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Pilot Study of Mental Health and Substance Use of Detained Youth in Ontario, Canada

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Abstract

Detained youth display substantive mental health and substance use problems. However, Canadian information is limited. The purpose of this study was 1) to assess mental health and substance use problems of youth in residential detention/custody facilities in Ontario, Canada, at intake, using the interRAI Youth Justice in Custodial Facilities (YJCF), and 2) to explore the added value of using the YJCF in addition to the facilities' standard intake tool. This paper presents the findings of this pilot study. Drawing on all 20 youth secure custody facilities in Ontario, Canada, two groups were created through stratified random group assignment: 10 intervention and 10 non-intervention sites. Staff recruited eligible admitted youth aged 16-19 years between November 2014 and May 2016, with 164 in intervention and 143 in non-intervention arms. Substance use and traumatic life events were reported for the majority of youth. For youth who were assessed using the YJCF, a substantial number of integrated evidence-informed care plans, or Collaborative Action Plans (CAPs) were triggered for specific areas of risk and need. The majority of intervention group youth with YJCFs had CAPs triggered for substance use, interpersonal conflict, traumatic life events, education challenges, transitions and family functioning problems, while for almost half the youth, CAPs were triggered for harm to others and suicidality/purposeful self-harm. The YJCF, compared to the standard admission tool, identified a greater percentage of youth with mental health and substance use problems. Implications for providing expanded assessment for youth are discussed.

Keywords: mental health, substance use, assessment, interRAI Child/Youth suite, Canada, evaluation

1. Introduction

Among the youth population, those with mental health problems are particularly vulnerable to life altering consequences, and those incarcerated in custodial institutions seem to display a high prevalence of such problems (Guebert & Olver, 2014). Compared to those who may be able to access outpatient care in the community, youthful offenders' assessment and treatment are less visible and often less well resourced (Simpson, McMaster, & Cohen, 2013; Wasserman et al., 2003). This is partly due to the tension between contrasting rehabilitation approaches summarized as the Risk-Need-Responsivity model, focused on preventing recidivism, and the psychopathological (mental health-based) model, focused on mental health problems of youth (McCormick, Peterson-Badali, & Skilling, 2015; Peterson-Badali et al., 2015b). Both are expressed within youth justice practices and have been evaluated in the literature. However, the Risk-Need-Responsivity model and assessment tools are pervasive.

In recent years there has been a resurgence of interest in and concern about mental health problems of persons involved in the Canadian justice system (e.g., Abracen et al., 2014; Hensel et al., 2020; McCormick, Peterson-Badali, & Skilling, 2015; Michalski, 2017; Peterson-Badali et al., 2015b). The interest and concern of scholars has also been mirrored in policy makers. In Ontario, the Ministry of Child and Youth Services¹, mandated to oversee a variety of youth services including custodial institutions, developed an interest in assessing mental health and substance use problems of detained youth. As the Risk-Need-Responsivity model had historically informed intake assessment, very limited information on mental health problems has been captured at intake in residential detention/custody facilities for all youth in Ontario. This assessment challenge led to the adaptation of a youth mental health assessment tool, currently

¹ Renamed the Ministry of Child, Community and Social Services after 2018 provincial election.

being utilized in other sectors of the Ministry, to assess the mental health problems experienced by youth in residential detention/custody facilities. This study presents the findings of this pilot to examine mental health problems of detained youth and to explore the added value of a broader admission assessment tool.

1.1. Mental Health and Substance Use Problems of Youth in the Justice System

International studies of youth in the justice system provide estimates of mental health problems ranging from 40 to 90% compared to youth in the general population with estimates of 10 to 20% (Development Services Group, Inc., 2017; Gottfried & Christopher, 2017; Teplin et al., 2002, 2013; Underwood, & Washington, 2016). In fact, most youth in the justice system are found to meet diagnostic criteria for more than one psychiatric diagnosis, especially substance use disorder (Chassin et al., 2009; Skowrya & Cocozza, 2007). Fazel et al. (2008) conducted a systematic review and meta-analysis of psychiatric survey studies of youth in custodial facilities from the United States, United Kingdom, Australia, Russia, Holland, Denmark, Spain and Canada. The meta-analysis found that among boys, 3.3% were diagnosed with psychotic illness, 10.6% with major depression, 11.7% with attention deficit hyperactivity disorder (ADHD), and 52.8% with conduct disorder. Among girls, 2.7% were diagnosed with psychotic illness, 29.2% with major depression, 18.5% with ADHD, and 52.8% with conduct disorder. Substance use disorder was not included in their analysis.

Canadian prevalence data for detained youth are limited. Most survey studies used in the meta-analysis were conducted in the United States and European Union (Fazel, Doll, & Långström, 2008), with only one study, Ulzen and Hamilton (1998), identified from Canada. Within this Canadian study, rates of mental illness in the delinquent sample were 30.6% diagnosed with current depression, 30% with anxiety disorders, 26.5% with ADHD, and 38.8%

with alcohol dependence – rates 7-8 times higher than in the community group. Moreover, 63.3% of the delinquents were found to display two or more psychiatric disorders.

Substance misuse is a particularly common mental health problem among youth in the justice system (Development Services Group, Inc., 2017; Goldstein, Olubadewo, Redding, & Lexcen, 2005). For example, a Canadian interview study with 162 Toronto delinquent youth found that 41% reported 1-2 indicators of problematic alcohol use, 49% had a similar number of indicators for problematic cannabis use and 25% had high indicators for hallucinogen use (Butters & Erickson, 2011; Erickson & Butters, 2009). These findings are consistent with international studies illustrating that among youth in the justice system, a significant proportion experience a constellation of comorbid problems related to mental health that may involve multiple substances as well as multiple mental health problems, including psychiatric diagnoses (Abram et al., 2003; Teplin et al., 2002; Vermeiren, Jaspers, & Moffitt, 2006; Vreugdenhil, Van Den Brink, Wouters, & Doreleijers, 2003; Vreugdenhil et al., 2004).

1.2. Assessment of Youth's Mental Health Problems.

Given these findings on mental health problems among delinquent youth, the Ministry, together with a team of scholars recognized a need for their youth justice system to identify and respond to the mental health problems of youth in their custody. Besides the ethical, moral and legal responsibilities of justice facilities to treat mental health problems of these youth, mental health problems can play a role in the safety of youth and staff in youth justice facilities, and in future recidivism (Grisso & Underwood, 2004; McCormick, Peterson-Badali, & Skilling, 2017; Skeem, Manchak, & Peterson, 2010; Underwood & Washington, 2016). For example, mental health problems and substance use of delinquent youth are consistently strong predictors of suicide ideation and attempts (Quinn, Liu, Kothari, Cerulli & Thurston 2017).

For many youth with mental health problems, the justice system may be the first and only point of contact for mental health assessment and services (Liebenberg & Ungar, 2014; Skowrya & Cocozza, 2007). A study conducted in Atlantic Canada (Liebenberg & Ungar, 2014) examined 497 youth in different services. The study found that although youth in the juvenile justice or mental health systems had similar levels of mental health problems and delinquent behaviours, youth in justice services reported significantly lower levels of engagement with mental health services than youth in the mental health system (Liebenberg & Ungar, 2014). The international literature similarly reflects on the unmet mental health problems of youth in the justice system and the associated limited methods for assessing needs (e.g. Bailey & Tarbuck, 2006; Kroll et al., 2002).

In the Canadian justice system, the prevailing model driving assessment and rehabilitation has been the Risk-Need-Responsivity (RNR) model as opposed to the “psychopathology” approach that includes assessment and treatment of mental health problems (Andrews et al., 1990; Bonta, Law, & Hanson, 1998; Hoge, 2002; McCormick, Peterson-Badali, & Skilling, 2015). The Risk-Need-Responsivity model focuses on three principles: 1) risk (intervention intensity should match recidivism risk), 2) needs (interventions should target criminogenic factors, such as antisocial attitudes, procriminal associates, etc.), and 3) responsivity (interventions should use cognitive behavioural strategies and be tailored to personal characteristics, such as learning style) (Bonta & Andrews, 2017). Risk-Need-Responsivity researchers have argued against the psychopathology model as their statistical analyses have shown that mental health problems, except for substance abuse, are not direct predictors of recidivism (e.g., Bonta, Law, & Hanson, 1998; Bonta & Andrews, 2017). Bonta and Andrews (2017) have labelled major mental disorder (schizophrenia, manic-depression) and

distress (anxious, sad) as noncriminogenic minor needs and stated that treatment of noncriminogenic needs “is not the primary focus of *correctional* rehabilitation” (p. 180, italics in original). Yet some research has found direct, indirect or reciprocal relationships between psychopathology and recidivism (Abracen et al., 2014; Abracen, Gallo, Looman, & Goodwill, 2016; Skeem, Manchak, & Peterson, 2010). For example, Schubert, Mulvey, and Glasheen (2011) found that co-occurrence of a substance use disorder and a mental health problem moderated the relationship between a number of risk markers and outcomes. They concluded that treatment efforts should focus on both criminogenic and mental health factors.

1.3 Standard Admission Instrument used in Ontario's Youth Justice System

The Ministry currently uses a standardized tool (the Youth Admission Interview Tool (YAIT)) on all youth admitted to secure youth justice custodial facilities across Ontario. It is a 38-item semi-structured, self-report paper and pencil interview with some open-ended and “yes-no” response options to be filled in by an intake worker. It takes about 20-40 minutes to conduct and because of its paper format it is not part of the youth's electronic data file. The YAIT assesses immediate risk and needs of youth as they are admitted with questions on: initial emotional status regarding custody/detention; whether youth know someone at their placement from whom they would like or be required to stay away; current offences; suicide/self-harm; social supports; past and recent alcohol or drug use; allergies, medication use. One open-ended question queries: “tell me about your physical and mental health”. Another question includes an 11-item (yes/no) check list for staff observations on emotional or behavioural states, such as difficulty understanding and responding; difficulty with English; appears hostile and aggressive; withdrawn and/or depressed; nervous; substance use withdrawal; signs of self-mutilation; and shows bizarre behaviour. No psychometric data are available on the instrument.

1.4 The interRAI Child/Youth Suite

The interRAI Child/Youth instruments are used in other sectors of the Ministry serving children and youth. The interRAI Child/Youth suite (Stewart et al., 2015b, 2016, 2017, 2020) comprises an integrated, rigorously developed set of standardized, comprehensive and multi-disciplinary assessment instruments that are compatible across services and different sectors, such as mental health, education and youth justice (Stewart et al., 2015a; Stewart & Hirdes, 2015; Stewart, Poss, Thornley, & Hirdes, 2019; Stewart et al., 2020). These instruments facilitate continuity of care across service sectors as they use common questions, constructs, algorithms and assessment-to-intervention system (Stewart & Hirdes, 2015; Hirdes et al., 2020). Reliability and validity studies have been conducted across the interRAI Child/Youth family of instruments. Studies examined subscales to assess factor structures, item response theory parametrization, detection performance, validity and reliability. Aggressive/disruptive behaviour, anhedonia, anxiety, communication, distractibility/hyperactivity, peer conflict and other subscales displayed strong psychometric properties with supported factor structure and internal consistency reliabilities, good construct, convergent-divergent, concurrent and criterion validities (e.g., Lau et al., 2017, 2018; Lau, Stewart, Saklofske, & Hirdes, 2019; Stewart & Babcock, 2020; Stewart & Hamza, 2017; Stewart, Morris, Asare-Bediako, & Toohey, 2019). For example, subscales correlated well when rated against criterion measures, such as the Child and Adolescent Functional Assessment Scale (CAFAS), the Child Behavior Checklist (CBCL), the Brief Child and Family Phone Interview (BCFPI) and Social Skills Improvement System (Stewart & Hamza, 2017).

One instrument within the suite is the interRAI Child and Youth Mental Health instrument. It is a widely used instrument for those 4 to 18 years of age receiving community-

based or inpatient/residential services that assesses mental health outcomes in several Ontario mental health service settings (Stewart et al., 2015b, 2015c, 2015d, 2016, 2017, 2020). The interRAI Youth Justice in Custodial Facilities (YJCF) (Stewart et al., under review), used for the current study, is based on the interRAI Child and Youth Mental Health Suite. The YJCF shares many of the same previously validated clinical elements, scales and algorithms of other instruments within the interRAI suite of instruments. The YJCF is a comprehensive standardized instrument for evaluating strengths, preferences, and mental health functioning as well as risks and needs of youth who are currently placed in a custodial facility. Similar to the other comprehensive instruments within the suite, the YJCF is an assessor-rated needs-based assessment comprised of over 400 clinical items covering a wide variety of domains in the area of youth mental health (e.g., social, environmental, psychological). Domains within the assessment include: intake and initial history; harm to self and others; criminal involvement; mental state indicators, such as distraction, hyperactivity, anxiety, negative symptoms and withdrawal, self-reported mood, attitude toward crime, etc.; prior and current substance use or excessive behaviour; behaviour/conduct problems; stress and trauma; strengths and resilience; family and social relations; cognition and executive function; functional status; communication, hearing and vision; medications; education; diagnostic and other health information on global assessment of functions, previous tests of intellectual functioning and previously identified DSM-IV psychiatric diagnoses. The YJCF takes 45-60 minutes to complete depending on case complexity.

Specific items serve as “triggers” to activate Collaborative Action Plans (CAPs) that emphasize measurement of events, responses, symptoms and functioning to better detect specific needs of the youth and family than currently possible utilizing a diagnostically-driven approach

(Mathias, Hirdes, & Pittman, 2010; Stewart et al., 2015a, 2015e, 2016). These trigger items comprise algorithms that flag youth with potential difficulties in need of further clinical review (e.g., trauma, substance use, family functioning).

Because of an awareness of mental health problems of youth in justice facilities, the Ministry was interested in moving beyond the Risk-Need-Responsivity model by enhancing the assessment of mental health and substance abuse problems on admission as there was great variation in number of clinical staff available in facilities and significant variation in the number of individual assessments of youth and in the quality of instruments used for those assessments. The Ministry wanted a standardized assessment of all youth that could be conducted by nonclinical staff; they were particularly interested in testing a validated instrument with a common language that could move across their different services and developmental stages with seamless transitions and be more cost-effective than using different instruments across the various sectors. In addition, the expectation was for the assessment information, in particular the CAPs, to facilitate improved evidence informed care planning for youth in the justice system at the youth's regular case planning meetings.

In partnership with the Ministry, our overall goal in the current project was: 1) to provide information on mental health and substance use problems of youth admitted to secure custody/detention facilities through the use of an instrument based one already being used in other sectors of the Ministry, and 2) to assess at a preliminary level if the use of YJCF provided added value in assessment of mental and substance use problems among youth admitted to secure custody/detention facilities in Ontario over and above what was provided by the YAIT.

2. Method

2.1 Study design

Drawing from the 20 youth secure custody/detention facilities in Ontario, we created two groups of facilities: 10 intervention sites assigned to YJCF training and implementation, and 10 control (standard practice) sites. The two groups were made as similar as possible through random group assignment within blocks of facilities matched by geographical region, type of facility (directly-operated vs. transfer payment) and type of youth served at the facility (e.g. females, males, Indigenous). Only youth aged 16 to 19 years old were recruited, due to the limitations of obtaining parental consent for younger youth. The study received research ethics board (REB) approvals from the University of Toronto, Centre for Addiction and Mental Health, the University of Western Ontario, the Ministry's Judicial Review, the Ministry's internal ethics review, and two facilities requiring separate ethics protocol.

The REB and judicial review required that researchers could not obtain consent from the youth directly; nor could the YJCF assessor be the same person obtaining consent. Thus, three (for the intervention group) or two (for the control group) different staff approached youth in the study. On admission, youth were assessed at all facilities with the mandated YAIT by an intake worker. At a later time, youth were approached by another Ministry staff trained to seek consent who provided information about the study. For youth in the intervention facilities, the YJCF assessment was to be conducted by a third staff, a trained assessor, within 72 hours or as soon as practicable.

2.2. Participants

Assessors

Sixty assessors who volunteered from the 10 intervention facilities were trained to conduct YJCF assessments through three 2-day hands-on, standardized and structured interRAI YJCF workshops (with 20 assessors at each training workshop). Criteria for assessors included a

diploma or degree in the child and youth related area and at least two years of field experience with demonstrated clinical skills within the youth justice sector. Additional phone support was provided to respond to queries and support use of the instrument.

Youth

Across all 20 secure youth justice facilities, staff recruited eligible youth between November 2014 and May 2016. The sample included youth sentenced to custody and those being held in detention (i.e., remanded) prior to additional court appearances.

Of the 976 youth deemed competent and eligible to be approached for consent, 307 (32% response rate) (164 into the intervention arm, 143 into the non-intervention arm) consented, of which 283 (92%) were in detention and 24 (8%) were in custody (Figure 1). The overall response rate was consistent over the data collection period, reflecting representation from all facilities.

2.3. Measures and data analysis

Socio-demographic and criminal offences data were collected from the Youth-Offender Tracking Information System, a detailed electronic database maintained by the Ministry on all youth charged with offences in Ontario. Data on mental health and substance use problems were extracted from the YJCF and YAIT. Data from the YJCF were entered by assessors into a de-identified web-based software system that provides a unique, randomly generated study-specific participant number. All personal identifiers were removed prior to data being available for analysis.

To assess the differences in capture of problems between the two instruments, mental health problems were identified along a continuum from a most restrictive definition of “problem” (i.e., listing of any previously identified diagnoses) to the least restrictive definition of

“problem” (i.e., mental state indicators), while substance use problems included recent and any previous use:

- 1) Diagnostic Statistical Manual (DSM) diagnosis (previously identified DSM-IV diagnosis in YAIT or YJCF);
- 2) DSM + suicide + psych meds (previously identified DSM-IV diagnosis in YAIT or YJCF + suicide ideology/attempts listed in YAIT or YJCF + listing of psychotropic medication in YAIT or YJCF);
- 3) DSM + suicide + psych meds + mental state indicators (previously identified DSM-IV diagnoses + suicide ideology/attempts + psychotropic medication (as above) + mental state indicators of distraction/hyperactivity; mood disturbance; anxiety; psychosis; negative symptoms/withdrawal; self-reported mood; positive attitude toward crime; listed anywhere in YAIT or YJCF);
- 4) Recent alcohol/substance use (any mention of recent drinking alcohol or taking drugs in YAIT or indication of use of alcohol or drugs within last 30 days in YJCF)
- 5) Substance use (any mention of any previous substance use in YAIT or indication of any substance use in YJCF).

Five separate between group (intervention group vs. control group) Generalized Estimating Equations - analyses, adjusting for clustering of youth within facilities and unbalanced number of youth within the facilities, were conducted to assess the proportion of youth in the intervention group identified by the YJCF with mental health and substance use problems compared to the proportion of youth in the control group identified by the YAIT with mental health and substance use problems. Additionally, five separate within group Adjusted Conditional Logistic Regression - analyses that allow for clustering (Ying & Lui, 2006) were

conducted for the intervention group; the analyses compared the mental health and substance use problems identified with the YJCF compared to the YAIT within the same persons. Descriptive analyses were conducted using SPSS 25 (IBM Corp, 2017) and inferential analyses were conducted using SAS version 9.3 (SAS Institute Inc., Cary, NC).

3. Results

3.1. Description of sample

Based on the study sample captured from the Youth-Offender Tracking Information System, the majority were male (86.0%), 16 to 17 years old (78.2%) and born in Canada (85.7%). About one fifth (21.5%) were listed as Indigenous status. Examination of criminal history indicated that 83.0% had at least five prior charges. Common charges included assault, theft/robbery, mischief and illegal possession and/or trafficking of illegal drugs.

Demographics were examined between the intervention and control groups and no significant between groups differences were found for age, Indigenous status or country of birth. A greater proportion of females were recruited to the intervention group (20.1%) compared to the control group (7.0%) ($Chi^2 = 10.93, df=1, p<.001$)². Mental health and substance use problems identified from the YAIT for both the intervention and control groups were compared to assess whether there were group differences. No significant between group differences were found indicating that both groups were comparable on mental health and substance use problems as coded from the YAIT.

Additionally, although 164 intervention arm youth had consented to the YJCF, the instrument was not completed for 73 youth. Demographic information was examined for the 91

² There were five female facilities with four having small capacities and one with a large capacity, leading to unequal number of girls held in each facility. Stratified random assignment resulted in a larger sample available with the intervention group.

intervention youth for whom a YJCF was completed and for the 73 intervention youth for whom a YJCF was not completed. No significant differences were found for sex, age, Indigenous status or country of birth. However, examination of the length of stay of these intervention youth from admission to first discharge found that those with a completed YJCF had a length of stay of 58.9 days while intervention youth with no YJCFs had a length of stay of 17.9 days ($F_{1,162} = 19.95$, $p < .001$).

3.2. Identification of mental and substance use problems of intervention and control groups

Table 1 indicates that a significantly higher proportion of intervention group youth were coded with previously identified DSM diagnoses with the YJCF (30.8%) than the proportion of control group youth who were coded with previously identified DSM diagnoses with the YAIT (0%), (perhaps not surprisingly as the YAIT has no specific question querying on DSM diagnoses). No differences between the two groups were found when the definition of mental health problem was expanded to include information on DSM plus suicide ideation/attempts and listings of psychotropic medications (e.g., aripiprazole, clonazepam, quetiapine, trazadone, and medications indicated for ADHD, for example methylphenidate). However, when the definition of mental health problem was further expanded to include mental state indicators, a significantly higher proportion of intervention group youth were identified with mental health problems with the YJCF (97.8%) than the proportion of control group youth who were identified with mental health problems with the YAIT (62.3%). Similarly, for the substance use indicators, a greater proportion of intervention group youth who completed the YJCF were coded for signs of recent and past alcohol and substance use when compared to control group youth who completed the YAIT.

Table 2 presents descriptive data on types of previously identified diagnoses, suicide ideation/attempts, psychotropic medication and common mental state indicators for both groups. For many youth, no information was coded for the indicators. Hence, the table only presents the number of youth for whom information was presented. Of the 28 youth with a listed diagnosis on the YJCF, over half were identified with a diagnosis of ADHD, and half were identified with diagnoses of anxiety, adjustment, and/or reactive attachment disorders. Almost half had substance-related disorders. Over half of all youth were identified with suicidal ideation, attempts or self-harm by both instruments, while the YAIT was better at identifying psychotropic medication, probably because this section was optional for completion in the YJCF. A greater percentage of youth were identified with mental state indicators in the YJCF compared to the YAIT. Both the YJCF and YAIT identified a high proportion of youth reporting substance use.

3.3. Identification of mental and substance use problems of the intervention group

The within group analyses (Table 3) indicated that the YJCF identified a statistically significantly higher proportion of youth with mental health and substance use problems within the same youth than did the YAIT. Slightly over one quarter of youth were listed as having a previously identified DSM diagnosis in the YJCF, while virtually none of these same youth had a listing of a DSM diagnosis in the YAIT. Almost 60% of youth were assessed with the YJCF to have at least one DSM diagnosis, suicide ideation/attempts and listed psychotropic medications compared to 46% of the same youth identified with these problems with the YAIT. Over three quarters of youth (77.3%) were identified as recent alcohol and/or substance users on the YJCF, while for the YAIT it was 37.5%. The majority of youth in both the YJCF and YAIT were identified as past year substance users.

Table 4 presents Collaborative Action Plans (CAPs) that were triggered from the YJCF. CAPs that were triggered for the majority of youth included: substance use; interpersonal conflict; traumatic life events; tobacco/nicotine use; education; transitions and family functioning. Additionally, almost half of the youth had CAPs triggered for harm to others and suicidality/purposeful self-harm.

4. Discussion

This study presents the findings of a pilot study to provide information on mental health and substance use problems of youth admitted to secure custody/detention facilities through the use of an instrument based on one already being used in other sectors of the Ministry and 2) to assess if the use of YJCF provided added value in assessment of mental and substance use problems among youth compared to the YAIT. The results indicated that the YJCF, compared to the standard admission tool, the YAIT, identified a greater percentage of youth with mental health and substance use problems. Hence, the YJCF provided important additional information on these factors, such as previously identified diagnoses, that was then available immediately to staff.

The crucial but not unexpected finding in this study is the degree of mental health and substance use problems with the YJCF identified in detained youth. Substance use and traumatic life events were reported for the majority of youth. The majority of intervention group youth with YJCFs had CAPs triggered on substance use, interpersonal conflict, traumatic life events, education challenges, transitions and family functioning problems, while for almost half the youth, CAPs were triggered for harm to others and suicidality/purposeful self-harm. Suicidality/purposeful self-harm is a particular concern for youth in custodial institutions (Quinn et al 2017). One of the key benefits with respect to the YJCF is the integration of evidence-

informed care planning guidelines that are utilized to provide best practice intervention strategies at the time of the assessment based on validated, standardized algorithms that can actually predict present and future imminent risk (Hirdes, 2019). Within the CAPs, detailed information is outlined to support treatment initiatives. For example, within the Suicide and Purposeful Self Harm CAP, there are specific goals of care and international best practice intervention strategies with respect to the following: attending to the young person's immediate safety needs, reducing the risk of repeated purposeful self-harm or suicide attempts, developing supports through the use of school, family and community supports to aide recovery, and supporting others in the youth's social network who are distressed by these attempts (Arbeau, Stewart, Fisman, Neufield, Rabinowitz, Theall & Hirdes, 2015). These interventions focus on risk reduction while also attending to treatment strategies to address underlying causes of self-harm (e.g., trauma).

Although prevalence estimates of mental health problems from other studies vary due to differences in operational definitions of mental health problems, sampling techniques and jurisdictions (Cauffman, 2004), similar patterns of problems do emerge. For example, Cauffman (2004) assessed Pennsylvania youth in detention using the Massachusetts Youth Screening Instrument Version 2 (MAYSI-V2) that provides an "alerting function" with a clinical cut-off for mental health problems somewhat similar to the CAPs of the YJCF. For measures that used similar labels in both instruments (i.e., suicidal thoughts/self-harm and traumatic experiences), similar patterns emerged. The MAYSI-V2 "suicide thoughts" clinical cut-off was triggered for 33% of females and 18% of males while the YJCF "high risk of self-harm" CAP was triggered for 19% of youth. Similarly, the MAYSI-V2 "traumatic experiences" clinical cut-off was triggered for 43% of females and 40% of males while the YJCF "traumatic experiences/life events" CAP was triggered for 40% of youth in our study.

Additionally, international studies have shown higher prevalence of externalizing (e.g., ADHD, disruptive behaviour) and substance use problems than internalizing problems (e.g., anxiety, mood), and high rates of traumatic exposure similar to the current study (e.g., Abram et al., 2013; Fazel, Doll, & Långström, 2008; Teplin et al., 2002; Wasserman, Ko, & McReynolds, 2004).

The findings of the current study are also consistent with previous literature that emphasizes the need to understand at least a certain segment of youth justice involvement from a developmental psychopathology lens (Lyons, Royce Baerger, Quigley, Erlich, & Griffin, 2001). The high rates of trauma exposure, substance use and suicide ideation/attempts/self-harm amongst justice involved youth in the current study further emphasizes the importance of assessments geared to the prevention of adverse long-term sequelae from these exposures and continued offending. The current study emphasizes that many youth who are involved with the justice system often exhibit significant psychosocial issues relating to trauma, substance use, suicide thoughts/attempts, etc., that represent complex service needs which require unique interventions in order to be addressed appropriately. It also highlights the importance of further research regarding the effectiveness and implementation of trauma informed systems for high risk youth involved with the justice system. As well, there is the need for more comprehensive mental health and substance use assessment research on all youth in the justice system and for continued psychometric testing of the YJCF with youth justice populations.

Yet, it is important to recognize that decisions to use a new instrument can add to both participant and assessor burden with the added requirement and cost of assessor training. However, the Ministry was interested in the YJCF because of potential efficiencies as they were interested in testing an instrument with a common language that could move across their

different services and be more cost-effective than using different instruments across the various sectors.

Moreover, the Risk-Need-Responsivity model, dominant in Canadian jurisdictions of youth justice (Walls, 2015), can also benefit from more in-depth assessment with a tool like the YJCF. The challenge of improving responsivity that has been noted by scholars (McCormick et al., 2015; Peterson-Badali et al., 2015; Vitopoulos, Peterson-Badali, & Skilling, 2012) could be aided, even for delinquent youth without the more serious mental health or substance use problems, with the more detailed information available in the YJCF assessment on criminogenic factors. Using an integrated suite could also enhance continuity of care and improved service system integration.

4.1. Limitations

Some factors specific to data collection posed limitations. These include the overall response rate of 32%, explicable largely by consent and interview requirements imposed by the multiple REBs and judicial review. No information was available to assess whether there were differences between youth who consented with those who did not. This response rate problem affects the generalizability of these findings to all youth in detention/custody. The completion rate was another limitation. The fact that the YJCF was not administered to 45% of intervention group youth despite their consent, is likely attributable to the shorter stays for youth held in detention prior to returning to court, which limits the time available for staff and youth to complete the YJCF. As previously mentioned, two initial steps (administration of the YAIT and seeking of consent by specifically trained staff) were required to occur before the assessor (another staff member) was able to administer the YJCF. If one of the three required staff to conduct the intake, the consent seeking or the YJCF were not available within the initial days of

the youth's stay, the YJCF might not have been completed as the youth might have left before the assessor had an opportunity to administer the YJCF.

It is hard to assess the impact of the response and completion rates on our estimates of mental health problems. However, the demographic characteristics were not significantly different between the 91 in the intervention arm who completed YJCFs and the 73 in the intervention arm without an YJCF, except for significantly shorter length of stay for non-completers. Moreover, the YAIT assessments of the intervention and control arm youth indicated no significant between group differences on any mental health and substance use indicators, providing some confidence in the YJCF. An additional potential source of bias was the small numbers of girls and Indigenous youth that did not permit separate analyses to examine variation in YJCF findings. Given that females in custody tend to show higher and different rates for a number of mental health problems, such as suicide ideation, traumatic events, etc., (Cauffman 2004), subsequent studies should try to sample a larger number of girls and Indigenous youth to develop a better understanding of their challenges and needs.

Additional limitations include instrumentation issues; both groups (intervention and control) received the mandated YAIT and the intervention group received the YJCF always after the YAIT. To reduce potential contamination, different staff conducted the YAIT and the YJCF on the youth. Yet, the administration of these two instruments always in the same order by different staff could introduce bias. Additionally, the set ordering of the instruments could have primed the responses of youth to the second instrument, the YJCF. However, both instruments were not administered in immediate succession, although the time lag between the administration of the YAIT and the YJCF could have affected responses. Importantly, though, both instruments were different in format; questions asked in the YAIT contained very limited information on

mental health that could be used in the YJCF. Despite these limitations, this study includes the largest sample of detained youth currently recruited in a Canadian study and identifies significant mental and substance use problems among youth admitted to secure custody/detention facilities in Ontario.

5. Conclusions

This study highlights the importance and added value of providing assessment for all youth in the justice system in a more integrated and focused way. Using an evidence-informed, validated, and standardized approach across jurisdictions provides the ability to utilize high quality data to offer a better understanding of mental health and substance use problems and hence, service needs. This approach could, in turn, help to direct resources where they are most needed, and support the staff in providing optimal care for youth as they transition to adulthood.

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Table 1

Identified Mental Health and Substance Use Problems among Youth in the Intervention and the Control Groups

Mental Health and Substance Use Problems	<u>Identified with YJCF</u> (Intervention Group)		<u>Identified with YAIT</u> (Control Group)	
	n	%	n	%
DSM diagnosis**	28	30.8	0	0
(DSM + suicide + psych meds	54	59.3	72	51.4
DSM + suicide + psych meds + mental state indicators***	88	97.8	86	62.3
Recent alcohol/substance use*	70	76.9	40	34.3
Past yr substance use*	83	91.2	108	77.1

*p < .05

**p < .01

***p < .001

Table 2

Identified Mental Health and Substance Use Problems among Youth in the Intervention Group

Mental Health and Substance Use Problems	<u>Identified with YJCF</u> (Intervention group) (N=88)		<u>Identified with YAIT</u> (Intervention group) (N=88)	
	n	%	n	%
DSM diagnosis***	26	28.4	<10	<10
DSM + suicide + psych meds*	52	59.1	40	45.5
DSM + suicide + psych meds + mental state indicators***	86	97.7	56	63.6
Recent alcohol/substance use***	66	77.3	33	37.5
Past yr substance use*	80	90.9	70	79.6

Note. n=88 due to missing data in 3 cases

*p < .05

**p < .01

***p < .001

Table 3

Most Common Mental State Indicators Identified in YJCF or YAIT

Mental state indicators		Intervention^{a b}		Control^{a b}	
DSM-IV Provisional Diagnosis		N=28	%	N	%
YJCF	Attention Deficit Hyperactivity Disorder	16	57.1		
	Anxiety, adjustment, reactive attachment disorders	14	50.0		
	Substance-related disorders	13	46.4		
	Disruptive Behaviour Disorder	<10			
	Total number youth (can have listed > 1 disorder)	28	100.0		
YAIT		<10		<10	
Suicide ideation or attempts or self-harm		N=91		N=109	
YJCF		47	51.6		
YAIT		59	54.1	50	45.9
Psychotropic medications		N=73		N=73	
YJCF	(optional section) _c	<10			
YAIT		35	47.9	38	52.1
Mental state indicators		N=91			
Distraction and hyperactivity					
YJCF		78	85.7		
YAIT		<10		<10	
Mood disturbance					
YJCF		74	81.3		
YAIT		17	10.6	18	12.9
Anxiety					
YJCF		48	52.8		
YAIT		22	13.7	29	20.7
Psychosis					
YJCF		14	15.4		
YAIT		<10		<10	
Negative symptoms					
YJCF		26	28.6		
YAIT		<10		0	
Other indicators					
YJCF		69	75.8		
YAIT		<10		0	
Mood					
YJCF		61	67.0		
YAIT		51	31.1	34	23.8

Attitude toward crime					
YJCF		30	33.0		
YAIT		0		0	
Substance use		N=91		N=138	
YJCF	Alcohol use to point of intoxication in last 30 days	50	54.9		
YAIT	Alcohol or drugs in last 48 hours	57	35.4	48	34.9
YJCF	Drug use (inhalants, hallucinogens, cocaine, crack, opiates, cannabis) in last year	80	87.9		
YAIT	Any listed drug use in last 6 months	135	82.3	117	82.1

Note. ^a Missing data excluded from analyses. ^b YAIT data not included when n's < 10.

^cOptional category; completed on only 8 youth, missing data for 83 youth.

Table 4

Number and Percent of Intervention Youth with YJCFs who had CAPs Triggered

Collaborative Action Plans (CAPSs)	Number of youth (n=91)	%
Harm to others	44	48.9
Suicidality and purposeful self-harm	39	43.3
Substance use	>80	
Interpersonal conflict	65	72.3
Sleep disturbance	45	50.0
Medication review	13	14.4
Traumatic life events	51	56.7
Tobacco and nicotine use	59	65.6
Strengths	11	12.2
Physical activity	30	33.3
Communication	12	13.3

Education	69	76.7
Transitions	62	68.9
Weight management	16	17.8
Continued offending	26	28.9
Control interventions	31	34.4
Family Functioning	62	68.9
Support systems for release	23	25.6
Rationalizations for antisocial choices	30	33.3

Figure 1 Participant Recruitment Flowchart

