

Behavioral Health Needs and School Success

Youth with Mental Health and Substance Abuse Problems are at Risk for Poor High School Performance

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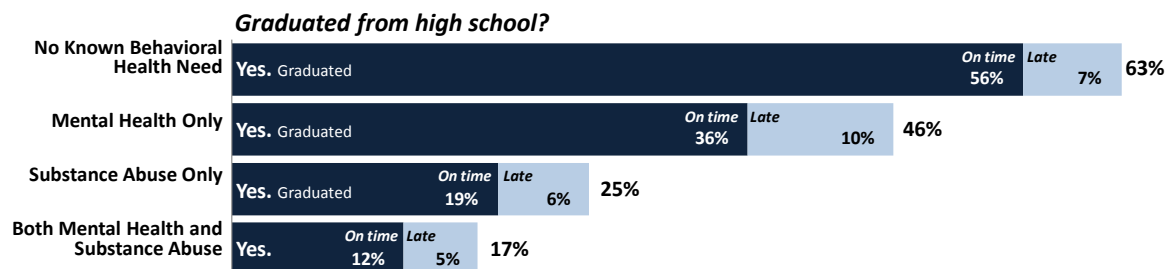
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YOUTH WITH MENTAL HEALTH AND SUBSTANCE ABUSE SERVICE NEEDS often experience a number of additional family, school and life stressors that can make high school participation and success difficult. This report describes the complex relationships between behavioral health, risk factors associated with social and health service needs, and high school progress and outcomes for DSHS clients who began 9th grade in 2005-06.

Key Findings

- 40 percent of the 28,922 DSHS 9th graders had behavioral health service needs—either mental health needs, substance abuse needs, or both (co-occurring)—during their high school years. These youth represented about 12 percent of Washington State’s ninth graders.
- Youth with behavioral health needs were less likely to graduate from and more likely to drop-out of high school than youth without behavioral health needs. Youth with co-occurring needs were the least likely to graduate on time (12 percent) and most likely to drop-out (80 percent).
- Youth with behavioral health needs had poor test outcomes, suggesting that school difficulties began early. Youth with co-occurring behavioral health needs were least likely to meet standard on 10th grade reading (34 percent) or math (9 percent) tests.
- Graduation rates varied by diagnostic category, with the lowest graduation rates found among youth with substance abuse, psychotic disorders, bipolar disorder and/or ADHD.
- Youth with behavioral health needs were more likely to experience an array of challenges and risk factors that are also associated with educational failure, including juvenile justice involvement, homelessness, early childbirth, school mobility and emergency room use.
- DSHS service patterns suggest that youth with behavioral health needs were often living in difficult family situations, including both abuse/neglect and deeper poverty levels.



STUDY POPULATION | DSHS 9th grade clients with known behavioral health needs

The study population included all (28,922) individuals who met the following criteria: 1) were first-time 9th graders in Washington schools during the 2005-06 school year; 2) received any DSHS service or medical assistance from programs now administered by the Health Care Authority (HCA) in State Fiscal Year (SFY) 2006; and 3) were observed to be residing in Washington State at any point during SFY2009 based on administrative records.

Demographic data, DSHS service use and behavioral health needs were identified via records from the DSHS Integrated Client Database (ICDB). Substance abuse and mental health needs were determined based on services, diagnoses and arrests recorded in state administrative data (see the technical notes for details). Student information, including grade level, graduation, test scores and special education services, was extracted from the Education Research and Data Center (ERDC) P-20 data warehouse, maintained by the Office of Financial Management (OFM).

FINDING 1 | Forty percent of first-time 9th graders served by DSHS had behavioral health service needs at some point during their high school years

Figure 1 below show the distribution of the types of mental health and substance abuse needs among these youth. Mental health needs were the most frequently identified behavioral health service need among these youth (34 percent). Substance abuse needs were present for 15 percent and, among those with a substance abuse need, over half also had at least one co-occurring mental health need. Based on the K-12 population size in 2005-06, the 28,922 ninth graders served by DSHS account for about one-third of the 9th grade class in Washington's public high schools, and the 11,439 ninth graders who have behavioral health needs account for about 12 percent of that class.

Four behavioral health need groups

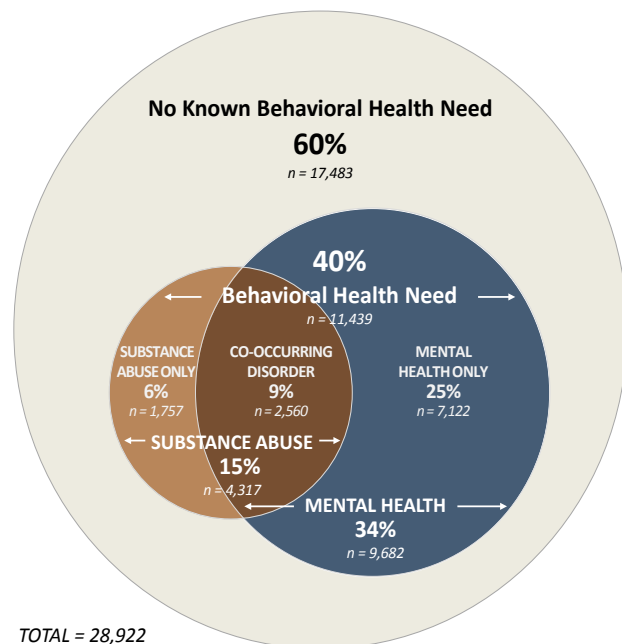
Four mutually exclusive behavioral health need groups were developed for the youth in this study and are shown in Figure 1.

They are, as follows:

- 60 percent had no known behavioral health need. 17,483 youth
- 25 percent had only a mental health need. 7,122 youth
- 6 percent had only a substance abuse need. 1,757 youth
- 9 percent had both (co-occurring) mental health and substance abuse needs. 2,560 youth
- *The prevalence of behavioral health needs varies by gender and race/ethnicity (see Table 6 in technical notes).*

SOURCE: Washington State Department of Social and Health Services, Research and Data Analysis Division, Integrated Client Database and INVEST database. April 2013.

FIGURE 1.
Behavioral Health Needs Among DSHS Youth



FINDING 2 | Youth with behavioral health needs were less likely to graduate than youth without identified behavioral health needs

Graduation rates were quite low for youth with behavioral health issues, particularly if substance abuse was present. The expected year of graduation for this cohort was 2009, and as Figure 2 (below) shows, only 19 percent of those with substance abuse need and 12 percent of those with both mental health and substance abuse needs graduated on-time. Those who had only mental health needs fared better, but their on-time graduation rate of 36 percent was still far below that of their peers without behavioral health needs (56 percent). While some students in each group were able to graduate late, within the following two years, the high school success rate was still comparatively low for those with behavioral health risks.

FIGURE 2.

On-time and late (6-year) graduation rates for youth with and without behavioral health needs

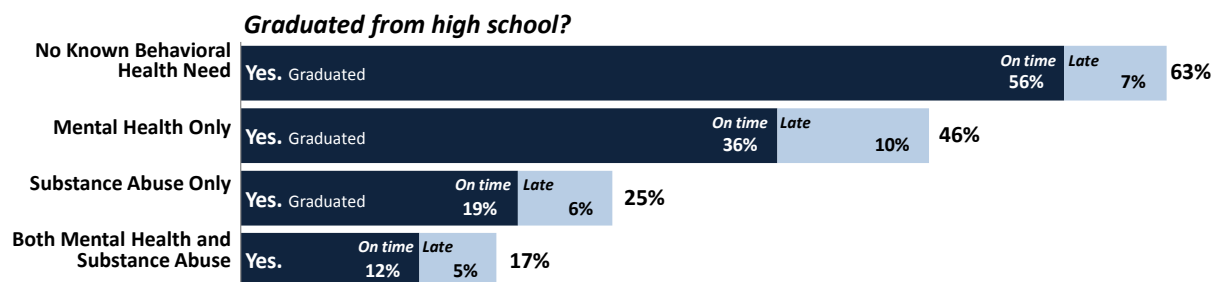


Table 1 below also shows that known or probable drop-out rates were also high among these youth. Among youth with no known behavioral health problems, 35 percent were indicated in school records as drop-outs or probable drop-outs. Substance abuse was again most strongly associated with these school-defined drop-out rates. For youth with substance abuse only, 73 percent dropped out—and for youth with both mental health and substance abuse problems, 80 percent dropped out. Youth with mental health problems and no substance abuse were at lesser but still elevated drop-out risk (48 percent).

TABLE 1.

High school graduation and drop-out rates for youth with behavioral health needs

Both on-time and delayed graduation rates and drop-out rates

	TOTAL	No Known Behavioral Health Need		Substance Abuse Only		Mental Health Only		Both Mental Health and Substance Abuse	
		#	%	#	%	#	%	#	%
Entire Cohort	28,922	17,483	–	1,757	–	7,122	–	2,560	–
Graduated from high school on-time	12,947	9,727	56%	329	19%	2,582	36%	309	12%
Graduated from high school late	2,188	1,213	7%	112	6%	730	10%	133	5%
Dropped out or probable drop-out	13,082	6,205	35%	1,285	73%	3,452	48%	2,050	80%

NOTE: Refer to Coker et al., 2012 for full description of decisions rules for determining on-time and late graduation and drop-out.

FINDING 3 | High school difficulties began early, as indicated by poor 10th grade standardized test performance

Youth with behavioral health needs did poorly throughout high school, especially youth with substance abuse problems. Figure 3 and Table 2 below show the relationship between behavioral health problems and meeting 10th grade standards in reading and math. Having both substance abuse and mental health issues is associated with the worst testing outcomes, followed by substance abuse only, and then by mental health only.

- On the reading tests, 66 percent of youth with both mental illness and substance abuse needs either did not take the tests or did not meet the standard for their grade level—compared to 27 percent in the group with no behavioral health issues. For substance abuse only, the comparable rate was 58 percent; for mental health only, 42 percent.
- On the math tests, 92 percent of youth with both mental illness and substance abuse either did not take the tests or did not meet standard for their grade level—compared to 63 percent of those with no behavioral health issues. For substance abuse only, the comparable rate was 84 percent; for mental health only, 76 percent.

FIGURE 3.

Taking and meeting standard on 10th grade reading and math tests

Among first time 9th graders in 2005-06, receiving DSHS services (TOTAL = 28,922)

		Met 10 th Grade Reading Test Standard?			
No Known Behavioral Health Need TOTAL = 17,483	Yes. Met standard	73%	No. 13%	14%	
	Did not take test				
Mental Health Only TOTAL = 7,122	Yes. Met standard	58%	No. Did not meet 19%	23%	Did not take test
	Did not take test				
Substance Abuse Only TOTAL = 1,757	Yes. Met standard	42%	No. Did not meet 21%	37%	Did not take test
	Did not take test				
Both Mental Health and Substance Abuse TOTAL = 2,560	Yes. Met standard	34%	No. Did not meet standard 24%	42%	Did not take test
	Did not take test				
		Met 10 th Grade Math Test Standard?			
No Known Behavioral Health Need TOTAL = 17,483	Yes. Met standard	37%	No. Did not meet standard 49%	14%	
	Did not take test				
Mental Health Only TOTAL = 7,122	Yes. 24%	No. Did not meet standard 53%	23%	Did not take test	
	Did not take test				
Substance Abuse Only TOTAL = 1,757	Yes. 16%	No. Did not meet standard 47%	37%	Did not take test	
	Did not take test				
Both Mental Health and Substance Abuse TOTAL = 2,560	9%	No. Did not meet standard 47%	44%	Did not take test	
	Did not take test				

TABLE 2.

DSHS behavioral health service needs and 10th grade reading and math tests

	TOTAL	No Known Behavioral Health Need		Substance Abuse Only		Mental Health Only		Both Mental Health and Substance Abuse	
		#	%	#	%	#	%	#	%
Entire Cohort	28,922	17,483	60%	1,757	6%	7,122	25%	2,560	9%
Met standard in 10 th grade reading	18,514	12,756	73%	736	42%	4,160	58%	862	34%
Did not meet standard – reading	4,663	2,314	13%	375	21%	1,352	19%	622	24%
Did not take 10 th grade reading	5,745	2,413	14%	646	37%	1,610	23%	1,076	42%
Met standard in 10 th grade math	8,686	6,475	37%	275	16%	1,699	24%	237	9%
Did not meet standard - math	14,371	8,554	49%	827	47%	3,782	53%	1,208	47%
Did not take 10 th grade math	5,865	2,454	14%	655	37%	1,641	23%	1,115	44%

FINDING 4 | Graduation rates varied by diagnostic category

Depression and anxiety were the most common mental health needs for high school aged youth receiving DSHS services as indicated by the presence of diagnosis, prescribed medications or both (see Table 3, below). Attention deficit/hyperactivity disorder (ADHD) was present for 26 percent of those with a mental health need, while 15 percent experienced a psychotic or bipolar disorder.

About four in ten (38 to 39 percent) of DSHS youth with any psychiatric diagnosis (excluding substance abuse) or psychiatric medications graduated from high school. Specifically,

- Only three in ten (29 percent) of DSHS youth with either medication or diagnoses for psychotic or bipolar disorders graduated from high school.
- A little more three in ten (33 percent) of DSHS youth with either medication or a diagnosis for ADHD, conduct or impulse disorder graduated from high school.
- Only two in ten (20 percent) of DSHS youth with substance abuse graduated from high school.

TABLE 3.

Graduation rates varied by type of behavioral health need

Behavioral health diagnoses, psychotropic medications, and combined disorder categories

	TOTAL	Graduating	
		#	%
Substance Abuse Need¹	4,317	883	20%
Medication and Diagnoses Combined			
Psychotic or bipolar	1,854	533	29%
Depression or anxiety	7,289	2,863	39%
Attention deficit/hyperactivity disorder (ADHD) and impulse control	3,229	1,074	33%
Psychiatric Diagnosis	7,349	2,773	38%
Psychotic disorder	433	116	27%
Bipolar disorder	1,197	332	28%
Depressive disorder	4,126	1,472	36%
Anxiety disorder	3,043	1,162	38%
Attention deficit/hyperactivity disorder, conduct or impulse disorder	1,753	464	26%
Adjustment disorder	1,165	450	39%
Other psychiatric diagnosis	1,322	504	38%
Psychiatric Medication	5,867	2,270	39%
Sedative	1,177	363	31%
Antianxiety	1,110	462	42%
Anti-psychotic	1,010	297	29%
Anti-depressant	3,656	1,359	37%
Anti-mania	184	53	29%
Attention deficit/hyperactivity disorder (ADHD)	2,070	774	37%

The combined rates include the presence of a diagnosis OR medication in the respective categories. Medication and diagnostic categories are not mutually exclusive.

¹ Youth has alcohol/drug related treatment, diagnosis or arrest.

FINDING 5 | Youth with behavioral health needs were more likely to experience an array of challenges and risk factors associated with educational failure

Table 4 presents a range of challenges and potential risk factors that are more likely to be present for youth with identified behavioral health needs than those without.

- **Juvenile Crime.** Juvenile crime was elevated for all youth with behavioral health needs and was highest among youth with substance abuse. Only 29 percent of the 9,359 youth with one or more juvenile crime events graduated, compared to 64 percent of youth with no crime events.
- **Homelessness.** Youth with behavioral health needs were more likely to experience homeless spells during high school. Those with co-occurring substance abuse and mental health needs were three times more likely to have a homeless spell than those with no behavioral health needs (25 percent compared to 8 percent). Only 24 percent of the youth with one or more homeless episodes graduated, compared to 56 percent of the youth without a homeless spell.
- **Emergency Room Use.** Emergency rooms usage was increased four-fold among youth with co-occurring needs. All youth with behavioral health issues had elevated rates of emergency room use. Youth with both substance abuse and mental health issues averaged four emergency room visits during high school—as compared to less than one emergency room episode for youth with no behavioral health issues. Youth who did not graduate had an average of 2.3 emergency room visits during high school, compared to 1.0 visit for youth who graduated.
- **School Changes.** School changes were more common for all youth with behavioral health needs, and were elevated more than three-fold among youth with co-occurring needs. Youth who did not graduate had an average of 1.1 school changes during high school, compared to 0.2 for youth who graduated.
- **Teen Pregnancy.** There were 1,843 young women who gave birth during their high school years. Young women with behavioral health needs were more likely to have babies during high school. Those with co-occurring substance abuse and mental health needs were almost three times more likely to have a baby than those with no behavioral health needs (24 percent compared to 9 percent). Only 24 percent of the young women who gave birth to a baby graduated, compared to 63 percent of the young women who did not have babies.

TABLE 4.
Youth behavioral health and associated risk factors

	TOTAL	No Known Behavioral Health Need		Substance Abuse Only		Mental Health Only		Both Mental Health and Substance Abuse	
		#	%/SD	#	%/SD	#	%/SD	#	%/SD
Entire Cohort	28,922	17,483	60%	1,757	6%	7,122	25%	2,560	9%
Juvenile Crime	9,359	3,746	21%	1,410	80%	2,202	31%	2,001	78%
Homelessness	3,364	1,388	8%	325	19%	1,001	14%	650	25%
Number ER Visits <i>M(SD)*</i>	1.6 (3.3)	0.9	(1.8)	1.6	(2.7)	2.3	(4.3)	3.8	(6.1)
Number School Changes <i>M(SD)**</i>	0.6 (0.8)	0.4	(0.6)	1.1	(0.9)	0.6	(0.7)	1.4	(0.9)
FEMALE ONLY Portion of Cohort	15,028	9,231	53%	520	30%	4,143	58%	1,134	44%
Childbirth***	1,843	837	9%	94	18%	636	15%	276	24%

* Number of ER visits during high school. **Number of school changes averaged over years enrolled. ***For females only.

FINDING 6 | Youth with behavioral health needs were more likely to have other risk factors including experience of abuse/neglect, deeper poverty, and juvenile justice involvement

- Abuse/Neglect.** The DSHS Children’s Administration (CA) provides services to youth in families where abuse and neglect are alleged. Almost half (48 percent) youth with both substance abuse and mental health needs received services other than foster care from the DSHS Children’s Administration at some point during high school, and 17 percent were in foster care during high school. Comparatively, only 20 percent of the DSHS youth without known behavioral health difficulty received CA non-foster care services, and only 1 percent were in foster care.
- Deeper Poverty.** Among youth in the study population, those receiving only medical assistance tend to be in families with higher income than other youth served by DSHS. Among youth with no behavioral health needs, 21 percent received only medical assistance and no other DSHS services during their high school years. Among youth with both substance abuse and mental health needs, the comparable rate was much less than 1 percent. Conversely, children in families receiving TANF cash assistance tend to have very low income, and a larger proportion of children with behavioral health needs received TANF assistance (43 percent of youth with both substance abuse and mental health needs, compared to only 25 percent of youth with no identified behavioral health needs).
- Juvenile Justice and Rehabilitation Administration (JJ&RA).** Of the total youth in our cohort, 1,149 received residential and/or community services from JJ&RA, due to commitment by the courts. The rate of JJ&RA service was highest among youth with substance abuse only (16 percent) and those with co-occurring substance abuse and mental health needs (19 percent). Only 1 percent of the youth with no behavioral health issues and only 3 percent of those with only mental health service need were served by JJ&RA.

TABLE 5.

DSHS behavioral health service needs and DSHS service use during high school

DSHS services provided

	TOTAL	No Known Behavioral Health Need		Substance Abuse Only		Mental Health Only		Both Mental Health and Substance Abuse	
		#	%	#	%	#	%	#	%
Entire Cohort	28,922	17,483	100%	1,757	100%	7,122	100%	2,560	100%
Medical assistance only	4,186	3,693	21%	29	2%	455	6%	9	0%
In a TANF family	8,664	4,429	25%	609	35%	2,529	36%	1,097	43%
Received Basic Food AND No TANF	9,288	5,510	32%	572	33%	2,330	33%	976	34%
Received JJ&RA services	1,149	181	1%	281	16%	191	3%	496	19%
In CA foster care	1,199	199	1%	44	3%	520	7%	436	17%
No foster care, other CA services	7,727	3,502	20%	638	36%	2,369	33%	1,218	48%
Received DDD services	651	226	1%	3	0%	388	5%	34	1%
Received DBHR mental health services	5,588	0	0%	0	0%	3,698	52%	1,890	74%
Received DBHR substance abuse services	3,979	268 ²	2%	1,428	81%	157 ³	2%	2,126	83%

² Assessments were the only DBHR-SA services received by these 268 youth.

³ Assessments were the only DBHR-SA services received by these 157 youth.

Conclusions

All the youth in this study received DSHS services when they were beginning high school. As such, most are from low-income families or have other difficulties such as developmental delays or family difficulties necessitating child welfare or protection needs that could increase the risk of school failure. These 28,922 youth make up about 32 percent of the 90,036 9th graders enrolled in Washington State public schools in October 2005.

This study has shown that among these already at-risk youth, those with identified behavioral health needs were much less likely to succeed in school. Youth with behavioral health issues were much less likely to be academically engaged in high school (as indicated by missing or below standard 10th grade test scores) and much more likely to drop-out of high school without graduating. Youth with co-occurring substance abuse and mental health difficulties were least likely to succeed, but those with either mental health needs or substance abuse only were also more at risk than those without identified behavioral health issues. *These 11,439 youth with DSHS-known behavioral health service needs make up about 12 percent of the 90,036 9th graders enrolled in Washington State public schools in October 2005.*

The 11,439 youth with behavioral health needs had much higher rates of juvenile crime, homelessness, early childbirth, emergency room use, and school mobility, all of which were negatively associated with high school graduation. They also had DSHS service records indicating higher rates of child abuse and neglect and family poverty. We have demonstrated poor high school outcomes, including low rates of graduation and increased risk of drop-out, for youth with such risk factors compared to their peers in a prior paper (Coker, et al, 2012).

The findings presented here speak to the importance of moving towards service interventions that operate across the schools, courts and social service systems, to provide earlier identification and treatment focused on school engagement and successful school completion for youth with behavioral health needs. This is a difficult system integration challenge given the organizational and information sharing barriers. However, services informed by an integrated view of a child's risk factors and experiences are clearly critical to improving school and life outcomes for youth with behavioral health needs.

LIMITED DATASET (THE INVEST DATABASE)

The larger study population from which the present cohort was drawn included all individuals who received any kind of DSHS service in State Fiscal Year (SFY) 2006, SFY 2007 and SFY 2008 and were age 25 or younger on January 1 of the first of these 3 years in which they received any DSHS service. The Education Research and Data Center was able to link K-12 data for 892,034 (60.59 percent) of these individuals, and provided education data, including graduation information, progress indicators, and other information, for the Academic Years 2004-2005 up to and including 2010-2011. The result was a limited dataset (INVEST database) that includes K-12 data for the time spans indicated and DSHS data from a variety of agencies and sources for the SFY 2004 through 2009, linked at the individual level, but including no direct identifiers). The ERDC P-20 data is compiled from student-level longitudinal education records collected by the Washington State Office of the Superintendent of Public Instruction (OSPI).

DECISION RULES FOR INCLUDING YOUTH IN THIS STUDY

Individual records for 28,922 youth receiving at least one month of DSHS service during 9th grade were drawn from the INVEST database for youth who:

- Were in the 9th grade for the first time in Academic Year 2005-2006.
- AND were between the ages of 12 and 17 on September 1, 2005.
- AND received at least one month of any DSHS service in Academic Year 2005-06.
- AND received at least one month of the following DSHS services during the 2006-2009 academic years: medical assistance (HCA), behavioral health services from the DSHS Division of Behavioral Health and Recovery (DBHR), juvenile rehabilitation services, or any services from the DSHS Children's Administration.
- AND were still living in Washington in SFY 2009, per the following criteria: received at least one month of any DSHS service other than the Child Support enforcement in SFY 2009, OR had employment data (Employment Security Department), an arrest record (Washington State Patrol), Administrative Office of the Courts data, or any higher education data at any point in SFY 2009.

DECISION RULES FOR DETERMINING DSHS BEHAVIORAL HEALTH NEED GROUPS

- Youth were coded as having a mental health service need if they received any Behavioral Rehabilitation Service treatment (BRS) from the DSHS Children's Administration OR any mental health treatment through DSHS DBHR or medical or tribal sources; OR if their medical records included at least one psychiatric diagnosis in the following categories: psychotic, bipolar, depression, anxiety, ADHD, conduct, impulse, or adjustment disorders; OR if they received psychotropic medication in the following classes: antianxiety, antidepressant, antipsychotic, antimania, or ADHD.
- Youth were coded as having a substance abuse treatment need if they received at least one abuse or dependence diagnosis or service from a DBHR or medical provider or if they had a substance-related arrest recorded by Washington State Patrol.

DECISION RULES FOR DETERMINING HIGH SCHOOL OUTCOMES AND SCHOOL RISK FACTORS

- The decision rules for determining high school outcomes can be found in Coker, et al., 2012.
- The 10th grade test scores as reported here reflect the students' performance on the Washington State Assessment of Student Learning (WASL) exams were used during the time period of the study. While typically given during the 10th grade, the student may have taken the exam earlier or later, or more than once. Results reported here reflect the latest test score data reported for the student in the available education records.
- Students were flagged as receiving special education services if enrolled in special education services at any point between and including AY2006 through AY2009 (see Coker, et al., 2013 for a more thorough description of special education needs specific to students who receive DSHS services).

DECISION RULES FOR DETERMINING OTHER RISK FACTORS

Juvenile Crime Events: Included either an arrest for a felony or gross misdemeanor recorded in the Washington State Patrol database OR activity recorded in the WSIPP recidivism database that indicates a disposition associated with criminal activity (conviction, detention, JJ&RA referral, deferral or diversion).

Homelessness: Indicates at least one spell of homelessness recorded by a financial eligibility worker during eligibility (re) determination for public assistance. Includes the following categories from the DSHS Automated Client Eligibility System (ACES): battered spouse shelter, emergency housing shelter, homeless without housing, homeless with housing, homeless without housing in shelter expenses, in appropriate living condition, and nominal rent in shelter expenses.

Emergency Room Use: Includes outpatient emergency room visits from medical service records.

Childbirth During Teen Years: Drawn from the Integrated DSHS Database, matched to state birth records.

School Changes: Includes any move to a new school averaged over the number of years enrolled during this timeframe (maximum of four years).

TABLE 6.

Gender, race-ethnicity and refugee/immigrant status by behavioral health need

	TOTAL	No Known Behavioral Health Need		Substance Abuse Only		Mental Health Only		Both Mental Health and Substance Abuse	
		#	%	#	%	#	%	#	%
Entire Cohort	28,922	17,483	60%	1,757	6%	7,122	25%	2,560	9%
Gender									
Male	13,894	8,252	59%	1,237	9%	2,979	21%	1,426	10%
Female	15,028	9,231	61%	520	3%	4,143	28%	1,134	8%
Race/Ethnicity									
White Only, Non-Hispanic	14,625	8,116	55%	881	6%	4,231	29%	1,397	10%
Unknown race	2,329	2,012	86%	21	1%	291	12%	5	0%
Any Racial or Ethnic Minority	11,968	7,355	61%	855	7%	2,600	22%	1,158	10%
<i>African American</i>	3,008	1,648	55%	220	7%	763	25%	377	13%
<i>American Indian</i>	2,168	832	38%	211	10%	661	30%	464	21%
<i>Asian/Pacific Islander</i>	1,939	1,379	71%	100	5%	316	16%	144	7%
<i>Hispanic</i>	5,740	3,868	67%	402	7%	1,103	19%	367	6%
Refugee or Immigrant	750	674	90%	18	2%	53	7%	5	1%

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