



Co-Occurring Disorders Among JR Clients: Relationship Between SUD, Mental Health, and Treatment



Washington State Department of
CHILDREN, YOUTH & FAMILIES



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Cross, Stephanie. (2023). Co-occurring Disorders Among JR Clients: Relationship Between SUD, Mental Health, and Treatment. Department of Children, Youth, and Families, Office of Innovation, Alignment, and Accountability. Olympia: WA

Introduction

There is a very high prevalence of substance use disorders (SUD) and mental health disorders (MH) among Juvenile Rehabilitation (JR) clients,¹ which in turn leads to a large need for appropriate SUD and MH treatments. The period in which a client is housed within a JR facility provides opportunities to identify treatment need and deliver effective SUD and MH treatment based on the individual's need. It is imperative, however, that the right treatment services be matched to the appropriate treatment need. The current study examines the predictors of treatment to help identify the extent to which JR is appropriately matching treatment to need. This report also examines what factors may predict whether or not a client received substance use disorder treatment, mental health disorder treatment, or both.

About the data

This report examines the number of clients who were released from either a JR institution or community facility (N=1,376) during state fiscal years (SFY) 2017 through 2019² to determine what factors drive treatment among clients with co-occurring substance use disorder and mental health disorder. The release cohort used in this report does not include clients who transferred to Department of Corrections after being discharged from JR or those clients who immediately began another obligation in JR.

The Global Appraisal of Individual Needs – Short Screen (GAIN-SS) Substance Disorder Screener (SD) scores, Internal Disorder Screener (ID) scores, and External Disorder Screener (ED) scores were examined to determine if a client has a substance use disorder (SUD), a mental health (MH) disorder, or both, along with treatment need for SUD, MH, or both. The GAIN-SS is a short version of the Global Appraisal of Individual Needs (GAIN-I), consists of 15 questions, and takes roughly 15 minutes to complete. The GAIN-SS is intended to quickly identify clients who may have one or more behavioral health disorders. If the client scores a 1 or above in any of the three sections on the GAIN-SS they are identified as likely having a treatment need in that area. Clients may have a treatment need in multiple areas. It is important to note, however, that JR

¹ Miksicek, D., Fox, A. M., & Veele, S. (2019). Residential Substance Use Treatment in Juvenile Rehabilitation in Washington State. Olympia, WA: Department of Children, Youth, and Families, Office of Innovation, Alignment, and Accountability;

Cross, S. (2022). A Snapshot of Current Juvenile Rehabilitation Youth: Substance Use Disorder & Treatment Needs. Washington State Department of Children, Youth, and Families – Office of Innovation, Alignment, and Accountability;

Co-Occurring Disorders Among DSHS Clients, <https://www.dshs.wa.gov/sites/default/files/rda/reports/research-3-32.pdf>;

Co-occurring Mental Illness among Clients in Chemical Dependency Treatment, <https://www.dshs.wa.gov/sites/default/files/rda/reports/research-4-82.pdf>

² SFY 2017 – 2019 covers the time period from July 1, 2016 thru June 30, 2019

has historically used a cutoff score of 2, not 1 as indicated by the GAIN-SS manual, to indicate a treatment need for SUD. As the GAIN-SS manual states, “moderate (1 to 2): A possible diagnosis; the client is likely to benefit from a brief assessment and outpatient intervention”³. For the purposes of this report, a score of 1 or higher was used to indicate need. While JR does not currently use the GAIN-SS to refer youth for mental health treatment, both the internal and external disorder sections are indicators of mental health need. JR does, however, use the GAIN-SS to refer for substance use disorder treatment. All JR admissions should receive the GAIN-SS within 48 hours of admission.

Client Activity Service Tracker (CAST) information for each client was gathered to assess whether clients participated in SUD treatment, MH treatment, or both treatments during their residential obligation.

Findings

Table 1 shows the demographic breakdown of JR clients who released from custody between SFY 2017 and 2019. The majority of JR clients were male (89.2%). Nearly a quarter (24%) of clients were Black/African American, 40% were White, and 23% were Hispanic. About 63% of youth were under the age of 18. The majority of clients in this study were serving a JR sentence (95.9%) opposed to an adult sentence (4.1%).⁴

Table 1

Demographics of Study Population and All JR Clients Who Released SFY 17-19

	Study		All	
	Count	%	Count	%
Gender				
Female	148	10.8%	161	10.3%
Male	1228	89.2%	1403	89.7%
Race/Ethnicity*				
American Indian/Alaska Native	121	9.0%	136	8.7%
Asian/Pacific Islander	44	3.3%	45	2.9%
Black/African American	325	24.2%	374	23.9%
Hispanic/Latino	311	23.2%	369	23.6%
White	541	40.3%	604	38.6%
Age				
Average Age	16.91		17.46	

* 34 clients in study population were removed due to 'unknown' race/ethnicity and 36 removed from all JR releases
Data Source: DCYF Juvenile Rehabilitation (SFY 17-19). Automated Client Tracking (ACT).

WSRDAC/M Reporting Standard: Yes; AI/AN, Multiracial included in AI/AN counts, Black/African American, Multiracial included in Black/African American counts, and Asian/PI, Multiracial included in Asian/PI counts.

³ Global Appraisal of Individual Needs-Short Screener (GAIN-SS): Administration and Scoring Manual Version 2.0.1, Dec. 2007, pg. 11

⁴ Important to note that all clients with an adult sentence who were transferred to DOC were not included in this analysis. Also, these cohorts were before the “JR to 25” legislation that raised the age of jurisdiction for JR.

Treatment Need

As mentioned before, this report follows the GAIN-SS user manual, in that clients who scored a 1 or more on either or both the internalizing disorder screener (ID) or the externalizing disorder screener (ED) were considered to have a MH treatment need and clients who score a 1 or more on the substance use disorder screener (SD) were considered to have an SUD treatment need. Furthermore, clients scoring a 1 or more on either the internalizing disorder screener (ID) or the externalizing disorder screener (ED) and the substance use disorder screener (SD) were identified as meeting criteria for co-occurring disorders (CD). Table 2 shows that the plurality of each racial/ethnic group fell into the co-occurring disorder category and only 9.3% (N=125) of all clients released during this time period had neither a mental health disorder nor substance use disorder according to the GAIN-SS scores.

Table 2

GAIN-SS MH, SUD, CD Indicator by Race/Ethnicity (Releases SFY 17-19)

Race/Ethnicity*	ID	ED	ID/ED	SD	CD	NONE
	%	%	%	%	%	%
American Indian/Alaska Native	0.8%	12.4%	10.7%	8.3%	62.0%	5.8%
Asian/Pacific Islander	11.4%	9.1%	4.5%	25.0%	36.4%	13.6%
Black/African American	7.1%	13.8%	12.6%	9.2%	45.5%	11.7%
Hispanic/Latino	1.9%	10.6%	10.9%	9.3%	55.3%	11.9%
White	4.8%	8.9%	17.9%	4.4%	57.1%	6.8%
Total Clients	61	145	187	104	720	125
Grand Total	4.5%	10.8%	13.9%	7.7%	53.7%	9.3%

* 34 clients were removed due to 'unknown' race/ethnicity

Data Source: DCYF Juvenile Rehabilitation (SFY 17-19). Automated Client Tracking (ACT).

WSRDAC/M Reporting Standard: Yes; AI/AN, Multiracial included in AI/AN counts, Asian/PI, Multiracial included in Asian/PI counts, and Black/African American, Multiracial included in Black/African American counts.

Table 3 looks at the GAIN-SS indicators by gender. The majority of males and females fell into the co-occurring disorder category (53% and 61% respectively). Males had a higher percentage of SD only (8.3 % vs. 4.1 %) and ED only (11.3 % vs. 5.4 %) than females, whereas females had a higher percentage of ID only (9.5 % vs. 3.8 %) and both ID/ED together (14.2 % vs. 13.8 %).

Table 3

GAIN-SS MH, SUD, CD Indicator by Gender (Releases SFY 17-19)

Gender	ID	ED	ID/ED	SD	CD	NONE
	%	%	%	%	%	%
Female	9.5%	5.4%	14.2%	4.1%	60.8%	6.1%
Male	3.8%	11.3%	13.8%	8.3%	52.9%	9.8%
Total Clients	61	147	191	108	740	129
Grand Total	4.4%	10.7%	13.9%	7.8%	53.8%	9.4%

Data Source: DCYF Juvenile Rehabilitation (SFY 17-19). Automated Client Tracking (ACT).

Treatment Received

Each separate substance use disorder treatment⁵ was combined into one category (SUD) and each mental health treatment⁶ was combined into one category (MH). If a client received SUD and MH treatment, they were put in the ‘BOTH’ category. If the client received no substance use disorder or mental health treatment while in a JR residential program, then they were put into the ‘NONE’ category. If a client received a treatment type different from what their GAIN-SS scores indicated a need for, then they were put into the ‘OTHER’ category. For example, if a client indicated a MH treatment need on the GAIN-SS but received SUD treatment and no MH treatment, they would be in the ‘OTHER’ category. It is important to point out that some of the treatment that is administered by community providers while a client is in a state-run community facility does not get recorded in the agency’s records management system, so the ‘NONE’ category is likely an over-estimate because clients may have received treatment for an indicated need while living in a community facility.

Table 4 looks at treatment type by race/ethnicity for those clients whose GAIN-SS score indicated a treatment need (a score of 1 or more). Most clients indicated as having a substance abuse or mental health treatment need and released from JR custody between SFY 2017 and 2019, did not receive either mental health or substance use treatment (N=627, 51.5%). Of those clients who did receive treatment, Asian/Pacific Islanders were more likely to receive SUD treatment. All other race/ethnicities received treatment for mental health needs or both SUD/MH most frequently compared to SUD treatment alone. Of those clients who did receive treatment, the majority fell into the ‘other’ treatment category.

Table 4
Treatment Type Received by Race/Ethnicity, for Clients Indicating Need
(Releases SFY 17-19)

Race/Ethnicity*	SUD	MH	BOTH	NONE	OTHER
	%	%	%	%	%
American Indian/Alaska Native	0.0%	10.5%	10.5%	50.9%	28.1%
Asian/Pacific Islander	7.9%	5.3%	5.3%	55.3%	26.3%
Black/African American	3.1%	9.0%	3.5%	57.3%	27.1%
Hispanic/Latino	2.2%	6.6%	6.6%	52.9%	31.8%
White	0.4%	11.3%	8.9%	47.3%	32.0%
n	20	115	87	627	368
Grand Total	1.6%	9.4%	7.1%	51.5%	30.2%

* 34 clients were removed due to ‘unknown’ race/ethnicity

⁵ ACC – Opiates Grant; ACRA – Opiates Grant; Alcoholics Anonymous; Drug/Alcohol Treatment; Intensive Inpatient Substance Use Treatment; Intensive Outpatient Substance Use Treatment; Narcotics Anonymous; Opioid Use Disorder Prevention Education; Outpatient Substance Use Treatment; POST Study – Assertive Community Support; and POST Study – Enhanced ACRA

⁶ Mental Health; Individual Therapy; Mental Health Treatment – Family; Mental Health Treatment – Group; Mental Health Treatment – Individual; Mental Health Treatment – Medication Management; and Wraparound w/ Intensive Services

Data Source: DCYF Juvenile Rehabilitation (SFY 17-19). Automated Client Tracking (ACT).
 WSRDAC/M Reporting Standard: Yes; AI/AN, Multiracial included in AI/AN counts, Asian/PI, Multiracial included in Asian/PI counts, and Black/African American, Multiracial included in Black/African American counts

Table 5 looks at treatment type by gender. Again, the majority of both genders released from JR custody between SFY 2017 and 2019 and indicated as having a treatment need did not receive either mental health or substance use treatment. Females were more likely to receive both treatments (9.5 %) than mental health treatment (4.7 %) or SUD treatment alone (0.7 %). Males were more likely to receive mental health treatment (8.8 %) than SUD treatment (1.5 %) or both treatments (6.3 %). A large percentage of both males and females received a treatment other than the treatment need indicated on the GAIN-SS.

Table 5

Treatment Type Received by Gender, for Clients Indicating Need (Releases SFY 17-19)

Gender	SUD	MH	BOTH	NONE	OTHER
Female	0.7%	4.7%	9.5%	49.3%	29.7%
Male	1.5%	8.8%	6.3%	46.5%	27.1%
Total Clients	20	115	91	644	377
Grand Total	1.6%	9.2%	7.3%	51.6%	30.2%

Data Source: DCYF Juvenile Rehabilitation (SFY 17-19). Automated Client Tracking (ACT).

While nearly 52% of all clients who indicated a treatment need on the GAIN-SS did not receive any SUD or MH treatment, 22.5% of clients who scored a 0 on all sections of the GAIN-SS, indicating no need for SUD or MH treatment, ended up receiving SUD, MH, or both treatments.

To identify factors that predict the likelihood of receiving treatment in JR, a series of logistic regression analyses were conducted, using gender, race/ethnicity, age, sentence type, and length of stay as control variables in the model. The independent variables were the internal, external, and substance use scores from the GAIN-SS. These analyses produce an odds ratio which, if above a 1 show an increase in the odds of an event happening and if below a 1 show a decrease in the odds of an event happening. The ‘*’ indicates that a given odds ratio is statistically significant and the researcher can be confident the independent variables are related to the dependent variable, which in this case is receiving treatment.

Table 6 shows the odds of a client receiving substance use disorder treatment. The results indicate that as the external GAIN-SS score increases by one point, the odds of receiving substance use treatment increases by 10.5%, holding all else constant. As the substance disorder GAIN-SS score increases by one point, the odds of receiving substance use treatment increases by 39.4 %, holding all else constant. Both results are significant at the p<.05 level. Therefore, it can be said with confidence that as a client’s external score or substance use score increases, the likelihood of that client receiving substance use treatment also increases. Furthermore, males with the same indicated treatment need as females are much more likely to receive substance use treatment than their female counterparts.

Table 6
Odds of Receiving Substance Use Treatment

	<i>SUD Treatment</i>	
	Odds Ratio	Robust SE
<i>Independent Variables</i>		
Internal	0.973	(0.049)
External	1.105*	(0.052)
Substance Use	1.394*	(0.056)
<i>Control Variables</i>		
Gender (male)	1.77*	(0.344)
Age at Release	0.965	(0.047)
American Indian/Alaska Native	0.781	(0.197)
Asian/Pacific Islander	1.834	(0.608)
Black/African American	0.998	(0.179)
Hispanic/Latino	1.181	(0.205)
Unknown race	1.040	(0.433)
Sentence Type	0.436	(0.211)
Length of Stay	1.000	(.001)
N	1376	
Wald chi-square	119.49**	
Pseudo R-square	0.080	

*statistically significant at p<.05 **statistically significant at p<.01

Data Source: DCYF Juvenile Rehabilitation (SFY 17-19). Automated Client Tracking (ACT).

WSRDAC/M Reporting Standard: Yes; AI/AN, Multiracial included in AI/AN counts, Asian/PI, Multiracial included in Asian/PI counts, and Black/African American, Multiracial included in Black/African American counts.

Table 7 shows the odds of a client receiving mental health treatment. The results indicate that as the internal GAIN-SS score increases by one point, the odds of receiving mental health treatment increases by 12.2%, holding all else constant (p<.05).

Table 7
Odds of Receiving Mental Health Treatment

	<i>MH Treatment</i>	
	Odds Ratio	Robust SE
<i>Independent Variables</i>		

Internal	1.122*	0.051
External	1.063	0.047
Substance Use	1.000	0.037
<i>Control Variables</i>		
Gender	0.439*	0.100
Age at Release	1.142*	0.053
American Indian/Alaska Native	1.060	0.225
Asian/Pacific Islander	0.720	0.271
Black/African American	0.683*	0.111
Hispanic/Latino	0.767	0.123
Unknown	0.880	0.346
Sentence Type ⁷	0.338*	0.134
Length of Stay	0.999	0.000
N	1376	
Wald chi-square	44.29**	
Pseudo R-square	0.030	

*statistically significant at p<.05 **statistically significant at p<.01

Data Source: DCYF Juvenile Rehabilitation (SFY 17-19). Automated Client Tracking (ACT).

WSRDAC/M Reporting Standard: Yes; AI/AN, Multiracial included in AI/AN counts, Asian/PI, Multiracial included in Asian/PI counts, and Black/African American, Multiracial included in Black/African American counts.

Table 8 shows the odds of a client receiving both substance use and mental health treatment. The results indicate that as the substance use GAIN-SS score increases by one point, the odds of receiving both substance use and mental health treatment increases by 27.2%, holding all else constant (p<.05). The model as a whole was significant at the p<.01 level.

Table 8
Odds of Receiving Substance and Mental Health Treatment

	<i>Both Treatments</i>	
	Odds Ratio	Robust SE
<i>Independent Variables</i>		
Internal	1.019	0.069
External	1.121	0.077
Substance Use	1.272*	0.074
<i>Control Variables</i>		
Gender	0.942	0.275
Age at Release	1.025	0.070
American Indian/Alaska Native	1.079	0.356

⁷ Although sentence type is statistically significant, the study population excludes most DOC clients and therefore we cannot meaningfully interpret these results.

Asian/Pacific Islander	1.628	0.831
Black/African American	0.689	0.199
Hispanic/Latino	1.158	0.282
Unknown	1.657	0.837
Sentence Type	0.193	0.194
Length of Stay	1.000	0.000
<hr/>		
N	1376	
Wald chi-square	44.29**	
Pseudo R-square	0.030	

*statistically significant at p<.05 **statistically significant at p<.01

Data Source: DCYF Juvenile Rehabilitation (SFY 17-19). Automated Client Tracking (ACT).

WSRDAC/M Reporting Standard: Yes; AI/AN, Multiracial included in AI/AN counts, Asian/PI, Multiracial included in Asian/PI counts, and Black/African American, Multiracial included in Black/African American counts.

For a more nuanced understanding of the relationships between assessed need and treatment, contour plots were used (Figures 1 – 6, appendix A) to help visualize the interaction between the GAIN-SS sections (internalizing, externalizing, and substance use) and the likelihood of receiving SUD treatment, MH treatment, or both treatments.

Discussion

This study provides a historical look into the SUD and MH needs and treatment for JR clients released between SFY 2017 and SFY 2019. While this study does indicate that some clients with treatment need based on GAIN-SS scores of 1 or above are receiving treatment, the majority of these clients with SUD or MH treatment needs are not receiving treatment (51.5%, N=627), or the treatment they did receive has not been adequately tracked in the agency’s records management system. Additionally, 22.5% of clients scoring a 0 on the GAIN-SS are receiving SUD or MH treatment, indicating that the GAIN-SS is not sufficient at identifying youth with SUD and MH treatment needs.

There are a number of limitations to this study that should be addressed before we provide recommendations. First, we use the GAIN-SS to determine treatment need. JR uses this for SUD treatment but does not use it for mental health treatment. The assessment, nevertheless, indicates which youth are likely to need treatment. Second, not all treatment that clients receive is consistently recorded in the JR records management system, CAST. These data collection challenges likely result in irrelevant findings. Improved data in the future will result in more refined analysis and findings on this topic.

Recommendation 1: *Clearly outline the pathways from assessment to treatment, then monitor those pathways regularly.* While it might seem like a simple prospect to assess youth and refer

them to treatment, it can be fairly complicated. First, a valid and reliable assessment system must be established, whereby all youth are assessed and valid results are produced. Articulation of results of assessments in place now that are used to inform treatment decisions need to be established clearly. For example, while JR has historically used a score of 2 or above on the GAIN-SS to indicate treatment need, these findings indicate that clients initially scoring below a 2 on the GAIN-SS are often identified later as having a SUD treatment need. It is not always clear how this happens or if it is being done consistently. Furthermore, by including clients who scored a 1 on the GAIN-SS, as suggested in the GAIN-SS manual, this study identified 18.2 percent (n=227) more clients that could benefit from treatment. A GAIN-SS score of under 2 should not rule out that a client may have a SUD treatment need, as shown by the data in this report, and a lower cutoff score could more accurately capture SUD and MH treatment need. A more reliable way of accurately identifying clients who have a SUD and/or MH treatment need would benefit the JR population overall.

Second, a variety of SUD and MH treatments must be designed, implemented, and monitored for quality to meet the identified needs of clients in JR. And finally, the assessments and the treatments must be connected, so that there is a clear pathway from the assessment results to the types and the number of the treatments available. This full process should be designed and documented, and then data reporting must be developed to monitor the assessment to treatment pathway. This type of monitoring will make it more likely that youth who need treatment will receive treatment.

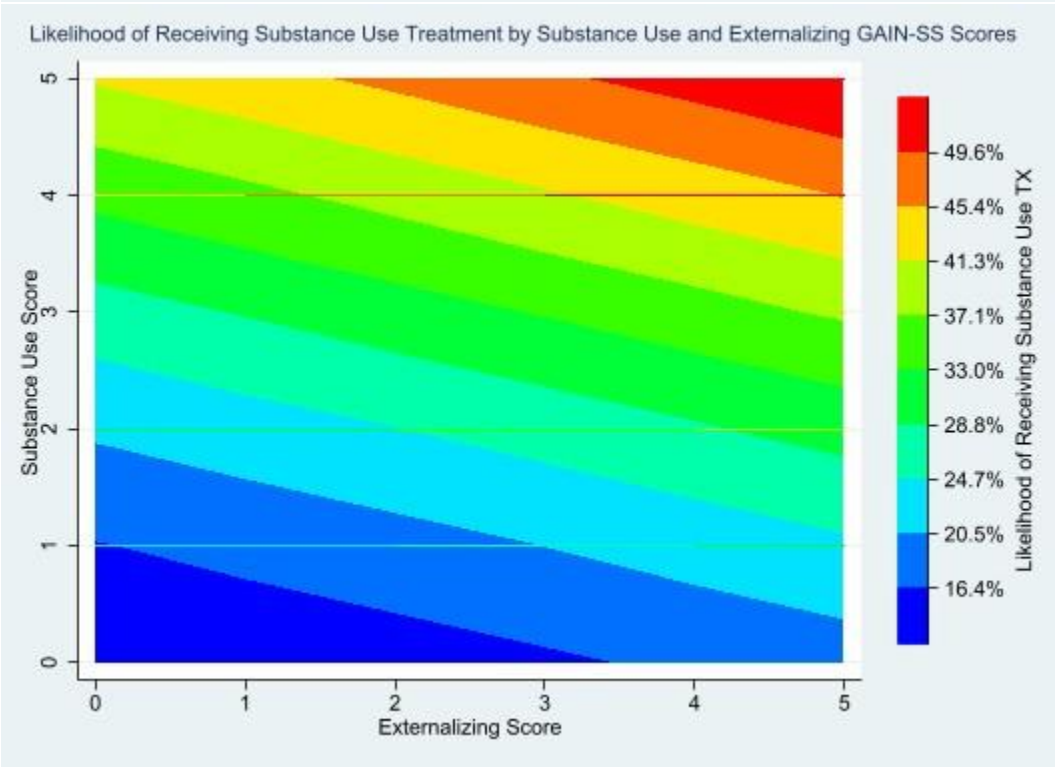
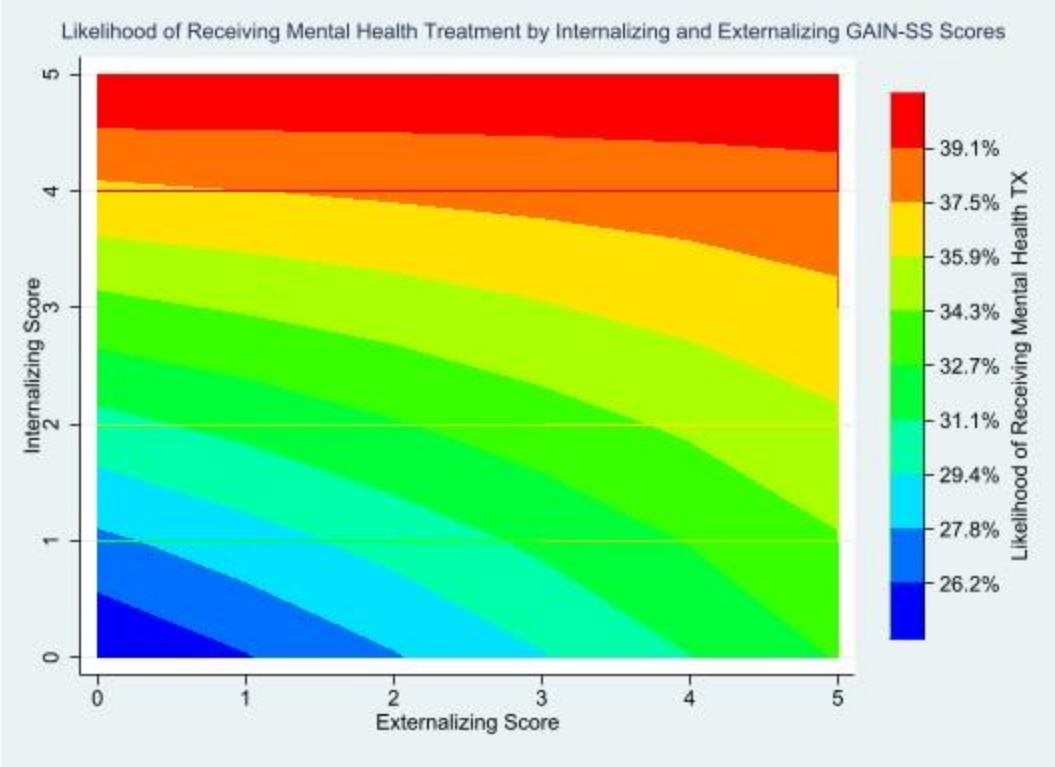
Recommendation 2: *Document a quality assurance plan for SUD and MH specific assessments and for the treatment provisions.* In terms of assessment, if the GAIN-SS continues to be used as the referral mechanism for SUD treatment, or if it is used for MH treatment referral, a quality assurance plan must be developed to ensure that all youth receive the assessment and a clear policy of how and when the assessment occurs should be developed. GAIN-SS scores were not available for every client released from JR during the time frame of this study. While the GAIN-SS should be administered within 48-72 hours of admission, for each new obligation, there are several clients who do not receive the GAIN-SS and were not included in this study. More importantly, these clients might have missed treatment opportunities due to the lack of assessment data. There is a need for quality assurance plans for SUD treatment and MH treatments in JR, both to monitor the treatment that is occurring and to ensure that documentation about the treatment is consistently and adequately produced.

Recommendation 3: *Design and implement reporting to support recommendations 1 and 2.* Once the pathway has been fully designed, and the quality assurance plans are created, leaders, and those expected to supervise this process, need to be able to monitor what is happening. This kind of data feedback loop will allow leaders to identify if and when an issue with the designed system is occurring, so they can intervene and correct any missteps.

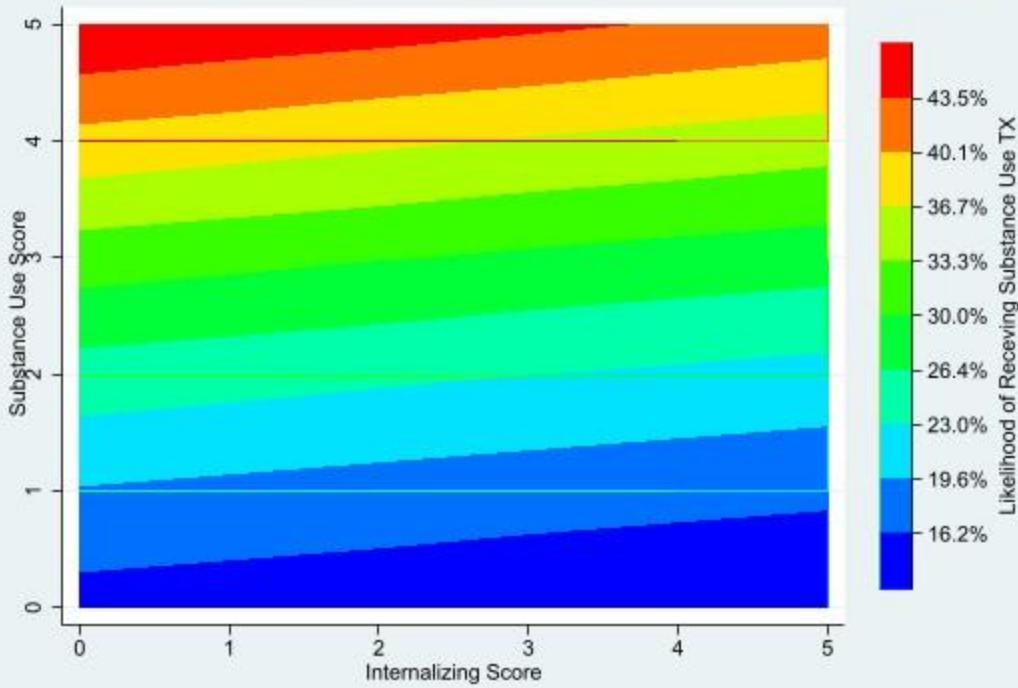
APPENDIX A

The following contour plots help visualize the interaction between the GAIN-SS sections (internalizing, externalizing, and substance use) and the likelihood of receiving SUD treatment, MH treatment, or both treatments. There are three variables represented in each plot. Located on the vertical and horizontal axes are the GAIN-SS sections being compared. The color in the plot corresponds to the predicted treatment (SUD, MH, or both).

These additional analyses show that the externalizing section of the GAIN-SS increases the likelihood of receiving substance use treatment as well as both treatments (substance use and mental health) when combined with the other GAIN-SS sections (see figures 2, 4-6). This may suggest that those clients displaying outward behaviors that indicate treatment need are more likely to receive substance use or both substance use and mental health treatment, with the exception of mental health treatment only, where the internalizing score had a larger impact on the likelihood of receiving treatment (see figure 1). A second finding from these analyses that is important to note is the low likelihood in general of a client, who has indicated treatment need, receiving any treatment. The results show the highest likelihood of receiving treatment is only around 50%. This finding leads back to the conclusions and recommendations suggesting there needs to be a clear pathway from assessment to treatment, and a sound quality assurance plan regarding the assessments themselves and the treatments provided.



Likelihood of Receiving Substance Use Treatment by Substance Use and Internalizing GAIN-SS Scores



Likelihood of Receiving Substance and Mental Health Treatment by Substance Use and Externalizing GAIN-SS Scores

