been present in the client’s charts. No client of ACT was directly recruited for this study, relevant information was extracted from charts and from their case workers. The ACT teams in this study were Pinecrest-Queensway Community Health Centre ACT, Carlington Community Health Centre ACT, Bank Street ACT team – The Royal Community Mental Health Program, and Catherine Street ACT team – The Royal Community Mental Health Program team. The study was approved by the University of Ottawa Research Ethics Board and The Royal’s Institute of Mental Health Research Ethics Board.

Client charts in ACT teams are an amalgamation of every documented interaction a client has had with professionals throughout their whole history, which often spans over 10 years of information. When a client is accepted onto an ACT team, a request for information and charts are sent out to multiple organizations and professionals to acquire a comprehensive history of the client. Information documented in client's files includes, but is not limited to, all hospitalizations, psychiatric reports, all types of assessments (e.g. psychiatric, neuropsychological, psychoeducational, capacity), sessions with various professionals e.g. psychologists, social work, occupational therapists, visits with professionals on ACT teams, legal proceedings, police reports, doctor visits, consultations, correspondences with families and other professionals regarding the client.

Measures

Ontario Common Assessment of Need (OCAN). OCAN is the standardized assessment tool used in the community mental health sector. OCAN supports a recovery approach by promoting conversations that capture the client's current situation, needs, strengths and service plan. The assessments can be conducted through interviewing either the patient themselves or a staff member responsible for the patient's care. It consists of 22 domains: accommodation/housing stability; food security; ability in looking after the home; self-care; daytime/social activities; physical health; psychotic symptom severity; information about condition and treatment; psychological distress; safety to self; safety to others; alcohol; drugs; company; intimate relationships; sexual expression; childcare; basic education; telephone; transport; money; and social benefits. The interviewee states whether a particular need is present and, if present, whether it is met (given a score of 1) or unmet (2). If there is no need (0), the interviewer proceeds to the next item. If there is a need, the respondent is asked for information on the levels of help received from family and friends, help received from formal services and help needed from formal services (rated as 0 = no help; 1 = low level of help; 2 =

medium level of help; 3 = high level of help). Overall, all the domain areas of the OCANs, demonstrate good reliability (Phelan et al., 1995; Xenitidis et al., 2000; Yeh et al., 2006).

The OCANs staff rating of current psychotic symptom severity, staff rating on the physical health domain, psychosocial functioning information including accommodations/housing stability, ability to take care of self and home, psychological distress, safety to self and others, intimate and companion relationships, engaging in social activities and financial ability/need was extracted from client charts. Substance use and problematic substance and alcohol use details either substance use or problematic substance use (e.g. just “casual use” ie. a provider will indicate in the client chart that the individual casually uses or uses alcohol or marijuana recreationally or use that is deemed problematic), that is current, past, or in remission was also gathered. Further data on specific drugs used and OCANs rating of drug issues and alcohol issues in terms of problematic use was collected. The OCANs staff prompt for drug use is "Do you take drugs that aren't prescribed? Are there any drugs you would find hard to stop taking?" and then give a rating of severity, according to the standard OCAN scoring. This is similar to alcohol use; the question prompt is, "Does drinking cause you any problems? Do you wish you could cut down your drinking.”

Sociodemographic and trauma information. The following additional information was collected from client charts: parental status, age, gender, education, ethnicity, home situation, marital status, employment, number of hospital uses, number of children, the number of times presented at the emergency department in the last 12 months, primary mental health diagnosis, the number and type of physical health issues. The presence or absence of trauma and trauma types experienced were collected. This was based on the literature on the most common and most significant categories of experienced trauma (sexual abuse, physical abuse, emotional abuse, neglect, war/political violence, major accident or life-threatening illness), as well as other common types present in the SMI literature specifically (bullying, serious suicide attempts, periods of homelessness, taken away from family, witness to violence). In addition, number of traumas experienced, and when the trauma was experienced (e.g. in adulthood or childhood). The presence or absence of a PTSD diagnosis was also collected whereby a psychiatrist had diagnosed the client with PTSD in the past.

Data Analytic Strategy

Data was screened and cleaned using IBM SPSS 25. Means, standard deviation, and bivariate correlations were computed for all continuous model variables. Frequencies were calculated for nominal and binary variables. Differences in demographics between genders were calculated using the chi-square test of independence. Statistical assumptions for regression analysis were verified (Tabachnick & Fidell, 2012). Chi-square test of independence was conducted for the trauma and substance use differences between genders.

SEM was conducted to test the conceptual model using MPLUS at a level of significance $p < 0.05$. Path coefficients were standardized to facilitate comparison and interpretation of data. Model fit was established using the following goodness-of-fit indices with corresponding criteria, a small and non-significant chi-square likelihood ratio statistic ($\chi 2$), comparative fit index (CFI) ≥ .95, and root mean square error of approximation (RMSEA) ≤ .06 (Hayduk, Cummings, Boadu, Pazderka-Robinson, & Boulianne, 2007). Adequate sample size was reached for the total sample since with 22 model parameters, the minimum sample size required is n =

220, considering the suggested 10 participants/parameters (Kline, 2015). Given that variables met the normality assumption, the maximum likelihood estimation method was carried out.

Outliers and Normality

Continuous analysis variables were checked for outliers. An outlier was defined as any value which falls outside the range of +/- 3.29 standard deviations from the mean (Tabachnick & Fidell, 2013). Three outliers were identified for # of physical health issues, and three outliers were identified for # of hospital admissions in the last 1 year. These outliers were removed from the data. The continuous analysis variables were also examined for normality by calculating skewness and kurtosis values. When the skewness is greater than 2 in absolute value, the variable is considered to be asymmetrical about its mean. When the kurtosis is greater than or equal to 3, then the variable's distribution is markedly different from a normal distribution in its tendency to produce outliers (Westfall & Henning, 2013). The skewness and kurtosis values revealed that # of physical health issues (skewness = 0.61, kurtosis = -0.02) and # of hospital admissions in the last 1 year (skewness = 1.73, kurtosis = 2.29) were within normal limits.

Data Screening

The data for the variables used in the SEM analysis were examined for missing responses. There were a total of 595 missing responses on the analysis variables, which was 11.72% of the total data. For individual cases, missing responses ranged from 0.00% to 83.33% of the total possible responses for the analysis variables (*M* = 11.72%, *SD* = 22.45%). Twenty percent of trauma experiences were missing from client charts and 16 – 27% of client charts were missing data from the OCANs, specifically staff ratings.

Little's missing completely at random (MCAR) test was conducted to assess the pattern of the missing data. The results of the test were significant, $\chi^2(553) = 678.67$, $p < .001$, indicating that the pattern of missing data was significantly different from what would be expected if the data were MCAR. To account for the missing data in the SEM analysis, a single regression-based imputation was conducted using the analysis variables to replace the missing value.

Results

Descriptive statistics by gender

There was a significant difference in education between men and women whereby women had significantly more instances of completing at least some college or university $\chi^2(4) = 10.12$, $p = .038$. There was a significant difference between genders in housing situation whereby women were more likely to be living independent, in a shelter, or in supported living whereas men were more likely to be in group homes, living with relatives, or were homeless/transient $\chi^2(5) = 12.08$, $p = .034$. There was also a significant difference in marital status with women being more likely to be in a relationship or $\chi^2(2) = 29.22$, $p < .001$. Finally, there was a significant difference in primary diagnosis where men had higher instances of schizophrenia whereas women had higher instances of schizoaffective and mood or personality disorders $\chi^2(2) = 29.22$, $p < .001$. There was a significant difference in time in ACT based on gender with women spending a longer time in the program, $F(1, 277) = 6.43$, $p = .012$, age difference with women in the program, on average, being older than men $F(1, 279) = 29.23$, $p < .001$, and physical health issues, where women had a higher number of physical health issues compared to men $F(1, 270) = 8.02$, $p = .005$.

Chi-square of trauma, PTSD, and substance use

A series of chi-square tests of independence were conducted to assess whether there was a gender effect on the presence of trauma, PTSD, type of trauma, substances of choice, and lifetime problematic substance use (Table 2 and Table 3). The results of the chi-square tests found that emotional abuse $\chi^2(1) = 17.48$, $p < .001$, life-threatening suicide attempts $\chi^2(1) = 8.35$, $p = .004$, and sexual trauma $\chi^2(1) = 34.70$, $p < .001$ were significant. The results of the Chi-square test for PTSD, $\chi^2(1) = 5.33$, $p = .021$, and experiences of trauma in adulthood, $\chi^2(1) = 14.01$, $p < .001$, were also significant. These results indicate that women had higher instances of certain types of trauma experiences, PTSD, and experiencing trauma in adulthood. In terms of effect size and odds ratios, for emotional abuse, Cramers V was a .25 indicating a moderate association, the odds ratio was .32 indicating that men had 68% less odds to have emotional abuse than women. For sexual trauma, Cramers V was moderate, of .35, and the odds ratio indicated that men had 83% less odds to indicate sexual trauma than women. Cramers V for suicide attempts indicated a weak association of .17 and the odds ratio indicated that men had 53% less odds than women to have had life-threatening suicide attempts. For adult trauma, Cramers V of .23 indicated a moderate association and the odds of having adult trauma were 65% less for men than women. Finally, Cramers V of .14 for PTSD indicated a weak association and for odds ratio, men had 61% less odds of having PTSD than women.

The results of the Chi-square test for alcohol use ,$\chi^2(1) = 9.02$, $p = .003$, marijuana, $\chi^2(1) = 15.09$, $p < .001$ and stimulants, $\chi^2(1) = 5.57$, $p = .018$, were all significant. Moreover, the results were also significant for lifetime problematic substance use, $\chi^2(1) = 5.57$, $p = .018$. Collectively, these results suggest certain substances of choice along with problematic substance use are markedly higher for men than women with SMI. For effect size and odds ratio, for alcohol, Cramers V of .18 indicated a weak association but the odds ratio showed that men had 2.22 times more odds than women to use alcohol. Cramers V of .23 for marijuana use was found indicating a moderate association, and that men had 2.67 times higher odds of marijuana use then women. For stimulant use, a Cramers V of .14 was found indicating a weak association, and for odds ratio men had 1.90 times higher odds of stimulant use then women. Finally, for substance dependence, the Cramers V of .23 shows a moderate association and the odds ratio indicated that men had 2.91 times higher odds of lifetime substance dependence then women.

SEM analysis

SEM was used to test the hypothesized model. All persons represented in our sample had a diagnosis of an SMI; therefore, SMI was not needed to be entered into the model. Furthermore, due to the large amount of missing data from the client OCANs, only the staff rated OCANs was entered into the analysis. Childhood trauma (presence or absence, e.g. yes experienced or no) predicted adult trauma through making someone more vulnerable to re-traumatization in adulthood and also predicting PTSD and problematic substance use. Adult trauma (presence or absence, e.g. yes experienced or no) predicted PTSD and predicted problematic substance use, PTSD (presence or absence) predicted hospital use, symptom severity, physical health and psychosocial functioning directly due to its core symptoms and therefore mediated through trauma. PTSD predicted hospital use, symptom severity, physical health and psychosocial functioning indirectly through problematic substance use.

SEM multigroup analysis by gender

The Chi-square statistic for the model overall model was significant, $\chi^2(96) = 170.21$, $p <$ .001, indicating poor model fit. The root mean square error of approximation (RMSEA) was .05, indicating a good model fit. The comparative fit index (CFI) was .79, indicating poor model fit. The Tucker-Lewis index (TLI) was .71, indicating poor model fit. The standardized root mean square residual (SRMR) was .06, indicating a good model fit.

For women, childhood trauma ($\beta = 0.19$, $p < .001$), and adulthood trauma ($\beta = 0.19$, $p < .001$), were both significant positive predictors of PTSD. No pathways or mediations were significant. The model for women is displayed in Figure 1.

For men, problematic substance use was a significant negative predictor of physical health ($\beta = 0.19$, $p < .001$). Childhood trauma was a significant positive predictor of problematic substance use ($\beta = 0.19$, $p < .05$). Furthermore, childhood trauma positively predicted adult trauma ($\beta = 0.19$, $p < .001$). Adult trauma also significantly predicted hospital usage ($\beta = 0.19$, $p < .001$). In terms of mediation, the only significant mediation present was that adult trauma mediated the relationship between childhood trauma and PTSD ($\beta = 0.19$, $p < .001$). The model for men is represented in Figure 2

Discussion

This study evaluated gender differences in people living with SMI in ACT and evaluated the SMI-PTSD model. The results indicate that there are gender differences in the diagnosis of PTSD, experiences of trauma, substances of choice as well as problematic substance use, and the SMI-PTSD model. Additionally, in conducting this study, issues related to inquiring on PTSD information and recording it in client charts came to light. In total, 70% of the participants had a trauma history recorded in their charts. There were major inconsistencies on the degree of detail in charting, from person to person. More specifically, the low rates of trauma are due to lack of evidence of trauma in the file (e.g., there was no mention and therefore it cannot be determined whether trauma occurred). Furthermore, there was only a 10% prevalence rate of PTSD diagnosis inquired about and recorded, which is not in line with research that has consistently shown very high rates of PTSD in SMI populations (Mueser et al., 2002; O'Hare et al., 2013; Solomon & Davidson, 1997). Lack of inquiring adequately about trauma related issues in people with SMI by professionals has been well established (Al-saffar et al., 2004; Lipschitz et al., 1996; Mueser et al., 1998). The current medical approach may bias diagnosis and treatment of trauma-related symptoms in people with SMI (Read et al., 2018). Even those with vigorous trauma-informed training often struggle due to overlaps in symptoms, trauma assessment misunderstandings, lack of understanding of how trauma affects SMI symptoms, stigmas, and barriers to treatment (Mueser et al., 2002).

Further, the lack of inquiry of trauma history we encountered is not exclusive to the ACT teams examined in this study, but instead represents a prevalent issue that should be addressed both in research as well as in practice (Read et al., 2018; Sampson & Read, 2017). Alarmingly, a recent systematic review found that the majority of cases of child abuse or neglect are not identified by mental health services (Read et al., 2018). Despite some existing work on the screening of intimate partner violence, albeit mainly in women, there is a dearth in the literature on the best practices on inquiring of broader trauma histories in adults (Lewis-O'Connor et al., 2019). Furthermore, of the dearth literature on this topic, one study found that 30% of physicians always inquired into the trauma histories of women whereas only 12% did for men (Weinreb et al., 2010). Although no research has looked at this aspect directly, it could also be that health care professionals are more likely to inquire about trauma in women and substance use in men based on preconceived notions about gender (Weinreb et al., 2010). Concerns have also been raised over the current methodologies of screening that extensively use checklists and seemingly lack both human connection as well as aftercare (Lewis-O'Connor et al., 2019). This apparent gap in the literature relating to trauma-inquiry has far-reaching consequences. It means that there is a lack of adhering to trauma-informed practices where specific guidelines outlining appropriate practices are clearly given (SAMHSA, 2012), and in turn create more challenges for key stakeholders and healthcare providers caring for vulnerable populations, who disproportionately report traumatic experiences.

We found that women with SMI experience emotional abuse, sexual trauma, life-threatening suicide attempts, adult trauma, and PTSD at higher rates compared to men. Previous work indicates that in cases where a person with SMI experiences abuse, the type of abuse is generally reflective of the person's gender (Khalifeh & Dean, 2010; Schön, 2010). More specifically, women are more likely to experience sexual violence (Cusack et al., 2004; Mueser et al., 1998; Mueser et al., 2004; Switzer et al., 1999), while men are more likely to experience physical violence (Khalifeh & Dean, 2010; Rosenberg et al., 1996). Finally, women are more likely to have experienced repeated violence and abuse for a longer period of time in adulthood (Khalifeh et al., 2016) and have a higher chance of developing PTSD when exposed to a traumatic event (Mangrum et al., 2006; Mueser et al., 2004). Taken together, our results support the notion that the type of abuse experienced by persons with SMI may be derivative of gender with women being more likely to experience continuous abuse well into their adulthood.

Further, we found that men had higher instances of problematic use of alcohol, marijuana, stimulants, as well as a higher incidence of lifetime problematic substance use. Typically, men are found to have higher rates of substance dependence or problematic substance use (Brady et al., 1999; Schulte et al., 2009). In fact, in a recent study, men were found to have higher rates of alcohol use disorder, cannabis use disorder, and tobacco use disorder compared to women of the same age throughout adulthood (Vasilenko et al., 2017). Men with SMI have also been found to have higher rates of comorbid problematic substance use or substance use disorder (Kessing, 2004; Mueser et al., 2000). At the same time, there has also been reports of similarities in substance use between women and men with or without concurrent SMI. For instance, studies by Dudish & Hatsukami, (1996) and Lundy et al., (1995) found no difference in cocaine dependence between men and women. Men and women with a comorbid diagnosis of schizophrenia and substance abuse were also found to have similar courses and severities of substance abuse (Brunette & Drake, 1997). Regardless of gender, the most common and clinically significant comorbidity among clients with SMI is substance use disorder (Brunette et al., 2004). The one constant in the literature, is that both men and women struggle with problematic substance use especially those with SMI.

Given that in our results only a single mediation relationship was significant, the SMI-PTSD model was generally minimally supported in this study. This may be due to the inadequate inquiry and reporting of trauma related issues in clients as well as lack of investigation and reporting of PTSD due to the issues mentioned above. However, some key gender differences were nonetheless revealed. For men, childhood trauma predicted adult trauma and further adult trauma influenced increased hospital usage. In turn, adult trauma mediated the relationship between childhood trauma and PTSD. Furthermore, there was a link between childhood trauma and physical health impacting problematic substance use issues. Given these results, it seems as though the conceptual model may be better suited to the life experiences and trajectory of men and may be less relevant to the experiences of women. In women, these relationships may be different and need to be conceptualized alternatively in order to understand and, in turn, support them with care and interventions that are more tailored to their unique experiences.

There are some limitations to using chart reviews. Data, including information relating to trauma history, is not being directly extracted from participants but instead, includes information from multiple different people over many years. Due to consistency issues, differences in professional judgement, depth of inquiry of trauma history and substance use, as well as the varying process of reaching clinical conclusions, some charts may be very detailed and up to date, but others may include only sparse information. Further, given the limited information on the charts about trauma, it was not feasible for us to distinguish between cases where trauma preceded or followed the onset of mental illness, problematic substance use, and other variables. We also found that there was a substantial amount of missing data from the OCANs, despite the fact that this measure is required to be completed at least once every six months to a year. It was clear that this was not the case in the ACT teams recruited here, which could result in treatment decisions being made using outdated OCAN results and chart information. Additionally, the OCANs ratings used in this study were only from staff, since there was too much missing data from the clients, it could be that the results may vary based on what clients rate themselves in psychosocial domains. Furthermore, it should be noted that our study only assessed ACT teams in Ontario, Canada, which limits the geographic generalizability to other areas as other ACT teams and models in other regions may operate differently. Finally, our study assessed the complex relationship between SMI, trauma, PTSD, substance use and gender, we were unable to assess and discuss how demographic differences between genders impact these relationships.

Based on the findings discussed herein reporting gender differences in traumatic experiences, rates of PTSD, problematic substance use, it comes to no surprise that one overarching conceptual model to understand these complex relationships for all genders is insufficient and fails to acknowledge not only the gender differences in life trajectory but also, generally, the different experiences of those with diverse backgrounds. Future work should consider gender differences and gendered trajectories around the relationships between SMI, trauma, PTSD, substance use and indications of overall health. More research should explore how the SMI-PTSD model applies to specific subgroups based on gender, sexual orientation, and cultural background and its validity when it comes to persons from diverse backgrounds. Despite it not being our goal, we inadvertently found that there is a large issue of under-reporting of trauma histories and PTSD, mainly due to the lack of inquiry of these topics adequately. The barriers for healthcare, social, and mental health workers to inquire about a client’s history with trauma and how this impact treatment outcomes should be investigated.

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Table 1

Demographic characteristics by Gender

Variable	Men	Women
Education		
Some or completed university degree	30 (18%)	22 (23%)
Some or completed high school	99 (60%)	43 (46%)
Some or completed college	18 (11%)	22 (23%)
No formal education	9 (5%)	3 (3%)
Secondary school	10 (6%)	4 (4%)
Ethnicity		
Arab/North African	7 (6%)	5 (7%)
White Canadian/European	75 (68%)	55 (76%)
Aboriginal/ Indigenous	7 (6%)	3 (4%)
South American/Caribbean	6 (5%)	3 (4%)
West/East African	10 (9%)	4 (5%)
East Asian	5 (5%)	3 (4%)
Religion		
Muslim	16 (10%)	5 (6%)
Christian	55 (35%)	30 (33%)
Atheist	5 (3%)	1 (1%)
Jewish	2 (1%)	1 (1%)
Hindu or Sikh	2 (1%)	0 (0%)
Home situation		
Independent	34 (19%)	34 (34%)
Group home	59 (34%)	26 (26%)
Supported living	36 (21%)	24 (24%)
Shelter/Homeless/Transient	16 (8%)	9 (9%)
With family/ relatives	31 (18%)	8 (8%)
Marital status		
Single	143 (81%)	52 (51%)
Dating, Longterm, Married	14 (8%)	16 (16%)
Divorced/ Widowed	19 (11%)	34 (33%)
Primary Diagnosis		
Schizophrenia	133 (75%)	60 (58%)
Schizoaffective	36 (20%)	34 (33%)
Mood or PD	9 (6%)	10 (10%)

Table 2

Observed and Expected Frequencies by Gender

	Gender							
Physical Abuse	Men	Women	χ^2	*p*	*V*	*O.R.*	*95% C.I.*	
Yes	60 [64]	41 [37]	1.03	.311	.061	.770	.465	1.27
No	114 [110]	60 [64]						
Emotional Abuse								
Yes	32 [47]	42 [27]	17.48	<.001**	.252	.317	.182	.549
No	142 [127]	59 [74]						
Neglect								
Yes	16 [17]	11 [10]	0.21	.649	.027	.829	.369	1.86
No	158 [156]	90 [91]						
Sexual Trauma								
Yes	18 [37]	41 [21]	34.70	<.001**	.335	.169	.090	.317
No	156 [136]	60 [79]						
War/Pol. Violence								
Yes	10 [10]	6 [6]	0.00	.947	.004	.965	.340	2.74
No	164 [163]	95 [95]						
Bullying								
Yes	17 [14]	6 [8]	1.22	.269	.067	1.71	.653	4.50
No	157 [159]	95 [92]						
Homelessness								
Yes	33 [28]	12 [16]	2.34	.126	.092	1.73	.852	3.53
No	141 [145]	89 [84]						
Suicide attempt								
Yes	28 [37]	31 [21]	8.35	.005*	.175	.427	.238	.767
No	146 [136]	69 [78]						
Accident/illness								
Yes	18 [16]	8 [10]	0.44	.508	.040	1.34	.561	3.21
No	156 [157]	93 [91]						
PTSD								
Yes	11 [16]	15 [10]	5.33	.021*	.137	.391	.172	.887
No	167 [161]	89 [94]						
Child trauma								
Yes	121 [120]	70 [70]	0.00	.968	.002	1.01	.594	1.72
No	53 [53]	31 [30]						
Adult trauma								
Yes	97 [111]	79 [65]	5.33	.021*	.226	.351	.201	.614
No	77 [62]	22 [36]						

Note. * p <.05, **p <.001, observed followed by expected frequencies in brackets

Table 3

Observed and Expected Frequencies

	Gender							
Alcohol	Men	Women	χ^2	*p*	*V*	*O.R.*	*95% C.I.*	
Yes	80 [68]	28 [39]	9.02	.003*	.179	2.22	1.31	3.74
No	98 [109]	76 [64]						
Marijuana								
Yes	106 [47]	37 [52]	15.09	<.001**	.231	2.67	1.62	4.40
No	72 [87]	67 [51]						
Opioids								
Yes	25 [20]	7 [11]	3.49	.062	.111	2.26	.943	5.43
No	153 [157]	97 [92]						
Stimulants								
Yes	69 [59]	26 [35]	5.57	.018*	.141	1.90	1.11	3.24
No	109 [118]	78 [68]						
Substance dep.								
Yes	83 [67]	24 [39]	15.46	<.001**	.234	2.91	1.69	5.01
No	95 [110]	80 [64]						

Note. * p <.05, **p <.001, observed followed by expected frequencies in brackets

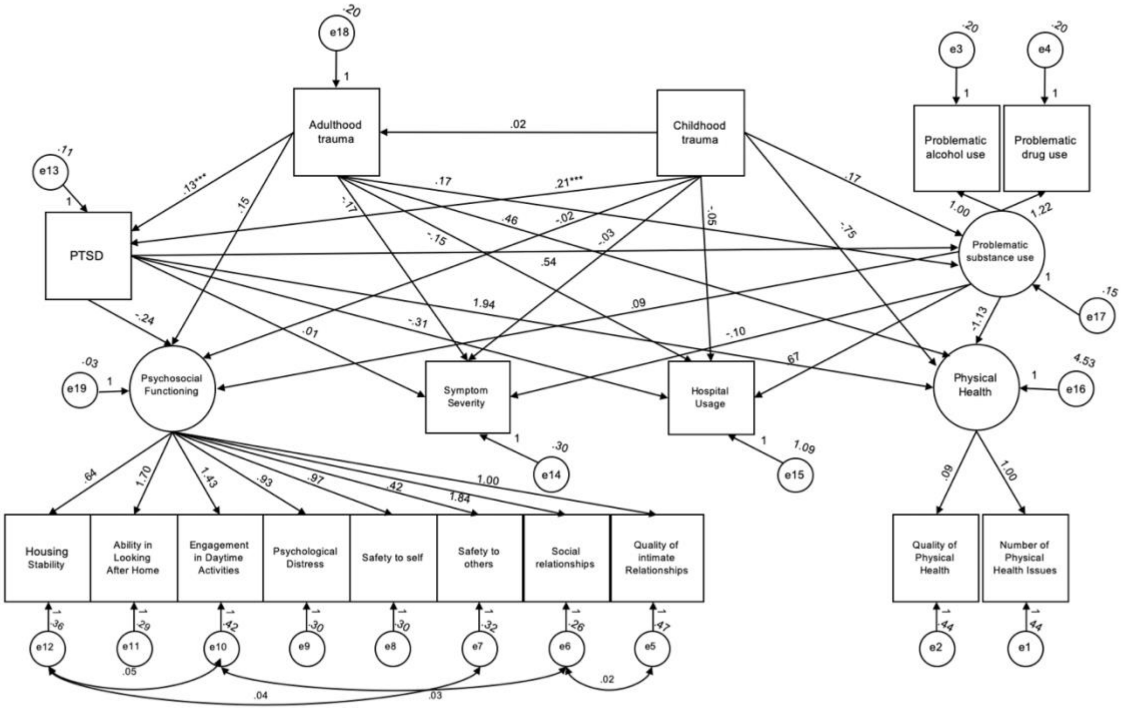

Figure 1. Structural PTSD-SMI Model for women. Values on paths are standardised coefficients with standard errors in parentheses. *p < .05, **p < .01, ***p < .001

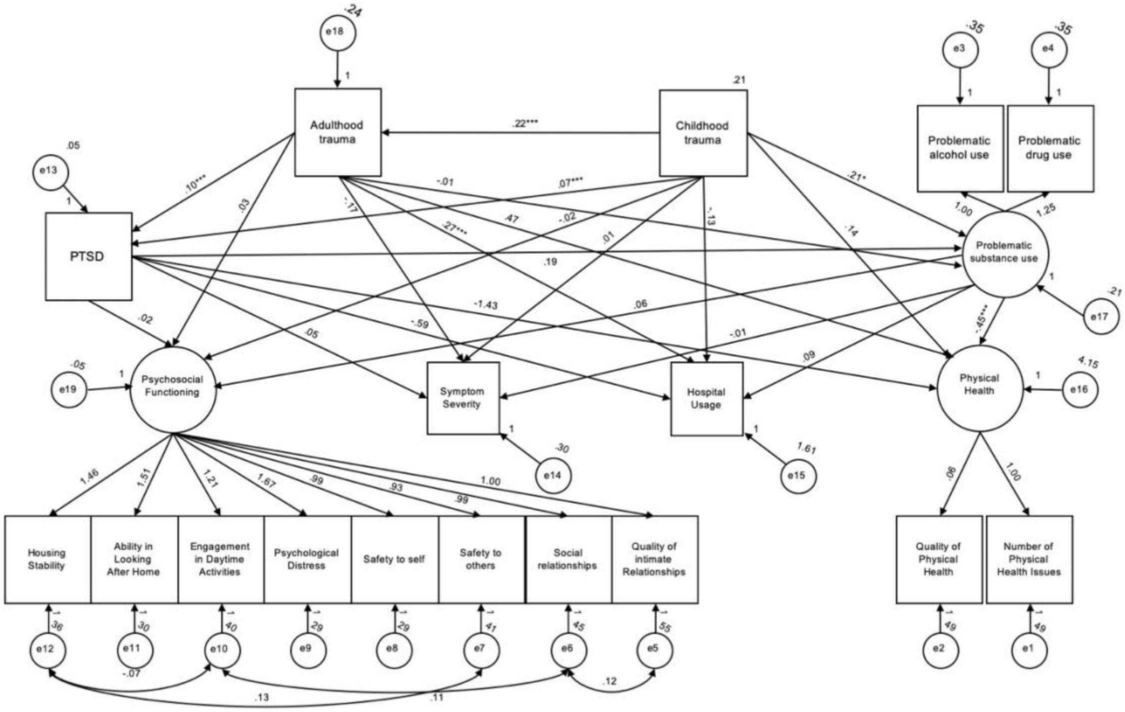

Figure 2. Structural PTSD-SMI Model for men. Values on paths are standardised coefficients with standard errors in parentheses. *p < .05, **p < .01, ***p < .001

Bridge between Study 1 and Study 2

Study 1 focused on quantitatively assessing the relationships between SMI, trauma, PTSD, substance use, psychosocial factors, and gender differences in ACT. In addition, it was one of the first studies to empirically test the SMI-PTSD descriptive model. The study's results showed that there are some gender differences in these relationships in addition to the SMI-PTSD model. This indicates that there needs to be more consideration of gender when looking at these relationships. This consideration could extend beyond binary gender and to people of diverse backgrounds such as racialized people or LGBTQIA people. Overall, overarching and general explanatory models may be insufficient as a whole and are lacking in consideration of intersectionality in terms of social identity factors.

One very important finding was a lack of adequate data on trauma and PTSD in clients. The issues regarding recognition and understanding of trauma and SMI in ACT teams are multifaceted, and include potential practitioner-level issues, translating research-to-practice issues, and organizational issues. As a consequence, the quality of care may be compromised with regards to addressing the potential trauma needs of clients in ACT teams.

Furthermore, very little research and literature exists examining ACT practitioners' perspectives on working with trauma as well as developing a better understanding of what the barriers to working with and address trauma-related issues are and what can teams do better to address these gaps. Therefore, the purpose of Study 2 is to better understand how trauma is treated within the ACT team, and to and obtain the perspective of ACT providers on working with trauma in clients and the barriers and facilitators in doing so.

Study 2: "We're Working in a Trauma Avoidant Culture": A Qualitative Study Exploring Assertive Community Treatment Providers Perspectives on Trauma and PTSD in Clients with Severe Mental Illness

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Abstract

Assertive Community Treatment (ACT) is the most widely used evidence-based community mental health intervention for people with severe mental illness (SMI). Despite research showing that the vast majority of those with SMI have traumatic histories, the ACT service model does not have consistent guidelines on how to address trauma. This study employed thematic-analysis through interviewing ACT providers to better understand their perspectives on working with trauma in clients. Five overarching themes with 21 sub-themes emerged: the role and scope of ACT teams and model regarding trauma, discussions of trauma with clients, current treatment of trauma, barriers to working with trauma, and recommendations for enabling trauma discussions and treatment. Some examples for recommendations were need for more training, increasing resources like including a psychologist on the team, more support from leadership, and a cultural change from medicalization. Implications of the barriers and suggestions are discussed.

Keywords: Assertive Community Treatment, trauma, qualitative research, Severe Mental Illness, provider perspectives, PTSD, community mental health, barriers to treatment

Introduction

It has been estimated that approximately 1 in 2 adults have experienced at least one traumatic event in their life (Briere, 2012). The prevalence of trauma amongst persons with severe mental illness (SMI) is higher still, with some estimates suggesting it could be up to 90% (O'Hare et al., 2013). Overall, co-morbid SMIs and trauma symptoms pervade all aspects of life and can have detrimental effects for individuals if they are not identified, understood, and effectively addressed in treatment (Mueser et al., 2004). Most individuals who experienced trauma experience lasting negative impacts on their social, physical, emotional, and spiritual well-being. Research shows that trauma decreases emotional control, feelings of safety and personal security, sense of self, and relationship stability (Hopper et al., 2010). Failure to identify and address individual life stressors and risk factors is linked to frequent hospitalization, difficulties with daily functioning, unemployment, social rejection, and lack of confidence in healthcare providers (Hopper et al., 2010). Conversely, research suggests that when clients and treatment providers work together to identify and address these factors, treatment outcomes improve (Al-Saffar et al., 2004). Further, persons with SMI population experience decreased depression, exhibit fewer trauma symptoms, abuse drugs and alcohol less often, report increased self-rated health, and gain renewed confidence in their mental health providers (Al-Saffar et al., 2004).

Barriers to trauma inquiry, identification, and documentation

Although the empirical literature supports trauma-informed care in persons with SMI, trauma and trauma-related issues are rarely addressed by mental health practitioners (Read et al., 2018; Salyers et al., 2004). For instance, in a sample of mental health clients with SMI, despite the high prevalence of trauma exposure (87%) and PTSD (19-30% depending on different scoring criteria), among the participants, documentation of traumatic histories was only 28% (Cusack et al., 2006). Clients with SMI have highlighted lack of time and/or a stable client-professional relationship as some of the biggest barriers to discussing trauma with a clinician (Ljungberg et al., 2016). These issues are often accompanied by perceived lack of understanding from the clinician who may embody an unengaged or unresponsive demeanor (Ljungberg et al., 2016). Thus, while it appears that the current system values trauma-informed care, it may be that little is done to promote it or actively utilize it. Therefore, as things are, it should come to little surprise when clients often end up feeling rushed or misunderstood when speaking about their trauma, which could in turn, hinder their ability to open up and discuss their experiences, and could ultimately prevent them from getting the help they need.

Some of the key barriers when it comes to discussing trauma-related topics with clients also highlight a lack of time to sufficiently deal with trauma-related issues and a lack of confidence, surety, or understanding with the client's trauma-related issues (Chung et al., 2012; Frueh et al., 2002; Gielen et al., 2014; Salyers et al., 2004). Another barrier identified by mental health providers includes the lack of routine follow-up, especially for clients with outdated files (Frueh et al., 2002). Concurrently, certain mental health care providers may not make garnering trauma-related information a priority as they may believe addressing trauma-related information on outdated files falls outside the realm of their responsibilities (Gielen et al., 2014). Finally, some mental health providers may perceive both their own behaviors as well as those of clients with SMI as impeding their ability to discuss trauma-related issues (Saylers et al., 2004). Crucially, clients depend on their mental health care providers for assistance and treatment. Consequently, in cases where mental healthcare providers do not feel comfortable tackling trauma-related issues, or even inquiring about or discussing with the client about their traumatic experiences, the client may be the one suffering in the end as they do not get the necessary level of care. In turn, many mental healthcare providers are cognizant of these issues and the most common recommendation to solve them is the continuing and vigorous training and psychoeducation on trauma assessment, identification, and treatment (Carey et al., 2000; Chung et al., 2012; Frueh et al., 2006; Gielen et al., 2014; Harris, 1994; Salyers et al., 2004).

The ACT Model

Assertive Community Treatment (ACT) is the most commonly employed community mental health model in Ontario and refers to a long-term, comprehensive, treatment and assistance program that is served in the community, in vivo, in persons with persistent SMI (Ontario ACT Association, 2018). Typically, ACT teams are multidisciplinary, which include staff in the area of psychiatry, nursing, social work, occupational therapy, substance abuse, peer support, and program administration (Ministry of Health and Long-Term Care, 2005). ACT teams offer among others, crisis assessment and intervention, assistance with symptom management and daily living, pharmacological and behavioral interventions, substance use treatments, relapse prevention, recovery, and social support services, as well as vocational housing services (Ontario ACT Association, 2018). At the same time, counselling and therapy are considered outside the scope of the ACT team's scope of work and are not offered to clients through the team. ACT clients have access to these services 24/7 while ACT teams simultaneously strive to maintain low client/staff caseloads, so team members and clients can become more familiar with one another. Despite the ACT model being one of the most widely disseminated practices for individuals with SMI, its effectiveness when dealing with trauma has come into question. As a matter of fact, during the initial client intake in an ACT team, no standardized tool for trauma assessment is employed, strongly suggesting that any underlying trauma-related needs of the client can be overlooked.

Current Study

The present study aimed to explore the perspectives, procedures, barriers, and facilitators surrounding the identification, screening, assessment, treatment, and discussions of trauma and trauma-related issues in clients serviced by ACT teams. To do so, we employed qualitative methods and interviewed members of ACT teams who are directly involved in the treatment of clients with SMI. Results from this study may allow for the contextualization of the quantitative empirical literature on the topic. Additionally, they may provide the unique insight of current mental health providers on the barriers of engaging in trauma-informed care and shed light on the procedures related to trauma identification and treatment employed in ACT teams as well as the level of consistency displayed between different ACT teams when dealing with trauma.

Methods

Participants

We recruited a purposive sample of service providers from four ACT teams in Canada. Specifically, the ACT team members whose role enables discussion on trauma were invited to participate, namely psychiatrists, nurses, social workers, peer support workers, and mental health workers. Sixteen interviews were conducted; four psychiatrists, four nurses, five mental health counsellors or social workers, two peer support specialists, and one occupational therapist participated. There were participants with dual roles where four were also the team leads of their respective team.

Participants were asked to take part in a one-on-one semi-structured interview with the first author. Before interviews were conducted, participants were told they could withdraw from the interview at any time, and that in such an event their data would not be used. Participants were also told that the data would be kept confidential and that they would not be personally identified or linked with their responses. Participants were asked to sign a consent form for their involvement. Prior to the interview, participants were given a copy of the interview protocol in order to have time to reflect on the questions asked. Interviews lasted approximately an hour and were conducted in a private room at each team's ACT main office. The study was approved by the University of Ottawa Research and Ethics Board.

Data analysis

The interview protocol included the following areas: assessment of trauma and PTSD (e.g. screening tools etc.), frequency of discussion of trauma and PTSD, comfort in discussing trauma-related issues with clients, barriers and facilitators to discussing trauma-related issues with clients, and providing treatment for trauma-related issues.

The audio recordings of the interviews were transcribed and the data was analyzed using a thematic analysis approach (Strauss and Corbin 1990). Thematic analysis emphasises identifying the patterns of issues or topics from the data that are of potential interest to the research problem. Thematic analysis is one of the most popular analysing methods as it offers a flexible means to evaluate data and provide a rich and detailed analysis. The thematic analysis for this study followed the six steps of analysis determined by Braun and Clarke (2006) to ensure a methodical manner for reaching meaningful results. First, a team of four research assistants read the transcribed data in its entirety, which was followed by the first author grouping responses under 21 sub-themes. We created, refined, or eliminated codes by establishing similarities and differences of the transcribed interview texts. These sub-themes were then grouped into five overarching themes. Reviewing interview transcripts by multiple coders helped to preserve different perspectives, while also reducing biases, ambiguities, and coding discrepancies.

Results

Five overarching themes emerged from the data: Table 1 demonstrates how the main themes relate to the 21 sub-themes that were identified during the analysis process. The results focus on the five overarching themes with brief discussion of their respective sub-themes

Theme one: Role and Scope of the ACT team and model addressing trauma

Despite ACT considering counselling outside its scope, ACT members find discussing trauma as an integral part of their role. In this regard one respondent stated that, "*I think it's possibly a tricky kind of balance, but ultimately, I think we can't say no we don't deal with trauma. To me there is an absurdity in that because it's just part and partial in people's lives and if we are not addressing it we are going to miss the boat*." One of the major areas of discussion that emerged is the debate on whether or not working with and treating trauma falls within the scope of the ACT teams and general ACT model. Some mentioned that it would fall within its scope since almost all clients have experienced trauma; others indicated that since therapy and counselling is not part of the scope of ACT teams that ACT providers should actively avoid working with such content. The scope of the ACT model does not specifically highlight or focus on therapy or treatment providence for those having suffered trauma. One participant noted that "*we're not a therapy team we're a treatment team and so we don't get into therapy with our clients".* On the contrary, another participant stated that while therapy is not currently within scope, it should be. They stated that, "*this is a need for our clients this kind of trauma therapy, or therapy in general in trying to fit it within the ACT model and offer resources to ACT workers so they are actually – and to think in our hiring who would be able to manage these skills, and then offer resources to gain the skills and then to supervise those skills so we do actually have a workforce that's able to offer therapy*." Furthermore, individual teams take it upon themselves to incorporate therapy and counselling within their work. For example, a participant noted that their team is moving towards hiring staff that are better suited to address trauma, "*only more recently has our team focused on hiring people who have a background like registered psychotherapist, so people who do psychotherapy as their profession rather than somebody who has only knowledge in a certain area."*

The screening processes across ACT teams are not consistent and typically do not adequately inquire about trauma. Generally, the intake procedures follow a similar pattern: clients come from a central intake procedure; background information is collected from past hospitalizations and health records; intake interviews and psychiatric interviews are conducted; the team makes the decision after assessing all the information and client interview. However, there are no standardized procedures nor assessment tools used conducted across all ACT teams, nor are there any focus on trauma history, trauma related issues, or differential diagnosis based on an awareness of trauma's impact on psychotic symptoms. In fact, one psychiatrist reported that none of their clients have a trauma history nor does trauma have an effect on symptoms of severe mental illness. They reported *"the [clients] that come to us their illness a lot of times it's chemically related…. schizophrenia is not related to stressors in the past, so the patients we have …most of the time it's biochemically related… 100% of my patients are on medications."*

Theme Two: Discussing trauma with clients

Participants focused on rapport building and ensuring that clients are not re-traumatized; "*So, the benefit of ACT is how you're usually allowed time to build that rapport, but you see how some clients feel, intimidated by past traumatic experiences it could have nothing to do with you and you've had great experiences with them but sometimes hard day that the people, it will bring up something that has happened in the past.*" Most, if not all, of the ACT members interviewed reported usually waiting for the client to open up the topic of trauma if they so wish rather than asking. Further, when clients do talk about trauma, the providers want to make sure they have resources to offer afterwards. One participant mentioned, "*I'm very happy that they brought it up, I don't want them to feel that, that they shouldn't have brought it up because it's something that affects a lot of our clients and whether it be from family history, their immigration something happened, a lot of our clients have had some sort of trauma, so I'm comfortable in speaking about it but I want them to be able-to have the correct resources.*" Providers also expressed some concerns when bringing up the topic of trauma: *I'm always careful if we're going to open that door, what are we going to do with that? How are we going to help that person hold that trauma? Is that person ready to talk about that? Is this the right context and space to talk about that? Is there a better way for that person to express that?*";

while recognizing that it could lead to their clients decompensating: "*I do try to keep in mind that for some clients they can descend into a place that's not safe for them if I open up a conversation about trauma without the time to properly address what's come up so be- being a little bit careful*."

The interview responses suggest that it may not always be appropriate to talk about trauma. The context, comfort level, and health of the clients should be carefully considered before approaching any sensitive topic, including their traumatic past experiences. Ultimately, when and if the discussion of trauma comes up should depend on the client; "*Some clients are able to compartmentalize that and move on and be fairly functional and then at some point they are ready to go back and address the trauma, because that barrier is strong enough to prevent it from leaking over to their day to day. Other clients, that cell barrier is so permeable if you start trying explicitly addressing the trauma it starts bleeding over so much to their life that they get unwell and hospitalized.*" Nonetheless, discussing trauma is crucial to better understand the context and history of the client and, to ensure they feel comfortable and understood within the ACT team, which in turn allows providers to meaningfully engage with them; "*it's important to acknowledge and normalize trauma and to let people know that they're accepted and not judged."*

Discussions surrounding trauma vary amongst ACT teams. Some interviewees asserted the trauma-related topics come up frequently, while others reported that it is never discussed. The perceived frequency of trauma discussions could depend on the role of the providers as well as their personal opinions on the importance of discussing and inquiring about trauma. Trauma may come up, during team discussions, or directly with the client, during interventions. These idiosyncrasies between providers were laid bare when asked about how trauma comes up in discussion with one participant elaborating, “*where you’ll ask them how they’re doing, what kind of thoughts have they been having, are there things that sort of stick in their mind. And that’s where it would come up. And in clients we find that they have a lot of this sort of things we often offer them therapy sessions, regular, with one of us*.” and another stating *“We don’t see patients here... for trauma, most of the patients referred to us they have really serious mental illness with lots of medication so that’s what we’re dealing with”.*

Another point that emerged from the analysis is the accuracy of the traumatic experiences described by the clients. It is inferred that it is almost impossible to know whether the experience was real or part of the client’s delusional system. The providers report that there are usually inconsistencies in the events described by the clients and that their stories often change overtime. However, as ACT providers, they feel it is imperative for them to acknowledge the experience as legitimate since, regardless of its accuracy, it represents something that has a very real impact on the client’s life and wellbeing “*in terms of dealing with the trauma, whether or not it happened, they believe it happened and it’s still traumatic so you still have to work with that*.”; “*to me those details, that accuracy, isn't as important. I guess the specific details are not as important as their experience of it, and how it's kind of been integrated into their lives*.” In conclusion, for the providers, understanding and listening to the experiences and events shared by the clients is of higher importance than determining their accuracy; “*validate, the feelings around and just listen to it, listen to their story, offer, probably a psychology consult or do you want to see- do you want to talk to a psychiatrist, offer some community resources, depending on what it is and how that's manifesting.”*

Theme Three: Treatment of trauma

Once a client is accepted in the team, a treatment plan to address their needs is created. Treatment plans are created collaboratively by ACT team members. Importantly, clients are given an active role in the development of treatment plans and their input is taken into consideration both when developing and adjusting these plans: *"The crisis plan would get drawn up and then we would review it as a team to tweak it; if we are missing something or if something is there that the client doesn't like. And then it gets reviewed back with the client when it's completed. And then whoever is on call also has access to that information so when a client calls in crisis they can go through the plan with them"*. Each treatment, coping, and crisis plan is tailor-made for each individual client to address their unique needs. This can take the form of medications, service calls, or any other resources or support given to the client through the ACT team; *"whether [it means] medications or whether it means we need to do support calls and call this person every day to make sure that the person's safe, it's meeting a plan that the client finds beneficial"*. Trauma is also taken into consideration when developing the treatment plan both to ensure that the client is not re-traumatized and to provide them with all the resources they might need, *"The crisis plan would get drawn up and then we would review it as a team to tweak it; if we are missing something or if something is there that the client doesn't like. And then it gets reviewed back with the client when it's completed. And then whoever is on call also has access to that information so when a client calls in crisis they can go through the plan with them".*

Different team members bring different strengths and knowledge to the team, which translates into multiple different therapeutic techniques employed within an ACT team. For example, one participant mentioned: *"I do some mindfulness, even just doing some of the deep breathing and grounding, physical, mental soothing grounding with clients, we do that in the moment"* while another said: *"self-management development, personal agency, it's like doing therapy but the therapist is the team"*. That being said, since ACT teams do not formally retain psychologists on their teams, there are cases where referrals to external resources, like trauma-therapy, are necessary. The problem with this is that the majority of the clients whose main source of income is disability support and benefits and are unable to afford and gain access to these resources; *"there is a tension I would say with availability of psychology and probably as you know hospital-based psychologists you can access them if you can access them, but they're rare and if you are trying to deal with something in the community then it's more than $200 an hour to see somebody"*. Furthermore, two teams have peer-support specialists they can utilize to support clients in their trauma, mostly as a supportive role, these roles are highly valued and utilized by the clients and teams.

Theme Four: Barriers to treatment of trauma

The participants identified lack of knowledge and training on trauma-related topics as a main barrier in engaging with clients about trauma's influence on their life, mental health and subsequent treatment. Most of the respondents admitted there were gaps in their knowledge, for instance, "*I could always- definitely learn more, and I recognize that I have therapeutic gaps, where I know I could get more training to be more trauma informed*". At times, few of the respondents acknowledged that their lack of expertise and relevant resources makes them apprehensive to approach the topic of trauma; "*I don't have all the tools that I would need to address it and I wouldn't want to make it worse by saying something that it's not*." That being said, it became apparent through the analysis that ACT providers strive to enhance their knowledge through self-education, external training, career experience, education sessions, and team knowledge transfer. Although this is promising, the respondents noted that availability of training is severely lacking. Even when trauma-related training is available, it is not held as a relevant topic overtime and it is not very useful when discussing trauma with clients, "*They went and they did the course to check the box. But it didn't really actually certify us in anything. And then when you look at what the trauma course was, it wasn't really educational or anything. didn't really teach you work… to be trauma informed"*

Leadership was also identified as a potential barrier. Leaders of the team either officially or hierarchically play a major role in the emphasis on trauma and as a consequence the level of comfort ACT members have when working with the client on trauma-related issues. If there is apprehension from leadership to deal with trauma in clients, this trickles down to the providers and they, in turn, become apprehensive *"when it comes to [leadership] wanting to deal with it [is a barrier] because I find honestly they're the ones most apprehensive to dealing with it…. if it's coming from… [leader] … who says "let's not go down that road"... it's a bit of a dynamic there right."* Another participant commented on the challenges with managing the hierarchy within the ACT team, despite that there is not supposed to be one due to its interdisciplinary nature and having a team lead who is not a medical doctor, "*even though ACTs are not supposed to be [hierarchical], there really is because the psychiatrist is the primary caregiver, they prescribe the medications."* Relatedly, another remarked on the apparent reluctance of some doctors to work with trauma which can have far-reaching consequences, "*A lot of the teams, doctors sign to work with the teams and don't necessarily want to do it. They're there* *because it's their turn to have to so some teams only have a psychiatrist a few times a week not someone who is plugged in and fully committed to the service. So, the leadership here has made a really big difference."* Furthermore, leadership does not allow for an avenue for providers to provide feedback, or where providers' feedback is valued, one participant remarked *"because of politics and how it goes and funding issues, this organization runs on keep your head down, your mouth shut no question."* However, one team has actively attempted to try to "*squash the hierarchy*" between the psychiatrists and the other providers so much so that team members feel comfortable "*consulting and receiving supervision*" from those in traditionally hierarchical roles such as the psychiatrist and other managers.

Another major barrier identified by participants is related to the set-up of the team; the ACT model itself is not conducive to provide the opportunity for clients to bring up trauma let alone to be able to work on the potential issues that may have arisen as a result of the trauma. Because of the way ACT is currently set up, providers are often unable to work with the same client continuously over time which prohibits the building of rapport as follow up on past conversations is difficult. Moreover, when multiple providers are in contact with the same client, issues coordinating amongst themselves on what happened with specific clients may arise. Another issue is the overburdening of providers with a large number of clients, which reduces providers' time to adequately attend to each client, and limit their focus to immediate needs only; "*The whole ACT model [is a barrier], say I'm seeing someone today and something were to come up like that. And we just started talking about it. I might not see that person again for 10 weeks….so there's just no continuity, no consistency… So, you don't even get to follow up, it's just about putting out fires"*

The treatment approach of SMI is largely follows a medical model, whereby the primary treatment approach is that of psychiatric intervention. This represents a barrier when addressing psychological distress, such as client trauma. When referring to psychiatrists, one participant stated, "*when they see our clients, they see something that has to be managed medically…and medical management can sometimes bury our capacity to work with clients in any other way*." When treatment is predominantly focused on medical management, this has an impact on the quality of services that clients receive. For instance, if a client's treatment time is mostly allocated towards prescription management, it leaves little room for them to develop appropriate coping skills to address trauma-related needs that are critical for relapse prevention. However, in order for these needs to be addressed requires therapeutic competency amongst staff – which is often found in trained professionals, such as clinical psychologists. Another participant added, "*And [we] still deal with doctors from that generation who look at it as basically, it's meds or nothing [we're] just here to get them in and out of the hospital*". One participant captured the essence of this issue by describing the environment as a "*trauma avoidant culture*".

Theme Five: Recommendations to facilitate discussions on trauma in general and within ACT model

The recommendations made were mainly directed toward addressing the barriers mentioned earlier and therefore additional contextualization are presented in the discussion. Some of the strategies mentioned were increased training and focus on trauma's impact on people and how to properly address potential issues with clients. Related to this, providers highlighted the importance of more investment and resources for the staff, including better tools and training, access to a psychologist, access to therapeutic resources including more funding for peer support workers and trauma specialists. Currently, no ACT team has a psychologist on staff. However, there was unanimous support to have a psychologist on staff for teams. One participant remarked, *"So having [a psychologist] permanently would actually be, even on a part-time basis, … very good, so for trauma it would be nice to have access to someone regularly".* In this regard, the analysis revealed that having a specialist that deals with trauma would be beneficial. Furthermore, the analysis revealed a need for changes in the structure of the ACT team and model, including better and more effective leadership and management through more transparency and higher engagement with trauma material. At the core of the issue, a radical, cultural shift moving away from the medical and hospitalization model of managing people with SMI towards more psychosocial interventions and genuine change to the implied hierarchy regarding medical professionals in ACT teams is necessary. An overarching recommendation was to foster a safer environment and a means for which ACT team members can provide feedback, seek more support, and make suggestions to administration. One participant summed up the main issues:

> *"A doctor told me one time he says if we're floating down stream and we see all these dead fish and bodies floating down stream, it's important to go upstream and see what's killing them in the river. So I think treating trauma is almost like going up that stream and seeing where are all these bodies are coming from... it's getting at the core of the issues for clients, it's dealing with its effects and how it manifests in its current sort of way, how it has evolved currently, and the way it's showing up in the person now. I know the system is not designed for that, it's not how it works, which is sad and frustrating. I*

> *think that [analogy] can be applied to organizations and to systems as well so what happened, where did we go off the rails in our approach to trauma? How can we get that back to, or have a new direction, knowing what we do now with trauma, how can we do better to serve people better?"*

Discussion

This study aimed to fill the gap in the empirical literature surrounding the perspectives of key stakeholders and mental health care providers working with people with SMI on trauma-related issues. This is the first study that specifically sought out to engage, listen to, and document the unique insight of ACT team members on the topic. Through qualitative analysis, we found five broad themes relating to trauma-related issues in ACT teams: the perceived role and scope of the ACT team and model regarding trauma, discussing trauma with clients, treatment of trauma, barriers to treatment of trauma, and recommendations to facilitate discussions on trauma in general and within the ACT model.

It became clear through the analysis that there is a lot of variability when approaching trauma both between different ACT teams, as well as within each team, due to differences in leadership style and level of comfort of each team member to broach the topic of trauma. Consequently, clients may get a different level of care depending on the team members they are attached to. This issue appears to stem from the lack of clarity regarding the role of ACT teams addressing trauma. ACT does not offer any clear guidelines on the issue, which was illustrated by the broader debate that emerged on whether or not therapy and counselling even fall within the scope of ACT. Some of the workers interviewed admitted that their teams foster a culture whereby trauma histories and discussions on trauma are actively discouraged and avoided because their leaders feel that counselling and therapy fall outside of the ACT's scope. On the other hand, other teams have put trauma at the forefront and have actively recruited staff that are able and willing to do this work in a therapeutic way. A thematic analysis conducted by Farrelly et al. (2014) on service users with psychotic disorders illustrated that treatment continuity, consistency, and clarity are of clear importance to service users. Not only is it vital to have supports available to clients, but the method in which these supports are delivered is just as important. Ultimately, what needs to be considered is that this great disparity in interpreting the scope of ACT has real consequences on the type and level of treatment that clients get and urgently call for clearer guidelines of what falls within and outside of the scope of the ACT team.

ACT teams serve persons with SMI who have more likely than not experienced some form of trauma in their life (O'Hare et al., 2013). Therefore, since ACT clients represent some of the most vulnerable and in greatest need of support clients, changes may be necessary for ACT teams to become truly trauma-informed and provide the best care they possibly can. As one worker characteristically put it, the current role of ACT teams is to "put out fires" rather than address the root of the issue, which more often than not may be trauma. Although the current approach may be great when it comes to fulfilling immediate needs (e.g., symptom management), it does little to increase the capacity and functioning for clients in the long term. The reason behind ACT adopting this approach is multifaceted. Partly, it is due to clients seeing multiple workers resulting in little consistency or continuity. At the same time, each worker is expected to step in and provide most services at any time. However, this generalist attitude to service provision may leave ACT team specialists struggling to provide specialty-related services with consistency (Moser et al., 2013). This is in line with Moser, Monroe, and Teague (2013) who have noted problems related to specialty intervention. Additionally, there seems to be a pervasive culture that primarily focuses on the medicalization of people with SMI. The overdependence on the medical model of mental illness was identified in our analysis as a barrier that hinders workers from even discussing trauma let alone treating it and addressing it in any genuine way. In the end, this approach negatively impacts clients, since there is ample evidence in the empirical literature supporting the effectiveness of trauma treatment models compared to simple symptom management through medication (Brady et al., 2001; Fallot & Harris, 2002, Najavits et al., 1998; Rosenberg et al., 2001). For instance, a study by Talbot et al. (1999) looked at 86 women with histories of sexual trauma being treated in a mental healthcare setting and found that those who were assigned to a psychoeducational group intervention experienced significant reduction in mental health symptoms compared to the control group (i.e., treatment as usual). As an extension to this issue, an informal hierarchy with psychiatrists, who are often reluctant to broach the topic of trauma, on top seems to have been formed in ACT teams. This coupled with lack of avenues for feedback from team members, make it hard for change to take place and may leave workers frustrated.

Despite the considerable research and work in bringing awareness on the prevalence of traumatic history and its impact on persons with SMI, significant gaps in implementing trauma-informed practices by key stakeholders and mental health care providers who work directly with this population remain. A study by Rosenberg et al. (2001) examining strategies for effective intervention development for clients with both SMI and posttraumatic symptoms affirms that trauma-related needs are urgent and providers often feel pressured to offer non-standardized forms of intervention to address them swiftly despite preferring standardized practices. Thus, knowledge translation that targets providers is essential. Furthermore, there may be misconceptions and possibly a lack of up to date awareness of the relationship between SMI, trauma, PTSD, and substance use. This can be easily rectified by more frequent training through knowledge sessions which will provide workers with the tools necessary to improve service delivery, client adherence, and therapeutic outcomes. Continuing education in place of the one-off sessions currently available to workers would also ensure that key information does not fall off providers' radar. In addition to all that, assessing client knowledge and attitudes on trauma, is critical to our understanding the reasons behind trauma under-reporting and our ability to develop better, more sensitive training. For example, are clients unwilling to talk about trauma, or is it that no one has asked them about it? Do clients recognize symptoms of PTSD and do they realize that these symptoms are treatable? At the same time, buy-in is critical, since if either providers or clients do not see the value in trauma-informed treatment, even effective interventions will not be employed in practice.

A discussion about trauma would not be complete without acknowledging that trauma does not affect all people equally and the subsequent impact of these results on differing groups of people. As mentioned, those with SMI report disproportionately high instances of traumatic exposure through their lifetimes. Still, research shows that certain demographic groups with SMI are even more impacted by trauma than others, including Black and Indigenous persons, migrants and refugees, and especially women (Roberts et al., 2011; Knipscheer et al., 2015; Brave Heart et al., 2011; Brand, 2013). There is also evidence that systemic issues and biases against people of colour in the mental health system further marginalize these communities (Corneau & Stergiopoulos, 2012; Rollock & Gordon, 2010; Fernando, 2013). Taken together and given that ACT are generally lacking in trauma informed practices and adequate care towards those with trauma, it could be that those with diverse identities are further not receiving the adequate care that they require.

However, the present study has limitations related to its limited scope and purposive sample. Only four ACT groups were surveyed, and only those that were providers of interest were contacted to participate. Future research should include the perspectives from a broader range of ACT teams across different regions and from various different types of ACT providers. Importantly, future work should also include the perspectives of ACT clients to get a better understanding of their experience with receiving care for their traumas, ascertain the barriers they experience when it comes to discussing trauma, and document and implement their recommendations. Finally, future work in ACT teams should consider actively involving ACT clients in the research process as equal voices by employing a participatory design method. There has been no research conducted including people that are in ACT teams on what they want out of being with ACT teams and more specifically, how they want their potential trauma related symptoms worked with.

The present study explored the ACT teams’ providers perspectives on working with trauma in clients broadly. The findings address existing gaps in the literature by discussing ACT teams' approach to trauma, barriers currently preventing appropriate trauma care, and suggestions from those that implement the ACT model on how better address the trauma needs of their clients. Despite the mental health system’s push for effective and efficient services, its current mindset to prioritize medical intervention without addressing trauma-related needs supports a model that impedes on true relapse prevention. The insight gained from ACT interviewees illustrates how a lack of trauma-related services can result in unclear clinical judgments amongst providers and, as a result, lead to inconsistent interactions with clients. While medical interventions can help in alleviating neurological and physiological symptoms, they are deficient in helping clients build healthy coping strategies that are required to overcome trauma and distress. Ultimately, addressing trauma head-on will greatly benefit client recovery and serve as a protective factor against relapse.

Conflict of Interest: The authors declare that they have no conflict of interest.

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Table 1 The five overarching themes and the relationship to the sub-themes

Role and Scope of ACT team and model concerning trauma	**Discussing trauma**	**Treatment of trauma**	**Barriers to treatment of trauma**	**Recommendations to facilitate discussions on trauma in general and in ACT model**
• Discussing trauma is an integral part of their role as ACT workers • There is much debate on whether or not working with and treating trauma falls within the scope of the ACT teams and general ACT model • The screening processes across ACT teams are not consistent and typically do not adequately inquire about trauma	• Rapport building is an important aspect of being able to discuss trauma with clients in a safe way • Workers typically wait for clients to open up the topic of trauma rather than asking • Workers want to make sure they have resources to offer afterwards before discussing traumas • There is much worry about decompensation which prevent workers from opening the topic of trauma • The perceived frequency of trauma discussions varies greatly which could depend on the role of the workers as well as their personal opinions on the importance of discussing and inquiring about trauma • Accuracy of the traumatic experiences described by the clients vary but need to be treated as legitimate as it has the same impact	• Development and adherence to an overall treatment plan and crisis plan is integral to treatment or addressing trauma • Different team members bring different strengths and knowledge to the team, which translates into multiple different therapeutic techniques employed within an ACT team.	• Lack of knowledge and training on trauma-related topics • Leadership and implied hierarchy • Lack of specialized staff including psychologists, peer support specialists, trauma specific professionals • The ACT model itself is not conducive to allow the room for clients to even bring up trauma let alone to be able to work on the potential issues that may have arisen due to trauma • The adherence to biomedical model of SMI whereby the major and sometimes only treatment endorsed and supported is that of medication	• Increased training and knowledge translation • More investment and resources for staff • Specialized staff, e.g. access to a psychologist, peer support workers and trauma specialists. • A need for changes in the structure of the ACT team and model • A cultural shift moving away from the medical and hospitalization model of managing people with SMI towards more psychosocial interventions • Foster a safer environment and a means for which ACT team members can provide feedback, seek more support, and make suggestions to administration and leadership

General Conclusions

Research in the last decade regarding SMI, trauma, and PTSD has shown that overall there are inconsistencies and lack of clear understanding in conceptualizing and identifying trauma and PTSD in those with SMI (e.g. Hardy, 2017). As a consequence of a lack of recognition and a clear understanding of traumatic stress in those with SMI, important knowledge gaps exist. More specifically, the precise relationship between SMI, trauma, PTSD, substance use and the potential gender differences in this relationship given the gendered nature of the experience of trauma, PTSD, and substance use. Much of the issues around recognition and conceptualization of trauma and SMI are multifaceted, including practitioner level issues, research to practice issues, organizational issues, and overall lack of research. These issues make it difficult to fully understand the relationships between these constructs in a diverse population. As a consequence, the quality of care may be compromised with regards to trauma-informed care and addressing the potential trauma needs of clients in ACT teams.

The findings from this two-part dissertation bring awareness to the need for a nuanced understanding of the ways in which trauma and PTSD may impact people with SMI. In addition, the findings bring awareness to the significant need for a more trauma-informed approach for those with SMI. Based on the findings of both studies, taken together, both men and women clients have high rates of traumatization yet they may not be receiving adequate trauma-informed-care overall when it comes to traumatization and potential PTSD symptomology. The ACT team members who were interviewed identified that lack of knowledge and of appropriate ways to provide care to those with traumatic stress was a concern. Women had significantly higher rates of trauma and PTSD in the file review, it may be that women and those that do not identify as men may be further disadvantaged by not receiving trauma treatment and care within ACT teams. In addition, it could also be that there may be still much gender stereotyping regarding trauma being employed by practitioners and clients alike. For example, the trauma of participants who identified as men may not be adequately recognized and treated potentially, in part, due to societal norms regarding masculinity where clients may not want to disclose trauma nor to practitioners want to ask due to this stigma. Finally, this dissertation shows that there may be a need to further consider those with diverse identities overall in better understanding of how intersectional minority identities may be further impacted by these relationships and the quality of treatment received. Those with intersecting diverse identities are more marginalized and tend to further receive inadequate consideration and care when it comes to research and practice (e.g. Chiu et al., 2018; Cole, 2009; Henrich et al., 2010; McGuire & Miranda, 2008). This was a limitation of this study whereby we did not conduct any analyses by race or ethnicity to acknowledge the many intersecting identities and how more marginalized identities are not always a consideration even though they may be differently impacted by trauma and SMI and access to quality mental health care.

Major Findings

Regarding gender differences in trauma exposure experiences, PTSD, and substance use, Study 1 found that women with SMI experienced emotional abuse, sexual trauma, life-threatening suicide attempts, adult trauma, and PTSD at higher rates compared to men. Further, it was found that men had higher instances of problematic use of alcohol, marijuana, stimulants, as well as a higher incidence of lifetime problematic substance use. For the SMI-PTSD model, although the model was generally unsupported overall, the model seemed to fit the experiences of men better than women. For men, childhood trauma predicted adult trauma and consequently adult trauma influenced increased hospitalizations. In turn, and the only mediation that was significant, adult trauma mediated the relationship between childhood trauma and PTSD. Additionally, there was a link between childhood trauma and physical health impacting problematic substance use issues. For women, childhood trauma and adulthood trauma were both significant positive predictors of PTSD. No pathways or mediations were significant for women. Given these results, it seems as though the conceptual model may be better suited to the life experiences and trajectory of men and may be less relevant to the experiences of women. In women, these relationships may be different and need to be conceptualized alternatively in order to understand and, in turn, support them with care and interventions that are more tailored to their unique experiences.

In Study 2, five themes emerged through the interviews with ACT providers. The providers outlined many challenges with working with trauma with clients: the perceived role and scope of the ACT team and model regarding trauma, discussing trauma with clients, treatment of trauma, barriers to treatment of trauma, and recommendations to facilitate discussions on trauma in general and within the ACT model. More specifically, from the theme of the role and scope of the ACT team and model (Theme 1) participants reported a lack of clarity and debate on whether or not working with and treating trauma falls within the scope of the ACT teams and if this is under the purview of the ACT model. However, participants also noted that though there is this debate, discussing trauma is an integral part of their role as ACT workers. Finally, it was revealed that the screening processes across ACT teams are not consistent and do not typically inquire about trauma fully. Theme two was around discussing trauma with clients. In terms of sub-themes, firstly, participants discussed the importance of rapport building in terms of it being an integral part of broaching the topic of trauma for clients. Secondly, workers were unanimous in that they will wait for clients to broach the topic of trauma rather than inquiring. Thirdly, workers want to make sure they are familiar with the resources available for clients before the topic is opened up so will hold off for a time. Fourthly, workers worry about client's decompensation if they bring up trauma which in turn prevent them from broaching the topic. Fifthly, there was also much variability on which workers would bring up discussing traumatic experiences based on the workers role and their own personal beliefs about its importance. Finally, there was a consensus that the accuracy of the trauma discussed and described by clients need to be treated as legitimate even if there is doubt (e.g. positive symptoms, delusions etc.) as the impact on the client is the same. The third theme was how trauma is currently being treated on the teams. There was agreement amongst the participants that the development and close adherence to a treatment and crisis plan is important to addressing trauma in clients and refer to psychotherapy when needed. Participants also reported that various team members bring different strengths and knowledge to the team, which translates into multiple different therapeutic techniques being employed. The fourth theme was barriers to treatment of trauma. This included: the lack of knowledge and training on trauma-related topics by workers; issues around leadership approaches and the implied hierarchy within the teams which prevent trauma treatment to be a focus, lack of specialized staff including psychologists, peer support specialists, trauma specific professional;, the ACT model itself not allowing for clients to even bring up trauma let alone to be able to work on the potential issues that may have arisen due to trauma; and finally, close adherence to the biomedical model of SMI where the major treatment endorsed and focused on is that of medication. The final, and fifth theme, was recommendations to facilitate broaching trauma as a topic. This included: increasing training and knowledge translation; increasing investment and resources for staff; hiring specialized staff; suggestions for a change to the structure of ACT teams and changes to the ACT model to include areas like trauma as a focus; a cultural shift moving away from the medical and hospitalization model of managing people with SMI towards more psychosocial interventions; and finally fostering a safer environment and a means by which ACT team members can provide feedback, seek more support, and make suggestions to administration and leadership.

Knowledge Translation to ACT teams

Sharing the results of this project with ACT teams is an important first step in addressing some of the gaps and recommendations presented herein. Once shared with ACT teams, they would be able to potentially implement short term and long terms changes, if so desired. An information sheet will be developed to summarize study 1 and 2 in their totality, as well as some tangible and concrete recommendations for ACT teams to implement in the short term and long term. This information sheet can be widely shared among all team members so that all providers will have knowledge about what the studies were, what was found, and what recommendations are being suggested. Additionally, a meeting with each ACT teams' team lead as a group or individually would also be beneficial in discussing the outcomes of each study, providing recommendations, and supporting the development of a plan to implement them. Due to the sensitive nature of the data and findings of the study, care will be taken to ensure that the results and recommendations are reported in a sensitive and confidential manner.

Research Implications

More research is necessary on conceptual models that take into consideration the various ways in which trauma has an impact on people. Muesers et al. (2002)s model is highly referenced in the literature and referred to as one of the accepted descriptive models in understanding the relationship between trauma, PTSD, and SMI, but very little research has been conducted on testing this model (Subica et al., 2008). Therefore, Study 1 has added to this literature of empirically testing this model. Research should continue to study these relationships empirically as there has been an uptick in interest trying to understand these relationships (Hardy & Mueser 2017). Recently in the literature, studies have developed and tested causal models to better understand the relationship between trauma, PTSD and SMI. This will aid us in understanding the precise nature between these constructs (Kelleher et al., 2013; Alsawy et al., 2015; Hardy et al., 2016; Amanuel et al., 2017; McGrath et al., 2017). However, as I have demonstrated, there are vastly different experiences of trauma, PTSD, substance use, and psychosocial experiences by gender. Therefore, these overarching conceptual models may be insufficient in understanding these relationships for people of all genders. It seems as if these relationships may be vastly different for various genders, and thus research needs to consider these differences more when doing studies on these types of models. It should be further noted that since, as a society, we better understand gender identity as not just merely “men” or “women” more research needs to take into consideration the lived experiences by those that are not cis- man or a woman e.g. trans women and men, gender fluid, agender people to better understand how more specifically gender identity may impact these relationships. Taken even further, these models could also begin to take into consideration the applicability to those of other diverse identities as well, for example those that are marginalized by race, poverty, gender, cognitive impairment, and other diverse experiences. Although there was not enough diversity in the sample to analyse these relationships by race or ethnicity, more research can investigate how these models may be applicable to clients with racialized identities.

The research implications of Study 2 touch on multiple domains. This study is the first ever ascertaining the perspectives of ACT providers regarding working with trauma in clients. Although the perspectives sought were about a specific area, the results have opened many doors to other areas that can be investigated further. ACT providers are looking for avenues to be heard in hope of changing the model and approach to their clients overall. More research can be done to gather perspectives from workers on the strengths and challenges of the ACT model. Recently, a study found similar qualitative results regarding barriers and suggestions as to how ACT can improve to better service their clients and to minimize worker turn around (Tse & Chablani, 2021). Furthermore, future work should also include the views of ACT clients to get a fuller view of their experience with receiving care for the trauma they may have experienced, ascertain the barriers they experience when it comes to discussing trauma, and document and implement their recommendations. This study did not include ACT clients directly, only through their charts, it would therefore be important that future work in these areas focus on client's perspectives and experiences directly as well. In the same vein, future work in ACT teams should consider actively involving ACT clients in the research process as equal voices by employing a participatory design method which involves including people that are consumers of mental health services within the research process to ensure that their perspectives and voices are being heard within the process instead of assuming that we (the providers; researchers) are the only experts.

Not only this, but future research should explore the implementation of trauma focused therapies and other psychosocial interventions within ACT teams to ascertain the effectiveness of these interventions and outcomes for clients with SMI. This can be done through piloting having a or multiple therapy trained ACT workers e.g. psychotherapists, psychologists, social workers with therapy experience etc.) whose main part of their role is to provide dedicated therapy to clients on the ACT team. This can be in comparison to teams as treatment as usual and ascertaining outcomes. In this way, research can establish the effectiveness of implementing trauma therapy and other psychosocial interventions on the team compared to not having it. If the research shows that this does indeed impact outcomes, ACT practitioners and ACT policy makers should consider making amendments to the ACT model to formally include therapy by team members which will involve additional funding.

Clinical Implications

In terms of the first part of this study, overall, health care providers should inquire into the trauma histories and consider PTSD/traumatic-stress symptoms of people with SMI more. This should be part of the standard general intake assessment interviews when meeting with clients. Even if clients have had one or many diagnoses from the past, it is imperative that health care providers continue to gather information about clients with SMIs symptoms and histories. Doing so will ensure that health-care is moving towards trauma-informed practice on a systemic level. The first part of my study also showed that inquiry into trauma history was inconsistent with various health-care providers. Some gathered a thorough trauma history and inquired about PTSD symptoms, and overall showed trauma-informed practice. However, others did not inquire on these areas at all. This shows a large discrepancy in health-care providers knowledge and training around the impact of trauma on people with SMI and perhaps may indicate a potential bias around endorsing only the medical model of mental health. Further, there may be biases in inquiry for men and women. There has been some research showing that health-care providers inquire more into the trauma histories of women than of men (Weinreb et al., 2010). Therefore, health-care providers should ensure that they are inquiring into the trauma histories, PTSD symptoms, and substance use histories of men and women equally, which may require addressing possible biases and use of stereotypes by health-care providers towards their patients.

The model which was tested was largely unsupported by the data perhaps due to the issues mentioned above. However, the model seemed to fit more for men than women. This may indicate that these relationships may be different for women than with men, and the impact of traumatic stress, substance use, and their various illnesses may vary by gender. Therefore, conceptualization of regarding these relationships should consider gender diversity rather than employing overall conceptual models that assume these relationships and models are equally applicable to people of all genders.

In terms of the second part on my study, the clinical implications may lead to the re-thinking the ACT model itself. The interviews show that the lack of acknowledging the impact of trauma on people with SMI is having detrimental effects on ACTs ability to provide adequate care to their clients. Most workers understand that trauma and potential trauma-related symptoms are a major factor in the clients they work with, while simultaneously acknowledging there is generally not a good way currently to address these issues within the ACT team. The major issue seems to be the ACT model, which has generally remained unchanged since the early 1980s and lacks any mention of working with the trauma symptoms of clients. In addition, ACT also does not endorse therapy or counselling as part of the model, and hence, generally, very little therapy or counselling happens within the teams. For example, workers indicate that the general approach is that they do not do counselling and therapy. Instead, clients are supported in receiving it from an outside source. But, since the clients are generally very low functioning, they are unable to follow through on consistently attending therapy. This then creates a scenario where clients are not receiving the proper therapeutic intervention necessary to address their trauma-related symptoms.

A remaining question and issue is therefore, how can the ACT model and ACT teams implement trauma-informed care and practices as integral part of the model and teams consistently? In terms of the model, as mentioned, more research and model construction on how to include trauma-informed care and practices within the model need to be conducted and presented to the ACT community– this then will trickle down to the implementation of said model by teams. Once a model where trauma is considered and named is accepted by ACT teams and practitioners, it will be easier to make the changes to the teams. In terms of the teams specifically, as ACT workers pointed out in the study, leadership and management need to do more to ensure trauma-informed practices are being implanted at an organizational and institutional level. Meaning part of everyday practice, ensuring the workers are trained appropriately, hiring the proper staff to do this type of work with clients, and most importantly, that leadership and management are willing to make these changes and push for them as needed. This is an ideal place for psychology to support ACT teams in becoming trauma-trained, and implementing trauma-informed practices at an organizational level. As psychologists have an expertise in the scientist-practitioner model and its application in providing evidence-based psychosocial interventions. This is where they can take a leading role in supporting teams moving their approaches and practice more in line with what we know now about trauma and trauma-informed care in general and with those with SMI specifically.

In the last few years, there has been more of a focus on trauma-informed care practices and understanding the impact of trauma on those with SMI, especially those with psychosis. The efficacy of trauma therapy and psychosocial interventions are positive in general, and suggest endorsing more of a recovery-oriented approach to recovery from SMI (Swan et al., 2017). For example, recently, there were two meta-analysis and systemic reviews looking at the efficacy of therapy targeting traumatic stress and PTSD in people with SMI. Findings were robust and showed that these interventions are able to relieve symptomology related to SMI and increase functioning (Swan et al., 2017 & Brand et al., 2018). As such, the ACT model and individual teams can make changes to their team organization but hiring, training and supporting workers is required. This is in addition to re-conceptualizing the ACT model itself to incorporate this new knowledge. Perhaps this can be the start of rethinking the ACT model, and as such how we conceptualize those with SMI and their specific needs. As mentioned earlier, some ACT teams have started to see the gaps in the care they were providing to their clients and have begun to incorporate counselling and therapeutic interventions into their work with clients. That being said, it should not be up to individual teams to see this and implement the necessary changes, as this then means that not all clients of all teams are receiving the best care they need. It would be most beneficial to make necessary changes at the ACT model level so then all teams in the region may be able to make these changes.

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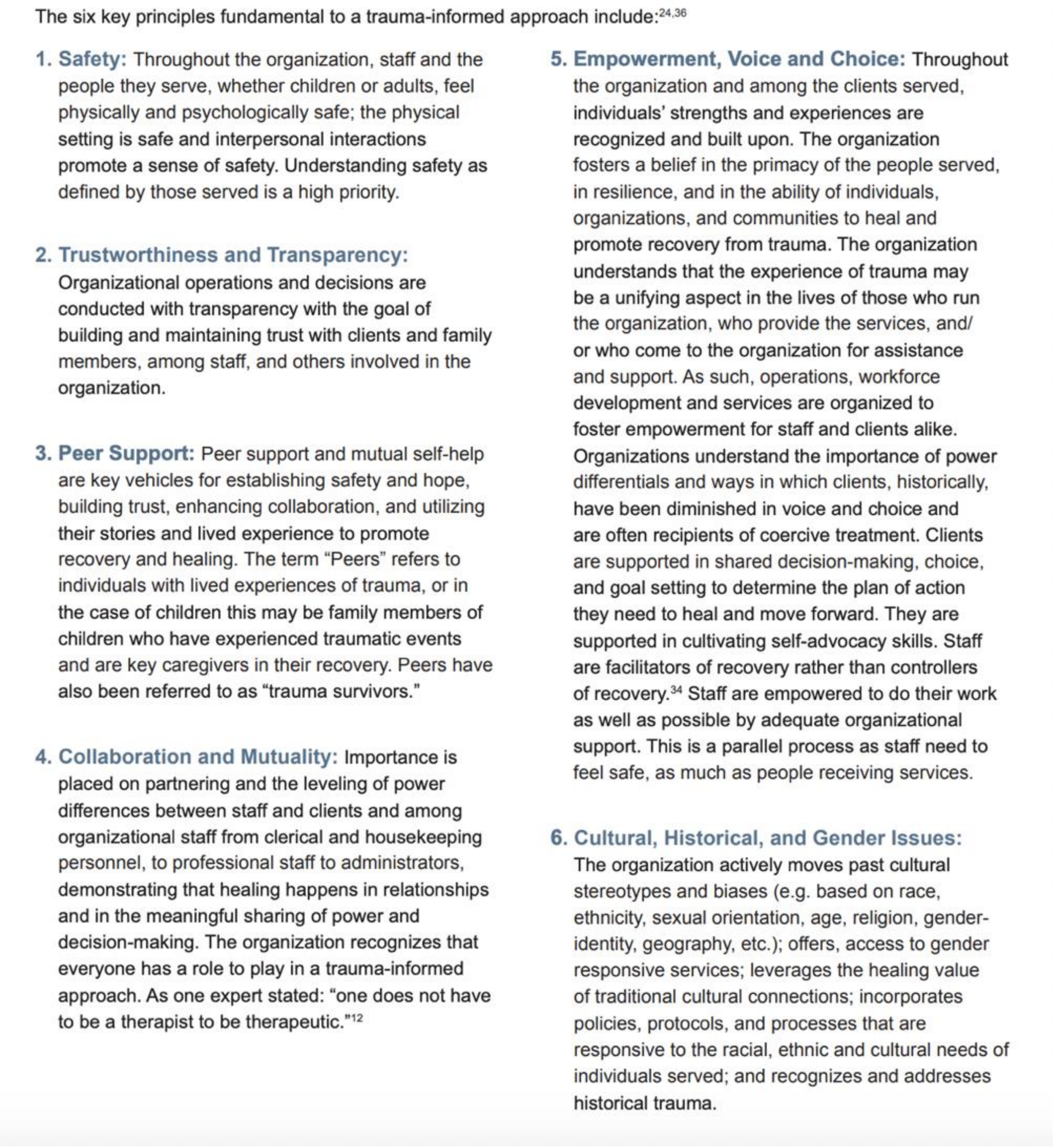
Appendix



The six key principles fundamental to a trauma-informed approach include:[24,36]

1. **Safety:** Throughout the organization, staff and the people they serve, whether children or adults, feel physically and psychologically safe; the physical setting is safe and interpersonal interactions promote a sense of safety. Understanding safety as defined by those served is a high priority.

2. **Trustworthiness and Transparency:** Organizational operations and decisions are conducted with transparency with the goal of building and maintaining trust with clients and family members, among staff, and others involved in the organization.

3. **Peer Support:** Peer support and mutual self-help are key vehicles for establishing safety and hope, building trust, enhancing collaboration, and utilizing their stories and lived experience to promote recovery and healing. The term "Peers" refers to individuals with lived experiences of trauma, or in the case of children this may be family members of children who have experienced traumatic events and are key caregivers in their recovery. Peers have also been referred to as "trauma survivors."

4. **Collaboration and Mutuality:** Importance is placed on partnering and the leveling of power differences between staff and clients and among organizational staff from clerical and housekeeping personnel, to professional staff to administrators, demonstrating that healing happens in relationships and in the meaningful sharing of power and decision-making. The organization recognizes that everyone has a role to play in a trauma-informed approach. As one expert stated: "one does not have to be a therapist to be therapeutic."[12]

5. **Empowerment, Voice and Choice:** Throughout the organization and among the clients served, individuals' strengths and experiences are recognized and built upon. The organization fosters a belief in the primacy of the people served, in resilience, and in the ability of individuals, organizations, and communities to heal and promote recovery from trauma. The organization understands that the experience of trauma may be a unifying aspect in the lives of those who run the organization, who provide the services, and/or who come to the organization for assistance and support. As such, operations, workforce development and services are organized to foster empowerment for staff and clients alike. Organizations understand the importance of power differentials and ways in which clients, historically, have been diminished in voice and choice and are often recipients of coercive treatment. Clients are supported in shared decision-making, choice, and goal setting to determine the plan of action they need to heal and move forward. They are supported in cultivating self-advocacy skills. Staff are facilitators of recovery rather than controllers of recovery.[34] Staff are empowered to do their work as well as possible by adequate organizational support. This is a parallel process as staff need to feel safe, as much as people receiving services.

6. **Cultural, Historical, and Gender Issues:** The organization actively moves past cultural stereotypes and biases (e.g. based on race, ethnicity, sexual orientation, age, religion, gender-identity, geography, etc.); offers, access to gender responsive services; leverages the healing value of traditional cultural connections; incorporates policies, protocols, and processes that are responsive to the racial, ethnic and cultural needs of individuals served; and recognizes and addresses historical trauma.

Supplemental questions for case workers about client's trauma experiences

Client file #:______________________ Client initials: ________________________

Please read the following and answer the subsequent questions related to your client:
A traumatic event is any event that involves experiencing or threatened with death, serious injury, or sexual violence; it also includes learning or directly being exposed to details of a family member or close friends experienced or threatened with death, serious injury or sexual violence. It does not include learning about it through media, pictures, television, or movies, except for work-related events.

Here are some examples of traumatic events, this is not an exhaustive list of potential traumatic experiences: domestic or family violence, dating violence; community violence (shooting, mugging, burglary, assault, bullying); sexual or physical abuse; natural disaster such as a hurricane, flood, fire or earthquake; a serious car accident; sudden unexpected or violent death of someone close (suicide, accident); serious injury (burns, dog attack); major surgery or life-threatening illness (cancer); war or political violence (civil war, terrorism, refugee).

1. Has this client divulged or do you have knowledge that they experienced traumatic event(s)? Y/N
2. If yes, please indicate all of the following traumatic event(s) experienced and when it was experienced (childhood, adulthood, both, or don't know)

☐ Physical abuse ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Sexual abuse ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Emotional abuse ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Neglect ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Domestic/family violence ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Single violent event ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Serious accident ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Natural disaster ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Sudden unexpected/violent death of someone close ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Major surgery or life-threatening illness ☐ Childhood ☐ Adulthood ☐ Don't know

☐ War or political violence ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Witness to violence ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Threatened with violence or death ☐ Childhood ☐ Adulthood ☐ Don't know

☐ Other (describe): ________________ ☐ Childhood ☐ Adulthood ☐ Don’t know

Data collection form

Unique Participant Code:	Date of admission (mm/yy):	Length of time in ACT program:
Age:	Gender:Male	
Education:	Race/Ethnicity:	Religion:
Home Situation:	Marital Status:	
Income amount and source: <14k, 14 – 30k, 30k – 60k, 60 – 90k, 90k +	Employment: .	
Hospital use All time: Last 5 years: Last 1 year:	Parent: No # of children: Contact with children?: N/A	
Physical Health (describe) list all diagnosed physical health diseases/disorders/issues:		
Primary Diagnosis: Other diagnoses:	GAF score:	

Substances

Indicate substance use or dependence (SU/SD); Current or in remission (C/R):

Alcohol: ☐ *Substance useCurrent*

Opioids (heroin, opium): ☐ *Substance useCurrent*

Stimulants (cocaine, amphetamine, meth): ☐ *Substance useCurrent*

Marijuana/Hashish: ☐ *Substance useRemission*

Dissociative (Ketamine, PCP, Salvia, DXM): ☐ *Substance useCurrent*

Hallucinogens (LSD, Mescaline, Psilocybin, DMT): ☐ *Substance useCurrent*

Steroids: ☐ *Substance useCurrent*

Inhalants: ☐*Substance useCurrent* *Tranquilizers (barbiturates, benzos):* ☐*Substance useCurrent* *Other (bath salts, MDMA etc. list):*	
PTSD present in chart:?:No	Depression present in chart? Yes
Trauma experienced: Physical / Sexual /Emotional / Other (describe)	Number of Traumas:
	Trauma in the last year? No Describe:
Trauma Experienced: Both Adulthood:	Issues with immigration experience:
Childhood:	Experience of discrimination:

OCAN rating STAFF:	**OCAN rating SELF:**	Indicate specific psychotic symptoms:
Accommodation:	Accommodation:	
Looking after the home:	Looking after the home:	
Self-care:	Self-care:	
Day-time activity:	Day-time activity:	Legal issues:
Physical Health:	Physical Health:	
Distress:	Distress:	Treatment capacity: Financial capacity:
Safety to self:	Safety to self:	Age of onset:
Safety to others:	Safety to others:	

Alcohol: Drugs: Company: Intimate relationships: Presence of psychotic symptoms:	Alcohol: Drugs: Company: Intimate relationships: Presence of psychotic symptoms:	Notes:
Initials of collector:		Date of collection:

Interview Questions

1. What are your roles and duties in the ACT team?
2. What are the intake procedures when a client is first reviewed and accepted into the team?
3. How often does trauma come up as a topic with clients? **Follow up:** How likely are you to ask about trauma and PTSD?
4. How comfortable are you with discussing traumatic events or PTSD symptoms that your clients may have experienced once they are brought up? **Follow up:** How comfortable are you with your knowledge of trauma and PTSD?
5. When it comes to light that the client has experienced traumatic event(s) and is or likely is experiencing trauma-related symptoms, how does your role and team respond? **Follow up:** Are you providing treatment for PTSD or trauma and if so what treatment are you providing?
6. When a client describes traumatic experiences, do you wonder about the accuracy of what they are describing to you (e.g. if it really happened, or how accurate is what they are saying)? Why or why not? **Follow up:** If so, how does this impact providing treatment?
7. What is the possibility that symptoms observed in clients (e.g., psychotic, manic, depressive, substance use, etc.) may be responses to trauma they experienced in the past? **Follow up:** How come?
8. How important is treating possible trauma-related symptoms in a client’s overall progress and well-being? **Follow up:** How much do you feel concerned that talking about traumatic events, trauma-related or PTSD symptoms will negatively affect your clients?
9. What do you think are the greatest barriers to discussing, assessing, and treating PTSD and other trauma-related problems in clients on this ACT team?
10. What do you think are the greatest facilitators to discussing, assessing, and treating trauma and PTSD with clients?
11. What do you think would be helpful in further facilitating being able to discuss trauma and PTSD with clients?

12. Do you think it’s the role of the ACT team to work with trauma and PTSD?