Washington Association of Juvenile Court Administrators

Technical Report

Deliverable 2: PACT Responsivity Assessment

Washington State University

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TABLE OF CONTENTS

Figures

Tables

Appendices

EXECUTIVE SUMMARY

In 2017, the Washington State Juvenile Court Administrators (WAJCA) contracted with the Washington State Institute for Criminal Justice to update and expand the utility of their risk and needs assessment tool – the Positive Achievement Change Tool (PACT). The expansion of the tool was outlined to improve predictive accuracy, make use of locally collected data, and improve the functionality of the instrument's design. The contract outlined two deliverables: (1) the creation of a needs assessment; and (2) the exploration of a responsivity assessment tool. In June of 2018 a technical report was provided describing the findings for Deliverable 1. The current report outlines findings for Deliverable 2 – the exploration of a responsivity assessment tool.

Data and Methods

To complete this portion of the project, we built upon the findings of Deliverable 1 and explored responsivity in two ways: (1) a continuum approach (Duwe & Kim, 2019) and (2) a typology approach (Brennan, 2009; Brennan, Breitenbach, & Deiterich, 2008; Hamilton, 2010; Routh, Hamilton, & Campbell, 2017). The sample included 50,862 youths that completed a PACT Full Assessment between 2005 and 2015. Models for both any and violent recidivism within 18 months of the program start date were tested. Gender-specific analyses were performed for all programs, except for Coordination of Services (COS) and Family Integrated Transitions/Multisystemic Therapy (FIT/MST) due to small sample sizes. Other programs examined include Aggression Replacement Training (ART), Education and Employment Training (EET), Functional Family Therapy (FFT), mental health programming, and substance abuse services.

We first assessed the baseline effectiveness of each program, or general responsivity of each program, via a statistical balancing technique (entropy weighting) to establish equitable comparison and treatment groups for each program. Recidivism rate differences between the comparison and program participant groups were identified. We then examined the continuum approach for responsivity by investigating the effect of youths' risk scores, Risk Level Category (RLC), need scores, Need Level Category (NLC), and program participation on any and violent recidivism. The risk and needs models used here were originally developed as part of Deliverable 1 (Hamilton et al., 2018). The impact of all programs, except for COS, were also tested for high risk, high need, and high risk/high need youth. Additionally, analyses were performed to evaluate the effect of COS on low-risk youth with either a moderate or high need or just any high need.

Lastly, we created a typology, via an exploratory latent class analysis, to more specifically identify youth types, with specific risks and needs. This analysis effectively groups youth together based on PACT item responses. A confirmatory latent class analysis was utilized next to examine the stability of the classes. These classes were then used to assess the impact of each class on any and violent recidivism, for each program.

Findings

Overall, findings were largely inconsistent across program type, gender, and methodological approach (continuum vs. typology).

Baseline/General Responsivity

- General responsivity findings are not positive for WAJCA supervised youth, where many programs identified, worse, or *iatrogenic*, effects for participants.
- Only a few programs were found to be generally effective for youth.
    - At baseline, females that participated in EET or FFT demonstrated lower rates of 'any' recidivism odds.

- Additionally, COS participants (male and female) demonstrated reduced rates of 'any' recidivism.

Responsivity Continuum Approach

- Strong support was found for new MPACT risk and needs models.
  - Youth with higher risk scores, or RLCs, were more likely to evidence greater any and violent recidivism odds.
  - Similarly, youth with higher needs scores or NLCs were also more likely to display higher any or violent reoffending rates.
- Overall, when examining youth targeted for programming, many negative, or iatrogenic, effects were found. However, one positive finding was also identified.
- Only female participation in ART resulted in decreased odds of 'any' recidivism, however, likely due to the reduced sample size, this finding was non-significant. <u>Responsivity Continuum – Risk and Need Classifications</u>
  - Generally, the following effects were found:
    - EET resulted in heightened violent recidivism likelihood for high-risk males.
    - Findings for FFT participation indicated an iatrogenic effect for violent, but not any, recidivism for both males and females. This effect appears to be stronger for female youth FFT participants.
    - ART exhibited an iatrogenic effect for only male youth who participate in the treatment
    - Substance abuse inpatient treatment appeared to decrease any recidivism when males and females were classified as high risk and/or high need. The effect held for male youths' violent reoffending.
    - Substance abuse outpatient programming resulted in greater any and violent recidivism for youth across risk and need classifications.
    - Combined inpatient and outpatient substance abuse programming resulted in greater any recidivism, particularly for male youth. However, female participants exhibited decreased violent recidivism.
    - Overall, substance abuse programming produced iatrogenic effects for both males and females.
    - Overall, mental health treatment exhibited an iatrogenic effect for male and female youth regardless of risk and need level classification, but especially for male youth.

Typology approach

- Analyses successfully identified 5 unique classes/types of male and female youth. Below are hypothesized sufficient typology-program matches.
  - Classes provide a more in-depth understanding of youth need clusters and their proportion within the supervised population.
  - Both males and females indicated a low risk and low need class, which would likely benefit from less intense programming to avoid exposure to higher risk peers and deeper involvement in the juvenile justice system.
  - One male class, Moderate Risk with Education Need, focused more on the necessity of improving education. There was no equivalent female class.
  - Both males and females also indicated a high need alcohol and/or substance abuse class (Moderate Risk Substance User and Highest Risk Substance User with High Destabilizers).

Although both classes implicate a need for substance abuse programming, the female class is higher risk and may require additional treatment addressing attitude/behavior, beliefs, family issues. In other words, the female class may benefit a more integrated program, such as FIT/MST while the male class may fare well with just substance abuse programming.
    - Males and females both possessed a class indicating Higher Risk with Complex Treatment Needs. While the target treatment for males was indicated as mental health issues and skill building, emphasis on addressing traumatic experiences and emotional instability was indicated for females in this class. Overall, no male class was indicated to have trauma exposure as a primary need.
    - A high risk and diverse need class was also found for both males and females (Highest Risk with Elevated and Diverse Needs and Higher Risk with Diverse Needs, respectively). Both classes were indicated to have a high substance abuse need, but the male class also indicated aggression, attitudinal, and mental health issues as primary targets. In contrast, the female class emphasized beliefs and school as other primary targets.
    - The final female class, Highest Risk with Prosocial Needs, was unlike all the male classes in its focus on social relationships, which past research has found to be more important for female offenders.
    - WAJCA should consider modifying programming to fit the needs of youth types identified.
- With regard to programming, there were a few interesting program-youth type combinations.
    - Reduced recidivism rates were identified for four of the female classes that participated in EET.
    - One male class (Highest Risk with Elevated and Diverse Needs) evidenced reduced recidivism with FFT participation, while two female classes (Highest Risk with Prosocial Needs and Higher Risk with Diverse Needs) displayed similar results.
    - FIT/MST participation reduced violent recidivism for two gender-combined classes (male classes Moderate Risk Substance User, Higher Risk with Complex Treatment Needs and female classes Highest Risk with Prosocial Needs and Highest Risk Substance User with High Destabilizers).
    - One gender-combined class demonstrated reduced recidivism odds following from COS participation (male class Moderate Risk with Education Need and female class Low Needs with Low Risk).
    - One male class (Highest Risk with Elevated and Diverse Needs) and one female class (Higher Risk with Diverse Needs) displayed significantly lowered violent recidivism after receiving substance abuse medicinal treatment.
    - However, none of the classes evidenced significantly decreased recidivism following from engagement in ART or mental health programming.

Conclusions

Generally, there are many positive and negative take-aways from the Deliverable 2 analyses. With regard to positive findings, we confirmed that the risk and need scales created for the MPACT are effectively categorizing youth. More specifically, the high and moderate categories of the MPACT's risk and needs are shown to effectively target youth who should be a priority for programming. Relatedly, both the continuum and typology approaches outline methods of tailoring programs to reduce the criminogenic needs of youth.

While more responsivity matches and patterns were anticipated, our findings revealed some positive connections between high need youth responsive to program content. In addition, some youth types were identified to be specifically responsive to select program types. Generally speaking, the current results indicate that certain programs are effective for some youth and that the typological approach may be valuable in

facilitating case management. However, this work is exploratory, where continued exploration is needed to fine tune the typologies in terms of treatment and general responsivity. To incorporate these positive findings into practitioner use, we *recommend* a Subject Matter Expert (SME) group be formed by WAJCA to investigate how best to align content, consistency of delivery, and refining program eligibility criteria to meet the identified needs and types of youth identified.

With regard to negative findings, it was unexpected and somewhat unsettling to identify many negative, iatrogenic, program effects. While non-significant, or weak, program effects are an indicator that program eligibility criteria may need adjustment, or program content may have experienced drift; iatrogenic effects indicate that program participation may be contributing to increase rates of recidivism. The numerous negative effects found raise some important flags regarding the current and future use of the programs utilized. We *strongly recommend* WAJCA take a deep dive into the content, fidelity, and potential regional variations in program effectiveness. Furthermore, as this is one of the first evaluations of WAJCA youth participation in substance abuse and mental health programming, we *recommend* WAJCA connect with program and service providers to provide a better understanding and context of the consistently negative findings these approaches indicated in the presented results.

Future Research

While we have described the study as pioneering and exploratory, there are many questions that have been raised as a result of our findings that require further exploration. First, as mentioned, regional program impacts should be explored, as it possible that negative program findings may be identified, isolated and improved. Relatedly, we did not examine program fidelity, which may have a substantial impact in programming effectiveness and research investigating fidelity may reveal methods of adjusting content and training to improve overall product. Third, future research should examine youth partition in multiple programs and program sequencing. Similar to responsivity research, there has been little practical guidance as to the methods of meeting the needs of youth presenting with multiple high need domains. Given WAJCA's robust array and provision of programming/services, further investigation is warranted. Finally, we did not examine key youth, family, and environmental factors, such as youth or family motivation to engage in programming, readiness for change, family, peer or other outside support, and/or impact of probation officer engagement/supervision style. These unmeasured elements may hold critical knowledge in the effective provision of programming and reduction of youth risk and needs.

INTRODUCTION

The Risk-Need-Responsivity (RNR) model has been the foundation of adult and juvenile corrections for more than thirty years (Andrews & Bonta, 2010; Crites & Taxman, 2013). The difficulty in examining the impact of these approaches is a need for long-term development of quality assessment and program data. As one of the early adopters of risk-needs assessment and evidence-based programming, the Washington State Juvenile Court Administrator's (WAJCA's) probation population provide an ideal proving ground to explore the RNR approach. Specifically, the development, and then further refinement of the Positive Achievement Change Tool (PACT) in 2005, led to the recalibration of the tool's risk and needs assessment models (Hamilton et al., 2017). This recalibration formulated Deliverable 1 of the current contract and provided the potential to improve prediction accuracy of the tool moving forward, incorporating both gender and outcome specificity. In this second phase of this project, we build upon the newly created tools to explore responsivity, attempting to identify risk and needs patterns of youth that combine with programming to reduce the probability of recidivism.

Agencies and research have viewed the RNR acronym in order of importance. That is, the greatest focus has been the development of the risk prediction and risk assessment. More recent findings have outlined the importance of needs assessments in identifying behavior targets and programming to reduce recidivism and contribute to long-term change (Hamilton et al., 2016; Wooditch, Tang, & Taxman, 2014). Responsivity is one critical aspect to program effectiveness. The responsivity principle is used to ensure offenders are matched to appropriate program interventions based on their risk and needs (Andrews & Bonta, 2010; Crites & Taxman, 2013). Specifically, interventions should be matched based on the identified need(s) and program dosage and intensity to the offender's risk of recidivating. Essentially, responsivity ensures the right people are matched with the appropriate program, with the recommended dosage, in order to achieve the desired recidivism reduction. Unfortunately, very little research is available describing responsivity within either adult or juvenile corrections.

Briefly, responsivity is a critical aspect to program effectiveness. The responsivity principle is used to ensure offenders are matched to appropriate program interventions based on their risk and needs (Andrews & Bonta, 2010; Bonta & Andrews, 2017; Crites & Taxman, 2013). Specifically, interventions should be matched based on the identified need(s) and program dosage and intensity to the offender's risk of recidivating. There are two types of responsivity. *General Responsivity* is interpreted as a program's ability to have the desired impact, such as the ability to reduce recidivism. With regard to the current study, general responsivity is a program's ability to reduce recidivism for WAJCA youth, or what we term *baseline effectiveness*. In contrast, *Specific Responsivity* is interpreted as a program's ability to have improved, or conversely an iatrogenic (negative), impact on a subgroup of WAJCA youth. Furthermore, program-specific responsivity is the ability to deliver a program considering the risk and protective factors of each youth. Essentially, responsivity ensures the right people are matched with the appropriate program, with the recommended dosage in order to achieve the desired effect such as recidivism reduction.

While responsivity may appear highly conceptual and difficult to implement in theory, its application boils down to the effective use of eligibility criteria. Too often, programs are created with the intent of impacting a large majority of a given agency's population. RNR modeling dictates the need to program those individuals that are moderate-to-high risk. However, one can imagine a myriad of variations in which youth with an array of needs, programs with multiple targets, and the variant effectiveness of programming across genders, may impact program effectiveness. Furthermore, certain programs may be more effective when cohorts are isolated to similar risk and/or needs types, where programming for those with lower risk and needs may create iatrogenic effects. Therefore, possible applications of responsivity findings will be the reduction of eligibility or homogenization of youth program cohorts to achieve improved outcomes for all participants.

However, likely due to analysis complexity and need for substantial assessment and programming data, there has been little empirical research focusing on the responsivity principle relative to the risk and needs principles. The limited published works available have found an appreciable decrease in recidivism when utilizing the risk and needs information to match individuals to programming (Luong & Wormith, 2011; Singh, et. al., 2014; Vieira, Skilling, & Peterson-Badali, 2009). Furthermore, while a select few studies have identified the potential in addressing responsivity for adults, our review of the literature revealed no article of consequence on the assessment of responsivity with youth. Therefore, foundational research is still needed to fully understand how to effectively apply the responsivity principle in practice. Specifically, we proposed an examination of responsivity to identify characteristics of youth who are likely to experience a reduced risk of recidivism following participation in specific interventions. It was anticipated that findings from this assessment would guide eligibility considerations, identifying youth most likely to complete, and succeed, as a result of intervention provision.

Responsivity Assessment

The development of a responsivity assessment attempts to isolate specified scales, items and/or clusters of items that, when combined with the provision of a given intervention, demonstrate reductions in recidivism. Somewhat different from the development of needs and risk assessment models, the assessment of responsivity is proposed to be *exploratory*. While prior risk assessment tool construction has a body of literature to support general development techniques, responsivity assessment is pioneered here.

The use of the WAJCA's collection of probation data was viewed as ideal for this project for several reasons. *First*, WAJCA has administered the Positive Achievement Change Tool (PACT) for more than two decades, providing a large sample of risk, needs and recidivism outcomes that may be used to assess the impact of program participation. *Second*, many evidence-based programming options have been provided statewide for several years, allowing for the examination of program-participation interactions. With that said, youth can enter the system with an array of needs of varying complexities that often require programming (Elliot, 2016; Greenwood & Welsh, 2012; Maschi, Hatcher, Schwalbe, & Rosato, 2008). Evidenced-based programs that are matched to youth based on their risk level and identified needs (including their severity of risk and needs), are considered to be both effective and responsive.

Prior Tests of Responsivity

To assess responsivity, there are two developing schools of thought. The *first* is viewed as an extension of developed tools, examining risk and needs as a scale, or what we refer to as a *responsivity continuum* approach. Duwe and Kim (2019) utilized a continuum-based approach. This perception of responsivity suggests that when individuals who are higher risk and higher need are paired with programs that have stronger evidence of effectiveness, the combination demonstrates the greatest impact on recidivism reduction. The examination of adult Minnesota DOC offenders identified that those with high risk and high need for substance abuse function best when provided evidence-based substance-abuse programming. While this initial investigation was limited in scope, the examination of a risk-needs continuum provides an opportunity to expand usage to the array of programming and services offered by the WAJCAs. That is, outlining that individuals with the highest risk combined with the highest need are identified to be the best fit for a given program.

In this scenario, one assumes that 1) the programs utilized are generally effective/responsive for the WAJCA population, 2) the risk and needs tools utilized are valid and accurate, and 3) those youths at the higher ends of the risk-need spectrum/continuum are most likely to be positively impacted by programming. For the current study, risk and needs domains scores, developed in the initial tech report (Hamilton et al., 2019), are used to assess which subjects would be most responsive to programming that targets a given domain.

A *second* method examines responsivity using a *typological approach*. The creation of subgroups of individuals with similar traits is known as typological development. Constructing typologies is a concise method of detailing a vast amount of information. The criminal justice system has used typologies for decades to classify both adults and youth involved with the justice system (Brennan & Breitenbach, 2009; Brennan, Breitenbach, & Deiterich, 2008; Megargee & Dorhout, 1976, 1977; Routh et al., 2017; Taxman & Caudy, 2015). However, there has been little application of typologies as a measure of responsivity in program considerations (Brennan & Breitenbach, 2009; Brennan, Breitenbach, & Deiterich, 2008; Megargee & Dorhout, 1976, 1977). Essentially, typologies identify patterns of items and responses within a risk-needs tool, allowing one to cluster assessed youth into a series of groups. With regard to responsivity, it was anticipated that these groupings would represent 'responsivity clusters', where youth belonging to a given group would be identified to be more, or less, responsive in a given program.

Ultimately, the designed responsivity assessment is intended to identify which youth are most responsive to current program provisions and may assist in the adjustment of program prioritization or the modification of program modules. Beyond the proposed analyses, typologies have the potential to enhance case management by expediting program matching and placement as well as the coordination and utilization of precious resources. Furthermore, typologies can be updated as new information is collected and monitored by case managers.

In this study, we sought to examine both methods of assessing responsivity. However, in order to identify the impact of programming on groups of youth, we must first identify the general responsivity, or effectiveness, of each program. We then examined the responsivity continuum approach. Finally, we created typologies to identify the interactions of each 'type' and programming participation on recidivism. The current study provides the results from Deliverable 2: The Exploration of a Responsivity Assessment Tool. In the next section our methodological approach is provided, followed by study findings and our conclusions and recommendations.

METHODS

In this section we detail the methods used to assess responsivity. An unanticipated benefit of the explorations of responsivity was the need to identify both general and specific responsivity. General responsivity examines the effectiveness of a given program with the target population, in this case WAJCA youth. To explore specific responsivity, we took on both approaches identified in prior responsivity literature, namely the continuum and the typology approach. A key component of the continuum approach is the recalibrated risk and needs tools crafted from the PACT, now identified as the Modified Positive Achievement Change Tool (MPACT). Given the substantial findings discussed here, readers interested in examining the details of the recalibrated risk and need tools, as well as the sample descriptives, should review the initial technical report (Hamilton et al., 2017). We begin with a discussion of the study sample. While much of this information is provided in the Deliverable 1 report, it is repeated here as a reference for readers. Next, we provide a brief overview of the programs used by WAJCA and the study classification of program types. Then, we describe the two responsivity assessment approaches – Responsivity Continuum and Typological.

Sampling Frame

Working with the Washington State Center for Court Research (WSCCR), a sample of youth that completed Prescreen and Full Assessment PACTs were identified. Based on Subject Matter Expert (SME) input, the sample frame was limited to assessments completed between 2005 and 2015, to coincide with a 2005 policy modification[1] and to allow for a sufficient follow-up duration needed to observe recidivism. To

[1] In 2005, a substantial upgrade was made to data collection, training and quality assurance procedures for the PACT.

coincide with statistical modeling assumptions, we focused our analysis on 'initial' assessments, removing reassessments from the available data. Recidivism was defined as a new charge committed within the first 18 months following the program start date, in which an adjudication was indicated within 12 months of the charge date. The crime types were also identified and categorized as 'any' (misdemeanor or felony), violent adjudication. The Revised Code of Washington (RCW) was provided for each charge, and the Washington State Institute of Public Policy's (WSIPP) severity index was used to categorize offense types. Youth without the requisite 30-month follow-up period following the initial assessment were deemed ineligible for study inclusion. Using these criteria, we identified a Prescreen sample of 64,746 and a Full Assessment sample of 50,862 youths. To create gender-specific prediction models, separate Prescreen and Full Assessment samples were created for male and female youth.

Descriptive Statistics

Using the samples described, PACT items and responses, as well as recidivism measures were examined. Univariate descriptive statistics for prediction for all models are presented in the Appendices; where Appendix I provides Prescreen, and Appendix II provides Full Assessment descriptive statistics. It should be noted that policy indicates all youth are provided a Prescreen assessment, while the Full Assessment is reserved for moderate or high-risk youth. Although some low-risk youth are provided a Full Assessment, this is a less-than-common occurrence. Within both tables, the original value is indicated for each item, along with columns indicating the proportions of youth identifying each response. We provide item means and standard deviations for the total sample and include a breakdown for males and females separately. While there are many items and response values to review, generally, these findings serve as a report of all items possible for the inclusion in the risk and needs models, where potential needs assessment items are indicated in the 'dynamic' column.

Program Descriptions

Following the assessment of item responses, we then sought to examine the evidence-based programming WAJCA provides. To do this we needed to understand and provide a 'baseline' assessment of the programs offered. As discussed previously, our baseline evaluation of effectiveness represents an assessment of general responsivity for WAJCA youth. This task required an impact evaluation of each program on recidivism, specifically 'any' recidivism and violent recidivism. Prior to our baseline assessment, we examined the components of each program and the behavior targets that each is designed to address. The following section provides background information on each of the program evaluated.

Aggression Replacement Training (ART)

Aggression Replacement Training focuses on improving anger control, reduction of behavioral outbursts, and promoting prosocial skills. The program occurs over the course of ten weeks. ART has three components that participants will engage in: social skills, anger control training, and moral reasoning. The social skills training component utilizes role-playing, modeling, and performance feedback to address various social situations using alternatives to anger or aggressive behavior. The anger control training component teaches participants techniques to identify and manage their anger and employ options other than aggression. Lastly, the moral reasoning component uses a weekly problem to develop acceptable social attitudes and values. This program is geared towards moderate and high-risk youth with an identified need for aggression/anger issues and prosocial skills.

Education and Employment Training (EET)

Education and Employment Training addresses employment, school engagement, and use of free time. Participants that are in school are given resources and connected to jobs. The participant will work up to 20 hours per week and the job will last a total of up to 150 hours. For participants not in school, this program is designed to either reconnect them with school or assist them with obtaining a General Equivalence Diploma

(GED). Currently, this program only operates in King County. This program targets moderate and high-risk youth with an identified need for education and employment assistance and negative use of free time.

Functional Family Therapy (FFT)

Functional Family Therapy focuses on reducing risk factors and improving protective factors both within and outside of the family. FFT consists of five major phases: engagement, motivation, relational assessment, behavior change, and generalization. In the engagement phase, therapists work with families to find a match in terms of beliefs, perspectives, and values in order to enhance the family's perceptions of therapist responsiveness and credibility. In the motivation phase, the therapist works to change the family relationships by decreasing hostility, conflict, and blame, building balanced alliances with members, and increasing hope using a strengths-based approach. The family relationships are further examined to determine the intra- and extra-family context such as attitudes and values and understand the relational functions between family members in the relational assessment phase. The behavior change phase introduces individual skill development and addresses individual skills or clinical domains such as depression and substance use. Lastly, the generalization phase focuses on making the changes made in the behavior change component more applicable to other aspects and introduces future planning including relapse prevention. This program's typical duration is between twelve to fourteen sessions over the course of three to five months and is for moderate and high-risk youth with an identified need for emotional, behavioral, and family-related issues.

Family Integrated Transitions-Multi-Systemic Therapy (FIT-MST)

Family Integrated Transitions is a program that assists a youth's transition to the community, attempting to examine issues within his or her family dynamic. During this time, mental health, substance abuse, and other necessary services are provided to the youth and family members. The six-month program is comprised of two topic sessions: transitional needs such as housing, safety, education, mental health, and substance abuse services across the first two months, and the last four months address the environmental systems such as home life, family, school, peers, and neighborhoods that can impact the youth. Multi-Systemic Therapy targets behavioral challenges that put the youth at risk from being placed out of the home as well as addressing interruptions of other domains such as education, family, mental health, and substance abuse (similar to FIT). The duration for MST is typically three to six months, with participants receiving an average of 44 program hours. FIT uses the MST model, and both programs focus on addressing similar issues, which is why FIT and MST can be combined into one program within Washington State on a case-by-case basis. However, FIT and MST can be utilized separately from one another. Both FIT and MST focus on moderate and high-risk youth that have multiple identified needs such as mental health, substance abuse, negative peer associations, family and school-related issues, and aggression and attitudinal issues.

Coordination of Services (COS)

Coordination of Services is a program designed for low-risk youth that serves a broker between the youth and his or her family and available community services. The purpose of this program is to prevent the youth from becoming further involved in the criminal justice system. Youth work with a parent or adult through a twelve-hour seminar delivered over two to three days. During this seminar, youth are introduced to a variety of services such as substance abuse, mental health, employment, and prosocial recreational activities like the YMCA.

Mental Health and Substance Abuse Program Services

Mental health and substance abuse programs offer a variety of programs such as inpatient, outpatient, and medication assisted programs. Inpatient programming for mental health and substance abuse typically involves commitment to a residential facility where the individual can be observed and treated in an intensive

program. Those who are designated as a danger, especially to themselves, or those who are undergoing detoxification, are the patients usually found in an inpatient program. Outpatient programming consists of individual and/or group counseling. Participants are able to live in the community and attend program services at a designated location. Program intensity is matched to the risk and needs levels of participants. Lastly, medication assisted programming is utilized to aid in treating opioid or heroin addiction by incrementally weaning individuals off the substances. Additionally, medications can be used to treat mental health related issues. Medications are used in conjunction with counseling and other programs to not create a change in substance use or mood but other destabilizing aspects of an individual's life such as education, employment, housing, and prosocial skill development.

To give readers a sense of the data added for Deliverable 2, descriptive statistics of program participation are provided, by gender, in Table 1. What is notable is that some programs (i.e., COS and EET) possess only a few hundred youth participants. A noted lack of sample size creates difficulty when examining the effectiveness of a program generally and said difficulty increases when trying to examine the responsiveness of participant sub-samples. This will be discussed further in the sections to come.

Table 1. Program Participation Descriptives

	Males		**Females**	
Program	*Non-Participants*	*Participants*	*Non-Participants*	*Participants*
ART	59.4% (n=6,471)	40.6% (n=4,414)	37.2%(n=2,123)	62.8%(n=3,577)
COS	34.0% (n=138)	66.0% (n=268)	64.5% (n=151)	35.5% (n=83)
EET	57.0% (n=405)	43.0% (n=305)	45.3% (n=158)	54.7% (n=191)
FFT	58.1% (n=3,406)	41.9% (n=2,457)	34.6% (n=1,270)	65.4% (n=2,402)
FIT/MST	36.4% (n=556)	63.6% (n=970)	69.8% (n=535)	30.2%(n=231)
SA inpatient*	69.4% (n=17,394)	30.6% (n=7,660)	64.7% (n=4,045)	35.3% (n=2,207)
SA outpatient*	42.2% (n=10,566)	57.8% (n=14,488)	39.1% (n=2,446)	60.9% (n=3,806)
SA in/outpatient*	73.6% (n=18,452)	26.4% (n=6,602)	68.6% (n=4,287)	31.4% (n=1,965)
SA medication*	94.3% (n=23,626)	5.7% (n=1,428)	89.3% (n=5,586)	10.7% (n=666)
SA any*	37.4% (n=9,370)	62.6% (n=15,684)	34.4% (n=2,149)	65.6%(n=4,103)
MH inpatient**	86.1% (n=11,455)	13.9% (n=1,846)	82.7% (n=3,516)	17.3% (n=737)
MH outpatient**	27.1% (n=3,606)	72.9% (n=9,695)	20.4%(n=866)	79.6% (n=3,387)
MH medication**	38.6% (n=5,136)	61.4% (n=8,165)	29.4% (n=1,252)	70.6% (n = 3.001)
MH any**	26.9% (n=3,577)	73.1% (n=9,724)	20.3% (n = 864)	79.7% (n = 3,389)

Note: *Eligible for substance use program. **Eligible for mental health program.

It is also important for readers to have a sense of recidivism, or base rates, for the sample population. Table 2 provides descriptives for any and violent recidivism, broken out by gender. It is notable that over half of the male sample recorded a recidivism event (54.1%) while less than half of the female sample was observed to recidivate (42.7%). Regarding violent recidivism, just under one-quarter of the male sample (22%) and nearly 15% of the female sample was identified to recidivate violently.

Table 2. Recidivism Descriptives by Gender

Recidivism	**Males**	**Females**
Any	54.1% (n=16,048)	42.7% (n=4,287)
Violent	22.2% (n=6,595)	14.6% (n=1,462)

Analytic Plan

Our analyses incorporate an expansive series of tests, described in this section. First, we examine the baseline effectiveness of each program. This required a statistical balancing technique to equate the comparison and participant groups of each program. We then compared participant and comparison subjects' rates of recidivism. Next, we examined the continuum approach for responsivity, exploring the impact of higher risk

and need youth within each program. Again, we examined group differences on recidivism by program and risk-need subgroup. Finally, we created our latent class typology and identified the impact of each class on recidivism for each program.

Baseline Program Effectiveness Assessment

To examine responsivity, several analytical methods and tests were completed. First, we examined the general effectiveness (or general responsivity) of each program. Several methods were used to assess the effectiveness of the ART, EET, FFT, FIT-MST, COS, mental health, and substance abuse programs. First, program and comparison groups were created. The program group was comprised of individuals that participated in, but may not have completed, a given program. Non-participants consisted of anyone eligible for but unable to start the program[2]. Comparison groups were comprised of individuals that were not program participants. Non-participants were deemed eligible for a given evaluation if they met the requisite Case Management Assessment Process (CMAP) requirements for a given program's participation (see Appendix III).

Following dataset construction, balancing methods were employed to adjust the comparison group, such that it resembled the participant group. We employed an advanced technique, entropy weighting, to provide an accurate balance and maintain the comparison group sample size. Generally speaking, the 'weight' is comprised of a summary measure that identifies differences between the comparison and participant groups on key indicators. When the weight is applied, any analyses completed equate the comparison and participant groups, simulating a randomized control trial. We built our weight including all PACT items, as well as youths' 'current offense'[3], race/ethnicity, gender, and other CMAP programs in which youth participated[4]. In total, 278 items were included as balancing measures used to equate the comparison to program participants. The balancing methods were repeated for the designed test and sample configuration. For each configuration, descriptive statistics examining participant and comparison groups both pre- and post-balance were created (see Appendix IV).

Another important aspect of the program evaluations was to estimate a 'recidivism exposure time' for the comparison group that is similar to that of the participant group. Following Knoth and He's (2019) evaluation of ART, it was suggested that a program's effect should not be measured until the youth begins said program, thereby creating a 'lag time' between a youth's assessment and program start date that should be excluded when calculating 'recidivism exposure time'. However, comparison youth do not possess a program start date, hence there is no lag time between the assessment and the program start date. Instead, we created and imputed a lag time for comparison youth. Using a random forest estimator, we imputed a value for each comparison youth by creating a lag time match with program participants, balancing the match via PACT responses. This process is used to provide an equivalent lag time for comparison youth. Therefore, the clock to examine the study, defined as an 18-month recidivism outcome, starts when a youth begins the program (for participants) or after the imputed lag (for comparison youth).

Following the balancing and imputation methods, cross-tabulations were computed (with chi-square significance tests) examining recidivism rate differences between comparison and program participants. Further analyses were completed, where feasible, for male and female samples. We provided these three sets of findings for any and violent recidivism outcomes.

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[2] Readers should note that we removed comparison pool subjects from the eligible pool if the youth and/or family was unwilling to participate, youth and/or family moved out of the state or had no contact/response, or the youth was currently incarcerated.

[3] This item was measured as the most serious offense associated with the disposition date that was within 150 days, either prior to or after the youth's assessment date.

[4] This item was measured as count of CMAP programs participated in following their initial assessment.

Responsivity Continuum Approach

Prior to creating responsivity models, a classic split-sample approach was used, whereby 50% of subjects are randomly selected for the construction/training group and the remaining 50% are retained for the testing/validation group. This process allows for responsivity models to be created using the construction sample and their effectiveness to then be applied and tested on the validation sample. This split-sample technique was used to provide greater confidence in study findings, where validation sample findings simulate the effect of developed responsivity models on a future sample.

Next, we examined the responsivity continuum approach, as it pertains to the risk and needs tools scoring. The risk and needs models were developed as part of Deliverable 1, and they identified models that predict any and violent recidivism. Needs models were also created from a subset of PACT dynamic items that predict recidivism. These needs models were created per domain and separately for each gender. Both risk and needs models provide cut points that identify a risk level (i.e., high, moderate, low) and needs level (by domain). Cut points provide a single Risk Level Category (RLC) and multiple (one for each domain) Needs Level Category (NLC) for all youth. For further details on the development of the risk and needs models, readers should refer to the Deliverable 1 report (Hamilton et al., 2018).

To assess responsivity of each program, tests were conducted to assess the effect of youths' risk scores, RLCs, need scores, NLCs, and participation in programming on any and violent recidivism. The relationship between risk and reoffending was first examined, wherein youths' standardized risk score and RLCs were assessed. Note, standardization was needed to combine scores across multiple scales/metrics of risk and need and were completed by calculating z-scores for youths' risk/domain need scores. Second, the association between youths' recidivism and their standardized need scores (z-scores) and NLCs were tested. Needs domains examined included School, Family, Alcohol/Drug Use, Mental Health, Attitudes/Behavior, Aggression, and Skills. Although the PACT includes other dynamic needs (e.g., Free Time, Employment, Relationships), these were not assessed here but are described in greater detail in the Deliverable 1 Technical Report (Hamilton et al., 2018).

Youths' responsivity to programming was assessed by first testing the relationship between program participation and recidivism. The created entropy weight for each program was applied to balance participants and non-participants prior to analysis. Any and violent recidivism base rates were also identified in a construction sample and standardized via z-scores, where the statistical weight was again implemented. These scores were then applied to a validation sample and examined. Programs investigated include Education and Employment Training (EET), Functional Family Therapy (FFT), Family Integrated Transitions/Multi-Systemic Therapy (FIT/MST), substance abuse program (inpatient, outpatient, medication, both inpatient and outpatient, and any), mental health program (inpatient, outpatient, medication, and any), and Aggression Replacement Training (ART).

The effects for most programs were tested for high risk/need youth. In these examinations, we identified high risk and high need youth for each program. Again, high need was determine based on the pre-identified program targets (see Table 3). Examinations were also conducted to evaluate the effect of programs on low-risk youth with any moderate or high needs for COS. These tests were also performed for low-risk youth with only any identified high need. Chi-square and odds ratios were computed for each program to evaluate whether participation in EET, FFT, FIT/MST, substance use treatment, mental health treatment, and WSART were associated with differentiated levels of recidivism (any and violent) for both male and female recidivism separately for most programs. Gender-combined examinations were conducted for COS and FIT/MST due to small sample sizes and to comply with statistical assumptions of the models computed.

Table 3. PACT Dynamic Needs Domains Associated with Programming

Program	Domain
EET	School History, Current School Status, Employment History, Current Employment
FFT	Current Living Arrangements
FIT/MST	Current Living Arrangements, Alcohol & Drug History, Mental Health History, Current Mental Health
ART	Aggression, Attitudes/Behaviors, Skills

For ease of interpretation, our analysis focuses on the interpretation of odds ratios. This statistic is fairly common to most readers, where a value of 1 is identified as 'no impact', values greater than 1 are interpreted as an increased odds percentage, and values below are subtracted from 1 and interpreted as reduced odds percentage.

Typological Approach

While important to the understanding of responsivity, it is possible that the continuum approach would not be specific enough to identify notable subgroups that would be responsive to WAJCA programming. As indicated, the typological approach was attempted to identify said subgroups. Several methods were used to create the typologies and assess the effectiveness of treatment for each type. First, an exploratory latent class analysis (ECLA) was used to create the typologies on the construction sample. ELCA groups individuals together based on their response to PACT assessment items. Based on the ELCA findings, each individual is assigned to its most probable class based on his or her pattern of responses. Unlike the continuum approach, the typology approach makes no assumption about response patterns within domains, grouping response patterns across the full pool of PACT items. This ECLA analysis is completed on the construction sample, reserving the validation sample. Next, a confirmatory latent class analysis (CLCA) was used to assess the stability of the types. A CLCA model uses the starting values from the ELCA as a mold. That mold is then placed over the validation sample data to assess the stability of types. To summarize, we provide narrative descriptions of each of the male and female classes separately. Finally, entropy weighted cross-tabulations were computed to examine the differences in recidivism, by class, for participants versus non-participants

RESULTS

The analysis findings are presented in this section. We begin with the baseline assessment of the WAJCA programs. A presentation of the responsivity continuum analysis follows. Finally, results from the typological approach are provided, where 1) the findings from the latent class analyses are presented, providing qualitative descriptions for the types found for both males and females, and 2) the effectiveness of youth classes for each programs are provided.

Baseline Effectiveness

Utilizing the balancing weight, we compared participants with eligible comparison subjects on each of the WAJCA programs. Effectiveness is identified by either a statistically significant reduction in participants' any or violent recidivism during the follow-up period. Results are further broken down by gender and are provided in Table 4. However, readers should note that the relatively large sample size (N=79,381), increases the likelihood that even small program effects are identified as significant. Therefore, odds ratios are provided to highlight the relative magnitude of each comparison.

Table 4 provides findings of the Baseline Program Effectiveness for each of the program's evaluated. With regard to ART, males identified significant and greater odds (OR=1.6) of 'any' recidivism while the program did not impact 'any' recidivism for female. Both males and female participants display increased odds of recidivating violently (10% & 20% greater odds, respectively).

When examining EET participation, males identified significant and greater odds (10%) of 'any' recidivism. However, a non-significant finding was identified for violent recidivism. For females, significant and reduced odds (30%) were identified for 'any' but significant and greater odds (30%) of violent recidivism. As noted, the female-specific sample was smaller (n=116) than other comparisons and findings should be reviewed with that context in mind.

For FFT, male participants identified significant and greater odds of 'any' (40%) and violent (80%) recidivism. For females, FFT participation was found to provide significant and reduced odds (10%) of 'any' recidivism. However, a non-significant finding was identified for female FFT participation when examining violent recidivism.

Next, we examined the effects of the combined FIT/MST program. While gender-specific models were available for the other comparisons, there were too few subjects to provide an adequate balance for females. As a result, a combined gender sample (N=263) was used for this baseline evaluation. Findings indicate significant and greater odds (70%) of 'any' and violent (20%) recidivism.

For COS a combined gender sample was also used (N=180) for the baseline evaluation. Here a 30% reduction in 'any' recidivism is observed. However, a non-significant finding was identified for violent recidivism.

Regarding substance abuse and mental health programming, baseline effects show some troubling findings. With the exception of non-significant findings for substance abuse medication programming's effect on violent recidivism, all substance abuse and mental health program findings indicate negative, or iatrogenic, effects. That is, comparison group subjects indicate reduced recidivism rates, while substance abuse and mental health program participants tend to recidivate for both 'any' and violent offenses at greater rates.

Table 4. Baseline Program Effectiveness

	Males			Females		
ART	*Comparison*	*Participant*	*OR*	*Comparison*	*Participant*	*OR*
Any	51	55***	1.6	41	42	1.0
Violent	21	24***	1.1	14	17**	1.2
EET[5]						
Any	45	47**	1.1	39	30**	0.7
Violent	22	23	2.2	6	8**	1.3
FFT						
Any	47	56***	1.4	49	44**	0.9
Violent	16	23***	1.8	16	16	1.0
FIT/MST[6]						
Any	45	59***	1.7			
Violent	25	28**	1.2			
COS[7]						

[5] Readers should note that, while there was sufficient youth to provide gender-specific findings, the female specific sample was smaller (n=116) than other comparisons and findings should be reviewed with that context in mind.
[6] Readers should note that there were not sufficient youth to provide gender-specific findings for FIT/MST and the results provided here are for a combined male and female sample (N=263).
[7] Readers should note that there were not sufficient youth to provide gender-specific findings for COS and the results provided here are for a combined male and female sample (N=180).

Any	26	19***	0.7			
Violent	6	8	1.3			
SA Inpatient						
Any	56	67***	1.6	45	55***	1.5
Violent	22	26***	1.2	14	17***	1.2
SA Outpatient						
Any	56	68***	1.6	46	57***	1.6
Violent	22	25***	1.2	15	17***	1.2
SA Medication						
Any	57	60***	1.1	46	50***	1.2
Violent	20	19	4.5	12	13	1.1
SA In/Outpatient						
Any	56	68***	1.6	46	57***	1.6
Violent	22	25***	1.2	15	17**	1.2
SA Any						
Any	51	64***	1.7	37	52***	1.9
Violent	20	25***	1.4	12	17***	1.5
MH Inpatient						
Any	56	63***	1.3	45	50***	1.2
Violent	27	31***	1.3	18	24***	1.4
MH Outpatient						
Any	50	59***	1.5	40	56***	1.4
Violent	20	26***	1.4	15	18***	1.3
MH Medication						
Any	52	58***	1.3	41	47***	1.3
Violent	21	26***	1.3	15	17*	1.2
MH Any						
Any	50	59***	1.5	40	48***	1.4
Violent	20	26***	1.4	15	18***	1.2

Note: *p<0.05, **p<0.01, ***p<0.001

Overall, baseline findings of program effectiveness are *not positive* for WAJCA supervised youth. Generally speaking, the programs examined did not demonstrate substantial reductions for youth participants. While unexpected, this finding provides some indication that programming may need to be more strategically reserved for youth in which they are most responsive, or effective. There is a potential that a more specified understating of youth attributes/characteristics will lead to improved eligibility criteria or prioritization of eligible youth. The intent of this study is to identify type, or sub-groups, of youth that may be best served by programming. In the next section we explore the responsivity continuum technique, followed by the typology method, exploring responsivity within the WAJCA sample.

Responsivity Continuum

Next, we present findings from the responsivity continuum method. The findings are presented in sections. First, the impact of risk score and RLCs are presented. Then, the impact of need scores and NLCs are presented. These results are followed by the presentation of responsivity.

Risk and Recidivism Outcomes

This section presents on results concerning youths' risk scores, RLCs, and recidivism outcomes (any or violent). Youths' standardized risk scores and RLCs were tested to examine how they predict reoffending. Low RLCs were used as the reference category and were compared to both Moderate and High Risk RLCs. Findings for youth are shown in Table 5.

For males, a higher risk score was associated with 76% increased odds of any recidivism and 80% greater odds of violent reoffending. When examining RLCs, compared to Low Risk males, Moderate Risk males possess over 3.5 greater odds of any and nearly 3 times greater odds of violent recidivism. High Risk males also displayed higher odds of recidivating compared to Low Risk males, with over 7.5 times greater odds for any and over 6 times greater odds of violent recidivism.

For female youth, a higher risk score predicted 50% increased odds of any and nearly 75% increased odds of violent recidivism. As compared to Low Risk females, Moderate Risk females presented over 2.5 times greater odds of any and violent reoffending. Similarly, High Risk females demonstrated roughly 5 times greater odds of any and violent recidivism.

Table 5. Risk & Recidivism Outcomes

	Males (n = 14,946)				Females (n = 5,082)			
	OR	OR	OR	OR	OR	OR	OR	OR
Risk score‡	1.76***		1.80***		1.50***		1.73***	
RLC								
Low RLC		--		--		--		--
Mod RLC		3.6***		2.8***		2.6***		2.6*
High RLC		7.5***		6.3***		5.1***		4.9***

‡ Standardized z-score utilized. Note: *p<0.05, **p<0.01, ***p<0.001

Collectively, the risk score and RLC findings are *positive* and anticipated. That is, the MPACT risk models were trained on the WAJCA population to predict recidivism and the findings indicated here confirm the impact of the models developed. However, as we indicated previously, it is necessary to establish the accuracy and validity of risk and needs models for the continuum approach.

Dynamic Needs and Recidivism Outcomes

The following section presents findings pertaining to the association between youths' dynamic needs and their reoffending outcomes. The relationship between youths' standardized need scores and NLCs with recidivism was assessed. Findings are presented for the following needs domains: School, Family, Alcohol/Drug Use, Mental Health, Attitudes/Behavior, Aggression, and Skills.

Table 6 displays findings for male youth. Higher standardized needs scores were related to at least 23% increased odds of any recidivism for all but the Mental Health domain. Similarly, greater needs scores were related to at least 26% greater odds of violent recidivism for all but the Alcohol/Drug domain.

With regard to NLCs, compared to males with Low Needs, those with Moderate Needs possessed increased odds, of at least 9% (Mental Health) and as much as 2.3 times greater odds (Family), of any recidivism for all need types. For violent recidivism, males with Moderate Needs also evidenced higher odds of reoffending, of at least 12% (Alcohol/Drugs) and nearly 2 times greater odds (Aggression), for all needs domains compared to males with a Low Need. For all need types, males with a High Need demonstrated greater odds of any recidivism, of at least 6% (Mental Health) and as much as 3.6 times greater odds (Attitudes/Behaviors), compared to those identified as Low Need in a given domain. With regard to violent recidivism, High Needs males possessed greater odds of reoffending, of at least 24% (Alcohol/Drugs) and as much as 2.8 times greater odds (School), compared to Low Needs youth.

Table 6. Male Odds Ratios for Needs Score and NLCs on Recidivism Outcomes

	Any Recidivism			Violent Recidivism		
Domain	Needs Score *OR*	Mod NLC *OR*	High NLC *OR*	Needs Score *OR*	Mod NLC *OR*	High NLC *OR*
School	1.46***	2.12***	3.11***	1.47***	1.79***	2.88***
Family	1.37***	2.30***	3.06***	1.35***	1.83***	2.50***
Alcohol/Drugs	1.28***	1.60***	1.92***	1.06**	1.12*	1.24**
Mental Health	1.02	1.09*	1.06†	1.18***	1.39***	1.71***
Attitudes/Behaviors	1.43***	2.10***	3.60***	1.30***	1.40***	2.15***
Aggression	1.34***	1.55***	2.28***	1.40***	1.92***	2.42***
Skills	1.23***	1.53***	1.81***	1.26***	1.48***	1.74***

Note: ***p < .001, **p < .01, *p < .05, †p < .1. N = 14,946.

Table 7 displays findings for female youth. Higher standardized needs scores were related to at least 21% increased odds of any recidivism for all but the Mental Health domain. Similarly, greater needs scores were related to at least a 22%, greater odds of violent recidivism for all but the Alcohol/Drugs domain.

With regard to NLCs, compared to females with Low Needs, those with Moderate Needs possessed increased odds, of at least 3% (Mental Health) and as much as 34% greater odds (Aggression), of any recidivism for all need types. For violent recidivism, with the exception of Alcohol/Drugs, females with Moderate Needs also evidenced higher odds of reoffending, of at least 11% (School) and over 70% greater odds (Attitudes/Behaviors), for all needs domains compared to females with a Low Need. For all need types, females with a High Need demonstrated greater odds of any recidivism, of at least 4% (Mental Health) and nearly 3 times greater odds (Aggression), compared to those identified as Low Need in a given domain. With regard to violent recidivism, High Needs females possessed greater odds of reoffending, of at least 16% (Alcohol/Drugs) and as much as 3.8 times greater odds (Aggression), compared to Low Need youth.

Table 7. Female Odds Ratios for Needs Score and NLCs on Recidivism Outcomes

	Any Recidivism			Violent Recidivism		
Domain	Needs Score *OR*	Mod NLC *OR*	High NLC *OR*	Needs Score *OR*	Mod NLC *OR*	High NLC *OR*
School	1.30***	1.53***	2.13***	1.30***	1.11***	1.97***
Family	1.22***	1.50***	2.18***	1.29***	1.44***	1.67***
Alcohol/Drugs	1.21***	1.44***	1.72***	1.01	1.00	1.16†
Mental Health	1.01	1.03	1.04	1.22***	1.51***	1.58***
Attitudes/Behaviors	1.31***	1.45***	2.09***	1.41***	1.71***	3.03***
Aggression	1.26***	1.34***	2.94***	1.63***	1.67***	3.38***
Skills	1.25***	1.47***	1.88***	1.42***	1.67***	2.71***

Note: ***p < .001, **p < .01, *p < .01, †p < .1. N = 5,082.

Again, the needs score and NLC findings are *positive* and anticipated. That is, the needs models were trained on the WAJCA population to predict recidivism and the findings indicated here reaffirm the impact of the created needs models. Although, as we indicated previously, it is necessary to establish the accuracy and validity of risk and needs models for the continuum approach; where all needs domain scoring consistently demonstrate recidivism prediction strength, with the exception of the Mental Health domain for any recidivism and the Alcohol/Drugs domain for violent recidivism.

Responsivity and Recidivism Outcomes

This section presents findings concerning the relationship between youths' program participation and their recidivism outcomes to assess responsivity to programming. Standardized recidivism base rates from a construction sample were identified for each program type and then applied to a validation sample for testing.

Programs analyzed include ART, EET, FFT, FIT/MST, substance use programming, and mental health treatment. Odds ratio findings for male and female youth are presented in Table 8.

With regard to ART eligible male youth, participation was associated with 5% increased odds of any recidivism for males (OR = 1.05) and 9% greater odds of violent reoffending (OR = 1.09). For females, participation in ART yielded a 7% decrease in any recidivism (OR = 0.93) and an 18% increase in violent reoffending (OR = 1.18) reoffending. Overall, ART is found to have a small impact on future recidivism, which appears to be slightly stronger for female than male youth.

For males, EET had an inconsistent impact on recidivism. While male participants possessed no greater odds of any recidivism, participation resulted in 9% heightened odds of violent recidivism (OR = 1.09). No significant results were found for female youth, indicating that female EET participants were neither significantly more, nor less, likely to have any or violent recidivism compared to non-participants. The sample size available for this program, for both males and females, may have resulted in instability of study results. Accordingly, findings should be viewed within this context.

Male participants of FFT did not present with a significantly increase in odds of any recidivism. However, they were marginally more likely to have violent reoffending (OR = 1.06). Female youth who participated in FFT were not significantly more likely to have any or violent recidivism when compared with non-participants. Overall, these findings show some promise for FFT, particularly for female youth.

Regarding the gender-combined FIT/MST sample, participation was not associated with a significant increase or decrease odds of any recidivism. However, participants demonstrated 13% greater odds of violent reoffending (OR = 1.13) if they participated in the program. Furthermore, the gender-combined sample of COS participants and non-participants yielded no significant difference in any or violent recidivism odds.

In regard to substance abuse treatment, participation in inpatient treatment resulted in males having 39% increased odds of any (OR = 1.39) and 17% increased odds of violent recidivism (OR = 1.17). For females, participation was associated with 37% increased odds of any (OR =1.37) reoffending but was not statistically related to violent recidivism.

When examining the effects of outpatient treatment, male participants possessed 42% increased odds of any (OR = 1.42) and 18% increased odds of violent recidivism (OR = 1.18). For females, participation was associated with 38% increased odds of any recidivism (OR = 1.38) as well as a marginal, 9% increased odds, for violent recidivism (OR = 1.09).

A mostly non-significant impact for substance abuse medication was identified, where male participants possessed only 14% increased odds of any recidivism (OR = 1.14) but a statistically non-significant affect for violent reoffending. For females, participation was not significantly associated with any or violent recidivism. *Generally, a greater impact of substance abuse was identified for any, rather than violent, recidivism.*

Males who received both substance abuse inpatient and outpatient treatment demonstrated 40% increased odds of any (OR = 1.40) and 13% greater odds of violent (OR = 1.13) recidivism. Female participants possessed 36% increased odds of any recidivism (OR = 1.36), but the effect of participation on violent recidivism was non-significant.

The summarized impact of 'any' substance abuse treatment was then measured, where male participants possessed 41% increased odds of any (OR = 1.41) and 18% increased odds of violent recidivism (OR = 1.18). For females, participation was associated with 49% increased odds of any (OR = 1.49) and 24% increased odds of violent recidivism (OR = 1.24). *Generally, a greater iatrogenic impact of substance abuse treatment was identified for any, rather than violent, recidivism.*

Regarding mental health treatment, participation in inpatient treatment resulted in males having 18% increased odds of any (OR = 1.18) and 25% increased odds of violent recidivism (OR = 1.25). For females, participation was associated with 14% increased odds of any (OR = 1.14) and 38% increased odds of violent recidivism (OR = 1.38).

When examining the effects of outpatient treatment, male participants possessed 21% increased odds of any (OR = 1.21) and 31% increased odds of violent recidivism (OR = 1.34). For females, participation was associated with 31% increased odds of any (OR = 1.31) and 35% increased odds of violent recidivism (OR = 1.35).

A substantial impact for mental health medication was also identified, where male participants possessed 14% increased odds of any (OR = 1.14) and 24% increased odds of violent recidivism (OR = 1.24). For females, participation was associated with 14% increased odds of any (OR = 1.14) and 13% increased odds of violent recidivism (OR = 1.13).

The summarized impact of 'any' mental health treatment was then measured, where male participants possessed 21% increased odds of any (OR = 1.21) and 28% increased odds of violent recidivism (OR = 1.28). For females, participation was associated with 28% increased odds of any (OR = 1.28) and 37% increased odds of violent recidivism (OR = 1.37). *Generally, a greater iatrogenic impact of mental health treatment was identified for violent, rather than any, recidivism.*

Table 8. Responsivity Continuum and Recidivism Outcomes

	Males		Females	
	Any Recidivism	Violent Recidivism	Any Recidivism	Violent Recidivism
	Participant	Participant	Participant	Participant
Program	*OR*	*OR*	*OR*	*OR*
ART	1.05*	1.09**	0.93*	1.18**
EET	1.00	1.09*	1.12	1.03
FFT	1.04	1.06†	1.02	1.09
FIT/MST (total sample)	1.05	1.13**	--	--
COS (total sample)	1.13	1.17	--	--
SA Inpatient	1.39***	1.17***	1.37***	1.07
SA Outpatient	1.42***	1.18***	1.38***	1.09†
SA Medication	1.14**	1.10	1.08	1.13
SA In/Outpatient	1.40***	1.13***	1.36***	1.08
SA Any	1.41***	1.18***	1.49***	1.24***
MH Inpatient	1.18***	1.25***	1.14*	1.38***
MH Outpatient	1.21***	1.31***	1.31***	1.35***
MH Medication	1.14***	1.24***	1.14***	1.13*
MH Any	1.21***	1.28***	1.28***	1.37***

Note: ***$p < .001$, **$p < .01$, *$p < .05$, †$p < .1$.

Programming Effectiveness for Risk and/or Need Level

We next assessed the effectiveness of COS programming for low-risk youth with either any moderate or high need via chi-square tests and binary logistic regressions. Comparisons were then completed for only low-risk youth with any high need. Only low-risk youth were included as the Washington State evidence-based practices guidelines indicate that qualification for COS requires that a given youth be classified as low-risk via the PACT.

Table 9. COS Effectiveness for Low Risk and Moderate or High Need Youth

	Gender-Combined Sample		x^2	OR
	Comparison	Participant		
Low Risk				
Any	11.9%	5.8%	1.25	0.48
Violent	1.7%	0.0%	0.89	N/A
Any Moderate or High Need				
Any	28.1%	21.4%	1.97	0.70
Violent	6.6%	9.0%	0.65	1.38
Low Risk & Any Moderate or High Need				
Any	12.2%	6.3%	0.73	0.50
Violent	2.4%	0.0%	0.75	N/A

As displayed in Table 9, COS was not found to be significantly related to either an increase or decrease in any or violent recidivism for low-risk youth, youth with any moderate or high need, or low-risk youth with any moderate or high need. All of the results in these tables should be interpreted with caution, as the sample sizes were small for the analyses (less than 500 for all and less than 200 or much fewer for some). Along this vein, some of the statistics could not be calculated as a result of small sample sizes and violation of statistical assumptions.

Table 10. COS Effectiveness for Low Risk and High Need Youth

	Gender-Combined Sample		x^2	OR
	Comparison	Participant		
Low Risk				
Any	11.9%	5.8%	1.25	N/A
Violent	1.7%	0.0%	0.89	N/A
Any High Need				
Any	36.0%	21.9%	1.39	0.49
Violent	14.3%	13.6%	0.01	0.98
Low Risk & Any High Need				
Any	N/A	N/A	N/A	N/A
Violent	N/A	N/A	N/A	N/A

Table 10 presents findings for low risk youth, youth with any high need, and low-risk youth with any high need. Despite mostly non-significant results, our findings for COS indicate that youth who participated in COS tended to have lower recidivism rates than youth who did not participate. Again, these findings are limited due to the small number of participants in the sample.

Next, we conducted chi-square tests and binary logistic regressions to examine the effect of the remaining programs for youth identified as being high risk, high need, or high risk *and* high need. Risk classification was based on updated RLCs while youths' need levels were based on updated NLCs. For EET, youth had to possess a high education need. FFT involved having a high family need. Conversely, FIT/MST were based on a high family need, a moderate or high mental health need, and any substance use need. Lastly,

a high aggression, attitude, or skills need was utilized for ART, as the CMAP guidelines indicate that eligibility for ART is predicated on demonstrating issues in any one of these problem areas. Results are shown in Table 11.

We discovered one significant result for EET, wherein males who were high risk and who participated in EET demonstrated 43% increased odds of violent recidivism (OR = 1.43). Regarding FFT, high-risk males who participated evidenced 22% heightened violent recidivism odds (OR = 1.22). High risk females who participated demonstrated 36% increased odds of any (OR = 1.36) and 42% greater odds of violent (OR = 1.42) reoffending. Furthermore, both male and female youth with a high family need who participated in FFT displayed significantly greater odds of only violent recidivism, where males evidenced 22% higher odds (OR = 1.22) while females possessed 66% higher odds (OR = 1.66). Similarly, high-risk males who had a family need and participated in FFT demonstrated 20% increased odds of violent recidivism (OR = 1.20) while high-risk females with a high family need displayed 41% greater odds of violent recidivism (OR = 1.41). *Generally, results for FFT participation appear to indicate an iatrogenic effect for violent, but not any, recidivism for both males and females. This effect appears to be stronger for female youth who participated in FFT.*

The results for FIT/MST are incomplete due to sample size issues. Analyses could not be completed due to statistical violations; hence, it is unclear what effect FIT/MST participation had for high risk, high need, or high risk and high need youth.

With regard to substance abuse treatment, nearly all treatment types resulted in male participants possessing a greater likelihood of any and violent recidivism. The exceptions were substance abuse inpatient treatment, where males demonstrated 30 to 35% decreased odds of any recidivism (OR = 0.65-0.70) and 19 to 25% reduced odds of violent reoffending (OR = 0.75-0.81). The second exception included treatment utilizing medications, were results were found to be non-significant. These patterns were mostly similar for female youth. While male youth who engaged in substance abuse inpatient treatment demonstrated lowered odds of any and violent recidivism, female youth who participated who displayed decreased odds for any recidivism. Specifically, females who were in substance abuse inpatient treatment evidenced 23 to 35% lowered odds of any reoffending (OR = 0.65 to 0.77). Again, as with male participants, females who received medications for substance use problems were neither significantly more likely, nor less likely, that non-participants to possess greater any or violent recidivism.

In regard to substance abuse outpatient treatment, high risk (OR = 1.60), high need (OR = 1.57), and high risk and high need (OR = 1.56) male participants possessed higher any recidivism odds. The same held for violent recidivism, where high risk (OR = 1.28), high need (OR = 1.44), and high risk and need (OR = 1.41) male participants exhibited greater recidivism likelihood. For females, high risk participants possessed greater any reoffending (OR = 1.44) and marginally higher violent recidivism odds (OR = 1.26). However, high need female participants only differed significantly from non-participants for any recidivism (OR = 2.53). Similarly, high risk and high need females demonstrated greater any recidivism likelihood (OR = 1.81) but not statistically different violent recidivism odds. Although not significant, high need as well as high risk and high need female substance abuse outpatient treatment participants possessed lowers odds of violent recidivism.

Males who received both inpatient and outpatient substance abuse treatment possessed higher any recidivism likelihood whether they were high risk (OR = 1.61), high need (OR = 1.50), or high risk and high need (OR = 1.49). Likewise, male participants who were high risk also demonstrated greater violent recidivism likelihood (OR = 1.17). Yet, male participants who were high need or high risk and high need did not demonstrate significantly different violent reoffending odds compared to non-participants. Findings for females were inconsistent. While participation in inpatient and outpatient treatment did not yield significant results for high-risk female participants, those who were high need and participated displayed greater any recidivism odds (OR = 1.43). However, this finding did not hold for violent reoffending. Conversely, high

risk and high need female participants did not demonstrate significantly different any recidivism odds, but they did possess significantly *decreased* violent reoffending odds (OR = 0.22).

The summarized effect of 'any' substance use treatment revealed that, regardless of risk and/or need level, male participants possessed 71% to two times the odds of any recidivism (OR = 1.71 to 2.02) and 34% to 42% greater odds of violent reoffending (OR = 1.34 to 1.42). Female participants demonstrated 58% to nearly three times the odds of any recidivism (OR = 1.58 to 2.89) regardless of risk or need class. They also displayed 38% to approximately six-and-a-half times the odds of violent reoffending (OR = 1.38 to 6.69).

For mental health inpatient treatment, only high-risk male participants possessed greater any recidivism rates (OR = 1.27). Findings were non-significant for high need or high risk and high need males. However, high risk (OR = 1.18), high need (OR = 1.46), and high risk/high need (OR = 1.43) male participants demonstrated greater violent recidivism rates. For females, participation was not statistically associated with either any or violent recidivism across all risk and need classifications. *Generally, mental health inpatient treatment had an iatrogenic effect for only male participants and their violent recidivistic events.*

High risk (OR = 1.42), high need (OR = 1.44), and high risk/high need (OR = 1.36) males who participated in mental health outpatient treatment possessed greater any recidivism odds than non-participants. Similarly, high risk (OR = 1.40), high need (OR = 1.76), and high risk/high need (OR = 1.67) male participants also demonstrated greater violent reoffending rates. However, only high need female participants displayed greater any recidivism odds (OR = 1.39). Like male participants, high risk (OR = 1.27), high need (Or = 1.94), and high risk/high need (OR = 2.59) female participants possessed greater violent recidivism odds.

For mental health medicinal treatment, males who were high risk (OR = 1.26), high need (OR = 1.41), or high risk/high need (OR = 1.38) possessed higher any recidivism rates if they utilized medication to treat their mental health problems. Likewise, high risk (OR = 1.32), high need (OR = 1.90), and high risk/high need (OR = 1.97) male participants demonstrated higher violent reoffending rates. Female participants who were high risk or high need exhibited non-statistically significant any recidivism rates. However, female participants who were high risk and high need displayed decreased odds of any reoffending (OR = 0.43). Additionally, high risk and high risk/high need female participants evidenced non-significant violent recidivism outcomes. Yet, high need female participants showed increased odds of violent reoffending (OR = 1.59). *Generally, mental health medicinal treatment had an iatrogenic effect for males' any and violent recidivism, but this effect did not hold for females who received mental health medication.*

The summarized effect of 'any' mental health treatment was also measured. Regardless of risk or need level, male participants possessed 35% to 43% greater odds of any recidivism (OR = 1.35 to 1.43) and 41% to 80% higher odds of violent reoffending (OR = 1.41 to 1.80). This effect was less pronounced for female participants. Only high need female participants demonstrated higher any recidivism odds (OR = 1.39). Yet, high risk (OR = 1.27), high need (OR = 1.90), and high risk/high need (OR = 2.58) female participants evidenced higher violent reoffending odds.

Finally, ART appeared to be iatrogenic for males regarding any or violent reoffending but had no statistical effect for females when considering either type of recidivism. High risk (OR = 1.16), high need (OR = 1.19), and high risk/high need (OR = 1.18) males displayed greater any recidivism odds. High risk (OR = 1.14), high need (OR = 1.16), and high risk/high need (OR = 1.15) males also possessed higher violent reoffending odds. However, findings across risk and need class for both any and violent recidivism were non-significant for female participants. Although not statistically significant, female participants evidenced slightly decreased odds of any recidivism across the risk and need classes. *Generally, ART appears to have more of an iatrogenic effect for only male youth who participate in the treatment.*

Table 11. Program Effectiveness for High Risk and/or High Need Youth

	Males		OR	Females		OR
EET	Comparison	Participant		Comparison	Participant	
High Risk						
Any	57.1%	51.5%	0.80	49.4%	42.9%	0.78
Violent	20.4%	26.8%	**1.43***	12.4%	14.3%	1.17
High Need						
Any	59.9%	53.9%	0.79	44.8%	40.0%	0.83
Violent	24.3%	26.7%	1.13	10.3%	25.0%	2.84
High Risk & Need						
Any	60.6%	52.9%	0.73	59.4%	50.0%	0.69
Violent	25.2%	25.3%	1.01	25.0%	0.0%	N/A
FFT						
High Risk						
Any	61.0%	61.9%	1.04	50.1%	57.8%	**1.36*****
Violent	25.8%	29.7%	**1.22*****	18.7%	24.6%	**1.42*****
High Need						
Any	60.8%	60.8%	1.00	46.4%	48.4%	1.09
Violent	25.8%	29.8%	**1.22*****	13.3%	20.2%	**1.66*****
High Risk & Need						
Any	61.1%	62.2%	1.05	50.6%	50.9%	1.02
Violent	26.3%	30.0%	**1.20*****	15.4%	20.4%	**1.41***
FIT/MST (total sample)						
High Risk						
Any	N/A	62.2%	N/A	--	--	--
Violent	N/A	32.9%	N/A	--	--	--
High Need						
Any	N/A	77.4%	N/A	--	--	**--**
Violent	N/A	35.4%	N/A	--	--	--
High Risk & Need						
Any	N/A	76.7%	N/A	--	--	**--**
Violent	N/A	36.0%	N/A	--	--	--
SA Inpatient						
High Risk						
Any	61.5%	71.2%	**0.65*****	54.8%	62.1%	**0.74*****
Violent	25.8%	29.9%	**0.81*****	20.8%	21.4%	0.68
High Need						
Any	58.4%	67.6%	**0.67*****	44.5%	55.4%	**0.65*****
Violent	24.1%	29.9%	**0.75*****	18.8%	17.9%	1.04
High Risk & Need						
Any	61.0%	69.1%	**0.70*****	53.2%	59.7%	**0.77***
Violent	25.5%	30.6%	**0.78*****	25.4%	22.9%	1.14
SA Outpatient						
High Risk						
Any	56.2%	67.2%	**1.60*****	54.3%	63.0%	**1.44****
Violent	23.0%	27.6%	**1.28*****	20.0%	23.9%	**1.26†**
High Need						
Any	55.2%	65.9%	**1.57*****	35.9%	58.6%	**2.53*****
Violent	20.9%	27.6%	**1.44****	25.0%	22.2%	0.87
High Risk & Need						
Any	56.2%	66.7%	**1.56*****	49.2%	63.6%	**1.81****
Violent	21.5%	27.9%	**1.41****	38.2%	23.1%	0.49
SA In/Outpatient						
High Risk						
Any	59.6%	70.4%	**1.61*****	60.0%	62.7%	1.13
Violent	24.4%	27.4%	**1.17***	21.4%	22.1%	1.05
High Need						

	Males		OR	Females		OR
Any	58.8%	68.2%	**1.50*** **	48.9%	57.8%	**1.43***
Violent	25.8%	27.1%	1.07	31.4%	19.5%	0.52
High Risk & Need						
Any	59.7%	68.8%	**1.49*** **	59.7%	61.8%	1.10
Violent	26.3%	27.4%	1.06	50.0%	18.5%	**0.22***
SA Medication						
High Risk						
Any	59.8%	62.5%	1.12	60.6%	57.2%	0.86
Violent	22.4%	21.3%	0.94	18.3%	22.1%	1.26
High Need						
Any	59.0%	64.7%	1.28	50.5%	52.0%	1.05
Violent	22.3%	24.4%	1.13	20.0%	25.0%	N/A
High Risk & Need						
Any	59.6%	65.7%	1.26	60.9%	56.9%	0.84
Violent	23.3%	25.0%	1.11	0.0%	40.0%	N/A
SA Any						
High Risk						
Any	54.9%	67.6%	**1.71*** **	51.0%	62.1%	**1.58*** **
Violent	22.2%	27.7%	**1.34*** **	18.4%	23.7%	**1.38** **
High Need						
Any	45.5%	62.7%	**2.02*** **	31.4%	57.0%	**2.89*** **
Violent	20.7%	27.0%	**1.42** **	4.8%	23.5%	**6.69** **
High Risk & Need						
Any	55.1%	67.7%	**1.71*** **	43.9%	61.9%	**2.09*** **
Violent	21.6%	27.4%	**1.38** **	8.8%	25.6%	**3.81†**
MH Inpatient						
High Risk						
Any	60.9%	66.3%	**1.27** **	57.3%	59.2%	1.08
Violent	29.9%	33.5%	**1.18†**	25.9%	32.6%	1.37
High Need						
Any	57.5%	63.6%	1.29	51.6%	48.4%	0.88
Violent	31.9%	40.7%	**1.46***	20.4%	27.4%	1.48
High Risk & Need						
Any	60.0%	64.8%	1.23	61.4%	52.3%	0.69
Violent	33.3%	41.8%	**1.43***	28.8%	38.6%	1.59
MH Outpatient						
High Risk						
Any	55.3%	63.7%	**1.42*** **	58.1%	59.8%	1.08
Violent	22.8%	29.2%	**1.40*** **	21.2%	25.5%	**1.27***
High Need						
Any	48.6%	57.6%	**1.44*** **	41.5%	49.7%	**1.39***
Violent	21.2%	32.1%	**1.76*** **	13.2%	22.7%	**1.94*** **
High Risk & Need						
Any	52.1%	59.7%	**1.36** **	59.6%	56.6%	0.89
Violent	22.7%	33.0%	**1.67*** **	13.5%	28.6%	**2.59*** **
MH Medication						
High Risk						
Any	57.1%	64.9%	**1.26*** **	59.9%	58.9%	0.96
Violent	23.8%	29.3%	**1.32*** **	23.9%	25.2%	1.07
High Need						
Any	49.9%	58.4%	**1.41*** **	47.8%	50.2%	1.10
Violent	21.5%	34.2%	**1.90*** **	15.5%	22.6%	**1.59** **
High Risk & Need						
Any	52.6%	60.5%	**1.38** **	73.4%	54.3%	**0.43*** **
Violent	22.0%	35.7%	**1.97*** **	23.0%	28.9%	1.37
MH Any						

	Males		OR	Females		OR
High Risk						
Any	55.2%	63.8%	**1.43*** **	58.1%	59.9%	1.07
Violent	22.7%	29.3%	**1.41*** **	21.2%	25.5%	**1.27***
High Need						
Any	48.7%	57.6%	**1.43*** **	41.5%	49.7%	**1.39***
Violent	20.9%	32.1%	**1.80*** **	13.4%	22.7%	**1.90*** **
High Risk & Need						
Any	52.2%	59.7%	**1.35** **	59.6%	56.6%	0.89
Violent	22.4%	33.0%	**1.71*** **	13.6%	28.6%	**2.58*** **
ART						
High Risk						
Any	55.4%	59.1%	**1.16*** **	56.6%	51.5%	0.81
Violent	23.7%	26.2%	**1.14** **	22.4%	24.7%	1.13
High Need						
Any	56.0%	60.1%	**1.19** **	51.0%	50.1%	0.97
Violent	24.6%	27.4%	**1.16** **	20.1%	22.5%	1.16
High Risk & Need						
Any	56.7%	60.8%	**1.18** **	58.8%	52.9%	0.79
Violent	26.0%	28.7%	**1.15***	28.1%	28.5%	1.01

Note: †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Overall, findings demonstrated that EET generally had no effect for males or females. Furthermore, FFT demonstrated no significant effect for males on 'any' recidivism; however, it had a greater impact on males' and females' violent reoffending. No conclusions could be made regarding FIT/MST, due to the small sample size. This particular program likely yielded a small sample for the responsivity continuum analysis because MST is intended to be reserved for only high-risk youth while FIT is meant for moderate or high-risk youth. In other words, we were already limited to a small sample, and trying to examine subsets (high need or high risk/high need) was not possible for the responsivity continuum tests. Moreover, results for substance abuse treatment were inconsistent. While inpatient treatment decreased males' any and violent recidivism as well as females' any reoffending, outpatient treatment resulted in greater likelihood of males' any and violent reoffending and females' any recidivism. This finding may be due to inpatient treatment being of a stronger dose and having more control over the youth's environment while he or she is in a treatment facility. However, a combination of inpatient and outpatient treatment increased any recidivism likelihood for males but was inconsistent for females. Overall, substance abuse medicinal treatment was shown to be non-significant for both males and females in any and violent recidivism. Yet, the measured effect of 'any' substance abuse treatment resulted in increased any and violent reoffending for both males and females. Additionally, the effect of mental health treatment was inconsistent. While all types of mental health treatment appeared to be iatrogenic regarding males' any and violent recidivism, only outpatient treatment and 'any' mental health programming increased females' violent reoffending. Lastly, ART appears to have had a more severe, negative effect for males while being non-significant for female youth.

Generally, findings from the responsivity continuum analyses indicate some positive and negative results. First, and as expected, high risk youth, or those with higher RLCs, demonstrated greater recidivism odds. Similarly, high need youth, or those with higher NLCs, exhibited greater reoffending odds. The exception, again, was a mental health need for any recidivism and substance abuse need for violent reoffending. When examining responsivity, many programs had an iatrogenic effect for youth participants. Exceptions included substance abuse inpatient treatment for both males and females as well as combined inpatient and outpatient substance abuse programming for female participants' violent reoffending. Although female youth ART participants were not shown to have significantly decreased recidivism odds when their specific risk and need classifications were examined, they still exhibited lessened any reoffending odds, which aligns with the first set of responsivity analyses that did not consider risk or need classification.

Typological Approach

The following section describes the results of the typological approach for assessing responsivity. There are two phases to this approach and the presentation of findings are ordered as: 1) latent class analyses findings, providing qualitative descriptions for both male and female types, and 2) program effectiveness by latent class type.

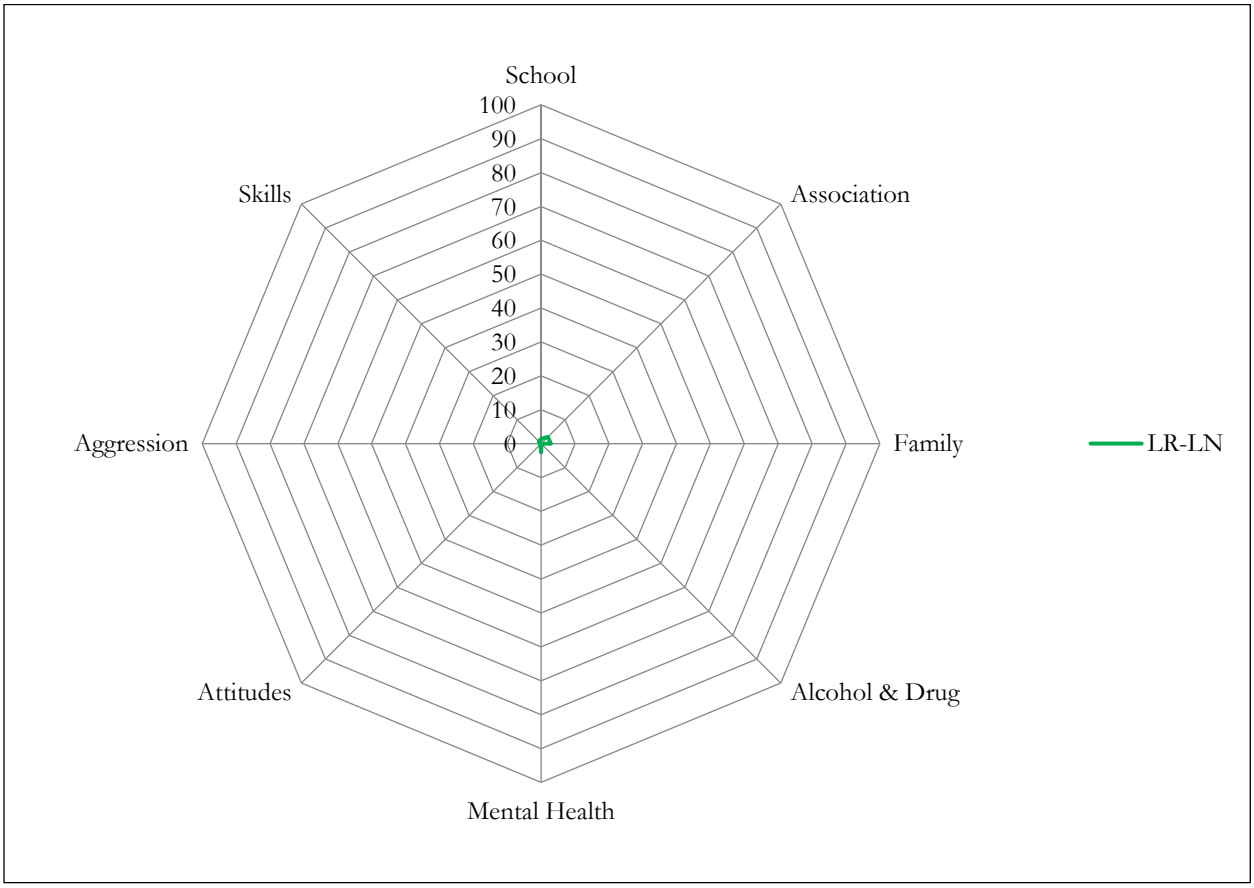
Class Descriptions

This section describes the characteristics of each of the typology's classes, along with their probability of recidivism associated with 'any' and violent offenses. Specifically, the current typological approach describes how the response patterns for each class may lead to future criminality. A more in-depth understanding of the risk and needs for each class can be developed by providing the qualitative descriptions for each class. Five types emerged for males: Low Risk and Low Need (LR-LN), Moderate Risk with Education Need (MREN), Moderate Risk Substance User (MRSU), Higher Risk with Complex Treatment Needs (HRCTN), and Highest Risk with Elevated and Diverse Needs (HREDN). Five types also emerged for females: Higher Risk Complex Treatment Needs (HRCTN), Low Needs with Low Risk (LN-LR), Highest Risk with Prosocial Needs (HRPN), Highest Risk Substance User with High Destabilizers (HRSUHD), and Higher Risk with Diverse Needs (HRDN).

Male Class Descriptions

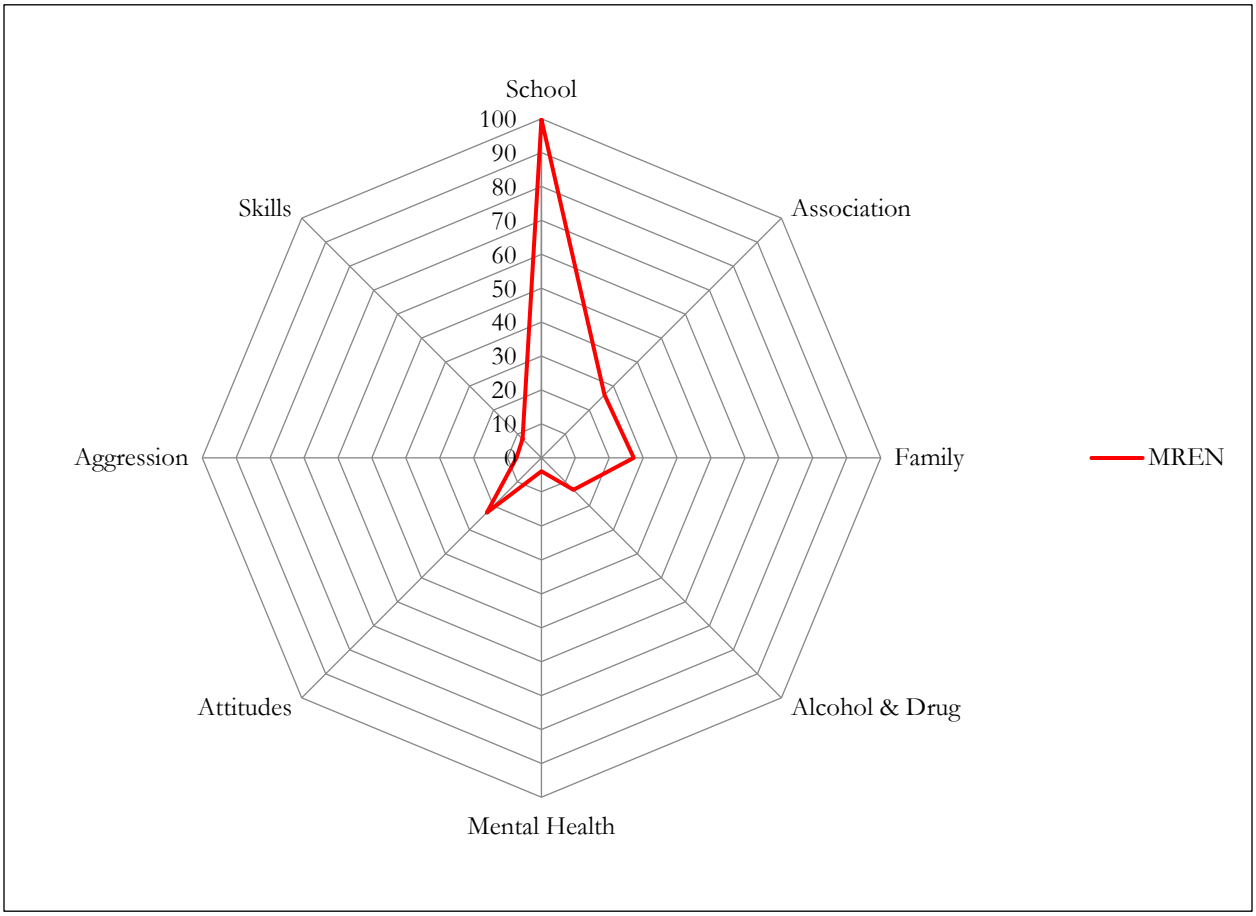
Class 1 was identified as 'Low Risk and Low Need (LR-LN)' and comprised roughly 26% of the sample. Individuals in this class tended to be lower risk relative to all other classes and possessed low needs across all domains of the PACT. These individuals also demonstrated the highest level of protective factors such as pro-social use of free time, positive interactions with and support from family, and positive skills such as internal and external trigger recognition, impulse control, and good problem solving ability. This class did have a mix between anti-social and pro-social friends. Treatments should focus on peer relationships in order to prevent or resist the influence of anti-social peers.

Figure 1. Male Class 1 – Low Risk and Low Need (LR-LN)



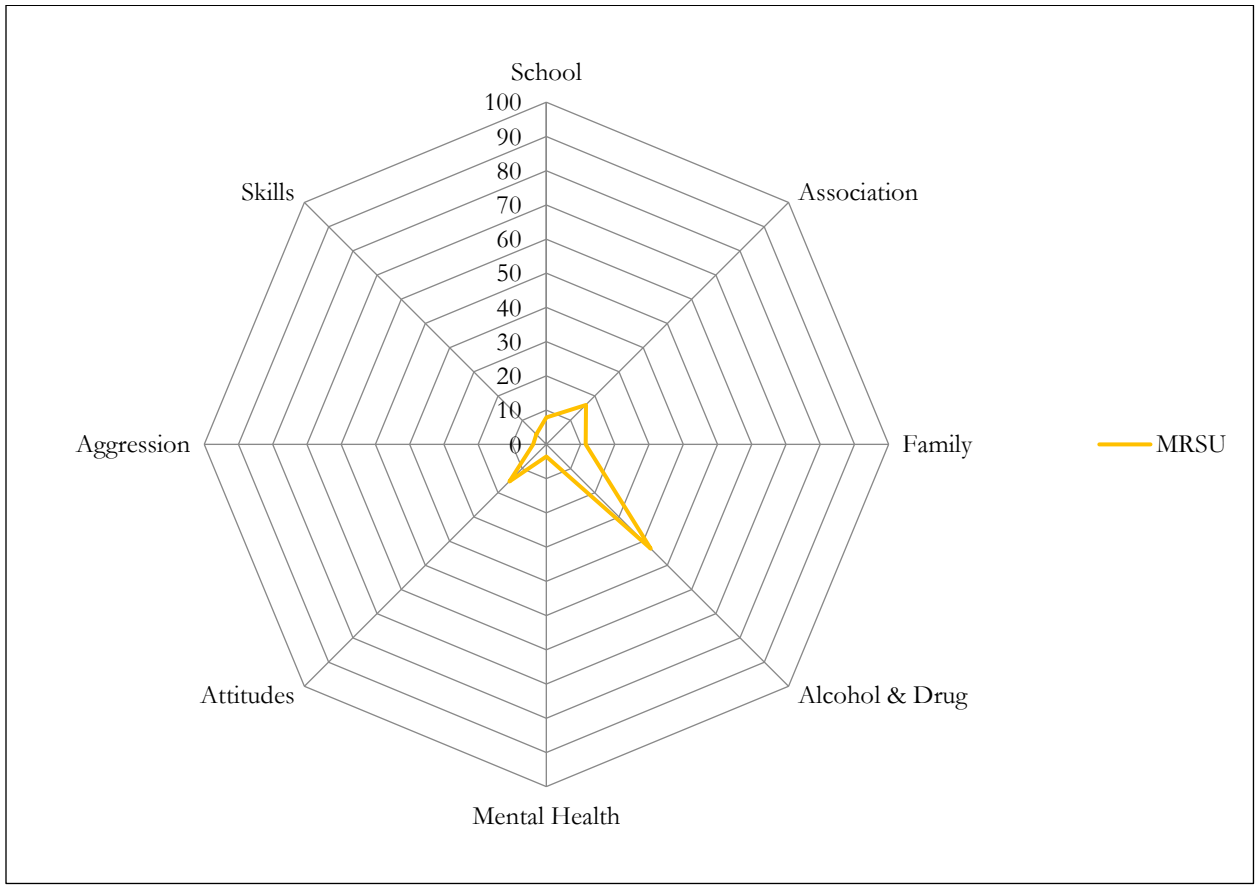
Class 2 was identified as 'Moderate Risk with Education Need (MREN)' and comprised roughly 10% of the sample. Individuals in this class possessed a moderate risk level for both any and violent recidivism. School-related issues were the primary indicated need for this class. Family-related issues were the second highest need indicated by this class. This class also indicated the highest family-related issues relative to all other male classes. For all domains of the PACT, a low-to-moderate level of need was indicated. Individuals in this class did possess some protective factors such as employment, understanding what it takes to maintain employment, or some skills such as goal setting and problem solving. Primary treatment programming should focus on education with regard to school attendance and performance. Supplementary treatment programming should focus on addressing family-related issues and skill building.

Figure 2. Male Class 2 – Moderate Risk with Education Need (MREN)



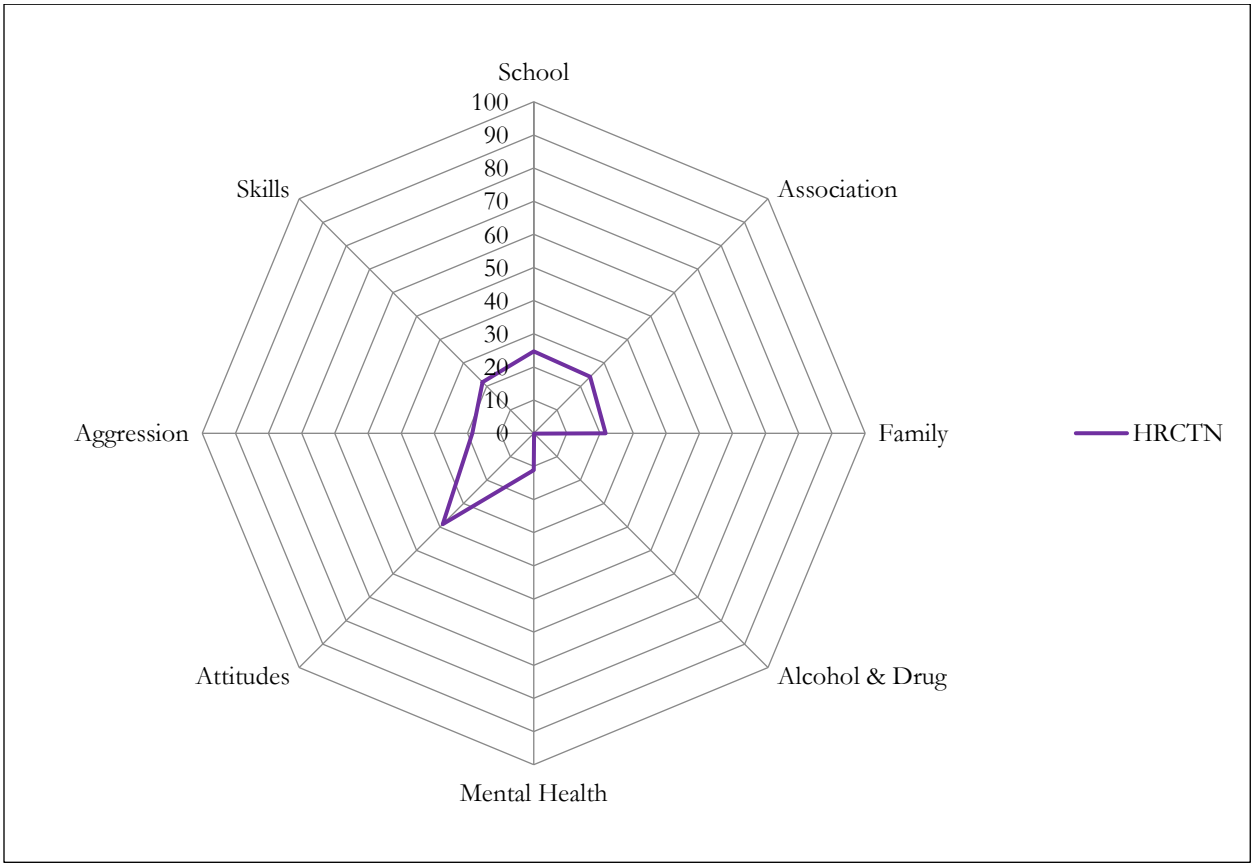
Class 3 was identified as 'Moderate Risk Substance User (MRSU)' and comprised roughly 19% of the sample. Similar to Class 2, this class possessed a moderate risk level for both any and violent recidivism. Alcohol and drug issues were the primary need indicated for individual in this class. However, this class possessed few protective factors. The pro-social use of free was the largest protective factor followed by some interest in employment. Treatment programming targeting substance abuse should be the primary focus.

Figure 3. Male Class 3 – Moderate Risk Substance User (MRSU)



Class 4 was identified as 'Higher Risk with Complex Treatment Needs (HRCTN)' and comprised roughly 31% of the sample. Individuals in this class possessed the second highest risk level for any and violent recidivism relative to the other male classes. This class indicated the highest mental health need compared to other classes and demonstrated the second highest issue pertaining to skills. Secondary issues were indicated for aggression and attitudes and behaviors. Individuals in this class possessed few protective factors with having the most interest in employment. Primary treatment programming should address mental health issues and skill building exercises. Secondary treatment for aggression and anti-social attitudes and behaviors will also be beneficial.

Figure 4. Male Class 4 – Higher Risk with Complex Treatment Needs (HRCTN)



Lastly, Class 5 was identified as 'Highest Risk with Elevated and Diverse Needs (HREDN)' and comprised roughly 13% of the sample. This class possessed the highest risk level of the male classes for any and violent recidivism. Additionally, individuals in this class also indicated the highest level of need across all domains with the exceptions school and mental health. Individuals possessed little to no protective factors but did have some involvement in pro-social activities. Treatment programming should address substance abuse, aggression, anti-social attitudes and behaviors, and mental health first. Addressing family, school, use of free time, and skill building should be secondary targets of treatment programming.

Figure 5. Male Class 5 – Highest Risk with Elevated and Diverse Needs (HREDN)

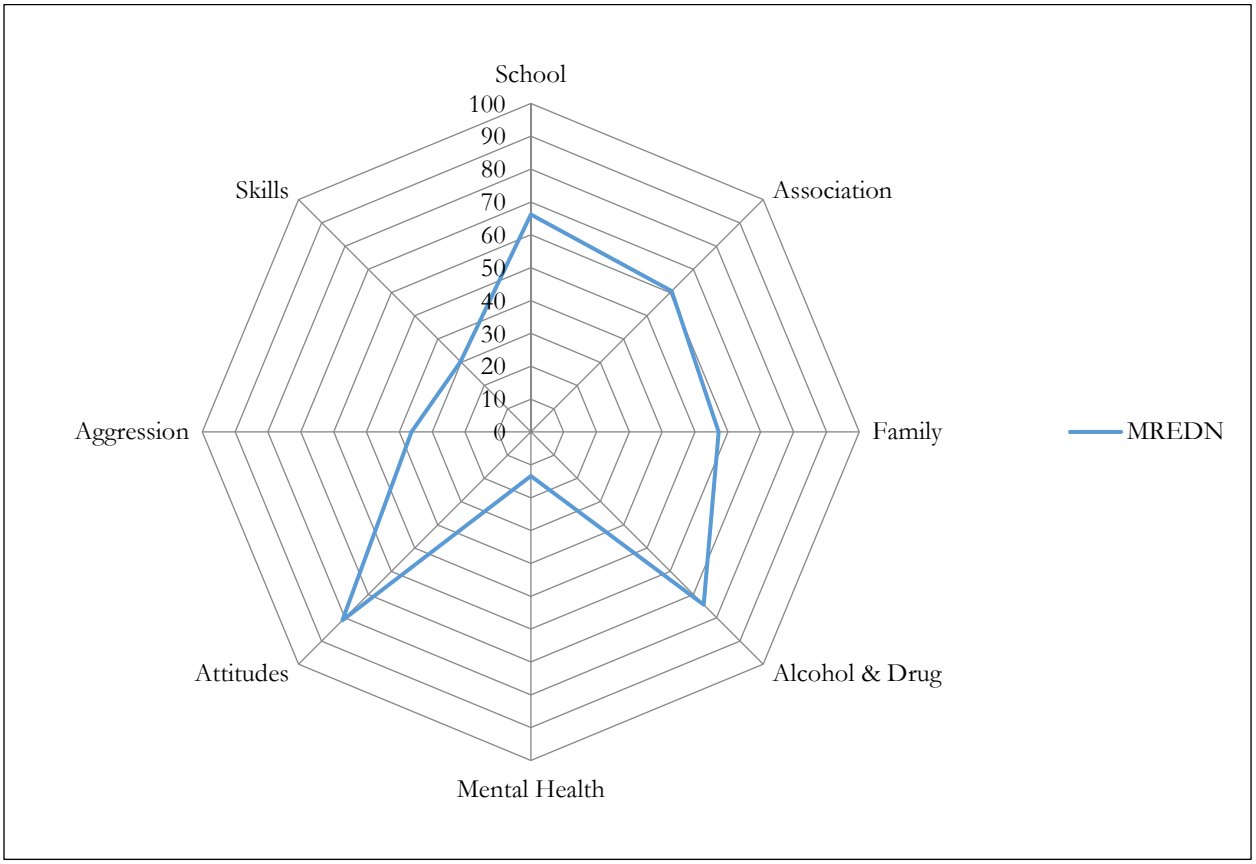
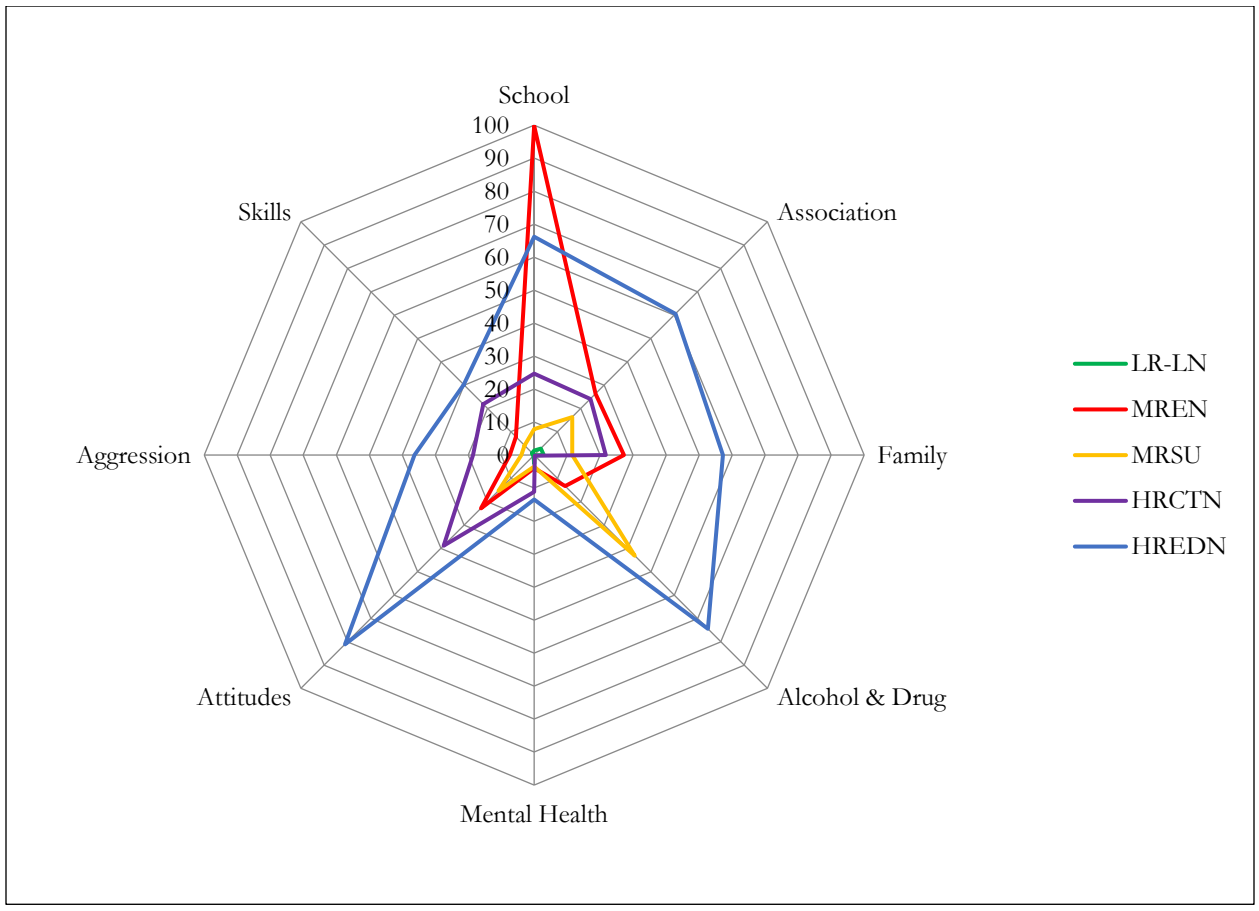


Figure 6 depicts the needs of all five male classes together to better illustrate the qualitative class descriptions and differences between the classes. There are several similarities between the male classes. First, all types indicated a need of some magnitude for the attitudes and behavior domain of the PACT, with the HREDN class indicating this as a primary need relative to other classes, which indicated this as a secondary need. Second, to varying extents, peer associations and family were also indicated as common needs between the classes. However, there were secondary needs for all classes except for the HREDN class, which indicated peer associations and family as primary needs. There were also some unique differences between the classes. First, and somewhat surprising for male typologies, only two classes (MRSU and HREDN) indicated a need for substance use. Second, only two classes (HRCTN and HREDN) indicated a need for skill development. Third, two classes indicated only one primary need: MREN for education and school and MRSU for substance use.

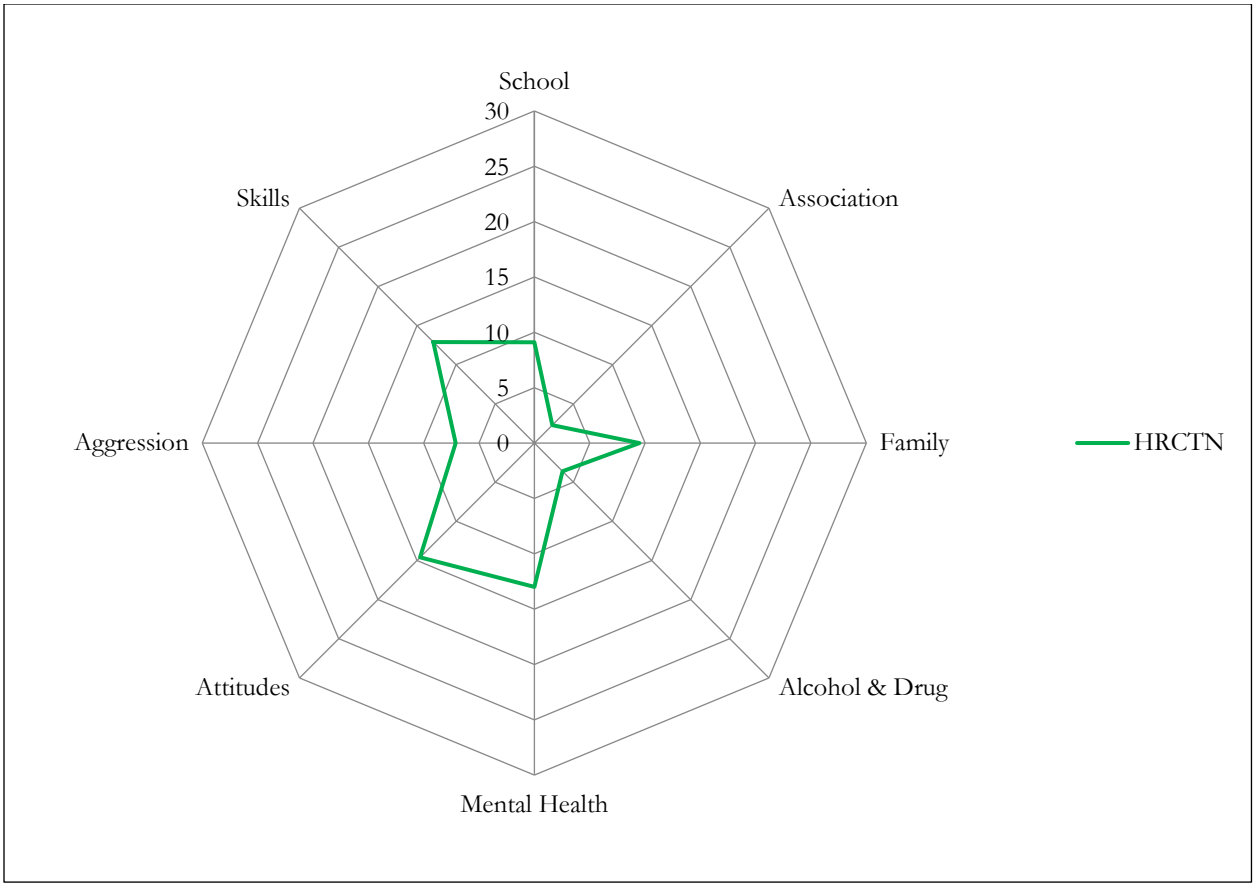
Figure 6. Male Classes – Typology Compilation



Female Class Descriptions

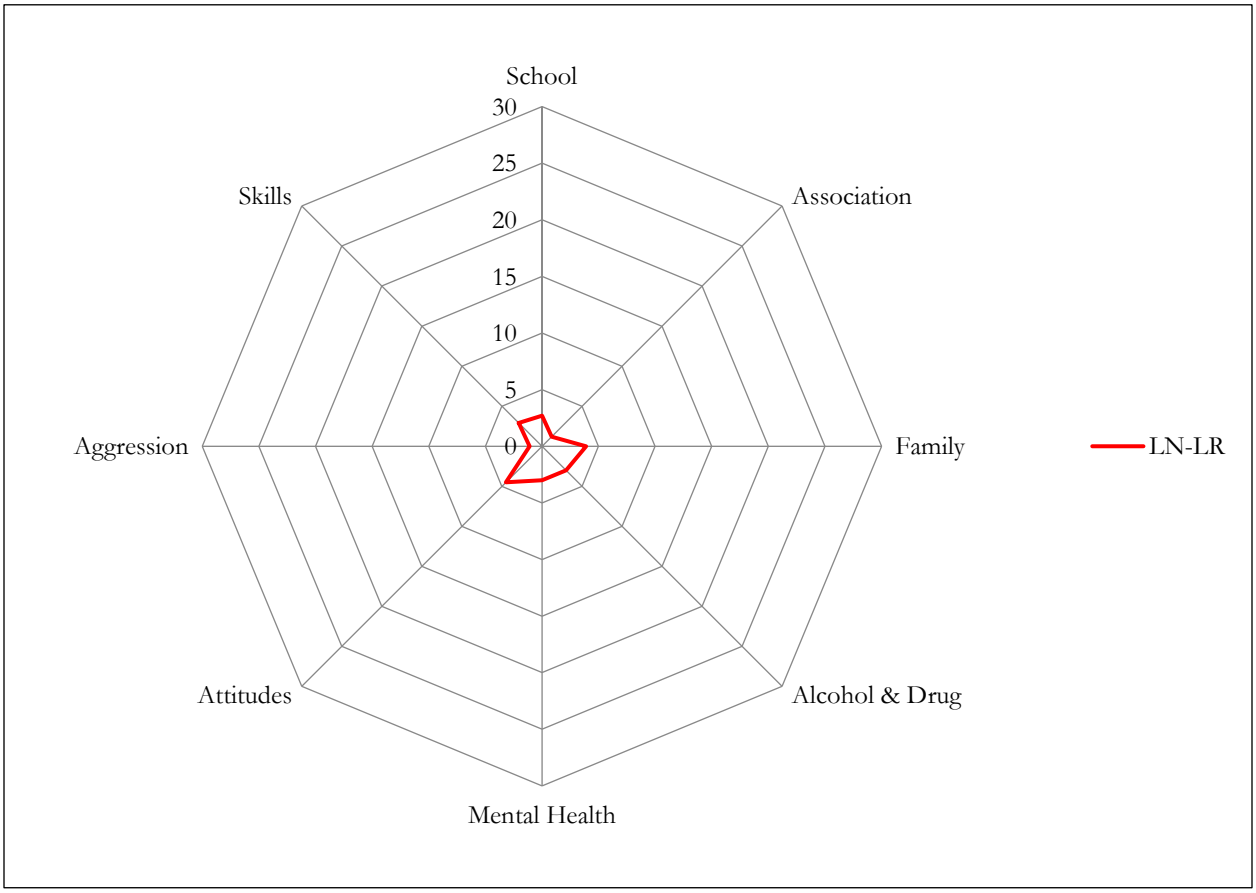
Class 1 was identified as 'Higher Risk Complex Treatment Needs (HRCTN)' and comprised roughly 15% of the sample. This class possessed the highest risk for violent recidivism and high-moderate risk of any recidivism. Individuals in this class indicated multiple primary needs such as mental health, anti-social attitudes and behaviors, and skills. This class experienced or witnessed violence or abuse at home or other locations, which may be why individuals indicated an elevated level of mental health issues. Secondary needs indicated were family, school, and aggression. This class did possess some protective factors such as pro-social use of free time. Treatment programming should primarily focus on addressing the traumatic experiences and emotional instability, improving resistance to anti-social influences and peers, impulse control, and addressing skills such as dealing with others, situations, and emotions, consequential thinking, and controlling aggression. Secondary treatment programming should address family, school, and aggression-related issues such as conflict at home, conduct and attendance at school, and acceptance of physical and verbal aggression.

Figure 7. Female Class 1 – Higher Risk Complex Treatment Needs (HRCTN)



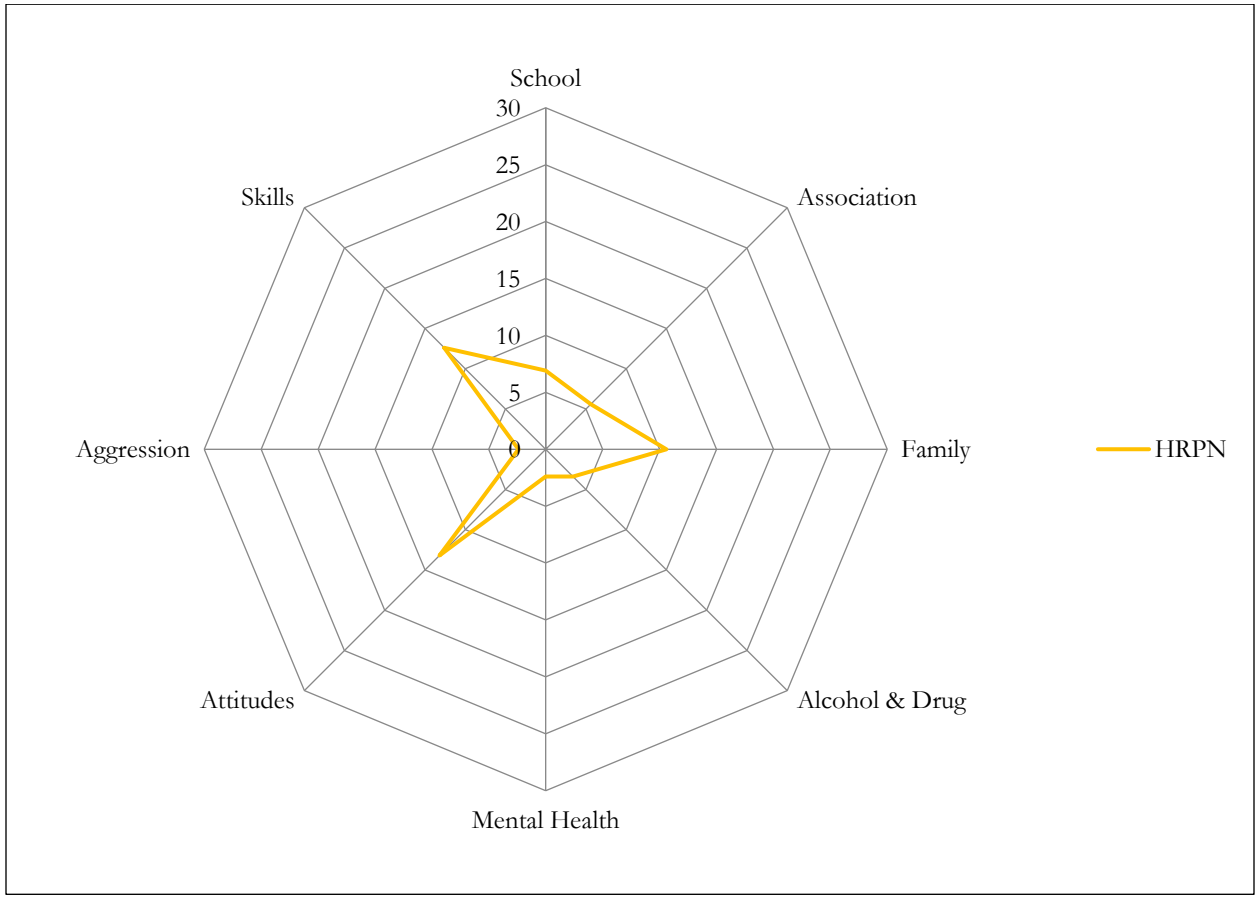
Class 2 was identified as 'Low Needs with Low Risk (LN-LR)' and comprised roughly 25% of the sample. This class possessed the lowest risk level for any recidivism relative to the other female classes and shared the lowest risk for violent recidivism with Class 5. This class indicated the lowest level of needs relative to the other classes. Anti-social and family related issues were indicated as the primary needs for this class. Secondary needs indicated were alcohol and drug use, mental health, school, and skills. This class possessed the most protective factors such as pro-social use of free time and employment. Primary treatment programming should focus on improving resistance to anti-social influences and addressing the relatively small amount of conflict at home. Additionally, secondary treatment programming should address the slight alcohol and drug use and improve consequential thinking.

Figure 8. Female Class 2 - Low Needs with Low Risk (LN-LR)



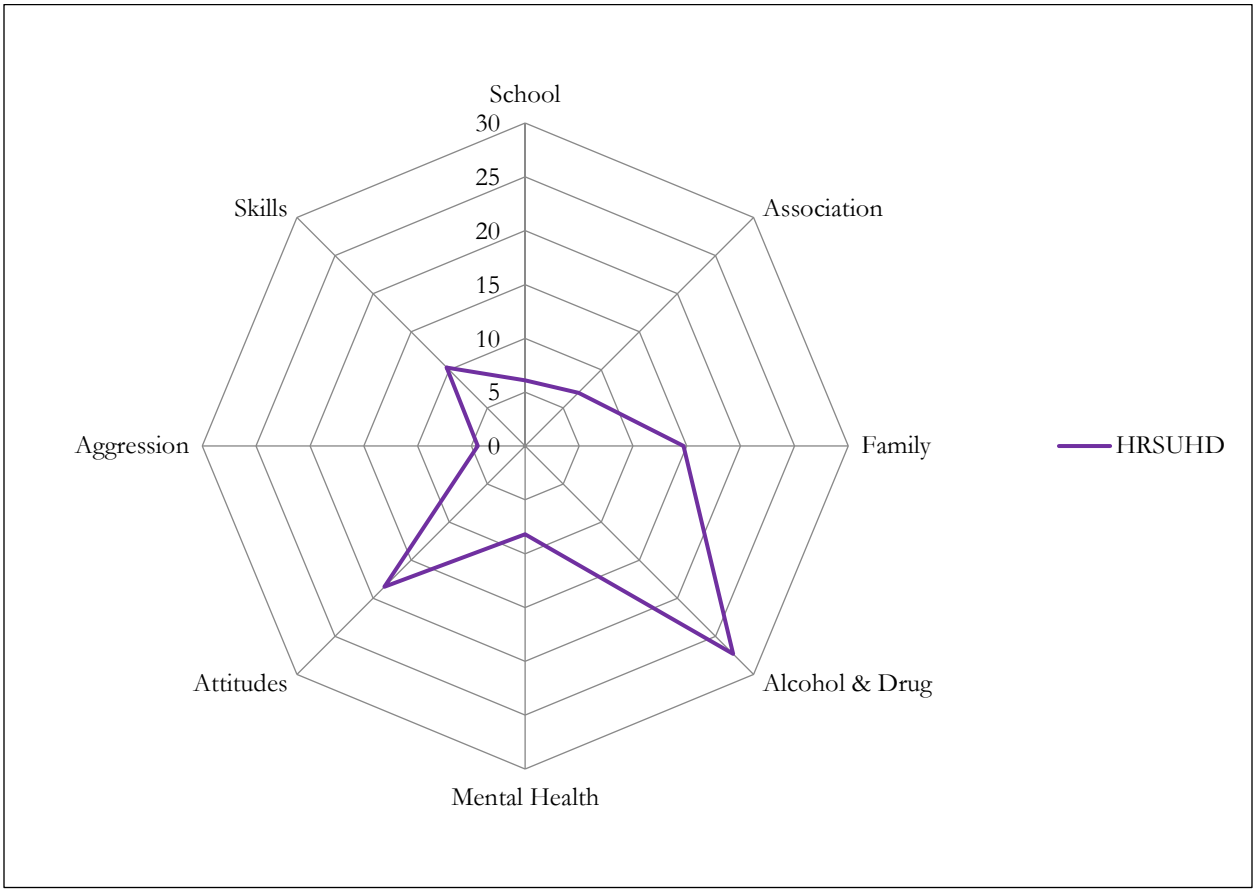
Class 3 was identified as 'Highest Risk with Prosocial Needs (HRPN)' and comprised roughly 25% of the sample. This class shared the highest risk for any and violent recidivism with Class 4. Skills and attitudes and behaviors were the primary indicated needs with family and school being secondary needs. This class possessed very few protective factors. Primary treatment should address the lack of skills and attitudinal issues such as consequential thinking, goal setting, and dealing with others, emotions, and situations, and attitudes and behaviors such as being law abiding and having respect for authority and property. Secondary treatment should focus on addressing the inconsistent or overly harsh punishment, inadequate rewards within the family, family conflict, and opportunity within the family.

Figure 9. Female Class 3 – Highest Risk with Prosocial Needs (HRPN)



Class 4 was identified as 'Highest Risk Substance User with High Destabilizers (HRSUHD)' and comprised roughly 21% of the sample. This class shared the highest risk of any and violent recidivism with Class 3. Individuals in this class indicated that alcohol and drugs were their primary need and possessed the highest indicated issue compared to all other female classes. Family and attitudes and behaviors were the secondary needs indicated. Alcohol and drug abuse should be the primary focus of treatment. Secondary treatment should address the anti-social views, lack of respect for authority, property, law-abiding behavior, belief in their own success as well as conflict and a lack of opportunity at home.

Figure 10. Female Class 4 – Highest Risk Substance User with High Destabilizers (HRSUHD)



Class 5 was identified as 'Higher Risk with Diverse Needs (HRDN)' and comprised roughly 15% of the sample. This class possessed a high-moderate risk for any recidivism but shared the lowest risk of violent recidivism with Class 2. Several primary needs were indicated such as alcohol and drugs, attitudes, and school. Secondary needs included family and skills. This class possessed no protective factors. Primary treatment should address alcohol and drug abuse, pride in anti-social behavior, lack of respect for societal rules or conventions, authority, and property as well as conduct, attendance, and performance at school, and the belief in school as encouraging and necessary. Lastly, secondary treatment should focus on improving consequential thinking and goal setting as well as reducing the conflict at home.

Figure 11. Female Class 5 – Higher Risk with Diverse Needs (HRDN)

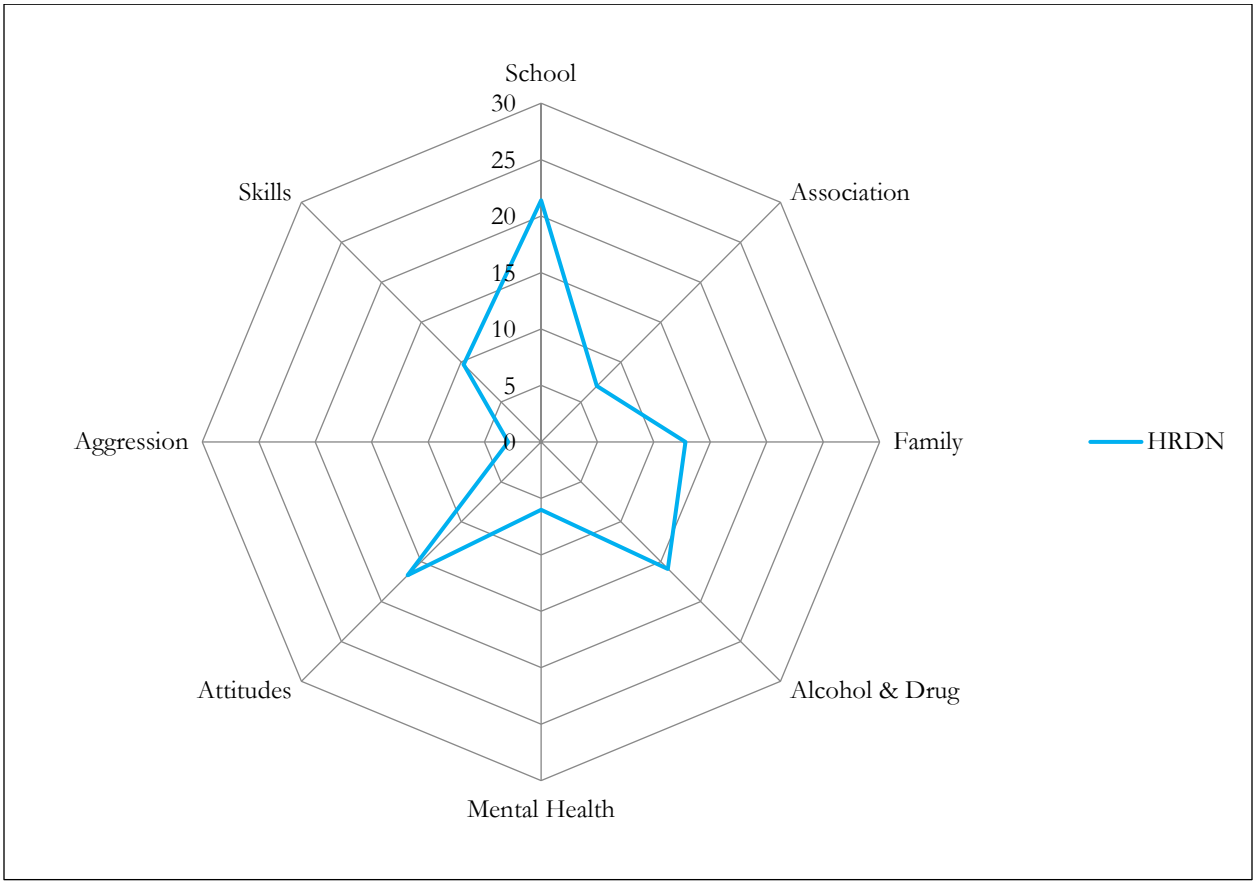
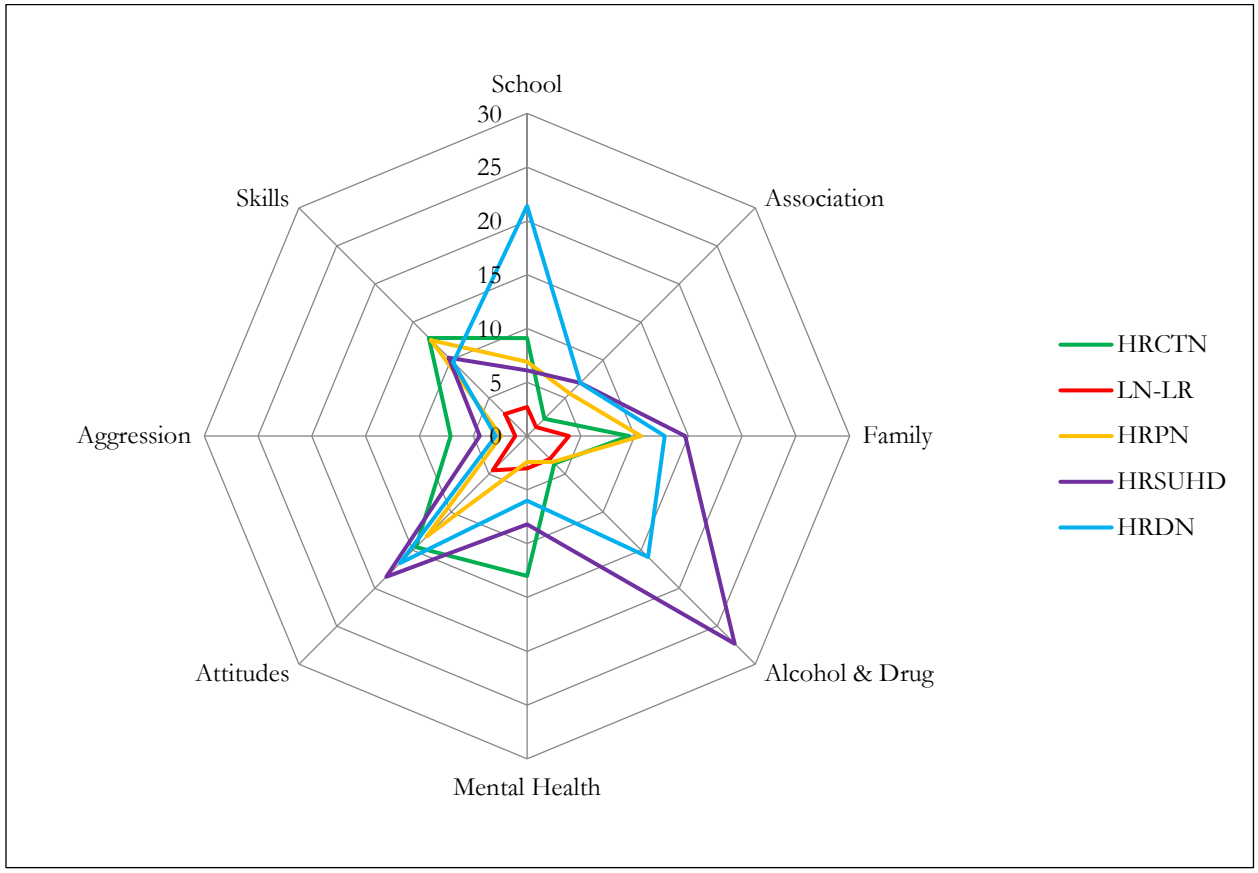


Figure 12 depicts the needs of all five female classes together to better illustrate the qualitative class descriptions and differences between the classes. A moderate to high primary need was indicated for the attitudes and behavior, skills, and family domains of the PACT by all classes, except for LN-LR. Furthermore, all classes, except for LN-LR, indicated at least three to four primary needs. The HRSUHD and HRDN classes indicated similar levels of need for nearly all domains except for substance abuse and school. The HRSUHD class indicated the highest need for the substance abuse domain, and the HRDN class indicated the highest need for the school domain.

Figure 12. Female Class – Typology Compilation



Typology Responsivity

In the following section we examine the impact of each WAJCA program on youth type, identified in the previous section. Cross-tabulations are provided, examining both 'any' and violent recidivism for each program's participants compared to non-participants. Odds ratios are also displayed. These findings are further broken down by gender.

Aggression Replacement Training (ART)

As seen from Table 12, the ART demonstrated a mixed impact on recidivism. Overall, there was a 3% increase in any recidivism (OR = 1.16) and a 2% increase in violent reoffending (OR = 1.13) for males who participated in or completed the ART program compared to those that did not receive ART. However, a non-significant increase in any recidivism was found for female participants, while a significant increase (~3%) was found for violent reoffending (OR = 1.22). These results are somewhat dissimilar to past Washington State

ART evaluations (Barnoski, 2004; Peterson, 2017a; WSIPP, 2002; 2018). While previous research has not found statistically significant reductions in recidivism, it has demonstrated that ART can be helpful in reducing recidivism.

Table 12. Class Recidivism for Males and Females for ART

	Males			Females		
	Comparison %	Participants %	OR	Comparison %	Participants %	OR
Class 1						
Any	42.7	46.5	**1.16†**	38.3	42.0	1.17
Violent	16.7	18.1	1.11	17.7	22.1	1.32
Class 2						
Any	53.9	59.9	**1.27***	35.4	39.1	1.17
Violent	21.2	25.1	1.25	10.9	14.7	**1.42***
Class 3						
Any	51.0	56.1	**1.23***	45.7	44.2	0.94
Violent	19.5	22.9	**1.22†**	13.8	17.0	**1.28†**
Class 4						
Any	56.9	56.7	0.99	45.1	42.7	0.91
Violent	26.2	26.2	1.00	16.3	16.4	1.00
Class 5						
Any	60.1	66.7	**1.33****	38.4	38.3	1.00
Violent	22.3	30.5	**1.53*****	11.7	12.0	1.03

Note: †p<0.10, *p<0.05, **p<0.01, ***p<0.001.

There are several key findings useful for practice when examining class-specific participation in or completion of ART. First, there was no significant decrease in any or violent recidivism for male class 4 (HRCTN) despite this class having one of the highest indicated needs for aggression-related issues relative to the other male classes. The ART program did not generate any decreases in either any or violent recidivism for any of the male classes. Rather, it resulted in increased any recidivism for class 1 ([LR-LN] OR = 1.16) and 2 ([MREN] OR = 1.27) as well as both higher any and violent recidivism odds for both class 3 ([MRSU] OR = 1.23 and OR = 1.22, respectively) and 5 ([HREDN] OR = 1.33 and OR = 1.53, respectively). *Although aggression was found to be an indicated, primary need for class 5 (HREDN), it is not recommended as a program to reduce reoffending for males.* Additionally, ART generated increases in violent reoffending for the female classes 2 ([LN-LR] OR = 1.42) and 3 ([HRPN] OR = 1.28). *Despite aggression being an indicated need for several of the female classes, ART is not a recommended program to reduce recidivism for females.*

Education and Employment Training (EET)

As displayed in Table 13, EET resulted in a significantly increased odds of any recidivism for the male classes 1 ([LR-LN] OR = 1.53) and 5 ([HREDN] OR = 1.56) as well as an increased odds of violent recidivism for class 1 ([LR-LN] OR = 2.22) and class 3 ([MRSU] OR = 1.38). However, EET demonstrated decreased odds of violent recidivism for class 5 ([HREDN] OR = 0.21). Class 2 for males (MREN) indicated a high school need, and the results show no statistically significant effect for this class on any or violent recidivism, so the treatment may still be useful for such males. Additionally, school was indicated as a secondary need for class 5 (HREDN), and the results are promising for violent, but not any, reoffending. Overall, there was a 3% significant increase in any recidivism and a marginally significant 2% increase in violent recidivism for males who participated in or completed EET compared to those who did not receive EET. However, for females, there was a significant 8% reduction in any recidivism for females who participated in or completed EET compared to those who did not. Yet, the reduction for violent reoffending was non-significant. These results follow a similar pattern to Miller, Fumia, and He (2015) with regard to the increase in any and violent felony recidivism. However, Miller and colleagues (2015) assessed the impact of EET on reducing misdemeanors only and included misdemeanors in the total recidivism count. The significant reductions in total recidivism were likely driven by the inclusion of misdemeanors. Miller and colleagues' (2015) findings indicate that EET is a good program for addressing youth with misdemeanors and may not be suited for felony offenses.

Table 13. Class Recidivism for Males and Females for EET

	Males			Females		
	Comparison %	Participants %	OR	Comparison %	Participants %	OR
Class 1						
Any	31.5	41.8	**1.53*** **	32.1	25.0	**0.67†**
Violent	10.4	20.9	**2.22*** **	7.5	0.0	N/A
Class 2						
Any	47.0	45.8	0.97	35.8	44.1	**1.44****
Violent	24.7	29.2	1.24	7.2	8.8	1.40
Class 3						
Any	51.1	52.8	1.03	52.8	30.0	**0.37*** **
Violent	23.2	30.2	**1.38*** **	0.3	6.7	N/A
Class 4						
Any	57.4	57.1	0.97	31.2	23.8	**0.70*** **
Violent	35.5	32.1	0.85	12.9	9.5	**0.58†**
Class 5						
Any	56.2	66.7	**1.56*** **	31.6	12.5	**0.29*** **
Violent	23.1	6.7	**0.21*** **	6.1	12.5	**1.43****

Note: †p<0.10, *p<0.05, **p<0.01, ***p<0.001.

EET programming is recommended for female classes 1 ([HRCTN] OR = 0.67), 3 ([HRPN] OR = 0.37), 4 ([HRSUHD] OR = 0.70), and 5 ([HRDN] OR = 0.29) in order to reduce any recidivism. These female classes, especially class 5 (HRDN), indicated a moderate to high need for educational services. However, increases in any recidivism were found for class 2 ([LN-LR] OR = 1.44) as well as higher violent recidivism odds for class 5 ([HRDN] OR = 1.43). The effect for class 2 (LN-LR) may be due to these youth presenting as low risk and low need, and they may be exposed to higher risk peers while participating in programming. Additionally, while no significant reductions were found for males, apart for class 5 (HREDN) violent recidivism (OR = 0.21), results did indicate a slight reduction in any recidivism for the male class 2 (MREN). This is probably due to this class indicating a relatively high need for education compared to other indicated needs for this class as well as the other male classes. It should be noted that this program operates in only one county, which contributed to a small sample size. Therefore, the results should be taken with a note of caution.

Functional Family Therapy (FFT)

Table 14 portrays the results for FFT. Overall, FFT demonstrated a 9% increase on any recidivism for males (OR = 1.41) and a 10% increase in violent reoffending (OR = 1.80). Additionally, FFT produced a 4% decrease in any recidivism for females but did not have a significant impact on violent reoffending for females. Only one male class (5 [HREDN]) experienced reductions in any (OR = 0.59) and violent (OR = 0.77) recidivism. Otherwise, class 2 (MREN) evidenced an increase in any recidivism (OR = 1.84), while both classes 3 ([MRSU] OR = 3.18) and 4 ([HRCTN] OR = 1.40) yielded increases in violent reoffending. Findings for females were also inconsistent. While female classes 2 (LN-LR) and 5 (HRDN) demonstrated reduced odds of any (OR = 0.23 and OR = 0.55, respectively) and violent (OR = 0.19 and OR = 0.29, respectively) recidivism, class 1 (HRCTN) yielded increases in any (OR = 3.11) and violent (OR = 3.02) reoffending. Class 3 (HRPN) also demonstrated higher odds of violent recidivism (OR = 3.83).

Table 14. Class Recidivism for Males and Females for FFT

	Males			Females		
	Comparison %	Participants %	OR	Comparison %	Participants %	OR
Class 1						
Any	49.2	47.2	0.92	22.7	47.5	**3.11*** **
Violent	0.1	19.4	N/A	9.5	23.8	**3.02*** **
Class 2						
Any	40.5	55.7	**1.84*** **	72.5	37.6	**0.23*** **
Violent	0.1	27.4	N/A	41.5	11.9	**0.19*** **
Class 3						
Any	58.1	55.0	0.88	46.4	46.8	1.02
Violent	8.4	22.5	**3.18*** **	5.1	17.0	**3.83*** **
Class 4						
Any	58.1	58.5	1.02	51.6	46.4	0.82
Violent	21.8	28.0	**1.40*** **	13.3	14.8	1.13
Class 5						
Any	72.7	61.2	**0.59*** **	54.8	40.3	**0.55*** **
Violent	31.5	26.2	**0.77***	30.8	11.6	**0.29*** **

Note: †p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Generally, FFT had inconsistent effects for the male and female classes, with increased any recidivism odds for male class 2 (MREN) and female class 1 (HRCTN). Greater violent recidivism odds were found for male classes 3 (MRSU) and 4 (HRCTN) in addition to female classes 1 (HRCTN) and 3 (HRPN). Yet, reduced any and violent recidivism odds were found for male class 5 (HREDN) and female classes 2 (LN-LR) and 5 (HRDN). These results are surprising given that several female classes indicated moderate-to-high level of need regarding family-related issues. In fact, class 2 (LN-LR) was the only class were family was a low need. Yet, this class evidenced reduced recidivism odds following FFT programming perhaps because they were already low risk and need. Barnoski (2004) found a roughly 3% reduction in any felony recidivism; however, this reduction was not statistically significant. Peterson's (2017b) findings were similar to Barnoski's. These findings, including Barnoski (2004) and Peterson (2017b), are surprising given the decades of research demonstrating FFT's effectiveness in reducing recidivism (Alexander & Parsons, 1973; Klein, Alexander, & Parsons, 1977; Barton, et. al., 1985, Gordon, et. al., 1988; Gordon & Arbuthwat, 1995; Hansson, 1998). Those who completed FFT experienced anywhere from a 25-60% reduction in recidivism relative to those who did not complete FFT or completed either other treatment programming or traditional practices.

Family Integrated Transitions – Multi-Systemic Therapy (FIT/MST)

As depicted in Table 15, FIT/MST also yielded inconsistent results. Overall, participation in FIT/MST resulted in a 13% increase in any recidivism (OR = 1.72) and a 4% increase in violent reoffending (OR = 1.20). FIT/MST increased any (OR = 5.74) and violent (OR = 2.32) recidivism for the male and female combined class 1 (LR-LN and HRCTN), any (OR = 5.24) and violent (OR = 2.32) reoffending for class 2 (MREN and LN-LR, respectively), and any (OR = 2.18) and violent (OR = 6.61) recidivism for class 5 (HREDN and HRDN, respectively). FIT/MST should likely not be used with male classes 1 (LR-LN) and 2 (MREN) or female class 2 (LN-LR) due to the intensive nature of FIT/MST and the relatively low and lower-moderate risk of these classes.

Table 15. Class Recidivism for Males and Females for FIT/MST

Gender-Combined			
	Comparison %	Participants %	OR
Class 1			
Any	30.6	72.1	**5.74*** **
Violent	13.9	27.9	**2.32** **
Class 2			
Any	20.7	57.5	**5.24*** **
Violent	15.7	29.9	**2.32*** **
Class 3			
Any	52.8	53.9	1.05
Violent	29.4	21.8	**0.68***
Class 4			
Any	55.6	57.5	1.08
Violent	45.0	29.9	**0.52*** **
Class 5			
Any	44.3	63.3	**2.18*** **
Violent	5.6	26.6	**6.61*** **

Note: †p<0.10, *p<0.05, **p<0.01, ***p<0.001.

However, this program is recommended for male and female classes 3 (MRSU and HRPN, respectively) and 4 (HRCTN and HRSUHD, respectively) to reduce violent recidivism. All of these classes involve a type of moderate or high need, with male class 3 (MRSU) focusing on substance use, male class 4 (HRCTN) targeting mental health and skills needs, female class 3 (HRPN) focusing on skills and family, and female class 4 (HRSUHD) indicating an alcohol and drug use need. FIT/MST involves a focus on multiple aspects of a youth's life, such as family, mental health issues, substance use, peers, and so on. Such programming may be particularly beneficial for these classes, as class 3 experienced 32% reduced odds of violent recidivism (OR = 0.68), and class 4 evidenced 48% lowered odds of violent reoffending (OR = 0.52). The reductions in violent recidivism follow similar findings articulated by WSIPP (2012; 2018). Furthermore, despite results not being significant, Mayfield's (2011) evaluation of the Washington State MST program found similar reductions in recidivism.

Coordination of Services (COS)

The COS program yielded a 7% reduction in any recidivism (OR = 0.68) but no appreciable reduction in violent recidivism for males or females overall. As shown in Table 16, there were few significant effects for class-specific analyses. However, class 1 demonstrated increased odds of violent reoffending (OR = 2.55), and class 2 resulted in decreased odds of any recidivism (OR = 0.56). These results are similar to what Fumia, Drake, and He (2015) found in their evaluation of the Washington State COS program. This result held true when examining the impact of COS on recidivism for specific classes as well. However, it should be noted that COS programming did not serve many clients relative to other programs. The small number of clients served, especially when examining class-specific effects, makes it difficult to estimate the true impact of COS on recidivism.

Table 16. Class Recidivism for Total Sample for COS

Gender-Combined			
	Comparison %	Participants %	OR
Class 1			
Any	29.1	27.3	0.89
Violent	5.4	12.7	**2.55***
Class 2			
Any	28.0	17.2	**0.56†**
Violent	3.8	0.0	N/A
Class 3			
Any	29.7	21.1	0.62
Violent	1.4	5.3	N/A
Class 4			
Any	32.2	27.3	0.75
Violent	18.9	9.1	0.40
Class 5			
Any	15.1	0.0	N/A
Violent	12.0	0.0	N/A

Note: †p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Generally, COS had no impact on most of the male and female combined classes but resulted in increased violent reoffending for class 1 (LR-LN and HRCTN, respectively) and reduced any recidivism for class 2 (MREN and LN-LR, respectively). These results may be driven, in part, by the nature of the female class 1 (HRCTN), which is comprised of higher risk youth with complex needs. Such youth likely require more intensive treatment despite the male class 1 (LR-LN) being low risk and low need. However, the female class 2 (LN-LR) is a low risk and low need group in addition to the male class 2 (MREN) consisting of moderate risk males with an education need. It is possible such programming is sufficient for these two classes.

Mental Health Treatment

Tables 17 and 18 display the results for the mental health programming evaluation. The different types of mental health programs did not yield any appreciable reductions in either any or violent recidivism for either males or females overall. Conversely, inpatient treatment evidenced greater any and violent reoffending for both males (OR = 1.29 and 1.26, respectively) and females (OR = 1.22 and 1.44, respectively). Similarly, outpatient treatment resulted in increased any and violent recidivism for male (OR = 1.46 and 1.44, respectively) and female (OR = 1.39 and 1.25, respectively) youth. Medicinal treatment also contributed to greater odds of any and violent recidivism for males (OR = 1.30 and 1.31, respectively) and females (OR = 1.27 and 1.16, respectively). Lastly, 'any' mental health treatment yielded in higher odds of any and violent reoffending for both male (OR = 1.46 and 1.44, respectively) and female (OR = 1.38 and 1.25, respectively) youth.

However, these findings were not all statistically significant when examining individual male and female classes. Males in classes 1 ([LR-LN] OR = 1.22), 2 ([MREN] OR = 1.53), 3([MRSU] OR = 1.25), and 4 ([HRCTN] OR = 1.36) who engaged in mental health inpatient treatment displayed higher recidivism odds, but findings were non-significant for class 5 (HREDN). Additionally, males in classes 1 ([LR-LN] OR = 1.69), 2 ([MREN] OR = 1.23), and 4 ([HRCTN] OR = 1.32) who participated in mental health treatment also demonstrated greater violent reoffending odds. Results were, again, not significant for class 5 (HREDN). Moreover, all male classes evidenced greater any (OR = 1.20 to 1.65) and violent (OR = 1.30 to 1.47) reoffending for mental health outpatient treatment, except for class 2 (MREN) violent reoffending, which was non-significant. For mental health medications, only class 1 ([LR-LN] OR = 1.29), class 3 ([MRSU] OR = 1.36), and class 4 ([HRCTN] OR = 1.34) showed greater any recidivism odds as all was violent reoffending (OR = 1.21, 1.32, and 1.30, respectively). Much like with 'any' mental health treatment, higher any (OR = 1.21 to 1.67) and violent (OR = 1.31 to 1.48) recidivism were evidenced for all classes, with the exception of violent reoffending for class 2 (MREN).

For females, only classes 1 (HRCTN) and 3 (HRPN) possessed higher recidivism odds for any (OR = 1.47 and 1.48, respectively) and violent (OR = 1.83 and 1.85, respectively) for inpatient treatment. However, all female classes demonstrated greater any recidivism odds for outpatient treatment (OR = 1.23 to 1.66), while only classes 2 ([LN-LR] OR = 1.40) and 5 ([HRDN] OR = 1.81) displayed greater violent reoffending odds. Additionally, classes 1 ([HRCTN] OR = 1.25), 3 ([MRSU] OR = 1.47), and 4 ([HRCTN] OR = 1.38) demonstrated greater any recidivism odds for medicinal treatment. Yet, only class 3 (HRPN) displayed marginally increased violent reoffending odds (OR = 1.22). Finally, all female classes possessed greater any recidivism odds if they received 'any' mental health treatment (OR = 1.23 to 1.65), while only class 2 ([LN-LR] OR = 1.40) and 5 ([HRDN] OR = 1.81) showed greater violent reoffending odds.

Generally, mental health programming produced an iatrogenic effect across all classes and program types, particularly for male youth, who demonstrated more statistically significant results across the various programs. This effect may have been stronger for male youth because they had a larger sample size. Overall, it is surprising that mental health programming had adverse effects on these groups, particularly male class 4 (HRCTN) and female classes 1 (HRCTN), 4 (HRSUHD), and 5 (HRDN) given their indicated need for mental health services. However, it may be that the mental health needs correspond with other needs rather than solely being a mental health need, such as having a substance use need or other complex needs. Such individuals may require multiple programs to address various needs, which is not always possible given resource or time restraints. These findings could also be due to the relatively small number of individuals participating in or completing mental health programming and the overall low recidivism rate, especially when further examining the individual classes.

Table 17. Class Recidivism for Males in Mental Health Treatment Programs

	Inpatient			Outpatient			Medication			Any		
	Comparison %	Participants %	OR	Comparison %	Participants %	OR	Comparison %	Participants %	OR	Comparison %	Participants %	OR
Class 1												
Any	43.4	48.1	**1.22****	38.9	46.0	**1.34*****	39.4	45.5	**1.29*****	38.9	46.0	**1.34*****
Violent	16.1	24.4	**1.69*****	13.7	17.1	**1.30****	13.9	16.3	**1.21†**	13.7	17.2	**1.31****
Class 2												
Any	55.6	65.4	**1.53*****	57.7	62.2	**1.20†**	60.7	61.6	1.04	57.7	62.2	**1.21†**
Violent	25.1	29.6	**1.23†**	25.1	25.3	1.01	25.2	26.0	1.04	25.0	25.4	1.02
Class 3												
Any	59.0	64.3	**1.25****	51.8	64.0	**1.65*****	54.7	62.2	**1.36*****	51.7	64.2	**1.67*****
Violent	23.6	23.4	0.98	18.3	24.8	**1.47*****	19.6	24.4	**1.32****	18.3	24.8	**1.48*****
Class 4												
Any	59.2	66.2	**1.36*****	53.6	61.8	**1.40*****	55.4	62.4	**1.34*****	53.4	61.8	**1.41*****
Violent	32.8	39.1	**1.32*****	25.5	31.3	**1.33*****	26.1	31.5	**1.30*****	25.3	31.3	**1.34*****
Class 5												
Any	71.7	70.8	0.97	62.7	72.2	**1.55*****	66.7	69.9	1.16	62.7	72.2	**1.55*****
Violent	31.3	31.3	1.00	25.2	31.7	**1.33*****	27.1	30.0	1.15	25.0	31.7	**1.39****

Note: †p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Table 18. Class Recidivism for Females in Mental Health Treatment Programs

	Inpatient			Outpatient			Medication			Any		
	Comparison %	Participants %	OR	Comparison %	Participants %	OR	Comparison %	Participants %	OR	Comparison %	Participants %	OR
Class 1												
Any	43.4	53.0	**1.47****	42.2	47.3	**1.23†**	41.3	46.8	**1.25†**	42.1	47.3	**1.23†**
Violent	22.9	35.5	**1.83*****	21.1	24.9	1.24	20.2	24.9	**1.31†**	21.0	24.9	1.24
Class 2												
Any	41.6	41.1	0.99	35.0	41.0	**1.29****	37.8	40.3	1.11	35.0	41.0	**1.29****
Violent	15.5	17.7	1.16	10.2	13.8	**1.40***	11.7	13.1	1.14	10.3	13.8	**1.40***
Class 3												
Any	45.6	55.7	**1.48*****	45.3	52.1	**1.31****	42.5	52.0	**1.47*****	45.5	52.0	**1.30****
Violent	15.5	25.7	**1.85*****	17.3	18.2	1.07	14.8	17.5	**1.22†**	17.4	18.2	1.06
Class 4												
Any	48.2	51.1	1.12	39.8	52.3	**1.66*****	42.8	50.8	**1.38****	39.9	52.3	**1.65*****
Violent	18.5	19.9	1.10	15.4	17.9	1.19	16.8	17.2	1.02	15.5	17.9	1.19
Class 5												
Any	45.5	45.7	1.01	35.4	45.3	**1.51****	41.2	43.5	1.10	35.5	45.3	**1.50****
Violent	15.5	16.0	1.05	7.4	12.7	**1.81****	10.4	11.4	1.11	7.4	12.7	**1.81****

Note: †p<0.10, *p<0.05, **p<0.01, ***p<0.001

Substance Abuse Treatment

Overall, for substance abuse treatment, participation resulted in significantly greater any recidivism for both males (OR = 1.13 to 1.67) and females (OR = 1.17 to 1.89) across the treatment types. The same held for violent reoffending for males (OR = 1.20 to 1.36) and females (OR = 1.19 to 1.52) with two exceptions. First, there was a non-significant relationship between medication-assisted treatment (MAT) and violent recidivism for female youth. Second, participation in MAT resulted in *decreased* odds of violent reoffending for male youth (OR = 0.93).

As seen in Tables 19 and 20, only MAT demonstrated reductions in violent recidivism at the class level for male class 5 ([HREDN] OR = 0.75) and female classes 1 ([HRCTN] OR = 0.47) and 5 ([HRDN] OR = 0.57). Both male class 5 (HREDN) and female class 5 (HRDN) are indicated to have a substance abuse need. Although female class 1 (HRCTN) does not specifically indicate a substance use need, it is a class found to have complex treatment needs. Yet, it is surprising to see that substance abuse treatment did not yield reductions in any recidivism for female classes 1 (HRCTN) and 4 (HRPN), with the exception of MAT, given their moderate to high need for substance abuse treatment. *Generally, substance abuse programming exhibited an iatrogenic effect for both male and female youth, with the exception substance abuse medicinal treatment and its effect on violent recidivism for male (HREDN) and female (HRDN) class 5, which both indicated a substance abuse need.* It should be noted that the impact of substance abuse treatment on drug recidivism was not examined. Therefore, the true effects of substance abuse treatment have yet to be discovered.

Table 19. Class Recidivism for Males in Substance Abuse Treatment Programs

	Inpatient			Outpatient			In/Outpatient			Medication			Any		
	Comparison %	Participants %	OR	Comparison %	Participants %	OR	Comparison %	Participants %	OR	Comparison %	Participants %	OR	Comparison %	Participants %	OR
Class 1															
Any	45.7	57.4	**1.60*** **	42.0	56.0	**1.76*** **	45.5	59.2	**1.74*** **	47.4	51.9	**1.21** **	42.1	55.4	**1.71*** **
Violent	15.0	19.5	**1.39*** **	14.9	18.3	**1.28** **	15.1	19.00	**1.33** **	13.8	14.2	1.00	14.5	18.4	**1.32** **
Class 2															
Any	58.4	65.5	**1.36** **	56.3	66.7	**1.55*** **	57.6	68.3	**1.59*** **	61.1	57.3	0.84	58.4	65.0	**1.32** *
Violent	21.0	24.0	1.18	19.2	26.7	**1.53*** **	20.9	25.6	**1.29** *	21.9	19.1	0.85	19.9	25.8	**1.40** **
Class 3															
Any	55.0	68.3	**1.77*** **	50.0	64.4	**1.81*** **	55.3	70.4	**1.92*** **	56.1	59.3	**1.15†**	49.1	63.5	**1.80*** **
Violent	20.3	23.4	**1.20** *	17.3	23.7	**1.48*** **	20.8	23.8	**1.18†**	19.3	17.4	0.88	16.3	23.3	**1.56*** **
Class 4															
Any	58.5	71.6	**1.77*** **	57.8	68.4	**1.58*** **	59.3	72.5	**1.80*** **	61.2	66.0	**1.22*** **	56.8	68.2	**1.63*** **
Violent	27.8	30.0	1.11	27.2	30.9	**1.20** **	27.7	29.4	1.08	24.8	26.4	1.09	27.0	31.0	**1.22** **
Class 5															
Any	66.8	73.5	**1.37** **	64.1	72.6	**1.48*** **	66.4	73.8	**1.42** **	65.9	72.8	**1.40** **	61.6	72.5	**1.64*** **
Violent	29.3	27.4	0.91	28.4	28.2	0.99	28.6	27.1	0.92	26.4	21.4	**0.75** *	28.3	28.2	1.00

Note: †p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Table 20. Class Recidivism for Females in Substance Abuse Treatment Programs

	Inpatient			Outpatient			In/Outpatient			Medication			Any		
	Comparison %	Participants %	OR	Comparison %	Participants %	OR	Comparison %	Participants %	OR	Comparison %	Participants %	OR	Comparison %	Participants %	OR
Class 1															
Any	45.5	55.4	**1.48*** **	40.0	54.2	**1.78*** **	46.2	55.2	**1.43** **	47.0	50.7	1.16	41.0	54.2	**1.70*** **
Violent	22.0	22.6	1.04	19.2	23.5	**1.30†**	20.4	21.8	1.09	18.6	10.1	**0.47*** **	21.4	23.5	1.13
Class 2															
Any	39.5	50.7	**1.57*** **	32.2	48.6	**1.99*** **	39.6	52.6	**1.70*** **	40.4	49.3	**1.44*** **	31.5	47.7	**1.98*** **
Violent	11.8	14.1	1.24	8.8	14.5	**1.77*** **	11.6	14.9	**1.32***	10.1	16.2	**1.69*** **	8.3	14.2	**1.84*** **
Class 3															
Any	47.4	60.5	**1.70*** **	43.0	59.1	**1.91*** **	47.8	62.3	**1.80*** **	48.2	50.9	1.11	40.7	57.9	**2.00*** **
Violent	13.7	18.9	**1.47** **	13.6	19.7	**1.55*** **	14.9	19.3	**1.36** **	13.9	16.2	1.21	11.4	19.2	**1.86*** **
Class 4															
Any	49.2	54.4	**1.23***	37.1	54.9	**2.06*** **	47.8	56.4	**1.41*** **	48.5	53.5	**1.22***	37.1	53.7	**1.97*** **
Violent	14.9	17.2	1.19	12.3	18.3	**1.60*** **	15.3	17.5	1.18	12.5	14.4	1.17	10.9	17.8	**1.79*** **
Class 5															
Any	42.0	52.9	**1.56*** **	42.5	48.7	**1.29***	44.0	52.8	**1.43** **	44.0	40.7	0.88	36.5	49.0	**1.67*** **
Violent	11.7	10.9	0.93	12.5	10.8	0.85	12.2	10.9	0.89	10.3	6.2	**0.57***	12.4	10.7	0.84

Note: +p<0.10, *p<0.05, **p<0.01, ***p<0.001.

DISCUSSION

Overall, there were mixed results for most programs. Despite this, there were several positive findings. Regarding baseline programming effectiveness, reductions in any recidivism were found for female youth who engaged in EET and FFT as well as males and females who participated in COS. Upon further examination, it can be seen that males and females experienced different outcomes for each program. For example, EET only produced decreases in any recidivism for female classes 1 (HRCTN), 3 (HRPN), 4 (HRSUHD), and 5 (HRDN) while other programs (i.e., substance abuse MAT) resulted in decreased violent recidivism for both male and female class 5 (HREDN and HRDN, respectively). One critical aspect that this research adds to the understanding of youth treatment programming is gender responsivity. There are relatively few studies addressing the responsiveness of these programs and comparing their impact on recidivism for both males and females.

Moreover, findings varied depending on the responsivity approach taken – continuum or typology. As an example, while substance abuse inpatient treatment was found to reduce any recidivism for high risk, high need, or high-risk youth in the continuum approach, no such finding was evidenced in the typology approach. Instead, substance abuse inpatient treatment was generally associated with increased any recidivism, for both males and females, in the typology approach. These results could be due to the greater specificity provided by the typology approach identifying specific risks and needs (i.e., substance abuse) rather than just any high risk or high need, as was done in the continuum method. .

Furthermore, the following results were significant for the typology approach but not necessarily the continuum method. Overall, the class-specific typology approach demonstrated statistically significant reductions in recidivism for program participants of EET (one male class, four female classes), FFT (one male class, four female classes), FIT/MST (two gender-combined classes), COS (one gender-combined class), and substance abuse MAT (one male class, two female classes). Several non-significant, but promising, findings were also evidenced, including: ART (one male class, two female classes), EET (two male classes), FFT (two male classes, one female class), COS (three gender-combined classes), mental health inpatient treatment (two male classes, one female class), substance abuse inpatient (one male class) and outpatient (one male) programming, combined substance abuse inpatient and outpatient treatment (one male class), substance abuse MAT (two male classes, one female class). These substance abuse programming findings, although not significant, for both the male and female class 5 typologies (HREDN and HRDN, respectively) are notable. Both of the male and female class 5 groups present as higher risk with diverse needs, and substance abuse is one of those primary needs. *Generally*, the typology approach yielded interesting youth type-program matches, demonstrating positive results for some programs as well as potential sources of information to refine eligibility criteria for programming, based on dynamic needs, to improve case management and youth outcomes. It is critical to note that these results are preliminary, and given a larger sample size, may show to generate significant results in the future. Stated otherwise, findings hold promise for the case management utility of the typology approach and provision of substance abuse programming in reducing violent recidivism specifically.

Overall, these findings again highlight the complexity of identifying responsivity and researching it. Any given approach taken should follow from an agency's intended goal and outcome. For instance, the continuum approach focused on differences between high risk, high need, and high risk and need youth. Such an approach is consistent with the RNR model, yet neglects low risk and deprioritizes moderate risk youth needs. Yet, the typology approach makes up for this deficiency by identifying classes of youth based on their respective characteristics (low, moderate, and high risks and/or needs). The implication here is that an agency should first identify which approach may better suit them. If, for instance, an agency primarily interacts with high-risk and/or high need youth, then the continuum approach may be sufficient and is, arguably, less complex then trying to identify various typologies. Yet, the typological approach, as mentioned, provides a

greater wealth of information for case management purposes that could be more valuable to an agency. Regardless of the approach, the agency should be directed to tailor their programs' eligibility criteria to fit with the youth with the greatest need for the program targets. Without this clear direction, programs take on a one-size-fits-all approach that, as shown here, muddy impact findings and may be detrimental to program effectiveness.

Furthermore, regarding typologies as a means of treatment responsivity, there were mixed findings about the application of typologies in treatment matching to improve responsivity. For example, EET did yield reductions in any recidivism for all females, especially those that indicated a moderate to high need for educational services. Similar, but non-significant, results were found male class 2, which also indicated a high need for educational services. Additionally, FIT/MST produced a reduction in violent recidivism for the gender-combined classes 3 and 4. These classes indicated a need for substance abuse, mental health, family, attitude/behavior, beliefs, and skills. However, not all types matched to the appropriate treatment experienced positive outcomes. For example, female classes 4 and 5 indicated a need for substance abuse services but members of those classes did not experience a reduction in any recidivism after participating in or completing substance abuse treatment. On the contrary, they demonstrated increased odds of any recidivism. Future research is needed to determine if either approach, or both, can be used to improve treatment responsivity.

While the positive findings are notable, it is also important to mention that many programs appeared to have an iatrogenic effect for both males and females. These findings are surprising, given some of the past research on certain programs, such as FFT (Alexander & Parsons, 1973; Klein, Alexander, & Parsons, 1977; Barton, et. al., 1985, Gordon, et. al., 1988; Gordon & Arbuthwat, 1995; Hansson, 1998). Additionally, both mental health and substance abuse treatment, overall, yielded the most negative impact on participants' any and violent recidivism. These iatrogenic may suggest that either these programs are not effective in reducing reoffending or that we were unable to sufficiently match and balance comparison group subjects to treatment group participants based on PACT items. We also did not consider co-occurring substance abuse and mental health issues. Regardless, these findings indicate an immediate need for continued research. The limitations listed in the next section may help to explain some of these unexpected findings. Additionally, responsivity is still a very much unexplored topic in the juvenile justice system, and continued research is required.

Limitations

There are several potential limitations that could be influencing our findings. First, and as mentioned, we did not assess the programs' impact on recidivism for each individual court. Instead, results were reported in the aggregate. This is a concern, as resources may not be distributed equitably across the state, and certain counties (i.e., King County) are much large than others, which may have impacted the findings. Second, and related to the first point, we did not examine program fidelity for either individual courts or at the aggregate level. While these programs contain a standardized set of operations, there could be jurisdictional differences in program implementation. Program fidelity is a critical aspect for programs to achieve their desired results and is considered an evidence-based practice (Andrews & Bonta, 2010). Programs with higher levels of fidelity and closer adherence to the program's operational standards, experience better outcomes such as higher levels of recidivism reduction. Third, we did not assess the impact of the youth participating in or completing multiple treatment programs. Additionally, we did not assess the sequencing of programs. Youth can enter the justice system with an array of needs which requires multiple programs to address said needs. A single program is not necessarily designed to address the potential combination of needs youth may indicate during their risk and needs intake assessment. Future research will need to examine each jurisdiction to determine which jurisdictions are driving these results.

Fourth, there could be a setting effect. While these programs have been adapted for use beyond the clinical setting, such as in schools, at home, or in juvenile probation, these programs were initially developed

for the clinical setting to be delivered by clinical staff. Future research needs to examine what characteristics of the program or about the youth that led to these reductions. This could provide insight on how to modify the program to better address felony recidivism.

Finally, we did not examine key youth, family, and environmental factors, such as youth or family motivation to engage in programming, readiness for change, family, peer or other outside support, and/or impact of probation officer engagement/supervision style (e.g., probation officer as law enforcer, social worker, and/or case manager). None of these factors is represented in the PACT; accordingly, we were not able to measure them with the current data. However, future research could seek to gain this information to provide more context to the findings.

CONCLUSION

The current report is a departure from research typically conducted on risk and needs assessment in the juvenile justice system. Instead, we focused our efforts on analyzing responsivity in terms of program effectiveness for high risk, high need, and high risk/high need groups as well as gender-specific typologies created from WAJCA's juvenile probation population. This work is pioneering; as little research has been completed regarding creation of a responsivity assessment for justice-involved youth. This is in part due to the bulk of RNR research focusing on the Risk and Need principles as well as the nebulous nature of the Responsivity principle. We attempted to more fully identity youths' responsivity to several programs via triangulation, insofar that we utilized two approaches – a responsivity continuum and responsivity typologies – to identify program effectiveness. This work also contributes to the field more fully in that it includes gender-specific analyses to better identify responsivity differences between males and female as well as informing case management.

While the WAJCA data and programming menu was an ideal fit for this study, the analyses did not provide the expected guidelines for eligibility criteria anticipated. Overall, our findings indicate that the programs had an inconsistent effect regarding any and violent recidivism, gender differences, and methodological approaches (continuum vs. typology). While some findings were anticipated such as the positive impact of FIT/MST participation for gender-combined classes 3 and 4, which indicated moderate-to-high risk and presented with a multitude of needs (i.e., substance use, family, skills, attitudes/behavior, mental health), many findings were unexpected. An example includes the apparent iatrogenic effect of mental health treatment for both males and females. It is evident that more research needs to be completed to better clarify these patterns of results. In particular, general responsivity of the programs should be established, reassessing the program content and the target population for each. While somewhat unsettling, it is important that further research conclude that CMAP programs are being utilized as directed and providing at least a modest reduction in recidivism.

With that said, we advocate that the results be used to continue treatment where appropriate in cases where treatment needs matched treatment effectiveness. We also suggest that programs that showed to be ineffective be re-evaluated for potential explanations regarding why youth participants demonstrated increased recidivism rates. This report lays the groundwork for continued analysis of these programs and potentially improved utility of a responsivity assessment for case management purposes. As a final recommendation, we suggest that a Subject Matter Expert (SME) team be developed to look at these issues in greater detail, potentially redesigning program content, consistency of delivery, and refining eligibility criteria.

APPENDIX I

Pre-Screen PACT Sample Descriptives

	Total (*n* = 41,555)			Males (*n* = 29,277)			Females (*n* = 12,278)		
Item	%	*Mean*	*SD*	%	*Mean*	*SD*	%	*Mean*	*SD*
CRIMINAL HISTORY									
Age at first offense		2.23	1.21		2.24	1.22		2.19	1.18
Over 16	11.7			11.9			11.2		
16	16.8			16.4			17.6		
15	21.2			20.7			22.3		
13 to 14	38.0			37.7			38.8		
Under 13	12.4			13.3			10.1		
Misdemeanor complaints		0.59	0.84		0.60	0.85		0.56	0.80
None or one	61.0			61.0			61.0		
Two	22.1			21.4			23.8		
Three or four	13.9			14.3			13.1		
Five or more	3.0			3.3			2.2		
Felony complaints		0.81	1.31		0.96	1.40		0.47	0.99
None	66.8			61.5			79.6		
One	27.6			31.5			18.1		
Two	3.7			4.5			1.7		
Three or more	1.9			2.5			0.6		
Weapon complaints		0.06	0.23		0.08	0.26		0.02	0.14
None	94.1			92.5			98.1		
One or more	5.9			7.5			1.9		
Against-person misdemeanor complaints		0.40	0.63		0.38	0.62		0.45	0.65
None	67.5			69.1			63.8		
One	24.9			23.7			27.7		
Two or more	7.6			7.2			8.5		
Against-person felony complaints		0.25	0.68		0.30	0.73		0.15	0.53
None	87.7			85.5			92.9		
One or two	12.0			14.1			7.0		
Three or more	0.3			0.4			0.1		
Number of times served at least 24hrs in detention		0.53	0.85		0.57	0.87		0.45	0.79
None	64.4			62.3			69.3		
One	24.1			25.4			21.0		
Two	5.6			5.8			5.1		
Three or more	6.0			6.5			4.6		
Number of times served at least 24hrs confined under JRA		0.10	0.51		0.11	0.55		0.05	0.37
None	96.1			95.4			97.9		
One	2.9			3.5			1.7		
Two or more	0.9			1.1			0.4		
Escapes		0.01	0.10		0.01	0.11		0.01	0.09
None	99.2			99.2			99.4		
One	0.7			0.7			0.6		
Two or more	0.1			0.1			0.1		
Failure to appear in court warrants		0.23	0.58		0.23	0.57		0.25	0.59
None	84.1			84.5			83.2		
One	8.3			8.1			8.7		
Two or more	7.6			7.4			8.0		
SCHOOL									
School scoring		0.64	0.88		0.64	0.88		0.62	0.88
None of the following	63.5			63.0			64.7		
Enrolled: Problems reported by teachers or calls to parents, or some full-day unexcused absences, or mostly Cs and Ds, some Fs	9.5			9.7			8.8		
Enrolled: Calls to police, or truancy petition or equivalent, or some Ds and mostly Fs OR dropped out, expelled or suspended	27.1			27.3			26.5		
CURRENT FRIENDS/COMPANIONS									
Friends/companions scoring		1.00	0.84		1.02	0.87		0.94	0.79
Has pro-social friends, no anti-social friends	27.7			27.3			28.6		
Has no friends, or pro-social and anti-social friends	53.4			53.0			54.3		
Has all anti-social friends	10.7			10.5			11.4		
Is a gang member/associate	8.2			9.3			5.7		
HISTORY OF COURT-ORDERED OR DSHS VOLUNTARY OUT-OF-HOME & SHELTER CARE PLACEMENTS EXCEEDING 30 DAYS									
History of court-ordered placements scoring		0.15	0.35		0.13	0.34		0.17	0.38
None	85.5			86.7			82.6		
One, two or three/more	14.5			13.3			17.4		

HISTORY OF RUNAWAYS OR TIMES KICKED OUT OF HOME									
History of runaway scoring		0.55	0.84		0.49	0.80		0.71	0.90
No history	67.6			71.1			59.1		
One instance	9.5			9.1			10.6		
Two or more instances	22.9			19.8			30.2		
JAIL/IMPRISONMENT HISTORY									
Jail/imprisonment scoring		0.43	0.49		0.42	0.49		0.46	0.50
No sibling(s), mother, father jail/imprisonment	57.2			58.4			54.5		
Sibling(s), mother or father jail/imprisonment	42.8			41.6			45.5		
CURRENT PARENTAL AUTHORITY & CONTROL									
Parental authority and control scoring		1.14	0.99		1.13	0.99		1.17	0.99
Usually obeys	43.0			43.7			41.5		
Sometimes obeys	40.6			40.4			40.9		
Disobeys	16.4			15.9			17.6		
ALCOHOL & DRUG USE									
Alcohol & drug use scoring		0.57	0.90		0.59	0.91		0.53	0.88
Current alcohol/drugs not causing family conflict, disrupting education, causing health problems, interfering with keeping pro-social friends or contributing to criminal behavior	71.3			70.3			73.7		
Current alcohol/drugs causing family conflict, or disrupting education, or causing health problems, or interfering with keeping pro-social friends or contributing to criminal behavior	28.7			29.7			26.3		
HISTORY OF ABUSE									
History of physical abuse scoring		0.23	0.42		0.19	0.39		0.32	0.47
No physical or sexual abuse	77.0			80.8			68.0		
Physical or sexual abuse	23.0			19.2			32.0		
HISTORY OF BEING A VICTIM OF NEGLECT									
History of being a victim of neglect scoring		0.28	0.69		0.26	0.67		0.33	0.74
Not a victim of neglect	86.1			87.1			83.6		
Victim of neglect	13.9			12.9			16.4		
HISTORY OF MENTAL HEALTH PROBLEMS									
History of mental health problems scoring		0.12	0.32		0.10	0.31		0.15	0.35
No history of mental health problem(s)	88.3			89.5			85.5		
Diagnosed with mental health problem(s), only medication prescribed, only treatment prescribed or medication and treatment prescribed	11.7			10.5			14.5		

APPENDIX II

Full PACT Sample Descriptives

	Total (*n* = 50,862)			Males (*n* = 38,100)			Females (*n* = 12,762)		
Item	%	*Mean*	*SD*	%	*Mean*	*SD*	%	*Mean*	*SD*
CRIMINAL HISTORY									
Age at first offense		2.70	1.05		2.71	1.06		2.64	1.01
Over 16	4.2			4.3			3.9		
16	10.5			10.4			10.8		
15	18.5			18.1			19.6		
13 to 14	45.5			44.5			48.4		
Under 13	21.4			22.8			17.4		
Misdemeanor complaints		1.08	1.02		1.08	1.03		1.09	0.97
None or one	37.8			38.7			35.0		
Two	26.0			25.0			29.1		
Three or four	26.2			25.7			27.9		
Five or more	9.9			10.6			8.0		
Felony complaints		1.48	1.69		1.65	1.74		0.96	1.40
None	46.9			41.9			61.6		
One	37.8			40.1			30.8		
Two	10.1			11.7			5.4		
Three or more	5.3			6.3			2.2		
Weapon complaints		0.10	0.30		0.13	0.33		0.04	0.19
None	89.6			87.5			96.1		
One or more	10.4			12.5			3.9		
Against-person misdemeanor complaints		0.59	0.75		0.56	0.74		0.68	0.78
None	56.9			58.8			51.2		
One	27.0			26.2			29.3		
Two or more	16.1			15.0			19.5		
Against-person felony complaints		0.38	0.81		0.42	0.84		0.27	0.71
None	81.4			79.7			86.6		
One or two	18.1			19.8			13.1		
Three or more	0.5			0.5			0.3		
Sexual misconduct misdemeanor complaints		0.02	0.17		0.03	0.18		0.01	0.11
None	97.7			97.5			99.2		
One	1.8			2.2			0.6		
Two or more	0.3			0.3			0.2		
Felony sex offense referrals		0.04	0.20		0.05	0.23		0.01	0.08
None	96.5			95.5			99.4		
One	3.3			4.2			0.5		
Two or more	0.3			0.3			0.0		
Number of times served at least 24hrs in detention		1.41	1.10		1.42	1.10		1.37	1.09
None	23.5			23.1			24.7		
One	36.5			36.4			36.6		
Two	15.6			15.5			16.0		
Three or more	24.4			25.0			22.7		
Number of times served at least 24hrs confined under JRA		0.19	0.71		0.21	0.74		0.14	0.61
None	92.3			91.5			94.6		
One	5.8			6.4			3.9		
Two or more	1.9			2.1			1.5		
Escapes		0.02	0.13		0.02	0.13		0.02	0.14
None	98.5			98.6			98.4		
One	1.4			1.3			1.5		
Two or more	0.1			0.1			0.1		
Failure to appear in court warrants		0.53	0.79		0.51	0.78		0.62	0.83
None	65.8			67.5			60.7		
One	15.1			14.5			16.9		
Two or more	19.1			18.0			22.4		
SCHOOL HISTORY									
Special education need		0.60	0.49		0.56	0.50		0.72	0.45
No need	60.2			56.2			72.1		
Need	39.8			43.8			27.9		
No special education need		-0.60	0.49		-0.56	0.50		-0.72	0.45
Need	39.9			43.9			28.0		
No need	60.1			56.1			72.0		
Learning disability		0.20	0.40		0.22	0.42		0.14	0.34
No	79.9			77.7			86.3		
Yes	20.1			22.3			13.7		
Behavioral problem		0.21	0.40		0.23	0.42		0.14	0.34
No	79.3			77.0			86.3		

Yes	20.7			23.0			13.7		
Mental retardation		0.01	0.08		0.01	0.08		0.00	0.07
No	99.4			99.3			99.5		
Yes	0.6			0.7			0.5		
ADHD		0.15	0.36		0.18	0.38		0.08	0.28
No	84.7			82.4			91.5		
Yes	15.3			17.6			8.5		
History of expulsions and suspensions since the first grade		1.54	0.96		1.61	0.89		1.33	1.11
None	11.2			9.2			17.0		
One	12.6			11.5			16.1		
Two or more	76.2			79.3			66.9		
Age at first expulsion or suspension		1.49	0.96		1.56	0.89		1.28	1.10
None	11.2			9.2			17.0		
14 to 18	18.0			16.8			21.5		
13 or under	70.9			74.0			61.5		
Enrolled in a community school during the last 6 months		-1.51	1.31		-1.52	1.30		-1.47	1.35
Graduated/enrolled	87.7			88.0			86.9		
Not enrolled	12.3			12.0			13.1		
CURRENT SCHOOL STATUS									
Current school enrollment status		-1.18	1.69		-1.15	1.73		-1.27	1.59
Full-time/graduated	72.6			72.2			73.6		
Part-time	13.8			13.5			14.7		
Drop-out, expelled, or suspended	13.6			14.2			11.7		
Youth believes there is value in getting an education		0.43	1.11		0.46	1.10		0.32	1.12
Believes	35.3			33.8			39.9		
Somewhat believes	51.2			52.1			48.3		
Does not believe	13.5			14.1			11.9		
Youth believes school provides an encouraging environment for him or her		0.85	1.07		0.86	1.06		0.83	1.08
Believes	21.9			21.6			23.0		
Somewhat believes	49.2			49.4			48.5		
Does not believe	28.9			29.0			28.5		
School staff youth likes or feels comfortable talking with		-0.59	0.75		-0.59	0.75		-0.60	0.75
Two or more	16.1			16.2			15.9		
One	27.2			26.8			28.5		
None	56.6			57.0			55.6		
Involvement in school activities during most recent term		1.17	1.14		1.15	1.16		1.23	1.11
Involved in two or more	4.0			4.1			3.4		
Involved in one	11.5			11.9			10.6		
Interested but not involved	32.4			32.7			31.5		
Not interested	52.1			51.3			54.5		
Conduct in most recent term		1.04	1.55		1.09	1.55		0.89	1.56
Good behavior	1.6			1.5			1.9		
No problems	30.4			29.4			33.7		
Problems reported by teachers	16.4			16.3			16.6		
Problem calls to parents	33.6			33.6			33.3		
Calls to police	18.1			19.2			14.6		
Number of expulsions & suspensions in most recent term		0.24	1.34		0.30	1.35		0.06	1.29
None	50.2			48.0			56.9		
One	30.6			31.5			27.8		
Two or three	13.8			14.6			11.3		
More than three	5.4			5.9			4.0		
Attendance in most recent term		1.09	1.79		1.01	1.80		1.31	1.77
Good attendance	14.5			15.1			12.7		
No unexcused absences	14.2			15.0			11.9		
Some partial-day absences	18.2			18.8			16.1		
Some full-day absences	25.7			25.8			25.5		
Truant	27.4			25.3			33.8		
Academic performance in most recent term		0.71	1.32		0.74	1.30		0.61	1.38
Mostly As	0.6			0.5			0.8		
Mostly As and Bs	4.8			4.4			6.1		
Mostly Bs and Cs	23.9			23.2			26.1		
Mostly Cs and Ds	35.5			6.5			32.3		
Some Ds and mostly Fs	35.2			35.4			34.7		
Likelihood youth will stay in and graduate from high school or vocational school		0.80	1.01		0.81	1.01		0.75	1.02
Very likely	21.2			20.8			22.5		
Uncertain	56.9			56.6			57.7		
Not likely	21.9			22.7			19.8		
HISTORIC USE OF FREE TIME									
History of pro-social structured recreational activities within past 5yrs		-0.93	0.77		-0.94	0.77		-0.89	0.77
Involved in two or more	26.5			27.0			24.9		
Involved in one	39.8			40.1			38.9		

Never involved	33.7			32.9			36.1		
History of unstructured pro-social recreational activities within past 5yrs		-1.08	0.74		-1.11	0.74		-0.99	0.75
Involved in two or more	31.6			33.0			27.2		
Involved in one	44.5			44.6			44.1		
Never involved	23.9			22.3			28.7		
CURRENT USE OF FREE TIME									
Current interest & involvement supervised, structured pro-social recreational activities		-0.80	0.87		-0.82	0.88		-0.75	0.85
Involved in two or more	4.4			4.7			3.5		
Involved in one	16.8			17.1			16.0		
Interested but not involved	33.1			33.3			32.7		
Not interested	45.6			44.9			47.8		
Types of structured recreational activities in which youth currently participates									
No pro-social activities		0.21	0.41		0.21	0.41		0.19	0.39
None	79.1			78.5			80.8		
One or more	20.9			21.5			19.2		
Current interest & involvement in pro-social unstructured recreational activities		-1.17	1.48		-1.24	1.47		-0.95	1.50
Involved in two or more	19.5			20.7			15.8		
Involved in one	33.0			34.3			29.1		
Interested but not involved	19.9			19.1			22.2		
Not interested	27.7			25.9			33.0		
EMPLOYMENT HISTORY									
History of employment		-0.22	0.42		-0.23	0.42		-0.19	0.40
Has been employed	22.2			23.1			19.4		
Too young or never employed	77.8			76.9			80.6		
History of successful employment		-0.79	0.40		-0.80	0.40		-0.77	0.42
Yes	79.5			80.1			77.4		
No	20.5			19.9			22.6		
History of problems while employed		0.42	0.66		0.39	0.65		0.51	0.71
Never fired/quit	68.2			69.9			61.9		
Fired/quit: Poor performance	22.1			21.1			25.5		
Fired/quit: Didn't get along	9.8			9.0			12.6		
History of positive personal relationship(s) with past employer(s) or adult coworker(s)		-0.89	0.74		-0.90	0.74		-0.88	0.75
Two or more	22.5			22.5			22.8		
One	44.2			44.7			42.5		
None	33.2			32.8			34.7		
CURRENT EMPLOYMENT									
Understanding of what is required to maintain a job		-0.64	0.65		-0.65	0.65		-0.62	0.64
Demonstrated ability	9.5			9.8			8.8		
Has knowledge	44.8			45.0			44.3		
Lacks knowledge	45.6			45.2			46.9		
Current interest in employment		-0.96	0.93		-0.98	0.93		-0.90	0.92
Employed	5.7			5.9			5.1		
Not employed, high interest	23.7			24.1			22.5		
Not employed, some interest	31.4			31.8			30.1		
Not interested or too young	39.2			38.2			42.3		
Current employment status		-0.15	0.51		-0.09	0.30		-0.08	0.29
Employment going well	9.2			9.4			8.5		
Not employed	90.4			90.2			91.0		
Problems with current employment	0.5			0.5			0.5		
Current positive personal relationship(s) with employer(s) or adult coworker(s)		-0.15	0.35		-0.15	0.35		-0.14	0.35
One or more positive relationships	14.5			14.6			14.4		
Not employed or employed, no positive relationships	85.5			85.4			85.6		
HISTORY OF RELATIONSHIPS									
History of positive adult non-family relationships no connected to school or employment		-0.81	0.92		-0.81	0.92		-0.81	0.91
Three or more	7.1			7.2			6.9		
Two	13.1			13.0			13.4		
One	33.4			33.1			34.1		
None	46.5			46.7			45.7		
History of anti-social friends/companions (overall)		1.35	1.02		1.38	1.05		1.32	0.94
Only prosocial	7.2			7.5			6.2		
No friends or mix of antisocial and prosocial friends	61.6			60.5			64.9		
Only antisocial	11.8			11.2			13.8		
Gang member	19.4			20.8			15.1		
Never had consistent friends		0.06	0.24		0.07	0.25		0.05	0.22
No	93.7			93.3			94.8		

Yes	6.3			6.7			5.2		
Only pro-social friends		0.75	0.43		0.74	0.44		0.76	0.43
No	25.2			25.5			24.3		
Yes	74.8			74.5			75.7		
Pro-social and anti-social friends		0.68	0.47		0.67	0.47		0.70	0.46
No	32.4			33.1			30.5		
Yes	67.6			66.9			69.5		
Only anti-social friends		0.86	0.35		0.85	0.35		0.88	0.32
No	14.0			14.7			11.6		
Yes	86.0			85.3			88.4		
Gang member		0.19	0.40		0.21	0.41		0.15	0.36
No	80.6			79.2			84.9		
Yes	19.4			20.8			15.1		
CURRENT RELATIONSHIPS									
Current positive adult non-family relationships not connected to school or employment		-0.73	0.88		-0.72	0.88		-0.73	0.88
Three or more	5.9			6.0			5.9		
Two	11.2			11.1			11.3		
One	32.5			32.3			32.8		
None	50.5			50.6			50.1		
Current pro-social community ties		-0.64	0.56		-0.65	0.56		-0.63	0.56
Strong ties	4.3			4.4			3.8		
Some ties	55.7			55.7			55.5		
None	40.1			39.9			40.7		
Current friends/companions youth spends time with (overall)		1.42	1.07		1.43	1.10		1.38	0.99
Only prosocial	8.3			8.6			7.1		
No friends or mix of antisocial and prosocial	54.3			53.6			56.3		
Only antisocial	16.9			15.6			20.7		
Gang member	20.6			22.1			15.9		
No consistent friends		0.09	0.28		0.09	0.29		0.08	0.27
No	91.3			91.0			92.3		
Yes	8.7			9.0			7.7		
Only pro-social friends		0.64	0.49		0.64	0.48		0.64	0.48
No	35.7			35.6			36.0		
Yes	64.3			64.6			64.0		
Pro-social and anti-social friends		0.56	0.50		0.56	0.50		0.57	0.50
No	44.0			44.3			43.2		
Yes	56.0			55.7			56.8		
Only anti-social friends		0.83	0.38		0.82	0.38		0.85	0.36
No	17.2			17.9			14.8		
Yes	82.8			82.1			85.2		
Is a gang member		0.21	0.40		0.22	0.42		0.16	0.37
No	79.4			77.9			84.1		
Yes	20.6			22.1			15.9		
Currently in a romantic, intimate, or sexual relationship		-0.03	0.56		-0.10	0.51		0.20	0.63
Involved with prosocial person	17.0			18.8			11.9		
Not involved	68.7			72.7			56.5		
Involved with antisocial person	14.3			8.5			31.6		
Currently admires anti-social peers		0.77	1.08		0.76	1.08		0.78	1.07
No	24.1			24.4			23.2		
Somewhat	50.7			50.3			52.0		
Yes	25.2			25.3			24.8		
Current resistance to anti-social peer influence		0.09	1.23		0.07	1.24		0.12	1.20
No association	10.3			10.8			8.6		
Usually resists	33.9			33.7			34.4		
Rarely resists	48.8			48.1			50.7		
Leads antisocial peers	7.1			7.3			6.3		
FAMILY HISTORY									
History of court-ordered or DSHS voluntary out-of-home and shelter care placements exceeding 30 days		-0.37	1.21		-0.44	1.16		-0.18	1.35
None	76.7			79.0			70.0		
One	13.1			12.1			16.1		
Two	4.0			3.6			5.5		
Three or more	6.1			5.3			8.5		
History of running away or getting kicked out of home		1.02	1.97		0.74	1.91		1.83	1.93
No history	43.3			49.3			25.3		
One instance	13.1			13.3			12.6		
Two to three	17.5			16.4			20.7		
Four to five	7.2			6.1			10.5		
Over five	18.9			14.9			30.8		
History of petitions filed		-0.57	0.82		-0.63	0.78		-0.41	0.91
No history	78.7			81.4			70.5		

History	21.3			18.6			29.5		
History of jail/imprisonment of persons involved in the household for at least 3 months (overall)		0.28	0.96		0.24	0.97		0.37	0.93
No history	36.2			37.8			31.3		
History	63.8			62.2			68.7		
No family imprisonment		0.36	0.48		0.38	0.49		0.32	0.46
History	63.7			62.1			68.5		
No history	36.3			37.9			31.5		
Mother/female caretaker		0.31	0.46		0.29	0.45		0.38	0.49
No	68.7			71.1			61.8		
Yes	31.3			28.9			38.2		
Father/male caretaker		0.43	0.50		0.43	0.49		0.45	0.50
No	56.6			57.2			54.7		
Yes	43.4			42.8			45.3		
Sibling		0.21	0.41		0.20	0.40		0.24	0.42
No	78.8			79.6			76.4		
Yes	21.2			20.4			23.6		
Other family member		0.08	0.26		0.07	0.25		0.09	0.29
No	92.5			93.1			90.5		
Yes	7.5			6.9			9.5		
Has been living under any adult supervision		-0.95	0.30		-0.96	0.28		-0.94	0.34
Yes	97.7			98.0			96.9		
No	2.3			2.0			3.1		
CURRENT LIVING ARRANGEMENTS									
Currently living with (overall)		-0.83	0.39		-0.84	0.38		-0.80	0.42
Mother or father	83.5			84.4			80.7		
Living alone or with other	15.9			15.0			18.6		
Transient	0.6			0.5			0.7		
Living alone		0.00	0.03		0.00	0.03		0.00	0.03
No	99.9			99.9			99.9		
Yes	0.1			0.1			0.1		
Transient living		0.01	0.08		0.01	0.08		0.01	0.10
No	99.3			99.4			99.1		
Yes	0.7			0.6			0.9		
Mother		0.73	0.44		0.74	0.44		0.70	0.46
No	27.0			26.1			29.5		
Yes	73.0			73.9			70.5		
Father		0.45	0.50		0.47	0.50		0.40	0.49
No	54.6			52.7			60.4		
Yes	45.5			47.3			39.6		
Sibling(s)		0.60	0.49		0.61	0.49		0.56	0.50
No	40.5			39.4			43.6		
Yes	59.5			60.6			56.4		
Grandparent(s)		0.11	0.32		0.11	0.31		0.12	0.33
No	88.6			88.8			87.9		
Yes	11.4			11.2			12.1		
Other relative(s)		0.17	0.38		0.16	0.37		0.19	0.39
No	82.9			83.6			81.1		
Yes	17.1			16.4			18.9		
Foster/group home		0.05	0.22		0.04	0.20		0.07	0.25
No	95.1			95.7			93.3		
Yes	4.9			4.3			6.7		
Friends		0.02	0.13		0.02	0.13		0.02	0.15
No	98.2			98.4			97.8		
Yes	1.8			1.6			2.2		
Annual combined income youth & family		0.87	1.20		0.84	1.21		0.95	1.15
$50,000 and over	7.3			7.7			6.0		
$35,000 to $49,000	11.9			12.1			11.0		
$15,000 to $34,999	48.7			48.9			48.2		
Under $15,000	32.2			31.3			34.8		
Jail/imprisonment history of persons involved with the household (overall)		-0.08	1.00		-0.10	1.00		-0.01	1.00
No history	52.6			55.0			50.4		
History	46.2			45.0			49.6		
No jail		0.54	0.50		0.55	0.50		0.50	0.50
Imprisoned	46.3			45.1			50.1		
Not imprisoned	53.7			54.9			49.9		
Mother		0.20	0.40		0.19	0.39		0.24	0.43
No	80.0			81.5			75.5		
Yes	20.0			18.5			24.5		
Father		0.21	0.41		0.21	0.41		0.20	0.40
No	79.1			78.9			79.7		
Yes	20.9			21.1			20.3		

Sibling		0.15	0.36		0.15	0.36		0.16	0.37
No	84.9			85.2			84.0		
Yes	15.1			14.8			16.0		
Other family member		0.05	0.21		0.04	0.20		0.06	0.24
No	95.2			95.6			94.0		
Yes	4.8			4.4			6.0		
Problem history of parents involved with the household (overall)		0.04	1.00		0.00	1.00		0.14	0.99
No history	48.1			49.8			42.9		
History	51.9			50.2			57.1		
No problem history		0.48	0.50		0.50	0.50		0.43	0.05
History	51.6			49.8			56.9		
No history	48.4			50.2			43.1		
Alcohol history		0.26	0.44		0.25	0.43		0.29	0.45
No	74.4			75.5			71.1		
Yes	25.6			24.5			28.9		
Drug history		0.22	0.41		0.21	0.41		0.25	0.44
No	78.0			79.1			74.5		
Yes	22.0			20.9			25.5		
Physical health history		0.17	0.37		0.16	0.37		0.18	0.38
No	83.5			84.0			82.0		
Yes	16.5			16.0			18.0		
Mental health history		0.14	0.35		0.13	0.34		0.18	0.38
No	85.8			86.9			82.4		
Yes	14.2			13.1			17.6		
Employment history		0.24	0.43		0.23	0.42		0.26	0.44
No	76.2			76.9			74.0		
Yes	23.8			23.1			26.0		
Problem history of sibling involved with the household (overall)		-0.25	0.76		-0.27	0.76		-0.18	0.78
No history	44.8			46.2			40.7		
No siblings	35.4			35.0			36.7		
History	19.8			18.8			22.6		
No siblings in the house		0.65	0.48		0.66	0.47		0.64	0.48
None	34.6			34.3			35.6		
One or more	65.4			65.7			64.4		
No problem history of siblings		0.44	0.50		0.45	0.50		0.50	0.49
History	56.0			54.5			60.3		
No history	44.0			45.5			39.7		
Alcohol history		0.10	0.30		0.09	0.29		0.12	0.32
No	90.1			90.6			88.5		
Yes	9.9			9.4			11.5		
Drug history		0.13	0.34		0.12	0.33		0.15	0.35
No	87.0			87.5			85.4		
Yes	13.0			12.5			14.6		
Physical health history		0.02	0.13		0.02	0.12		0.02	0.14
No	98.3			98.4			97.9		
Yes	1.7			1.6			2.1		
Mental health history		0.05	0.23		0.05	0.22		0.07	0.25
No	94.6			95.0			93.2		
Yes	5.4			5.0			6.8		
Employment history		0.03	0.17		0.03	0.17		0.04	0.18
No	96.9			97.0			96.5		
Yes	3.1			3.0			3.5		
Support network for family		-0.97	0.58		-0.98	0.58		-0.93	0.57
Strong	15.3			16.1			12.9		
Some	66.2			65.8			67.3		
None	18.5			18.1			19.8		
Family willingness to help support youth		0.00	1.19		-0.05	1.17		0.16	1.23
Consistent willingness	56.0			58.1			49.6		
Inconsistent support	35.6			34.1			40.2		
Not willing	5.2			5.0			5.8		
Hostile, berating, belittling	3.3			2.9			4.4		
Family provides opportunities for youth to participate in family activities and decisions affecting youth		0.78	0.93		0.76	0.94		0.85	0.91
Yes	19.0			19.8			16.6		
Some	65.0			65.1			64.8		
No	16.0			15.1			18.6		
Has run away or been kicked out		-0.15	1.03		-0.26	1.00		0.15	1.05
No	58.9			63.8			44.3		
Yes	38.6			34.2			51.8		
Current runaway	2.5			2.0			3.9		
Family member(s) youth feels close to or has good relationship with (overall)		-0.59	0.81		-0.62	0.79		-0.51	0.86

Close	79.5			80.8			75.4		
Not close	20.5			19.2			24.6		
Not close to family		0.20	0.40		0.19	0.39		0.24	0.43
Close	79.9			81.2			76.2		
Not close	20.1			18.8			23.8		
Close to mother		0.50	0.50		0.52	0.50		0.44	0.50
Not close	50.1			48.1			56.2		
Close	49.9			51.9			43.8		
Close to father		0.21	0.41		0.24	0.42		0.14	0.35
Not close	78.7			76.4			85.7		
Close	21.3			23.6			14.3		
Close to male sibling		0.18	0.38		0.20	0.40		0.13	0.33
Not close	82.2			80.5			87.3		
Close	17.8			19.5			12.7		
Close to female sibling		0.16	0.36		0.15	0.35		0.18	0.39
Not close	84.4			85.3			81.6		
Close	15.6			14.7			18.4		
Close to extended family		0.19	0.39		0.19	0.39		0.20	0.40
Not close	80.8			80.9			80.3		
Close	19.2			19.1			19.7		
Level of conflict in household		0.84	1.41		0.74	1.40		1.14	1.39
Some, well-managed	30.4			33.2			22.1		
Verbal intimidation	42.9			42.5			43.9		
Threats of physical abuse	8.9			8.6			9.7		
Domestic violence	17.8			15.7			24.3		
Parental supervision		0.49	1.22		0.47	1.21		0.56	1.22
Consistent	37.4			38.1			35.4		
Sporadic	38.6			38.7			38.3		
Inadequate	24.0			23.2			26.3		
Parental authority and control		0.90	1.02		0.86	1.03		1.04	0.97
Usually obeys	19.0			20.3			15.1		
Sometimes obeys	52.9			53.5			51.0		
Disobeys	28.2			26.3			33.9		
Consistent appropriate consequences for bad behavior		0.30	1.45		0.25	1.44		0.44	1.45
Consistent: appropriate	54.6			56.3			49.6		
Consistent: severe or insufficient	6.1			5.7			7.2		
Inconsistent	39.3			38.0			43.2		
Consistent appropriate reward for good behavior		0.45	1.27		0.42	1.27		0.55	1.26
Consistent: appropriate	41.2			42.4			37.5		
Consistent: insufficient or indulgent	31.6			31.3			32.5		
Inconsistent	27.2			26.3			30.0		
Parental characterization of youth's anti-social behavior		-0.50	0.92		-0.50	0.92		-0.50	0.93
Disapproves	76.4			76.3			76.7		
Minimizes	20.8			21.1			20.0		
Accepts	2.6			2.5			3.1		
Proud of	0.2			0.2			0.3		
ALCOHOL & DRUG HISTORY									
History of alcohol use (overall)		0.17	1.39		0.11	1.41		0.34	1.33
No history	22.7			24.4			17.5		
History	37.7			37.9			37.3		
Disrupted education, caused family conflict, interfered with prosocial friends, or caused health problems	17.3			16.1			21.1		
Contributed to criminal behavior	22.3			21.7			24.1		
No past alcohol use		0.23	0.42		0.24	0.43		0.18	0.38
Use	77.3			75.5			82.5		
No use	22.7			24.5			17.5		
Past alcohol use		0.77	0.42		0.76	0.43		0.82	0.38
No	22.7			24.4			17.6		
Yes	77.3			75.6			82.4		
Disrupted education		0.22	0.41		0.21	0.40		0.26	0.44
No	78.1			79.3			74.4		
Yes	21.9			20.7			25.6		
Caused family conflict		0.27	0.45		0.26	0.44		0.32	0.47
No	72.7			74.4			67.7		
Yes	27.3			25.6			32.3		
Interfered with pro-social friends		0.24	0.43		0.23	0.42		0.28	0.45
No	76.0			77.4			71.6		
Yes	24.0			22.6			28.4		
Caused poor health		0.04	0.20		0.04	0.19		0.06	0.24
No	95.6			96.2			93.8		
Yes	4.4			3.8			6.2		
Contributed to criminal behavior		0.22	0.42		0.22	0.41		0.24	0.43

No	77.7			78.3			75.9		
Yes	22.3			21.7			24.1		
Alcohol tolerance		0.03	0.18		0.03	0.17		0.05	0.21
No	96.5			96.9			95.4		
Yes	3.5			3.1			4.6		
Alcohol withdrawal		0.01	0.11		0.01	0.10		0.02	0.13
No	98.7			98.9			98.2		
Yes	1.3			1.1			1.8		
History of drug use (overall)		1.51	2.07		1.49	2.10		1.57	1.98
No history	19.3			20.1			16.9		
History	29.4			29.2			29.9		
Disrupted education, caused family conflict, interfered with prosocial friends, or caused health problems	22.7			21.7			25.6		
Contributed to criminal behavior	28.6			29.0			27.5		
No past drug use		0.19	0.40		0.20	0.40		0.17	0.38
Use	80.6			79.8			83.0		
No use	19.4			20.2			17.0		
Past drug use		0.81	0.39		0.80	0.40		0.83	0.38
No	19.3			20.1			17.0		
Yes	80.7			79.9			83.0		
Disrupted education		0.36	0.48		0.36	0.48		0.37	0.48
No	63.7			64.0			62.7		
Yes	36.3			36.0			37.3		
Caused family conflict		0.37	0.48		0.36	0.48		0.40	0.49
No	62.8			63.8			59.8		
Yes	37.2			36.2			40.2		
Interfered with pro-social friends		0.34	0.47		0.33	0.47		0.37	0.48
No	65.9			66.9			63.0		
Yes	34.1			33.1			37.0		
Caused health problems		0.06	0.23		0.05	0.21		0.08	0.27
No	94.5			95.3			92.0		
Yes	5.5			4.7			8.0		
Contributed to criminal behavior		0.29	0.45		0.29	0.45		0.28	0.45
No	71.4			71.0			72.5		
Yes	28.6			29.0			27.5		
Drug tolerance		0.07	0.26		0.07	0.25		0.09	0.28
No	92.7			93.1			91.4		
Yes	7.3			6.9			8.6		
Drug withdrawal		0.03	0.17		0.03	0.16		0.04	0.20
No	97.0			97.3			95.9		
Yes	3.0			2.7			4.1		
History of referrals for drug/alcohol assessment		0.98	1.24		0.96	1.23		1.03	1.26
No problem or never referred	57.2			57.7			55.7		
Referred but not assessed	8.3			8.3			8.3		
Diagnosed as abuse	13.8			13.9			13.5		
Diagnosed as dependent	20.7			20.1			22.5		
History of attending alcohol/drug education classes		-0.45	0.79		-0.45	0.79		-0.46	0.80
Voluntarily attended	2.9			2.8			3.0		
Attended at request	10.6			10.6			10.6		
Attended at court direction	15.3			15.2			15.7		
Never attended	71.2			71.4			70.7		
History of participating in alcohol/drug treatment program		-0.26	0.44		-0.26	0.44		-0.27	0.45
Participated	26.3			25.9			27.3		
Has not participated	73.7			74.1			72.7		
Youth using alcohol/drugs		-0.11	1.79		-0.11	1.79		-0.09	1.78
No	27.7			27.8			27.3		
Yes	72.3			72.2			72.7		
CURRENT ALCOHOL & DRUGS									
Alcohol use (overall)		1.21	1.19		1.19	1.20		1.28	1.17
Not using	39.4			40.7			35.6		
Not disrupting functioning	23.1			22.7			24.0		
Disrupting education, causes family conflict, interferes with keeping prosocial friends, or causes health problems	14.5			13.5			17.4		
Contributes to criminal behavior	23.0			23.1			22.9		
No current alcohol use		0.30	0.44		0.31	0.46		0.27	0.45
Yes	70.3			69.5			72.8		
No	29.7			30.5			27.2		
Not disrupting functioning		0.44	0.50		0.43	0.49		0.47	0.50
No	56.2			57.2			53.2		
Yes	43.8			42.8			46.8		
Disrupts education		0.14	0.35		0.14	0.34		0.16	0.37
No	85.7			86.3			84.0		

Yes	14.3			13.7			16.0		
Causes family conflict		0.19	0.39		0.18	0.39		0.22	0.41
No	80.9			81.8			78.2		
Yes	19.1			18.2			21.8		
Interferes with prosocial friends		0.17	0.37		0.16	0.37		0.19	0.39
No	83.1			83.8			80.8		
Yes	16.9			16.2			19.2		
Causes health problems		0.03	0.18		0.03	0.17		0.04	0.20
No	96.8			97.1			95.7		
Yes	3.2			2.9			4.3		
Contributes to criminal behavior		0.17	0.37		0.17	0.37		0.17	0.37
No	83.3			83.3			83.3		
Yes	16.7			16.7			16.7		
Alcohol tolerance		0.02	0.15		0.02	0.15		0.03	0.17
No	97.6			97.8			96.9		
Yes	2.4			2.2			3.1		
Alcohol withdrawal		0.01	0.09		0.01	0.09		0.01	0.11
No	99.1			99.2			98.7		
Yes	0.9			0.8			1.3		
Current drug use (overall)		2.29	1.39		2.32	1.39		2.19	1.40
Not using	18.1			17.5			20.1		
Not disrupting functioning OR use disrupting education, causes family conflict, interferes with keeping prosocial friends, or causes health problems	49.3			49.0			50.1		
Contributes to criminal behavior	32.6			33.5			29.8		
No current drug use		0.15	0.36		0.14	0.35		0.17	0.37
Yes	85.2			85.7			83.5		
No	14.8			14.3			16.5		
Not disrupting functioning		0.59	0.49		0.60	0.49		0.58	0.49
No	40.8			40.4			41.9		
Yes	59.2			59.6			58.1		
Disrupts education		0.28	0.45		0.28	0.45		0.28	0.45
No	72.0			71.8			72.4		
Yes	28.0			28.2			27.6		
Drug use causes family conflict		0.30	0.46		0.30	0.46		0.31	0.46
No	69.7			69.8			69.1		
Yes	30.3			30.2			30.9		
Interferes with prosocial friends		0.28	0.45		0.27	0.45		0.29	0.45
No	72.4			72.8			71.4		
Yes	27.6			27.2			28.6		
Causes health problems		0.05	0.21		0.04	0.20		0.07	0.25
No	95.2			95.9			93.3		
Yes	4.8			4.1			6.7		
Contributes to criminal behavior		0.24	0.42		0.24	0.43		0.22	0.41
No	76.5			75.8			78.3		
Yes	23.5			24.2			21.7		
Drug tolerance		0.06	0.25		0.06	0.24		0.07	0.26
No	93.6			93.9			92.6		
Yes	6.4			6.1			7.4		
Drug withdrawal		0.03	0.16		0.03	0.16		0.04	0.19
No	97.2			97.5			96.4		
Yes	2.8			2.5			3.6		
Type of drugs currently used									
Marijuana		0.58	0.49		0.58	0.49		0.55	0.50
No	42.4			41.6			44.6		
Yes	57.6			58.4			55.4		
Amphetamines		0.09	0.29		0.08	0.27		0.15	0.36
No	90.5			92.4			85.1		
Yes	9.5			7.6			14.9		
Cocaine		0.05	0.22		0.05	0.21		0.07	0.25
No	94.9			95.4			93.3		
Yes	5.1			4.6			6.7		
Heroin		0.02	0.13		0.01	0.12		0.03	0.17
No	98.2			98.6			96.9		
Yes	1.8			1.4			3.1		
Other drug		0.09	0.29		0.08	0.28		0.11	0.31
No	91.0			91.5			89.3		
Yes	9.0			8.5			10.7		
Alcohol/drug treatment program participation		0.34	0.84		0.35	0.83		0.31	0.84
Successfully completed	2.2			2.1			2.4		
Currently attending	17.1			16.9			17.9		
Treatment not warranted	25.4			25.1			26.5		
Needs treatment, not attending	55.3			55.9			53.3		

MENTAL HEALTH HISTORY									
History of suicidal ideation									
No thoughts of suicide		0.74	0.44		0.79	0.41		0.59	0.49
Yes	26.4			21.4			41.1		
No	73.6			78.6			58.9		
Serious thoughts of suicide		0.17	0.38		0.15	0.35		0.26	0.44
No	82.6			85.4			74.2		
Yes	17.4			14.6			25.8		
Has made a plan		0.03	0.17		0.02	0.15		0.05	0.21
No	97.0			97.7			95.2		
Yes	3.0			2.3			4.8		
Has attempted		0.07	0.25		0.05	0.21		0.13	0.34
No	93.1			95.3			86.6		
Yes	6.9			4.7			13.4		
Hopeless		0.04	0.19		0.03	0.17		0.06	0.24
No	96.2			96.9			94.0		
Yes	3.8			3.1			6.0		
Self-mutilating		0.04	0.19		0.02	0.15		0.09	0.28
No	96.2			97.8			91.3		
Yes	3.8			2.2			8.7		
History of physical abuse (overall)		-0.36	0.93		-0.43	0.91		-0.17	0.98
No	68.1			71.3			58.7		
Yes	31.9			28.7			41.3		
Not a victim of physical abuse		0.69	0.46		0.72	0.45		0.59	0.49
Yes	31.3			28.2			40.6		
No	68.7			71.8			59.4		
Physical abuse: family member		0.22	0.42		0.20	0.40		0.28	0.45
No	77.8			79.6			72.2		
Yes	22.2			20.4			27.8		
Physical abuse: in the home		0.09	0.29		0.08	0.27		0.12	0.32
No	91.0			92.0			88.1		
Yes	9.0			8.0			11.9		
Physical abuse: someone outside the family		0.08	0.28		0.07	0.25		0.13	0.34
No	91.7			93.3			86.8		
Yes	8.3			6.7			13.2		
Physical abuse: foster home		0.01	0.07		0.00	0.07		0.01	0.08
No	99.5			99.5			99.3		
Yes	0.5			0.5			0.7		
Physical abuse: with a weapon		0.01	0.10		0.01	0.10		0.01	0.10
No	99.0			98.9			99.0		
Yes	1.0			1.1			1.0		
Has not witnessed violence		0.10	0.31		0.11	0.31		0.09	0.29
Yes	89.5			89.0			91.0		
No	10.5			11.0			9.0		
Witnessed violence in the home		0.19	0.39		0.17	0.38		0.23	0.42
No	81.2			82.7			76.6		
Yes	18.8			17.3			23.4		
Witnessed violence in foster home		0.01	0.10		0.01	0.10		0.02	0.12
No	98.9			99.1			98.5		
Yes	1.1			0.9			1.5		
Witnessed violence in the community		0.20	0.40		0.19	0.39		0.22	0.41
No	80.2			80.8			78.5		
Yes	19.8			19.2			21.5		
Witnessed murder		0.01	0.08		0.01	0.08		0.01	0.08
No	99.3			99.3			99.4		
Yes	0.7			0.7			0.6		
History of sexual abuse (overall)		-0.71	0.71		-0.84	0.54		-0.31	0.95
No	85.4			92.0			65.6		
Yes	14.6			8.0			34.4		
Not a victim of sexual abuse		0.86	0.35		0.92	0.27		0.66	0.47
Yes	14.4			7.9			33.9		
No	85.6			92.1			66.1		
Sexual abuse: family member		0.07	0.25		0.04	0.20		0.14	0.35
No	93.4			95.9			86.1		
Yes	6.6			4.1			13.9		
Sexual abuse: someone outside the family		0.09	0.29		0.04	0.20		0.24	0.43
No	90.7			95.7			76.1		
Yes	9.3			4.3			23.9		
History of being a victim of neglect		-0.48	0.88		-0.52	0.85		-0.36	0.93
No	74.1			76.2			67.8		
Yes	25.9			23.8			32.2		
History of ADD/ADHD		-0.32	1.06		-0.25	1.09		-0.56	0.92

No	69.9			66.4			80.4		
Medication or treatment prescribed	22.7			25.4			14.4		
Medication and treatment prescribed	7.5			8.2			5.2		
History of mental health problems		-0.25	1.16		-0.32	1.12		-0.06	1.23
No	69.4			72.0			61.6		
Medication or treatment prescribed	17.3			15.9			21.5		
Medication and treatment prescribed	13.3			12.1			16.9		
Health insurance		-0.88	0.47		-0.87	0.49		-0.90	0.43
Yes	94.1			93.7			95.1		
No	5.9			6.3			4.9		
Current mental health problem status		-0.40	0.92		-0.45	0.90		-0.27	0.96
No	70.1			72.3			63.5		
Yes	29.9			27.7			36.5		
Anger		1.49	0.96		1.45	0.96		1.60	0.94
No history	12.8			14.0			9.5		
Occasional feelings	45.6			46.4			43.4		
Consistent feelings	21.2			20.0			24.6		
Aggressive reactions	20.4			19.6			22.5		
Depression		1.02	0.83		0.93	0.81		1.27	0.84
No history	28.7			32.6			18.0		
Occasional feelings	44.9			45.1			44.4		
Consistent feelings	21.7			18.6			30.4		
Impairment in daily tasks	4.6			3.7			7.2		
Somatic complaints		0.32	0.64		0.28	0.61		0.43	0.71
No history	75.4			78.4			66.9		
One or two	19.4			17.0			26.2		
Three or four	3.0			2.6			4.1		
Five or more	2.2			2.0			2.8		
Delusions/hallucinations		0.05	0.21		0.04	0.20		0.05	0.22
No	95.5			95.7			95.0		
Yes	4.5			4.3			5.0		
Trauma		0.39	0.49		0.34	0.48		0.52	0.50
No	60.9			65.6			48.0		
Yes	39.1			34.4			52.0		
CURRENT MENTAL HEALTH									
Current suicide ideation									
No recent thoughts		0.23	0.42		0.19	0.40		0.31	0.46
No	77.2			80.6			69.1		
Yes	22.8			19.4			30.9		
Recent plan		0.01	0.09		0.01	0.08		0.01	0.12
No	99.2			99.4			98.6		
Yes	0.8			0.6			1.4		
Recent attempt		0.01	0.11		0.01	0.09		0.03	0.16
No	98.7			99.1			97.4		
Yes	1.3			0.9			2.6		
Hopeless		0.01	0.10		0.01	0.09		0.02	0.12
No	99.1			99.3			98.5		
Yes	0.9			0.7			1.5		
Self-mutilation		0.01	0.11		0.01	0.08		0.03	0.16
No	98.9			99.4			97.4		
Yes	1.1			0.6			2.6		
Currently diagnosed with ADD/ADHD		-0.09	0.61		-0.11	0.66		-0.04	0.48
Compliant with medication	23.7			28.1			13.7		
No problem or no medication	61.6			54.9			76.7		
Non-compliant with medication	14.8			17.0			9.6		
Mental health treatment currently prescribed, excluding ADD/ADHD treatment		-0.21	0.75		-0.22	0.73		-0.20	0.80
Attending treatment	41.4			40.1			44.1		
No treatment need	38.6			41.5			32.0		
Non-compliant with treatment	20.0			18.4			23.8		
Mental health medication currently prescribed, excluding ADD/ADHD medication		-0.21	0.67		-0.23	0.66		-0.18	0.70
Compliant with medication	35.4			35.6			35.0		
No medication need	50.1			51.2			47.6		
Non-compliant with medication	14.4			13.1			17.4		
Mental health problems currently interfere with working with the youth		0.32	0.47		0.33	0.47		0.31	0.46
No problem or mental health does not interfere	67.9			67.2			69.5		
Yes	32.1			32.8			30.5		
ATTITUDES/BEHAVIORS									
Primary emotion when committing last crime(s) within last 6 months		0.64	0.77		0.65	0.76		0.61	0.79
Nervous, afraid, worried, uncertain	18.0			17.6			19.3		
Hyper, excited, stimulated,	82.0			82.4			80.7		

confident, or unconcerned									
Primary purpose for committing crime(s) within last 6 months									
Anger/revenge		0.26	0.44		0.23	0.42		0.33	0.47
No	84.2			76.6			66.9		
Yes	15.8			23.4			33.1		
Power		0.01	0.10		0.00	0.06		0.01	0.11
No	98.9			99.0			98.7		
Yes	1.1			1.0			1.3		
Impulse		0.19	0.39		0.19	0.39		0.18	0.39
No	81.0			80.8			81.6		
Yes	19.0			19.2			18.4		
Sexual desire		0.03	0.17		0.04	0.19		0.00	0.06
No	97.0			96.1			99.6		
Yes	3.0			3.9			0.4		
Money, material gain, or drugs		0.19	0.39		0.19	0.39		0.17	0.38
No	81.2			80.7			82.6		
Yes	18.8			19.3			17.4		
Excitement, amusement		0.15	0.36		0.16	0.37		0.13	0.34
No	84.7			84.0			86.7		
Yes	15.3			16.0			13.3		
Status, acceptance, attention		0.16	0.37		0.16	0.37		0.15	0.35
No	84.2			83.8			85.3		
Yes	15.8			16.2			14.7		
Optimism		-0.30	1.06		-0.28	1.06		-0.34	1.07
High aspirations	5.7			5.1			7.4		
Normal aspirations	57.1			57.2			56.8		
Low aspirations	35.7			36.2			34.4		
Believes nothing matters	1.5			1.5			1.4		
Impulsive; acts before thinking		0.29	1.27		0.30	1.27		0.28	1.27
Uses self-control	4.8			4.6			5.3		
Some self-control	37.4			37.4			37.2		
Impulsive	39.5			39.5			39.6		
Highly impulsive	18.4			18.5			17.9		
Belief in control over anti-social behavior		0.18	1.44		0.18	1.44		0.19	1.45
Believes	29.7			29.7			29.8		
Somewhat believes	62.6			62.8			62.2		
Does not believe	7.6			7.5			8.0		
Empathy, remorse, sympathy, or feelings for victim(s) of criminal behavior		-0.15	1.59		-0.14	1.59		-0.16	1.59
Empathy	17.5			17.3			18.0		
Some empathy	48.2			48.3			47.9		
No empathy	34.3			34.3			34.1		
Respect for property of others		0.80	1.77		0.85	1.76		0.65	1.80
Respects	25.9			24.8			29.1		
Respects personal, not public	30.1			30.0			30.4		
Conditional respect for personal	30.4			30.9			28.9		
No respect	13.6			14.3			11.6		
Respect for authority figures		0.01	1.81		0.02	1.82		-0.02	1.80
Respects	42.7			42.6			43.1		
Does not respect	35.3			35.1			36.1		
Resents	15.1			15.4			14.3		
Defies or is hostile	6.8			6.9			6.5		
Attitude toward pro-social rules/conventions in society		0.73	1.41		0.74	1.41		0.69	1.41
Abides	18.4			18.3			18.9		
Believes rules sometimes apply	59.5			59.2			60.5		
Does no believe rules apply	16.1			16.5			15.0		
Resents rules	5.9			6.0			5.6		
Accepts responsibility for anti-social behavior		0.34	1.60		0.33	1.61		0.36	1.60
Accepts responsibility	29.9			30.1			29.4		
Minimizes antisocial behavior	50.3			50.3			50.5		
Accepts antisocial behavior	15.8			15.6			16.3		
Proud of antisocial behavior	4.0			4.0			3.9		
Youth's belief in successfully meeting conditions of court supervision		0.06	1.07		0.06	1.07		0.04	1.06
Believes	49.5			49.3			49.9		
Unsure	46.0			46.0			45.8		
Does not believe	4.6			4.7			4.3		
AGGRESSION									
Tolerance for frustration		0.78	1.32		0.71	1.35		0.98	1.21
Rarely upset	16.8			18.4			12.3		
Sometimes upset	54.7			55.3			52.9		
Often upset	28.5			26.4			34.9		
Hostile interpretation of actions & intentions of others		-0.19	1.59		-0.22	1.59		-0.12	1.58
Positive view	42.9			43.6			40.6		

Negative view	47.8			47.3			49.5		
Hostile view	9.3			9.1			10.0		
Belief in yelling & verbal aggression to resolve a disagreement or conflict		0.68	1.36		0.62	1.39		0.87	1.28
Rarely appropriate	19.0			20.4			14.8		
Sometimes appropriate	55.9			56.5			54.0		
Often appropriate	25.1			23.1			31.1		
Belief in fighting & physical aggression to resolve a disagreement or conflict		0.67	1.81		0.66	1.81		0.69	1.82
Never appropriate	14.3			14.2			14.5		
Rarely appropriate	29.4			29.7			28.7		
Sometimes appropriate	44.4			44.4			44.3		
Often appropriate	11.9			11.7			12.5		
Reports/evidence of violence not included in criminal history									
No reports		0.45	0.50		0.46	0.50		0.43	0.49
Yes	54.7			53.8			57.1		
No	45.3			46.2			42.9		
Violent destruction of property		0.15	0.36		0.15	0.36		0.15	0.36
No	84.7			84.6			85.1		
Yes	15.3			15.4			14.9		
Violent outbursts, displays of temper, uncontrolled anger indicating potential for harm		0.50	0.50		0.49	0.50		0.54	0.50
No	49.6			50.9			45.7		
Yes	50.4			49.1			54.3		
Deliberately inflicted physical pain		0.17	0.37		0.16	0.37		0.18	0.39
No	83.5			84.0			81.9		
Yes	16.5			16.0			18.1		
Used/threatened with a weapon		0.08	0.26		0.08	0.27		0.05	0.23
No	92.5			91.8			94.6		
Yes	7.5			8.2			5.4		
Fire starting reports		0.04	0.20		0.05	0.21		0.02	0.15
No	95.9			95.3			97.8		
Yes	4.1			4.7			2.2		
Animal cruelty reports		0.01	0.12		0.02	0.12		0.01	0.10
No	98.6			98.4			99.1		
Yes	1.4			1.6			0.9		
Reports/evidence of sexual aggression not included in criminal history									
No reports of sexual aggression outside of criminal history		0.97	0.18		0.96	0.19		0.98	0.13
Yes	3.3			3.9			1.6		
No	96.7			96.1			98.4		
Reports of aggressive sex		0.01	0.10		0.01	0.11		0.01	0.07
No	99.0			98.9			99.5		
Yes	1.0			1.1			0.5		
Reports of sex for power		0.00	0.06		0.00	0.06		0.00	0.06
No	99.6			99.6			99.6		
Yes	0.4			0.4			0.4		
Reports of young sex partners		0.01	0.10		0.01	0.11		0.00	0.05
No	99.0			98.7			99.7		
Yes	1.0			1.3			0.3		
Reports of child sex		0.01	0.10		0.01	0.11		0.00	0.05
No	99.0			98.8			99.8		
Yes	1.0			1.2			0.2		
Reports of voyeurism		0.00	0.06		0.00	0.06		0.00	0.04
No	99.7			99.6			99.9		
Yes	0.3			0.4			0.1		
Reports of exposure		0.01	0.09		0.01	0.10		0.01	0.08
No	99.1			99.1			99.4		
Yes	0.9			0.9			0.6		
SKILLS									
Consequential thinking		-0.99	0.89		-0.98	0.89		-1.03	0.89
Acts to obtain desired consequences	3.3			3.2			3.8		
Identifies consequences of actions	17.0			16.7			18.1		
Understands there are consequences to actions	67.5			67.8			66.6		
Does not understand	12.1			12.3			11.5		
Goal-setting		0.09	1.44		0.13	1.45		-0.01	1.43
Realistic goals	8.5			8.0			10.1		
Somewhat realistic goals	46.6			46.2			47.8		
Unrealistic goals	17.0			16.9			17.2		
No goals	28.0			29.0			24.8		
Problem-solving		-0.60	1.13		-0.58	1.13		-0.64	1.13
Applies appropriate solutions	2.5			2.4			2.8		
Thinks of solutions	14.5			14.0			15.8		
Identifies problem behaviors	53.1			53.2			52.8		
Cannot identify	29.9			30.4			28.5		

Situational perception		-0.59	1.22		-0.57	1.22		-0.65	1.22
Selects best time and place	4.2			4.0			4.6		
Chooses skill but not time/place	16.7			16.3			18.0		
Analyzes but unable to choose skill	46.2			46.1			46.5		
Cannot analyze	32.9			33.6			31.0		
Dealing with others		-0.79	1.08		-0.77	1.08		-0.86	1.08
Often uses advanced skills	2.6			2.4			3.2		
Sometimes uses advanced skills	19.2			18.5			2.4		
Has basic skills, not advanced	55.5			55.9			54.5		
Lacks basic skills	22.6			23.2			20.9		
Dealing with difficult situations		0.65	1.32		0.66	1.31		0.62	1.33
Often uses skills	2.3			2.3			2.5		
Sometimes uses skills	32.1			31.7			33.3		
Rarely uses skills	28.9			29.3			27.7		
Lacks skills	36.6			36.7			36.4		
Dealing with feelings/emotions		0.73	1.29		0.74	1.29		0.68	1.31
Often uses skills	2.1			2.1			2.4		
Sometimes uses skills	29.5			29.0			31.0		
Rarely uses skills	30.5			30.9			29.2		
Lacks skills	37.9			38.1			37.4		
Monitoring of internal triggers		0.64	1.53		0.65	1.53		0.60	1.54
Actively monitors	3.1			3.0			3.4		
Identifies	41.3			40.9			42.3		
Cannot identify	55.6			56.1			54.4		
Monitoring of external triggers		0.14	1.51		0.15	1.51		0.11	1.51
Actively monitors	4.1			4.0			4.3		
Identifies	56.6			56.5			57.2		
Cannot identify	39.3			39.5			38.5		
Control of impulsive behaviors		0.78	1.66		0.78	1.66		0.76	1.66
No problem	4.7			4.7			4.5		
Uses techniques	3.0			3.0			3.2		
Knows techniques	29.0			28.9			29.5		
Lacks techniques	63.3			63.4			62.9		
Control of aggression		0.05	1.78		0.03	1.79		0.11	1.78
No problem	10.5			10.7			9.8		
Often uses alternatives	9.5			9.7			9.0		
Sometimes uses alternatives	30.0			30.1			29.8		
Rarely uses alternatives	14.4			14.5			14.3		
Lacks alternatives	35.6			35.1			37.2		

APPENDIX III

WASHINGTON STATE PACT EBP ELIGIBILITY

Coordination of Services: All low-risk youth as indicated by the pre-screen or full risk assessment

Education and Employment Training (EET):

1. Age 15 to 18 and any one of the following:
    - Domain 3A (School History) static risk score is 4 or 5
    - Domain 3B (Current School Status) dynamic risk score is between 7 and 22
    - Domain 5A (Employment History) static protective factor is 0 or 1
    - Domain 5B (Current Employment) dynamic protective factor is 0 to 2
2. Even though the above is the currently eligibility for EET in PACT, the CJAA committee has decided that only moderate and high risk will be eligible for EET.

Family Functional Therapy (FFT)

1. Risk level moderate or high and
2. Domain 7B (Currently Living Arrangements) items 7-16: dynamic risk score of at least 6

Family Integrated Transitions (FIT)

1. Risk level is moderate or high and
2. Domain 7B (Current Living Arrangements): dynamic risk score is equal or greater than 8 and
3. Domain 9A (Mental Health History) agreement to one or more:
    a. History of Suicidal Ideation (item 1)
    b. History of Mental Health Problems (item 7)
    c. Current Mental health problem status (item 14) or

    Domain 9B (Current Mental Health) agreement to one or more:
    d. Current Suicidal Ideation (item 1)
    e. Mental Health treatment current prescribed (item 3)
    f. Mental Health medication currently prescribed (item 4)
    g. Mental Health problems currently interfere with the youth (item 5)
4. And any one of the following:
    a. Domain 8A, item 1, "History of alcohol use" *any* response except "No past alcohol use"
    b. Domain 8A, item 2, "History of drug use" any response except "No past drug use"
    c. Domain 8A, item 6, "Minor is currently using alcohol and/or drugs" response = yes

Multisystemic Therapy (MST)

1. Risk level is high and
2. Domain 7B (Current Living Arrangements): dynamic risk score is equal or greater than 8

Washington State Aggression Replacement Training (WSART)

1. Risk level is moderate or high and any one of the following:
    - Domain 1 (Criminal History) static risk factor score of at least 1 for
        - Weapon (item 4) or
        - Violent misdemeanor (item 5) or
        - Violent felony (item 6)
    - Domain 11 (Aggression) items 2, 3 and 4: dynamic risk factor of at least 2
    - Domain 10 (Attitudes/Behaviors) items 6-10: dynamic risk score of at least 5
    - Domain 12 (Skills) all items except 2: dynamic risk score of at least 4

APPENDIX IV

Before and After Entropy Balancing Results Summary

	Sample Size		Before Entropy Balancing	After Entropy Balancing
Model	Comparison	Treatment	χ^2/t-test (% < .05)	χ^2/t-test (% < .05)
ART				
Female	4,785	2,704	177/295 (60%)	0/295 (0%)
Male	13,403	7,877	207/295 (70.17%)	0/295 (0%)
COS				
Combined	1,364	261	59/296 (19.93%)	21/296 (7.09%)
EET				
Female	7,021	152	**114/295 (38.64%)**	4/295 (1.36%)
Male	19,868	453	142/295 (48.14%)	0/295 (0%)
FFT				
Female	3,163	1,756	**111/158 (70.25%)**	1/158 (0.63%)
Male	6,787	4,137	**129/158 (81.65%)**	63/158 (39.87%)
FIT & MST				
Combined	6,480	593	**105/158 (66.46%)**	33/158 (20.89%)
MH Any				
Female	2,920	6,130	241/327 (73.7%)	8/327 (2.45%)
Male	11,716	13,790	**258/327 (78.9%)**	7/327 (2.14%)
MH Inpatient				
Female	8,201	849	**181/327 (55.35%)**	9/327 (2.75%)
Male	23,852	1,651	224/327 (68.5%)	10/327 (3.06%)
MH Meds				
Female	3,708	5,342	216/327 (66.06%)	3/327 (0.92%)
Male	15,173	10,332	252/327 (77.06%)	4/327 (1.22%)
MH Outpatient				
Female	2,922	6,128	241/327 (73.7%)	8/327 (2.45%)
Male	11,743	13,763	**258/327 (78.9%)**	7/327 (2.14%)
SA Any				
Female	4,567	4,483	220/327 (67.28%)	5/327 (1.53%)
Male	13,735	11,768	262/327 (80.12%)	3/327 (0.92%)
SA Inpatient				
Female	6,860	2,190	**221/327 (67.58%)**	4/327 (1.22%)
Male	20,457	5,046	269/327 (82.26%)	3/327 (0.92%)
SA In- & Outpatient				
Female	7,136	1,914	**222/327 (67.89%)**	2/327 (0.61%)
Male	21,284	4,219	267/327 (81.65%)	6/327 (1.83%)
SA Meds				
Female	8,336	714	182/327 (55.66%)	9/327 (2.75%)
Male	24,449	1,054	204/327 (62.39%)	17/327 (5.2%)
SA Outpatient				
Female	4,920	4,130	221/327 (67.58%)	4/327 (1.22%)
Male	14,696	10,807	270/327 (82.57%)	3/327 (0.92%)

Note: Bolded values indicate that the standardized difference between the comparison and treatment groups was greater than 20%, which is a signal that the two groups were not balanced.