

THE PREVALENCE OF MENTAL HEALTH PROBLEMS  
AMONG DETAINED JUVENILES IN IDAHO

By

Lucas Donaldson

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Lucas Donaldson

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The following individuals read and discussed the thesis submitted by student Lucas Donaldson, and they evaluated his presentation and response to questions during the final oral examination. They found that the student passed the final oral examination.

Theodore W. McDonald, Ph.D.                               Chair, Supervisory Committee

Edward Baker, Ph.D.                                       Member, Supervisory Committee

Sandina Begic, Ph.D.                                      Member, Supervisory Committee

The final reading approval of the thesis was granted by Theodore W. McDonald, Ph.D., Chair of the Supervisory Committee. The thesis was approved by the Graduate College.

## DEDICATION

This thesis is dedicated to those suffering from mental and behavioral health problems—especially those serving time in correctional facilities with unrecognized and untreated problems. If we work together and share our knowledge, we can move toward a system that gives everyone the opportunity to live up to his or her potential.

I dedicate this thesis also to my parents Paul and Luana, and to my sister and brothers, Tonya, Nathan, and Ivan. You were my sounding board, my support, and my inspiration. Thank you for being there through it all.

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## ABSTRACT

The Massachusetts Youth Screening Instrument (MAYSI-2) is an effective tool to quickly identify individuals entering the juvenile justice system that may be most in need of mental and behavioral health services. The MAYSI-2 measures potential disorder on seven subscales—Alcohol/Drug Use, Angry-Irritable, Depressed-Anxious, Somatic Complaints, Suicidal Ideation, Thought Disturbance, and Traumatic Experience. Although Juvenile Detention Centers in Idaho have been collecting MAYSI-2 data for approximately eight years, Idaho’s data has yet to be added to the body of literature documenting MAYSI-2 results. The current study describes the prevalence of mental health problems as measured by the MAYSI-2, utilizing data gathered between fiscal years 2013-2015 among detained juveniles in Idaho. Data collection from fiscal years 2013-2015 began in June 2012 and concluded in July 2015. The sample included 4,032 cases from 13 juvenile detention centers across Idaho. Overall, 52% of boys and 70% of girls scored in the clinically significant range on at least one MAYSI-2 subscale. Without stratifying by gender, Angry/Irritable (30%), Traumatic Experiences (28%), and Somatic Complaints (24%) were the top three most frequently indicated subscales. Excluding Thought Disturbances (normed for boys only), Alcohol/Drug use (14%) was the least frequently indicated subscale. When stratified by year and gender, there was marked consistency. Overall, girls (70%) were significantly more likely to screen positive on any subscale than boys (52%),  $\chi^2(1, N = 3,925) = 108.14, p < .001$ . Notably, a greater percentage of girls scored in the clinically significant range on every subscale (excluding

Thought Disturbances, which was normed for boys only). Across years, there was a significantly greater number of youth who scored in the range of clinical concern in 2015 (61%) when compared to 2013 (55%) and 2014 (55%),  $\chi^2(2, N = 4,032) = 10.71, p < .01$ . These data highlight areas of concern that could be addressed by programs that focus “upstream” (i.e., before youth become involved in the juvenile justice system) and “downstream” by guiding policymakers to appropriately direct funding. Terry Reilly Health Services is one Idaho entity taking an upstream approach by operating an in-school counselor program. School counselors are in a position to address issues such as trauma—a likely early link in the causal chain of mental and behavioral health problems. Research over the past few decades has demonstrated the elements of effective treatment including cognitive behavioral therapy, strength-based approaches, and emphasis on social contexts to build strong relationships among facility staff and peers. The data and analysis presented here adds to the pool of knowledge from which policymakers are able to draw in order to make informed decisions regarding this important topic.

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## LIST OF ABBREVIATIONS

BSU	Boise State University
CBCL-YSR	Child Behavior Checklist-Youth Self Report
CHP	Center for Health Policy
CSP	Clinical Services Program
IDJC	Idaho Department of Juvenile Corrections
MACI	Millon Adolescent Clinical Inventory
MAYSI-2	Massachusetts Youth Screening Instrument – Second Version

## CHAPTER ONE: INTRODUCTION

Through a series of historical circumstances, the juvenile justice system in the United States has become a *de facto* mental health-services provider—a role for which it was neither designed nor prepared (Grisso, 2007). During the 1980s and 1990s, the juvenile justice system experienced a sharp rise in the number of youth under its care due to a combination of increased crime and countermeasures that included stricter sentencing laws (Grisso, 2007). Mental health advocates recognized that the prevalence of mental health problems was higher among youthful offenders than youth in the general population, that mental health problems could offer a partial explanation for criminal behavior, and that individual youth and the broader community could benefit from providing youth suffering from mental health problems with appropriate services (e.g., Zajac, Sheidow, & Davis, 2015). However, because of some limitations in the studies on these issues, the true scope of mental health problems among youthful offenders has not always been clear (e.g., Otto, Greenstein, Johnson, & Friedman, 1992).

Mental health advocates recognized that screening and assessment were integral steps toward identifying and addressing mental health problems among juvenile offenders. (Otto et al., 1992). Given the large number of youth entering detention facilities, screening procedures need to be relatively brief. In this context, the Massachusetts Youth Screening Instrument—which is now in its second version—was developed (MAYSI-2, Grisso & Barnum, 2006).

In Idaho, the Boise State University (BSU) Center for Health Policy (CHP) has been receiving MAYSI-2 data collected on detained youth throughout the state as part of an ongoing program evaluation for the Clinical Services Program (CSP) since 2008 (Begic, McDonald, & Toussaint, 2015). The CSP began in 2006 as a pilot project in the Juvenile Detention Center (JDC) in Bonneville County, which was then expanded to include Idaho's twelve additional JDCs.

### **Statement of the Problem**

To date, there has been no effort to systematically assess, using the MAYSI-2 instrument, the prevalence of mental health problems among Idaho's detained youth. A great deal of previous research has demonstrated the high prevalence of mental health problems among incarcerated and detained youth, much of which has included the MAYSI-2 as a measurement tool (e.g., Aalsma, Schwartz, & Perkins, 2014; Archer, Simonds-Bisbee, Spiegel, Handel, & Elkins, 2010; Cauffman, 2004; Chino, Personius, - Zippoy, & Tanata 2004; Gilbert, Grande, Hallman, & Underwood, 2015; Otto et al., 1992; Shufelt and Coccozza, 2006; Teplin et al., 2002; Wasserman, 2002). By elucidating the magnitude of mental health problems among detained and incarcerated youth, mental health advocates, practitioners, and other interested parties in many states have been able to identify areas of greatest concern to tailor appropriate responses in policy and practice (e.g., Shufelt & Coccozza, 2006). It is hoped that quantifying such problems among Idaho's detained youth can similarly serve to drive policy and practice in Idaho.

Researchers concerned with addressing disparities in mental health services for youth involved with the justice system have emphasized the importance of consistent screening procedures with validated instruments (e.g., Skowrya & Coccozza, 2007). The

MAYSI-2 (Grisso & Barnum, 2006) has demonstrated validity in multiple studies and contexts (e.g., Archer, Simonds-Bisbee, Spiegel, Handel, & Elkins, 2010; Ford, Chapman, Pearson, Borum, & Wolpaw, 2007; Lexcen, Vincent, & Grisso, 2004), has been utilized to some degree in juvenile correctional settings in at least 49 states, and has been implemented for official statewide use in at least 39 states (Skowrya & Coccozza, 2007).

### **Purpose**

The purpose of this study was to explore the prevalence of mental health problems as measured by self-reported indications on the MAYSI-2 screening instrument among detained juveniles in Idaho. Previous research has established that mental health problems are more common among detained juveniles than youth in the general population (e.g., Teplin et al., 2002) and that delinquency is often a manifestation of these problems (e.g., Grisso, 2007). If the mental health needs of detained youth go unmet, high rates of recidivism are likely to continue (e.g., Grisso, 2007), placing individual youth and the communities in which they live at potentially avoidable risk (e.g., Desai, Goulet, Robbins, Chapman, Migdole, & Hoge, 2006).

In order to mount an effective response to the mental health needs of justice system-involved youth, policymakers and practitioners must have an accurate assessment of the prevalence of potential disorder among the youth they serve. The MAYSI-2 is a mental health screening tool designed specifically for justice system-involved youth (Grisso & Barnum, 2006); its demonstrated validity, reliability (e.g., Archer, Stredny, Mason, & Arnau, 2004; Ford et al., 2007), and widespread use (Skowrya & Coccozza,

2007) make it ideal for mental health professionals to make comparisons across juvenile justice systems by referencing a common tool.

To explore the prevalence of mental health problems among Idaho's detained youth, the researcher analyzed MAYSI-2 data collected between fiscal years 2013 to 2015 from 12 JDCs across the state. The MAYSI-2 measures potential disorder on seven subscales—Alcohol/Drug Use, Angry-Irritable, Depressed-Anxious, Somatic Complaints, Suicidal Ideation, Thought Disturbance, and Traumatic Experience (Grisso & Barnum, 2006). The researcher assessed the prevalence of mental health problems according to the MAYSI-2 on each subscale/any subscale, analyzed for possible gender differences in subscale indications, and compared findings across all three years.

The results of this study contribute to the literature in several important ways. The analysis will demonstrate whether or not there is consistency across three years of data collection. Additionally, it will provide a basis for comparison to gender differences established in previous research, which will help to explore the reliability of the MAYSI-2. Finally, the report will provide mental health policymakers and practitioners with valuable information about needed services within Idaho's juvenile justice system.

### **Research Questions**

Because this research was exploratory in nature, there were no hypotheses. Instead, there were several research questions to be explored, and these are listed below.

1. What is the prevalence of mental health symptomology, as measured by the MAYSI-2, in detained juveniles in Idaho during the years 2013-2015?
2. Do mental health prevalence rates systematically differ between detained boys and girls?

3. Are the mental health prevalence rates relatively consistent across years, or do they vary markedly?
4. How do Idaho's mental health prevalence rates compare to those in other states where detained juveniles are administered the MAYSI-2 screening instrument?

### **Limitations**

There are several limitations related to this study. First, the MAYSI-2 elicits self-reported information by inquiring about events in the respondent's past. As such, respondents may give inaccurate answers due to lapse in memory, intentional misdirection, or apathy (Neutens & Rubinson, 2010). Although these limitations are present whenever a self-report format is utilized, youth themselves are the best source of information in the time frame and context for which the MAYSI-2 was designed (Grisso & Barnum, 2006).

Another limitation is that the data were collected from Idaho's JDCs, which house detained juveniles over relatively short time periods when compared to facilities that house incarcerated juveniles. Therefore, it is possible that more serious offenders—who may have more severe and/or numerous mental health problems—may be underrepresented in the sample. Additionally, although the data were collected from detained youth in a variety of locations across Idaho, making it a good representation of Idaho's detained juveniles, the results should not be generalized to Idaho's broader youth population or detained youth outside of Idaho.

### **Delimitations**

As part of the CSP, MAYSI-2 data have been gathered from JDCs across Idaho since 2008. The present analysis was conducted on fiscal years 2013-2015. These years



were selected because data collection procedures improved as time progressed. Data were collected from each of Idaho's 13 JDCs; however, due to the small number of cases, data from Valley County in all three years and one year of Lemhi County data (2015) are not included in this analysis.

### **Definition of Terms**

Mental disorder – conditions described by the DSM-V for the purpose of clinical diagnoses.

Mental health problems – refers to *potential* mental disorder as measured by MAYSI-2 constructs, in which a positive screen alerts staff to a need for follow-up rather than a clinical diagnosis.

Detained juveniles – youths housed in county juvenile detention centers, often while awaiting court appearances or sentencing. Periods of detention tend to be short relative to periods of incarceration (T. McDonald, personal communication, November 25, 2015).

Incarcerated juveniles – youths housed in state juvenile corrections centers while serving sentences administered by the courts (T. McDonald, personal communication, November 25, 2015).

## CHAPTER TWO: LITERATURE REVIEW

### **Mental Health and the Juvenile Justice System**

The juvenile justice system in the United States began to formalize as such nearly 120 years ago (Grisso, 1999; Grisso, 2005; Grisso, 2007; Thomas, 2002). One of the driving forces behind the creation of a separate juvenile system was the development of a belief that youthful offenders were a population quite different from adult offenders due to their immaturity. Early in the 20<sup>th</sup> century, the juvenile justice system emphasized rehabilitation over punishment (Thomas, 2002). In the 1990s, rising youth crime initiated a shift in thinking among policy makers regarding the treatment of juvenile offenders that resulted in a greater emphasis on punishment (e.g., Blumstein, Rivara, & Rosenfeld, 2000). As a result, the number of incarcerated juveniles increased, with many convicted as adults and housed in adult facilities (Grisso, 2007).

As the number of incarcerated juveniles increased, mental health advocates began to raise important concerns regarding the nature of mental illness among juvenile offenders and the ability of the justice system to respond by identifying specific disorders and providing the appropriate services (e.g., mental health treatment) within the correctional setting. One important aspect regarding youthful offenders in particular is the tendency for mental health problems to manifest as delinquency. Behavioral disorders (e.g., oppositional defiance) are a prime example, which can result in youth “acting out” in a variety of ways (Grisso, 1999; Otto et al., 1992). Clinicians and advocates familiar with juvenile mental health have pointed out that the tendency for misbehavior among

youth suffering from mental health problems is likely evidenced by the high prevalence rates of mental disorder among youth involved with the justice system (e.g., Otto et al., 1992), and often suggested that neither the juvenile justice facilities, nor the adult facilities housing juveniles, were adequately prepared to handle the mental health needs of this growing population (Grisso, 2007).

The National Coalition for the Mentally Ill in the Criminal Justice System—a group of professionals, scholars, and mental health advocates—began a unified push to address the inequities of mental health services in general and within the U.S. justice system in particular (Rotenberg, 1992). The coalition has maintained that there has been a general lack of understanding regarding the prevalence of mental disorder among detained and incarcerated youth, and much of this lack could be traced to research limitations in relevant studies, including small sample sizes, ill-defined and inconsistent inclusion criteria, and the use of non-standardized instruments (e.g., Teplin, Abram, McClelland, Dulcan, & Mericle, 2002).

Among juvenile justice and mental health researchers, the development and validation of effective and versatile mental health screening instruments have figured prominently in the juvenile justice and mental health literature over the past two decades (e.g., Aalsma et al., 2014; Grisso, 2005; Otto et al., 1992; Teplin et al., 2002). Effective screening tools can quickly and accurately identify potential mental health problems and/or need of services in juvenile justice settings. The data gathered via screening also helps justice systems to respond appropriately to short-term individual crises and give juvenile justice administrators the necessary information for long-term preparedness. Once juvenile justice officials begin to utilize this information for short- and long-term

responses, they can share information and communicate with one another regarding the successful implementation of mental health programs and services. The MAYSI-2, when adopted by justice systems in multiple states, allows juvenile justice officials in those states to understand the prevalence of mental health problems relative to other states that utilize the MAYSI-2.

The MAYSI-2 (Grisso & Barnum, 2006) was created specifically for use with incarcerated youth. It has demonstrated validity and reliability among diverse justice system-involved youth populations (e.g., Cauffman, 2004), resulting in at least 39 states that utilize the MAYSI-2 in standard juvenile justice intake processes (at least 49 states have used the MAYSI-2 at some point, if not as part of the standardized intake process) (Skowrya & Coccozza, 2007). Idaho's JDCs have been systematically collecting MAYSI-2 data since 2008. Due to improved data collection procedures, the researcher selected three more recent years for the current analysis—2013-2015.

The purpose of this analysis is to explore the prevalence of mental health problems among Idaho's detained youth according to MAYSI-2 data. These data will allow Idaho's juvenile justice policymakers to engage in communication with their counterparts in other states, armed with accurate information for meaningful comparisons and mutual solutions. This literature review begins with the history of the juvenile justice system in the United States. Historical context lays the groundwork to describe what led to a push for reform in mental health services provided to justice system-involved youth—a push that began to take shape in the 1980s. The empirical literature that justified this push for reform will then be discussed, followed by recommendations and subsequent research in a landmark study conducted by Teplin et al. (2002). The

discussion will then turn to screening and assessment, which are foundational pieces to understanding and addressing mental health problems among justice system-involved youth; this discussion leads into a specific focus on the MAYSI-2. Finally, the review will summarize MAYSI-2 findings from Pennsylvania, Nevada, and Indiana. These data provide points of comparison for the present analysis of MAYSI-2 results derived from Idaho's detained youth.

### **History of the Juvenile Justice System**

Prior to the establishment of a formal juvenile justice system near the turn of the 20<sup>th</sup> century, offenders as young as 15 were often treated as adults in the process of criminal prosecution (Thomas, 2002). Near the turn of the 20<sup>th</sup> century, there was a movement to reform the legal system and establish separate laws and procedures regarding the prosecution of youth. Prior to that time, many juveniles were subjected to the same criminal charges as adults. Youth under the age of seven were immune from prosecution on the grounds that they were believed to be incapable of criminal responsibility. Courts operated with a legal presumption that youth between the ages seven and 14 also were not criminally responsible; however, prosecutors maintained the authority to challenge that presumption (Thomas, 2002). Individuals over the age of 14 were held to the same legal standards regarding criminal responsibility and subjected to the same penalties as adults, which often resulted in youth being incarcerated alongside adults (Thomas, 2002). Deaths of detained youth at the hands of their adult counterparts spurred reformists into action and, by 1899, the first juvenile court was established in Chicago, Illinois. By 1925, 46 states had followed suit (Thomas, 2002).

Since its inception at the turn of the 20<sup>th</sup> century, the juvenile justice system has shifted between emphasizing rehabilitation and punishment. Regardless of this shift, the belief that youth require special consideration due to their developmental immaturity was a foundational piece of the juvenile justice system (Grisso, 1996). As a corollary to that belief, juvenile courts were given a custodial, rehabilitative mission, and broad discretion to carry it out (Grisso, 1996). Youth charged with crimes were not given the same rights of due process afforded to their adult counterparts; the underlying logic was that a rehabilitative focus would naturally protect their rights (Grisso, 1996). However, once the pendulum swung in favor of punishment, critics pointed out that many judges were abusing their discretion, which initiated a series of U.S. Supreme Court cases that changed the laws governing juvenile court proceedings (Grisso, 1996; Thomas, 2002).

Three key U.S. Supreme Court cases reshaped the rights of juveniles in the course of prosecution. In *Kent v. U.S.* (1966), the Supreme Court ruled that juveniles transferred to adult court had rights to a hearing and legal counsel. In *Gault v. U.S.* (1967) the Supreme Court established that, in a hearing that could result in detainment, juveniles had rights to notice of charges, counsel, and to question witnesses. Prior to *Winship v. U.S.* (1970) many juvenile courts operated according to the “preponderance of evidence” legal standard to establish guilt. *Winship v. U.S.* (1970) resulted in a mandate that courts must adhere to the stricter standard of establishing guilt “beyond a reasonable doubt.” The Juvenile Standards Project added to these legal reforms by recommending standardized sentencing based on the charges for which juveniles were convicted (American Bar Association, 1980 as cited in Grisso, 1996).

With the rights of due process and standardized sentencing procedures in place, juvenile courts began to function much as adult courts, in which punishment in proportion to the crime—rather than rehabilitation—was the focus. Rising crime rates throughout the 1980s and 1990s resulted in “get tough” policies in both adult (Kornaki, 2014) and juvenile justice systems that emphasized more punitive sentencing practices (Grisso 2007; Thomas, 2002). With harsher sentences came concomitant population increases in both adult and juvenile correctional facilities (Grisso, 2007). This dramatic rise in detained and incarcerated youth took place at a time when states were being forced to close public mental health facilities due to losses of funding. Juvenile justice-facility staff began to voice concerns that the incoming wave of youth seemed to display a greater amount of behavior consistent with what they believed to be mental disorder, leading many to the assumption that juvenile justice facilities were becoming *de facto* psychiatric hospitals (Grisso, 2007).

### **Push for Reform**

In 1989, the National Coalition for the Mentally Ill in the Criminal Justice System was founded (Rotenberg, 1992). As the title suggests, the coalition took special interest in incarcerated individuals with mental disorders, a population its members considered to be severely underserved. The coalition targeted three specific groups of mentally ill detainees: those serving time in jails, adult prisons, and youth in juvenile justice facilities (Rotenberg, 1992). Youth occupied a prominent role in the coalition’s stated goals because the coalition’s members believed that helping address mental health problems among young people provided an opportunity to heal and strengthen communities at both personal and family levels. If youth in need were given the opportunity for mental health

treatment, they could avoid legal and interpersonal consequences. The broader community could benefit because youth treated for their mental illnesses would be less likely to harm others or cause other problems in the community (Grisso, 2007; Rotenberg, 1992). Youth also figured prominently in the coalition's goals because youth crime—particularly violent crime—was receiving enhanced public attention at the time of the coalition's formation (Blumstein, Rivara, & Rosenfeld, 2000).

The coalition sought to influence policy by recruiting stakeholders from among corrections professionals, mental health clinicians, judges, researchers, and federal agencies to take part in work sessions aimed at elucidating challenges and solutions pertaining to mental health problems among justice-system involved youth (Rotenberg, 1992). One result of these work sessions was a monograph outlining the priorities identified by the coalition (Cocozza, 1992).

Among the goals identified in the coalition's monograph, research to aid development of effective mental health screening tools was a major priority (Otto et al., 1992). Coalition members agreed that efficient screening tools would provide juvenile justice professionals with an accurate picture of the mental health needs of youth entering correctional facilities (Rotenberg, 1992). Up to that point, there were no consistent data available that described the prevalence of mental health problems among justice system-involved youth, owing to flaws in research methods and analysis (Otto et al., 1992).

Otto et al. (1992) conducted a review of the literature reporting the prevalence of mental disorder among the general population of youth in the United States as well as those in the juvenile justice system. In their analysis, Otto et al. (1992) demonstrated common flaws in research methodology, evidenced by factors such as wide ranging



prevalence rates, lack of consistent construct definitions, and ill-defined and inadequate sample selection. For instance, to explore prevalence of mental disorder among youth in the general population, Otto et al. (1992) cited an earlier review conducted by Gould, Wunsch-Hitzig, and Dohrenwend (1981) that included 25 U.S. studies completed between 1928 and 1975. Here, study participants, defined as “school age,” were evaluated for the condition of “childhood maladjustment.” Using teachers’ estimates, Gould et al. (1981) reported a range of 7% to 22%; parents’ estimates of maladjustment were between 10% and 37% (as cited in Otto et al., 1992). The pattern of wide-ranging estimates, generalized definitions of disorder, and inconsistent age ranges of study participants continued in a review of 16 community surveys conducted by Links (1983) and another review of eight studies conducted by Brandenburg, Friedman, and Silver (1990) (as cited in Otto et al., 1992).

Although much of their analysis was aimed at demonstrating flaws in the research methods of previous studies, Otto et al. (1992) used data from some of the more rigorous research studies to extrapolate prevalence trends, and made a number of recommendations that would inform and improve future research. For example, whereas most of the studies reviewed by Otto et al. (1992) utilized global definitions of disorder, two studies (Costello, 1989; Kashani et al., 1987) provided rates for specific DSM-III disorders (i.e., attention deficit disorder, conduct disorder, over-anxious disorder, affective disorders, and phobias) and employed more stringent sampling techniques and standardized measures. These improvements in research methods were noteworthy because they provided investigators with the framework to more accurately estimate the prevalence of specific disorders. By cross-referencing general population data with

juvenile court data provided by the National Center for Juvenile Justice, Otto et al. (1992) were able to extrapolate minimum prevalence rates expected among the juvenile justice population and presented strong evidence that disorder among justice system-involved youth was likely greater than youth in the general population.

Otto et al. (1992) summarized 34 studies that examined disorder among youth in the juvenile justice system between 1975 and 1992. To present the most accurate data possible, Otto et al. (1992) emphasized the prevalence rates derived from the studies that utilized random sampling or “implemented a comprehensive procedure for obtaining data such as including all cases admitted during a certain period of time” (p. 17). Despite more rigorous research methods, prevalence rates still ranged widely. For instance, the following ranges of prevalence rates were presented: conduct disorder from 10% to 91%; attention deficit disorder/attention deficit hyperactive disorder from 0% to 46%; substance abuse and dependence from 0% to 95%; personality disorders from 2% to 17%; mental retardation from 1% to 23%; learning disabilities and developmental disorders from 17% to 53%; affective disorders from 2% to 78%; anxiety disorders from 0% to 41%; and psychotic disorders from 1% to 6%.

In their review, Otto et al. (1992) highlighted a number of additional indicators of mental disorder that were higher among youth in the juvenile justice system than the general population, and these would later become important in guiding the development of screening instruments such as the MAYSI-2 (Grisso & Barnum, 2006). For instance, prior treatment for mental health conditions was considered in several studies (Otto et al., 1992). Seven studies reported psychiatric hospitalization rates, five of which reported rates of 12% or higher. Among the studies that reported prior outpatient treatment, the

five that utilized rigorous sampling techniques reported rates between 38% and 66%. Compared to the general population, higher rates of abuse among youth involved in the justice system had also been widely reported in previous research; of the studies reviewed by Otto et al. (1992), four employed rigorous sampling techniques and reported abuse rates between 25% and 31%. Another important factor when considering the mental health needs of youth in the juvenile justice system is history of self-injurious behavior such as suicide attempts (Otto et al., 1992). In the review conducted by Otto et al. (1992), one outlier study reported previous suicide attempts at a rate of 1% (Cocozza & Ingalls, 1984); the other studies reported rates between 6% and 28%.

The shortcomings of existing research reviewed by Otto et al. (1992) was reiterated in the larger collection of works published by the National Coalition for the Mentally Ill in the Criminal Justice System (Cocozza, 1992) and led to a number of specific recommendations that helped set the agenda for research and policy in the coming decades. To begin, prior researchers of mental illness among youth tended to report only a single diagnosis—that which was deemed of primary importance. In doing so, researchers left a gap by failing to provide data exploring the issue of comorbidity. Research that did report instances of comorbidity suggested that youth who received a mental health diagnosis were more likely than not to have multiple diagnoses, which makes the nature of comorbidity extremely important to understanding disorder among justice system-involved youth (e.g., Otto et al., 1992; Shufelt & Cocozza, 2006). Additionally, despite the existence of structured interviews guided by validated psychometric instruments, most researchers employed unstructured interviews that relied heavily on self-reporting or retrospective data derived from record reviews. Other flaws

in prior research included poorly described samples regarding demographics, point of justice-system involvement, and selection criteria.

To address these concerns, Otto et al. (1992) recommended a systematic approach to establishing the prevalence of mental disorder among justice system-involved youth. Research recommendations included random selection of study participants, detailed descriptions of demographic variables and point of system involvement (e.g., detention facility or probation), data analysis that included triangulation of record reviews, and use of structured clinical interviews, validated instruments, and corroborating interviews with participants' family members. Teplin et al. (2002) were among the first researchers to systematically address the concerns raised by Otto et al. (1992) and other members of the National Coalition for the Mentally Ill in the Criminal Justice System (Rotenberg, 1992).

### **Search for Consistency**

Teplin et al. (2002) conducted a landmark study as part of the Northwestern Juvenile Project. These researchers emphasized three major methodological problems from earlier research: 1) biased samples due to inconsistent exclusion criteria, 2) small samples, which make identifying the prevalence of severe disorder particularly difficult, and 3) measurement problems including non-specific diagnostic criteria and unstandardized, untested instruments. To address these problems, Teplin et al. (2002) utilized a large enough sample ( $N = 1,829$ ) to stratify by gender, race/ethnicity, and age. The researchers were particularly concerned with including females in their study because females are a growing population in the justice system and existing research that included large samples of females was sparse. Teplin et al. (2002) also focused on Hispanics—due to their overrepresentation in the justice system and because they are the

largest minority population in the U.S.—and youth  $\leq 13$  years. The sample was selected from the Cook County (Illinois) Juvenile Temporary Detention Center from November 1995 – June 1998 and included boys (1,172) and girls (657) between the ages of 10 and 18. Researchers utilized the Diagnostic Interview Schedule for Children version 2.3 (DISC-2.3), which had demonstrated validity and reliability (e.g., Schaffer et al., 1996). Teplin et al. (2002) determined mental health diagnoses according to DISC computer algorithms, which corresponded to DSM-III-R criteria, as well as a more conservative diagnosis that combined DSM-III-R criteria and “diagnosis-specific impairment criteria, reported by participants” (p. 1135).

Teplin et al. (2002) determined 6-month prevalence rates for affective disorders (e.g., major depressive episode), psychotic disorders, anxiety disorders, attention-deficit/hyperactivity disorder (ADHD), disruptive behavior disorders (i.e., conduct and oppositional defiant disorder), and substance use disorders. Results of this study suggested that over 60% of males and 70% of females met or exceeded diagnostic criteria with impairment for any of the disorders assessed. Using the less conservative diagnostic criteria, regardless of impairment status, 21% of males and 31% of females were indicated for anxiety disorder; 17% of males and 21% of females were diagnosed with ADHD; 41% of males and 46% of females met the criteria for disruptive behavior disorders; and 51% of males and 47% of females reached the diagnostic threshold for any substance use disorder. Stratified by gender, non-Hispanic white males had the highest rates for any disorder, followed by Hispanic males, then African American males. Among females, non-Hispanic whites were reported to have higher rates of any disorder than African Americans. Stratified by gender and age, males 13 years and under (53%)

were significantly less likely to have any disorder than those 14-15 years (68%) and 16 and over (67%). Teplin et al. (2002) utilized the DISC—an instrument that corresponds to DSM-III-R criteria, which gives it diagnostic capabilities. In “real-world” settings (i.e., outside of a research study), screening is conducted on large numbers of youth to determine *potential* mental health problems in order to divert those most in need to further assessment—a more economical approach to which the MAYSI-2 is well suited.

### **Screening**

Screening and assessment have been identified by researchers as fundamental steps to responding to the mental health needs of detained youth (Cauffman, 2004; Grisso, 2005; Otto et al., 1992; Teplin et al., 2002; Wasserman et al., 2005). Screening and assessment play related yet distinct roles in determining the mental health status and needs of those to whom they are applied (Grisso, 2005).

Mental health screening is a systematic and affordable approach to identifying the most urgent mental health needs of youth entering the justice system (Grisso, 2005). Puzzanchera and Kang (2014) calculated that there were approximately 1,319,700 juvenile arrests in the U.S. in 2012. Because of limited resources, it is impossible for juvenile justice officials to obtain detailed mental health information on each incoming youth (Grisso, 2005). However, given the high prevalence of mental disorder among members of this population, it is important to determine the most pressing mental health needs (Grisso, 2005). Therefore, screening is ideally conducted on every incoming youth in order to place him or her into one of two broad categories: those who are most and least likely to possess symptoms consistent with mental disorder (Grisso, 2005).

Because all incoming youth should be screened, the process should take no more than 30 minutes and require no advanced training (Grisso, 2005). Lack of fine-focus detail is the tradeoff for this high-volume approach; the results from screening ordinarily do not suggest a specific diagnosis or treatment. The results may, however, indicate pressing needs such as suicide watch, substance detoxification, or medication (Grisso, 2005). Beyond these most immediate needs, screening identifies those youth who should receive a more thorough follow-up via assessment.

### **Assessment**

Comprehensive assessment—conducted by staff with specific training—is used to follow up on information gathered in the screening process. In contrast to screening, assessment is typically only conducted on youth determined by the screener to be most likely to possess symptoms consistent with mental disorder (Grisso, 2005). The assessment verifies or disconfirms the mental health needs identified by the screener, adding details that describe specific manifestations of potential disorder. The assessment process often incorporates a clinical interview and review of past records in order to supply greater detail and context regarding each youth and his or her mental health status; therefore, assessment requires a substantially greater time commitment than screening (Grisso, 2005). Clinical staff is able to utilize this higher level of detail to inform recommendations that address short- and long-term interventions to be implemented in the facility and potentially continued in the community (Grisso, 2005).

### **MAYSI-2**

The MAYSI-2 is a mental health screening instrument that was developed in response to a call from the National Coalition for the Mentally Ill in the Criminal Justice

System (Cocozza, 1992) as outlined in its 1992 publication (Grisso & Barnum, 2006). This call incorporated the concerns of researchers, clinicians, and policy makers regarding, among other things, research methods, results, and their translation into mental health services in the juvenile justice system. The MAYSI-2 addresses the concerns of researchers by providing a common, standardized instrument that allows for the comparison of data gathered from a wide variety of sources (Grisso & Barnum, 2006). For clinicians, the MAYSI-2 provides a way to quickly identify youth with mental, emotional, or behavioral distress who require an immediate response and/or follow-up assessment. Policymakers (e.g., juvenile justice administration officials) can use information gathered by researchers and clinicians to coordinate effective responses to the mental health needs of youth in the care of the juvenile justice system.

Though several psychometric instruments have been validated for use with delinquent youth, the MAYSI-2 was designed to address specific challenges associated with systematically and comprehensively screening members of this large population (Grisso & Barnum, 2006). Some validated instruments, such as Reynolds Adolescent Depression Scale (Reynolds, 1989), screen for problems on a single dimension; if facility staff were to use such a specialized tool, they would likely have to use other tools to screen for problems on other dimensions (e.g., anxiety or disruptive behavior problems). This would require the utilization of a sequence of instruments—and a considerable time investment—to form a complete picture of potential mental health problems (Grisso & Barnum, 2006). The Minnesota Multiphasic Personality Inventory for Adolescents (MMPI-A; Butcher, Graham, Archer, Tellegen, Ben-Porath, & Kaemmer, 1992), on the other hand, covers multiple dimensions; however, the MMPI-A is quite lengthy also



requires a considerable time commitment (Grisso & Barnum, 2006). Instruments such as the Child Behavior Checklist-Youth Self Report (CBCL-YSR; Achenbach, 1991) and Brief Symptom Inventory (BSI; Derogatis, 1993) require less time, but fail to consider important issues specific to corrections-facility settings (e.g., suicide risk and substance use) (Grisso & Barnum, 2006). Additionally, many of these instruments require clinical training to score and interpret the results (Grisso & Barnum, 2006). Grisso and Barnum (2006) considered all of these challenges in designing the MAYSI-2.

As a comprehensive screening instrument, the MAYSI-2 was designed to be administered to each incoming youth at all entry points of the juvenile justice system (e.g., probation and correctional programs as well as secure facilities). Such a high volume of respondents necessitated a tool that could be administered in 15 minutes or less and could be scored and interpreted by staff with no mental health expertise (Grisso & Barnum, 2006).

The MAYSI-2 is a self-report, 52-item instrument designed for readability at a fifth-grade level. The instrument can be read individually by the respondent or read aloud by juvenile justice staff to either individuals or groups (Grisso & Barnum, 2006). Items require a yes/no response that indicates whether or not the youth has had an experience related to the item in the previous few months, with one exception: items in the Traumatic Experiences scale inquire about the respondent's lifetime. The MAYSI-2 includes seven subscales: Alcohol/Drug Use, Angry-Irritable, Depressed-Anxious, Somatic Complaints, Suicidal Ideation, Thought Disturbance (normed for boys only), and Traumatic Experiences (Grisso & Barnum, 2006). The tool serves an alerting function by dividing youth into one of three categories of risk: low risk, "caution," and "warning." A

“caution” score places the youth in the top 50% of normed scores derived from the original MAYSI study; a “warning” score indicates the highest level of risk, placing the youth in the top 10% of normed scores (Grisso & Barnum, 2006). The MAYSI-2 was originally developed in a paper-and-pencil format (Grisso & Barnum, 2006), but has also been used and evaluated in computer (Cauffman, 2004) and voice formats (Hayes, McReynolds, & Wasserman, 2005).

#### Phases of MAYSI-2 Development

The MAYSI and its second edition (MAYSI-2) were developed over four phases (Grisso & Barnum, 2006). In the first phase (1994-1996), designers identified the most important constructs described in the child clinical literature related to behavioral, mental, and emotional states of adolescents in clinical and juvenile justice settings. In addition, the designers considered the most prominent topics identified by juvenile justice agencies regarding immediate mental health and safety needs of youth in their custody. The combination of these factors guided designers in the original MAYSI subscale development (Grisso & Barnum, 2006). A prototype was created and pilot tested on a small, mixed-gender sample (N = 179) drawn from the Massachusetts Department of Youth Services pretrial detention centers, assessment centers, and probation intake (Grisso & Barnum, 2006).

After some scale adjustment and subsequent positive results regarding item-scale correlations, inter-scale correlations, and *alpha*-coefficients, the MAYSI was subjected to a large-scale study in its second phase of development (1996-1998), which resulted in the development of the first MAYSI manual (Grisso & Barnum, 1998). In the second phase, MAYSI developers established norms, identified cut-off scores, and validated the

MAYSI's psychometric properties and scales by comparing its results to similar constructs as measured by the Millon Adolescent Clinical Inventory (MACI; Millon, 1993) and CBCL-YSR (Achenbach, 1991; Grisso & Barnum, 2006). In the third phase (1998-1999) researchers reexamined data from the 1996-1998 study and utilized factor analysis to improve the MAYSI items and subscales. These data resulted in the second version of the MAYSI (i.e., the MAYSI-2) and its manual, which was first published in 2000 (Grisso & Barnum, 2000), updated in 2003, and again in 2006 (Giresi, 2012). In the fourth phase (2000-2002), the MAYSI-2 designers sought to widely distribute the tool while aiding juvenile justice organizations with its implementation and assisting with research projects in an effort to further its refinement; this effort was part of the National Youth Screening Assistance Project (Grisso & Barnum, 2006). The fourth phase initiated a flurry of research activity to replicate study findings from Grisso et al. (2001) (e.g., Archer et al., 2004; Cauffman, 2004). Replication studies have demonstrated the MAYSI-2 to have good internal consistency, moderate test-retest reliability and appropriate concurrent validity (Aalsma, Schwartz, & Perkins, 2014). These positive study results and the work of mental health advocates contributed to widespread use of the MAYSI-2, which has been utilized at some point by juvenile justice agencies in at least 49 states (Skowrya & Coccozza, 2007).

#### MAYSI-2 Results in Pennsylvania, Nevada, and Indiana

Research in several states utilizing the MAYSI-2 has consistently demonstrated that (a) detained juveniles likely have a much higher prevalence of mental disorder than the approximately 20% reported among juveniles in the general population (Kazdin, 2000), and (b), girls tend to report more mental health problems than boys. Published

results from studies in Pennsylvania, Nevada, and Indiana were used in this paper as a frame of reference. These states were chosen because they represent a variety of geographic locations across the U.S. and because study authors analyzed and reported the data in a way that allowed for comparison to results from Idaho presented here.

Cauffman (2004) conducted one of the earliest and largest studies examining the effectiveness of the MAYSI-2 as a screening tool for juveniles detained in Pennsylvania. Cauffman (2004) collected MAYSI-2 data on 18,607 admissions—rather than individual youth—from 15 of the 23 juvenile detention centers located in Pennsylvania between May 2000 and October 2002. The sample included 15,246 (82%) boys and 3,361 (18%) girls between the ages of 10 and 19 ( $M = 15.5$ ). According to self-reported data, the sample was approximately 44% White, 44% African American, 10% Hispanic, and 1% Asian. Because the Thought Disturbance scale is normed only for boys and the Traumatic Experiences scale is slightly different for boys and girls, Cauffman (2004) utilized only the five scales boys and girls have in common when analyzing gender differences. Cauffman (2004) determined the percentage of boys and girls who scored “caution” or above on each subscale as well as the percentage of those who scored “caution” or above on any subscale (Table 1). As summarized in Table 1, 70% of boys and 81% of girls scored high enough on any subscale to merit further mental health evaluation. Utilizing univariate analysis, the researcher demonstrated significantly more mental health symptoms among girls than boys on all five subscales (Cauffman, 2004).

**Table 1. Percentage of Boys and Girls Above “Caution” on Each Subscale and Any Subscale**

Scale	% Above “Caution”	
	Boys	Girls
Alcohol/Drug use	34	36
Angry/Irritable	41	56
Depressed/Anxious	36	54
Somatic Complaints	43	59
Suicidal Ideation	18	33
Thought Disturbance	39	NA
Traumatic Experience	40	43
Any Subscale	70	81

\* Among only the 5 scales boys and girls have in common (i.e., excluding Traumatic Events and Thought Disturbance).

Results of a study conducted in Nevada also demonstrated high prevalence of mental disorder among detained juveniles, and it was again found that girls scored consistently higher on all MAYSI-2 subscales—excluding Thought Disturbance—than boys (Chino et al., 2004). Chino et al. (2004) conducted a comprehensive study of youth detained in each of Nevada’s 12 juvenile detention facilities. The researchers gathered data from March through June of 2003, estimating that they obtained MAYSI-2 data on more than 90% of youth detained in that time period. The sample (N = 660) included 547 (83%) boys and 113 (17%) girls between the ages of 11 and 18 (M = 15.9). Responses indicated that the sample was 40% White, 28% Hispanic, 20% African American, 8% Native American, and 4% Asian. Chino et al. (2004) utilized a slightly different scoring system than MAYSI-2 developers and calculated the percentage of participant scores divided into low, moderate, and high risk broken down by MAYSI-2 scale and gender (Table 2). Low-, moderate-, and high-risk scores approximately corresponded to low risk,

“caution,” and “warning,” (M. Chino, personal communication, December 12, 2015).

Chi-square analyses revealed that girls scored significantly higher on the Depressed-Anxious, Somatic Complaints, Suicidal Ideation, and Traumatic Experiences subscales (Chino et al., 2004).

**Table 2. Study Population % Scores on the MAYSI-2 Scales by Gender**

Scale	Males			Females		
	%Low Risk	%Moderate Risk	%High Risk	%Low Risk	%Moderate Risk	%High Risk
Alcohol/Drug Use	33%	42%	25%	33%	35%	32%
Angry/Irritable	42%	32%	26%	33%	36%	31%
Depressed/Anxious	49%	37%	14%	31%	39%	30%
Somatic Complaints	40%	49%	11%	20%	51%	29%
Suicidal Ideation	73%	8%	19%	55%	11%	34%
Thought Disturbance	40%	44%	16%	N/A	N/A	N/A
Traumatic Experience	22%	40%	38%	12%	29%	59%

Adapted from Screening for Mental Health Problems Among Incarcerated Youth in Nevada: Practice and Policy, p.12, by M. Chino, J. Personius-Zipoy, & D. Tanata, 2004, *Nevada Journal of Public Health*, 1, 8-15. Retrieved from <http://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=1033&context=njph>

A more recent study confirmed a high rate of mental health problems as well as gender differences consistent with previous research among youth detained in Indiana. Aalsma et al. (2014) reported the results of the Indiana Project—a study of MAYSI-2 data collected on a rolling basis from 16 of 22 detention centers in Indiana between January 1, 2008 and December 31, 2011. Detention centers were located in both rural and urban areas and ranged in detainee populations from 30 to 4,553. In all, the researchers analyzed data from 25,265 detention stays (including 15,461 unique individuals). The sample was 76% male and 24% female with an average age of approximately 15.5 years. Because of the low number of respondents who indicated their race/ethnicity as Asian

(less than 1%) or “other” (2%), the researchers included only White (51%), African American (38%), and Hispanic (9%) juveniles in their analysis (Aalsma et al., 2014). Overall, 70% of the sample scored above the clinical cut-off on at least one MAYSI-2 subscale. Chi-squared analysis demonstrated that girls (80%) were more likely than boys (68%) to score in the clinical range on at least one subscale. Aalsma et al. (2014) determined that 21% of the sample screened positive on two or more subscales, and that girls (33%) were significantly more likely than boys (18%) to screen positive on two or more subscales.

The MAYSI-2 has undergone substantial testing and refinement in preparation to specifically target the juvenile justice population. It has gained widespread popularity and has demonstrated its usefulness in other states. It is, therefore, prudent to analyze MAYSI-2 data collected among detained juveniles in Idaho alongside similar data provided by other states. An understanding of these data will facilitate communication between policy makers and practitioners in their efforts to identify the most pressing mental health needs of detained youth and concentrate resources on the most appropriate services.

### CHAPTER THREE: METHODS

In 2006, the Idaho Department of Juvenile Corrections (IDJC) and the Idaho Department of Health and Welfare (IDHW) funded a pilot project that placed a mental health clinician in Idaho's juvenile detention center (JDC) located in Bonneville County (Begic, McDonald, & Toussaint, 2015). The clinician was tasked with screening incoming youth for mental health problems and making recommendations for future services based on provisional diagnoses. After an encouraging evaluation of the pilot project, funding was approved to expand it into what became the Clinical Services Program (CSP). The expansion included 12 additional JDCs in the counties of Ada, Bannock, Bonner, Canyon, Fremont, Kootenai, Lemhi, Minidoka, Nez Perce, Twin Falls, and Valley, as well as the Fort Hall Shoshone/Bannock tribal facility (Begic et al., 2015). The CSP involves IDJC clinicians and other staff members from each of the participating JDCs across Idaho. JDC staff compiles data on each incoming youth as part of a systematic intake process that includes screening each youth with the MAYSI-2.

As part of an ongoing evaluation of the CSP, IDJC staff removed any unique identifiers and provided these data to researchers at the Boise State University (BSU) Center for Health Policy (CHP) (Begic et al., 2015). The CHP researchers evaluate the CSP annually (e.g., Begic et al., 2015; Begic, McDonald, Gazieva, & Lindsay, 2014; Begic, McDonald, & Howard, 2013; McDonald, Begic, & Howard, 2012; McDonald, Osgood, & VanNess, 2010; McDonald & Theiler, 2011; McDonald, Williams, Osgood,



& VanNess, 2009). The present analysis includes MAYSI-2 data collected during fiscal years 2013-2015.

### **Sample**

Data were gathered on each juvenile detained in Idaho's 13 JDCs. The data gathering process required some back and forth communication between the CHP, clinicians, and other JDC staff. Over the years, this communication led to more consistency in gathering and recording procedures; therefore, the researcher chose to include three years of data gathered in the most consistent manner possible for the current analysis.

Data collection took place between June 2012 and July 2015. Due to the sparse number of cases, data from Valley County for all three years were excluded from the analysis (Begic et al., 2015). Because there were too few cases to analyze, Lemhi County's 2015 data were excluded. The total number of cases included in the analysis ( $N = 4,032$ ) is summarized in Table 3 by JDC and data year. Of the 4,032 cases in the total sample, gender was indicated for 3,925. Statistical tests of gender differences included only those 3,925 cases, of which 2,778 (71%) were boys and 1,147 (30%) were girls. Cases ranged in age from 10 to 20 ( $M = 16.2$ ,  $SD = 1.7$ ). Demographics regarding race/ethnicity were not part of the data collection process in the JDCs because a large majority of the population was White; therefore analysis of this variable was not possible.

**Table 3. Cases by JDC and Fiscal Year**

County JDC	Data Year		
	2013	2014	2015
Ada	66	150	254
Bannock	137	117	123
Bonner	75	83	45
Bonneville	155	131	150
Canyon	230	159	214
Fremont	29	44	22
Kootenai	228	242	230
Lemhi	23	18	
Minidoka	58	94	78
Nez Perce	156	109	79
Shoshone	18	19	11
Twin Falls	167	171	147
<b>Total</b>	1,342	1,337	1,353

### Research Design

In the present study, the researcher primarily employed a descriptive/exploratory design, utilizing secondary data derived from the CSP. The researcher analyzed data from fiscal years 2013-2015.

### Instrument

All incoming youth were screened with the MAYSI-2—a 52-item self-report tool targeting justice system-involved youth. The instrument consists of seven subscales—Alcohol/Drug Use, Angry-Irritable, Depressed Anxious, Somatic Complaints, Suicidal Ideation, Thought Disturbance (normed for boys only), and Traumatic Experiences—

designed to identify youth with unique mental health and/or substance abuse needs rather than as a diagnostic tool (i.e., a “warning system”) (Grisso & Barnum, 2006). Grisso and Barnum—the instrument developers—created a scoring system that delineates “caution” and “warning.” Grisso and Barnum (2006) gauged the “caution” cut-off by comparing subscales to parallel constructs measured by the MACI and CBCL-YSR, which had been more extensively studied. These instruments do not have a scale that parallels the MAYSI-2’s Traumatic Experiences scale; therefore, no cut-off was established for Traumatic Experiences (Grisso & Barnum, 2006). “Caution” indicates a clinically significant score, placing the youth approximately within the highest 50% of scores normed through the original Massachusetts study (Grisso et al., 2001). “Warning” places the youth approximately within the top 10% of scores from the Massachusetts sample (Grisso & Barnum, 2006). Although the manual does include scoring recommendations, the instrument developers left room for juvenile justice agencies to determine how best to adapt the scoring criteria and how these criteria correspond to subsequent responses in terms of mental health services. According to Idaho policy (Mecham, 2015), the scoring system was adapted for youth to receive a designation of either “true” or “false” according to each subscale. In this case, youths were “screened in” (true) when they scored on the high end of the established “caution” zone or the low end of the “warning” zone, depending on the subscale. Additionally, CSP clinicians chose to collect Thought Disturbance results for both boys and girls, and as a result they are analyzed here. As noted earlier, the Thought Disturbance scale was normed only for boys (Grisso & Barnum, 2006), so conclusions drawn about girls’ Thought Disturbance scores should be

treated with caution. Table 4 compares scoring criteria that correspond to the MAYSI-2 developers' established "caution" and "warning" categories to Idaho's scoring policy.

**Table 4. Comparison of Established MAYSI-2 Cutoff Criteria to Idaho's MAYSI-2 Scoring Procedures.**

Scale	Range of possible scores	MAYSI-2 Cutoff Scores Established by the Developers' Manual		Idaho's Cutoff Scores
		Caution	Warning	True
Alcohol/Drug Use	0-8	4-6	7-8	6+
Angry/Irritable	0-9	5-7	8-9	6+
Depressed/Anxious	0-9	3-5	6-9	5+
Somatic Complaints	0-6	3-5	6	6
Suicidal Ideation	0-5	2	3-5	3+
Thought Disturbance	0-5	1	2-5	2+
*Traumatic Experience	0-5	NA	NA	3+

*Note.* \*Traumatic Experiences had no parallel MACI or CBCL-YSR scale from which to determine clinically significant cut-off criteria.

### Procedure

All data utilized in the present analysis were collected by IDJC staff and provided to the BSU CHP as part of an ongoing evaluation of the CSP. Data provided to the CHP were coded and free of any individually identifiable information. Institutional Review Board approval was attained prior to the current study.

The CSP entails an intake process whereby juveniles entering detention facilities are screened with the MAYSI-2, then interviewed by a clinician. Data provided to the CHP includes MAYSI-2 results as well as booking information and provisional diagnoses (Begic et al., 2015).

For the purpose of the present analysis, the researcher extracted data from fiscal years 2013-2015 and created a separate database in Microsoft Excel. Next the data were cleaned and entered into IBM's Statistical Package for the Social Sciences (SPSS).

### **Statistical Analysis**

The purpose of this study was to explore the prevalence of mental health problems among Idaho's detained youth. Descriptive statistics were the primary mode of analysis. Cases were categorized on a nominal (true/false) scale according to each MAYSI-2 subscale. An indication of "true" was considered a positive screen. Frequencies and percentages of youth with positive screens were reported for each of the seven MAYSI-2 subscales as well as an additional "Any Subscale" variable that described the number of youth who screened positive on at least one subscale. These frequencies and percentages were organized and presented to include all years combined as well as broken down by gender and year.

The researcher conducted chi-square analyses to assess for possible differences as a function of several variables. First, the researcher determined if there was a difference in positive screens on "Any Subscale" between data years without regard to gender. Second, possible differences in positive screens on "Any Subscale" within data years were examined as a function of gender (Table 6). Third, the possible differences in positive screens on each of the seven MAYSI-2 subscales within each data year and across all three data years combined were examined as a function of gender (Table 7).

## CHAPTER FOUR: RESULTS

When all three data years were combined, 52% of boys and 70% of girls screened positive on at least one of the seven MAYS-2 subscales. Without regard to gender, when all three years were combined, the top three most frequently indicated subscales in descending order were Angry/Irritable (30%), Traumatic Experiences (28%), and Somatic Complaints (24%). Broken down by year, the frequencies of youth that screened positive on the Angry/Irritable subscale were 27%, 28% and 34% in data years 2013, 2014, and 2015, respectively, which means it was consistently the most frequently indicated subscale in all three data years (see Table 5). This pattern of consistency continued with Traumatic Experiences indications (26%, 26%, and 33%), which was the second most frequently indicated subscale. Somatic Complaints, however, deviated slightly from the pattern: in 2014, Suicidal Ideation (23%) indications were slightly more prevalent than Somatic Complaints (22%). Excluding Thought Disturbances (normed for boys only), Alcohol/Drug Use was consistently the least frequently indicated subscale at 14% overall, and 14%, 12%, and 17% in data years 2013, 2014, and 2015, respectively (see Table 5).

**Table 5. Frequencies and Percentages of Cases with a Positive Screen on the MAYSI-2 in Idaho 2013 – 2015.**

MAYSI-2 Subscales	Data Year (Number of cases)			
	2013 (1,342)	2014 (1,337)	2015 (1,353)	All Years (4,032)
Alcohol/Drug use	14% (183)	12% (164)	17% (223)	14% (570)
Angry/Irritable	27% (362)	28% (372)	34% (458)	30% (1,192)
Depressed/Anxious	14% (192)	17% (222)	20% (270)	17% (684)
Somatic Complaints	22% (296)	22% (291)	28% (384)	24% (971)
Suicidal Ideation	19% (258)	23% (302)	22% (299)	21% (859)
Thought Disturbance	9% (121)	10% (139)	9% (121)	9% (381)
Traumatic Experience	26% (344)	26% (353)	33% (446)	28% (1,143)
Any Subscale	55% (738)	55% (739)	61% (819)	57% (2,296)

When examined according to gender, the analysis revealed some striking consistencies. When all three data years were combined, Angry/Irritable remained the most frequently indicated subscale among girls (38%). Among boys, the most frequently indicated subscale was tied between Angry/Irritable (26%) and Traumatic Experiences (26%). When all three data years were combined, the second most frequently indicated subscale for both boys (19%) and girls (36%) was Somatic Complaints. The third most frequently indicated subscale for both boys (16%) and girls (34%) was Suicidal Ideation.

**Table 6. Gender Differences Between Positive Screens on Each MAYSI-2 Subscale by Year.**

MAYSI-2 Subscales	Data Year (Number of cases in which gender was indicated)							
	2013 (1,331)		2014 (1,283)		2015 (1,311)		All Years (3,925)	
	Boys (950)	Girls (381)	Boys (932)	Girls (351)	Boys (896)	Girls (415)	Boys (2,778)	Girls (1,147)
Alcohol/Drug use	12% (118)	17% (63)	10% (89)	17% (60)	14% (129)	20% (82)	12% (336)	20% (205)
Angry/Irritable	23% (222)	36% (137)	23% (216)	39% (137)	31% (277)	40% (162)	26% (715)	38% (436)
Depressed/Anxious	11% (108)	21% (81)	12% (114)	26% (92)	16% (140)	30% (123)	13% (362)	26% (296)
Somatic Complaints	18% (172)	32% (121)	16% (149)	36% (125)	22% (201)	40% (167)	19% (522)	36% (413)
Suicidal Ideation	15% (143)	30% (115)	16% (147)	40% (141)	18% (158)	32% (134)	16% (448)	34% (390)
Thought Disturbance	9% (85)	9% (35)	9% (85)	15% (52)	9% (81)	9% (38)	9% (251)	11% (125)
Traumatic Experience	22% (121)	33% (127)	25% (228)	34% (119)	33% (291)	36% (149)	26% (731)	34% (395)
Any Subscale	50% (472)	68% (258)	50% (461)	71% (249)	56% (500)	70% (292)	52% (1,443)	70% (799)



A chi-squared test was used to explore whether or not detained juveniles screened positive more frequently on “Any Subscale”—defined as a positive screen on any of the seven MAYSI-2 subscales—as a function of data year. The percentage of positive screens on “Any Subscale” among juveniles detained in Idaho in data year 2015 (61%) was significantly greater than the percentage of positive screens in data years 2013 and 2014 (55% each),  $\chi^2(2, N = 4,032) = 10.71, p < .01$ .

To assess for possible gender differences, again, without regard to individual subscales, the researcher performed a chi-squared test on “Any Subscale.” Among cases for which gender was indicated, across all three data years, the analysis revealed that girls (70%) were significantly more likely to screen positive on any subscale than boys (52%),  $\chi^2(1, N = 3,925) = 108.14, p < .001$ . When each year was examined separately, girls were consistently more likely than boys to screen positive on every subscale (excluding Thought Disturbances). Results of these analyses are summarized in Table 7.

**Table 7. Chi-Squared Values Indicating Greater Potential Disorder Among Females on Individual MAYSI-2 Subscales for Each Data Year and All Three Years Combined.**

MAYSI-2 Subscales	Data Year			
	2013	2014	2015	All Years
Alcohol/Drug use	3.92*	14.14***	6.04*	22.80***
Angry/Irritable	21.88***	32.14***	8.40**	59.01***
Depressed/Anxious	21.84***	36.97***	34.73***	94.96***
Somatic Complaints	29.53***	58.47***	44.55***	132.59***
Suicidal Ideation	39.84***	87.19***	35.19***	154.47***
<i>a</i> Thought Disturbance	0.02	8.67**	0.01	3.25
Traumatic Experience	17.39***	11.52**	1.49	26.19***
Any Subscale	35.71***	47.59**	25.13***	108.14***

*a* Thought Disturbance was normed for boys only

\* $p < .05$

\*\* $p < .01$

\*\*\* $p < .001$

## CHAPTER FIVE: DISCUSSION

This study examined the scope of mental health problems in Idaho's juvenile detention centers utilizing data gathered across three years via the MAYSI-2. The results of this study give administrators, clinical practitioners, and other policy makers in Idaho a foundation of understanding from which to communicate with each other as well as other states and to help drive policy in Idaho. Because all incoming youth were screened, the data are comprehensive. Additionally, communication between analysts at the CHP and those charged with gathering data in the field led to a more refined data-gathering process as time progressed (one reason the researcher chose to include three of the more recent years for the current analysis). Therefore, there is good reason to conclude that the data in the current analysis are sound. The discussion of these data will include patterns specific to Idaho and a comparison to MAYSI-2 data published from other states. The chapter will also include a discussion of likely causes of mental health problems among youth in juvenile detention as well as potential solutions, followed by limitations of the study and suggestions for future research.

### **Major Patterns**

Although there were some differences in analytical and reporting techniques employed in the studies discussed in this paper, there were some striking patterns of results. Perhaps most immediately apparent is the large proportion of justice system-involved youth who scored in the clinically significant range on the MAYSI-2. The Idaho and Indiana studies reported overall proportions (i.e., genders combined) of youth who screened positive on "Any Subscale." In Idaho, 57% of youth screened positive on "Any Subscale." In Indiana, 70% screened positive on "Any Subscale." The Pennsylvania

study did not report an overall proportion, but it did report the proportion of girls (81%) and boys (70%) separately. Idaho, Indiana, and Pennsylvania all reported numbers on an “Any Subscale” variable. Broken down by gender, the proportions of juveniles with a positive indication on at least one MAYSI-2 subscale ranged from 52% (boys in Idaho) to 81% (girls in Pennsylvania).

Another glaring pattern is that in each study, girls demonstrated a higher risk for potential disorder on every subscale analyzed. In some cases, the percentage of girls with potential disorder was *much* greater than the percentage of boys with potential disorder. For instance, in the Pennsylvania study, Angry/Irritable was the second most frequently indicated subscale for both boys and girls—41% of boys and 56% of girls scored above “caution (considered clinically significant in this discussion).” In the same study, 43% of boys and 59% of girls scored in the clinically significant range for Somatic Complaints. In the Nevada study, researchers reported gender differences in low-, medium-, and high-risk zones. In that study, 14% of boys were high risk for Depressed/Anxious; 30% of girls were high risk for depression—greater than twice the proportion. In the Idaho study, girls scored higher than boys on the Depressed/Anxious subscale at 26% versus 13%, and on the Suicidal Ideation subscale, 34% versus 16%. These data clearly suggest that youth involved with the justice system are much more likely to have a mental health problem than the 20% expected among youth in the general population and that a much greater percentage of girls face these challenges. Why is there such a tremendous discrepancy between detained/incarcerated youth in the general population and between girls and boys? Answers to questions such as these are never simple, however, trauma seems to play an important role.

### **Potential Cause: Trauma**

The link between trauma and juvenile justice system involvement has been well established. In one study, Dierkhising, Ko, Woods-Jaeger, Briggs, Lee, and Pynoos (2013) reported 90% of justice system-involved youth had experienced some sort of traumatic event. The most common types of trauma include the loss of a caregiver, impaired caregiver, domestic violence, emotional/physical abuse, and community violence. In their study, Dierkhising et al. (2013) reported that 35% of the sample experienced trauma in the first year of life, and greater than 60% had experienced trauma by age 5. Additionally, adolescents in the study experienced an average of 4.9 different types of traumas. Evidence suggests that children exposed to multiple traumas are more likely to commit serious criminal offenses and are thus more likely to become involved with the justice system into adulthood (Dierkhising et al., 2013). For that reason, the treatment of exposure to trauma and subsequent mental and behavioral health problems is one way to interrupt the causal chain, thus mitigating the conditions that lead to detention and incarceration of youth. The most desirable solution would be to eliminate the initial trauma completely; however, the potential solutions offered in this paper focus on two key populations: those youth currently under the care of the juvenile justice system and those most likely to become involved in the juvenile justice system.

### **Potential Solutions**

Interest in effective treatment for youth and adults involved with the justice system has led to a tremendous amount of research in the past few decades (e.g., Gendreau, Smith, & French, 2006). The most successful treatment programs tend to include elements of cognitive behavioral therapy, which builds social skills by asking

participants to examine their thought processes, strength-based approaches to help participants set goals, and an emphasis on social contexts within the treatment environment to build strong relationships with staff and peers (Mathys, 2017). Policymakers endeavoring to address more “downstream” approaches (e.g., those utilized in correctional settings) should certainly take care to ensure these aspects of appropriate practice are included in funded programs. Policies that expand existing resources in those areas would be appropriate. However, if one considers root causes, a more “upstream” approach could reduce the number of youth who come into contact with the juvenile justice system and thus require such services in that setting. Terry Reilly Health Services (TRHS) is currently operating a program that could be considered such an upstream approach in Idaho.

TRHS is a non-profit clinic that began in the 1970s. It initially provided health services to migrant workers and their families in Canyon County, but has expanded to several locations throughout the Treasure Valley. TRHS provides affordable medical, dental, behavioral, and mental healthcare services (Terry Reilly, 2018). In early 2017, TRHS hired a fulltime in-school counselor to place at Lewis and Clark Elementary School in Caldwell, Idaho. The idea for a school counselor employed by TRHS arose because, alone, the counselor employed by the school district was unable to meet the needs of the students. TRHS brought welcome relief to school officials who were frustrated by the long waiting list for a community mental health program and the disruption of removing students from school to attend. The word spread and Star Elementary soon approached TRHS to request its assistance. By late 2017, TRHS had hired a counselor to provide “floating” services between Star and Middleton and another

to location in Melba. Efforts are currently underway to place counselors throughout the Boise School District (M. Mezo, personal communication, December 22, 2017).

Through this program, school counselors are trained to address issues including trauma, stress, anxiety, and substance abuse—all commonly associated with youth experiencing mental and behavioral health issues (Dierkhising et al., 2013). From one-on-one student counseling sessions, their scope has expanded to include staff counseling and mindfulness groups. These counselors are employees of TRHS, but because their positions are in the schools, hiring is conducted in close collaboration with the schools.

TRHS is a non-profit organization; as such, it receives grant funding and it is expected to demonstrate the effectiveness of its programmatic efforts by measuring outcomes. Fulltime counselors are required to spend 60% of their time face to face with their clients. Based on 45-minute sessions, a fulltime in-school counselor would be expected to have approximately 100 student and/or staff encounters per month. Efforts to measure outcomes associated with grades, attendance, and behaviors (e.g., outbursts) are currently underway and should be available by June of 2018 (M. Mezo, personal communication, December 22, 2017). MAYSI-2 findings, in conjunction with these outcomes data could provide a clearer picture to influence policy makers and draw resources necessary to expand similar programs throughout the state.

### **Limitations of the Study**

Limitations related to this study include concerns regarding measurements using the MAYSI-2. Although the present analysis includes comparisons of Idaho's MAYSI-2 data to data gathered from juveniles in other states, there was some variation in scoring—a feature the designers of the instrument built in for purposes of versatility. For example,

current policy in Idaho's JDCs dictates a scoring system that results in either a "true" or "false" indication on each MAYSI-2 subscale (i.e., the youth is either "screened in" or "screened out"), which differs slightly from the scoring systems utilized by other states, as well as the scoring system described in the MAYSI-2 manual (Grisso & Barnum, 2006). Juvenile justice officials in Idaho chose cutoff criteria that excluded some youth who scored in the range of "caution." For that reason, the number of Idaho youth reported to have scored in the clinically significant range in this paper may be artificially deflated. Therefore, it is quite possible that the numbers representing potential mental health problems among Idaho's detained youth population are higher, thus placing them in closer proximity to the numbers reported by Pennsylvania, Indiana, and Nevada.

### **Suggestions for Future Research**

The limited scope of the current study leads into suggestions for future research. The results of this study suggest that a much greater proportion of girls suffer from mental health-related problems. Trauma has been identified as a likely cause. Trauma has many forms and research has shown that girls and boys involved with the justice system tend to be exposed to similar types of trauma, with several key exceptions: boys tend to report more exposure to violence, girls report more sexual assault (Dierkhising et al., 2013). Future research exploring the mechanisms by which traumatic experiences are internalized and expressed as "disorder" could answer questions regarding the gender discrepancy, inform treatment methodologies, and may lead to more gender-specific approaches.



## Conclusions

Youth involved in the juvenile justice system demonstrate a greater prevalence of mental disorders when compared to youth in the general population. According to this research, 57% of detained juveniles in Idaho scored high enough on at least one MAYSI-2 subscale to warrant clinical concern. Among boys, there was a tie between Angry/Irritable (26%) and Traumatic Experiences (26%) for the most frequently indicated subscale, followed by Somatic Complaints (19%) and Suicidal Ideation (16%). Among girls, the most frequently indicated subscale was Angry Irritable (38%), followed by Somatic Complaints (36%) and a tie for third between Suicidal Ideation (34%) and Traumatic Experiences (34%). In descending order, excluding the ties with Traumatic Experiences (not to minimize the significance of trauma), the top three most frequently indicated subscales that boys and girls share are Angry/Irritable, Somatic Complaints, and Suicidal Ideation. It is interesting to note that, examined in that light, boys and girls in this study share similar challenges. That information would be especially helpful when designing and implementing programs and services for maximum impact.

It is also interesting to note that a much greater percentage of girls scored in the range of clinical concern on every subscale (excluding Thought Disturbances, which is not normed for girls). In the Depressed/Anxious and Suicidal Ideation subscales, at least twice the percentage of girls scored in the clinically significant range when compared to boys. That a greater percentage of girls seem to demonstrate a potential for disorder is a phenomenon common to every study under discussed in this paper. This information would also be important when designing programs and allocating resources. Additionally, future research to explore why a greater percentage of girls are demonstrating these traits

may help to identify root causes, thus providing our communities with tools to improve the mental health of all their members.

It would be prudent to develop policy in such a manner as to encourage existing efforts in the community. The TRHS in-school counselor program currently underway is a promising endeavor. Should the outcome data indicate positive results, policies aimed at replicating this type of service throughout Idaho may prove worthwhile in addressing root causes of juvenile delinquency.

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