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## Behavioral and Emotional Strengths among Youth in Systems-of-Care and the Effect of Race/Ethnicity

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### Abstract

Behavioral and emotional strengths are important to consider when understanding youth mental health and treatment. This study examined the association between youth strengths and functional impairment, and whether this association is modified by race/ethnicity. Multinomial logistic regression models were used to estimate the effects of strengths on impairment, and examine whether race and ethnicity modified this relationship in 8,129 Caucasian, African American, Hispanic, and American Indian/Alaska Native youth, between 5 and 18 years of age. Results suggest that youth with average and above average strengths were less likely to have impairment compared to youth with below average strengths. Race and ethnicity modified this relationship in both expected and unexpected ways. Among youth with average and above average strengths, racial and ethnic minority youth appear to have more impairment than Caucasian youth. However, among youth with below average strengths, racial and ethnic minority youth have less impairment than Caucasian youth. Findings highlight the importance of incorporating strengths-based approaches in youth mental health treatment and the need for further research to understand the specific nature of strengths as it effects impairment across racial/ethnic groups. Implications and recommendations are discussed.

### Keywords

behavioral and emotional strengths; youth; functional impairment; race/ethnicity

Youth's mental health problems often result in impaired behavioral and emotional functioning. In recent years, functional impairment has played an increasing role in identifying a youth's need for services, treatment planning, service delivery and treatment outcomes. Coinciding with the increased emphasis upon functioning has been a shift to incorporate a strengths-based approach into the treatment of youth's mental health problems. While studies have examined the relation between mental health problems and impairment (e.g., Lyons, Uziel-Miller, Reyes, & Sokol, 2000; Walrath, Mandell, Holden, & Santiago, 2004), less is known about the relation between a youth's strengths and functional impairment and whether that relation varies for youth from different racial and ethnic backgrounds. An increased understanding of how strengths and impairment are related can

aid clinicians in developing treatment plans that not only address deficits, but also build upon the assets a youth brings to the treatment setting, and in providing more culturally sensitive treatment.

Five to ten percent of children have both a DSM-IV psychiatric diagnosis and corresponding functional impairment (Canino et al., 2004; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Ford, Goodman, & Meltzer, 2003; Roberts, Roberts, & Xing, 2007). Studies that examine the relation between strengths and impairment suggest a negative correlation; youth with higher levels of strengths have correspondingly lower levels of functional impairment, and vice versa (Lyons et al., 2000; Farmer et al., 2005; Oswald, Cohen, Best, Jenson, & Lyons, 2001; Stiffman et al., 2007; Walrath, Mandell, et al., 2004). Strengths are also related to other mental health outcomes. For example, youth with higher levels of strengths tend to have fewer symptoms of mental health problems (Oswald et al., 2001). Among youth served in residential centers, those with higher levels of strengths were more likely to be discharged to a family home or independent living situation rather than a more restrictive setting like a hospital or group home (Lyons et al., 2000). Such studies suggest the potential benefit of incorporating strengths into mental health services and support the notion that a strength-based approach is not only more empowering (Rudolph & Epstein, 2000) and less stigmatizing than one that is based on deficits alone (Cox, 2006), but may also positively effect outcomes.

There are a number of sociodemographic and clinical risk factors that may obscure the true relation between strengths and impairment. For example, youth living in poverty may have less access to resources and may have fewer financial strengths to draw upon than youth living in families with economic stability. Correspondingly, family income is associated with functional impairment and youth living in poverty are more likely to have impairment (e.g., Brauner & Stephens, 2006; Costello et al., 2003). Gender, age, and risk history (e.g. physical abuse, sexual abuse, etc.) are other factors that may be associated with youth strengths (e.g., Luthar, Cicchetti, & Becker, 2000; Stadelmann, Perren, von Wyll, & von Klitzing, 2007; Walrath, Mandell, et al., 2004) and functional impairment (e.g., Mueller, Tolman, Higa-McMillan, & Daleiden, 2009; Walrath, Petras, et al., 2004). Studies that examine the relation between youth emotional and behavioral strengths and functional impairment without taking into account such sociodemographic and clinical risk factors may overestimate the relation between strengths and impairment.

Though studies have found racial and ethnic differences in the behavioral and emotional strengths of youth (Walrath, Mandell, et al., 2004) and in the mental health problems and functioning of youth (Angold et al., 2002; Minsky et al., 2006; Nguyen, Huang, Arganza, & Liao, 2007; Yeh et al., 2005), it remains unclear whether the relationship between strengths and impairment varies across racial and ethnic groups. Cultural values and beliefs influence the strengths that children and youth develop and possess. For example, family and community involvement, as well as the development of a racial or ethnic identity, are culturally entrenched values and experiences that are particularly salient among African American, Hispanic, and American Indian/Alaska Native families (e.g., Lambert et al., 2005; Sarche & Spicer, 2008; Stiffman et al., 2007; Umana-Taylor & Updegraff, 2007). Perhaps strengths are more (or less) important in effecting the functional impairment of children from certain racial and ethnic backgrounds. If strengths have varying importance in the functional impairment of racially and ethnically diverse children, clinicians can focus efforts to enhance the capacities of particular groups of children, as well as ensuring that culturally relevant treatment goals are and techniques that recognize strengths are utilized in treatment.

Although the interaction between youth strengths and race/ethnicity on functional impairment has not been previously investigated, some insight into the association between strengths and impairment can be gained from work by Walrath, Mandell, and colleagues (2004). They examined the reverse association, (i.e., the association between functional impairment and strengths), in youth served by community mental health systems of care. While non-Hispanic White youth had lower than average overall strengths compared to youth of other racial and ethnic backgrounds, the relationship between functional impairment and strengths did not vary by race/ethnicity (i.e., there was no significant interaction). It is worth noting that the study sample aggregated all racial and ethnic minority youth together, comparing all minority youth to White youth, and was restricted to cases with complete information, the latter of which resulted in the exclusion of approximately half of the sample.

The current study uses data from the national evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program (CMHI) to extend the previous literature, examine the association between the behavioral and emotional strengths and functional impairment of youth, and further determine whether this association varies across racial and ethnic groups. Initiated in 1993, the CMHI is the largest, federally funded initiative to develop and enhance accessible, coordinated, individualized, culturally competent, family driven, and strengths based services that are provided in the least restrictive environment possible (Center for Mental Health Services, 2006). Over 92 communities have received funding (Center for Mental Health Services, 2006) and the CMHI provides a unique opportunity to better understand the strengths and impairment of youth with mental health problems.

## Methods

### Data Source

The national evaluation of the CMHI examines the development and implementation of the system of care approach to child mental health services, service delivery practices, and child and family outcomes. To achieve this purpose, the project collects descriptive information (demographic information, diagnosis at intake, etc.) on all youth referred into the program, in addition to more extensive information on a sub-sample of youth and families who participate in a longitudinal study of the program. The present study utilizes baseline data from this sub-sample of youth and families, and was supported by NIMH 1R01MH075828-01A1 (P.I., Philip Leaf, Ph.D.) and NIMH 2T32MH019545-16 (P.I., Philip Leaf, Ph.D.). A detailed description of the national evaluation study design and procedures can be found elsewhere (e.g., Center for Mental Health Services, 2003; 2006).

Two datasets were made available for use in the current study: the original dataset, which included missing data, and a multiply imputed dataset, which had been created to allow multiple investigators to examine a broad range of research interests. In the current study sample, missingness at the variable level ranged from 0% to 19%, and the sample size in the final models would have been reduced by 42% if the original data had been used; therefore, the multiply imputed dataset was used in the present analyses. Briefly, multiple imputation is a principled method of addressing missing data whereby missing values are imputed by predicting the values based on the observed data (Rubin, 1987; Schafer, 1997; 1999; Schafer & Graham, 2002). Missing values were imputed five times using the chained equations procedures described by Raghunathan and colleagues and five “complete” datasets were generated (Raghunathan, Lepkowski, Van Hoewyk & Solenbeger, 2001). Additional information on multiple imputation can be found in Graham (2009) and Siddique and colleagues (2008). Analyses are conducted on each dataset and the final estimates are combined to account for variability within and across each imputed dataset (Rubin, 1987;

Schafer, 1997). A more detailed description of the multiple imputation process and procedures used to create the multiply imputed datasets that were used for the present study can be found elsewhere (Stuart, Azur, Frangakis, & Leaf, *in press*).

### Sample Selection

The current study uses baseline data ( $n=8129$ ), on Caucasian (55%), African American (24%), Hispanic (13%), and American Indian/Alaskan Native youth (7%) ages 5–18 years ( $M=12.27$ ,  $SD = 3.21$ ) who were enrolled in the longitudinal study between 1997 and 2005. These youth and their families were referred to one of 45 systems of care program sites across the United States. The sites included urban ( $n=15$ ) and rural communities ( $n=17$ ), as well as communities whose geographic area spanned both urban and rural areas ( $n=13$ ). Due to small sample sizes, (i.e., Asian ( $n=32$ ), Pacific Islander ( $n=24$ ), and youth of “other” ( $n=41$ )), some racial/ethnic groups were excluded from the study.

### Measures

**Functional impairment**—The Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1994) was administered by providers or independent interviewers, who completed structured training to assure consistent, reliable scoring (Hodges, 1997; 2000; Hodges & Kim, 2000) at intake into services. The CAFAS is a measure of functional impairment across eight domains: home role performance, school role performance, community role performance, behavior toward others, moods and emotions, self-harmful behavior, substance use or abuse, and thinking (Hodges, 1997). The total functional impairment is a sum of scores across the eight domains, and ranges from 0 to 240, with higher scores indicating greater levels of impairment. Scores between 0–10 suggest minimal impairment, 20–40 mild impairment, 50–90 moderate impairment, 100–130 marked impairment, and 140–240 severe impairment. For the purposes of the present study, total functional impairment was categorized accordingly: 0–40 minimal/mild impairment, 50–90 moderate impairment, 100–130 marked impairment, and 140–240 severe impairment. The CAFAS has acceptable reliability (ICCs ranging from .83–.92; Cronbach’s alphas ranging from .63–.68) and validity (e.g., Hodges, Doucette-Gates, & Kim, 2000; Hodges & Wong, 1996).

**Strengths**—Youth behavioral and emotional strengths were measured at intake into services with the Behavioral and Emotional Strengths Questionnaire (BERS; Epstein & Sharma, 1998). The BERS is a standardized caregiver report questionnaire, which assesses strengths across five domains: interpersonal strength, family involvement, intrapersonal strength, school functioning, and affective strength, and yields subscale scores and an overall Strength Quotient (standardized summation of the five subscales). Scores below 90 indicate below average strength, scores between 90 and 110 indicate average strength, and scores above 110 indicate above average strength (Epstein & Sharma, 1998). The BERS has demonstrated excellent reliability and validity, with coefficient alphas for the subscales and overall quotient ranging from .79 to .99. (e.g., Epstein, 1999; Epstein, Ryser, & Pearson, 2002).

**Covariates**—At intake into services, caregivers were asked to identify the youth’s race and ethnicity. This information was used to create four mutually exclusive race/ethnicity categories (non-Hispanic White, non-Hispanic African American, non-Hispanic American Indian/Alaskan Native, and Hispanic).

While the focus of the present study is on the relationship between strengths and functional impairment, there are several factors related to these variables that, if excluded from analytical models, could result in the identification of significant associations that may not

exist. To that end, a number of potential confounding variables were included as covariates in the model. At intake into services, trained interviewers and service providers obtained caregiver report of such covariates as youth gender, age, Medicaid eligibility (no/yes), geographic region, previous service use, source of referral into the system of care program, family household income, and youth and family risk factors (e.g., history of domestic violence, abuse). The original income variable was a ten-point Likert scale that ranged from *less than \$5000 to \$100000 and over*. Income was re-categorized as <\$15,000, \$15,000–\$24,999, \$25,000–\$49,999, and ≥\$50,000. Risk factors were categorized as *none*, *youth risk factors only* (e.g., child has been physically abused, child has attempted suicide), *family risk factors only* (e.g., history of family violence, biological parent(s) convicted of a crime), and *youth and family risk factors*.

## Analyses

Multinomial logistic regression models were used to estimate the association between functional impairment and strengths. The estimates are expressed as relative risk ratios (RRR), which can be interpreted in a similar manner to odds ratios. An RRR greater than 1 suggests that there is a greater likelihood of being impaired than not being impaired. An RRR less than 1 suggests that there is a lower likelihood of being impaired than not being impaired. Models were built in stages. First, the unadjusted association between strengths and impairment was estimated. Then, the association between strengths and impairment was estimated accounting for the covariates. Finally, an interaction term between strengths and impairment was added to the model, still accounting for the covariates. Although the development of Goodness of Fit tests for multinomial models is an area of ongoing statistical research, there are tools readily available to identify and select the “better fitting” model. For the purposes of the present study, analyses were completed to determine whether the model that examines the association between strengths and impairment accounting for covariates, or the model with the interaction term, still accounting for the covariates, was a better fitting model for the data. The Bayesian Information Criterion (BIC) and the Akaike Information Criterion (AIC) were used to compare these two models (Schwartz, 1978); lower scores represent better fitting models (Lo, Mendell, & Rubin, 2001). All the models accounted for the correlation among youth from within the same funded site. Exploratory analyses and initial model building were conducted on one imputed dataset. Analyses for final models were conducted across the five imputed datasets and results were combined using Rubin’s rules for combining multiply imputed data (Schafer, 1999; Schafer & Graham, 2002). Analyses were conducted using Stata 10.0 (StataCorp LP, 2007).

## Results

The sample was predominantly male (67%), and Caucasian (55%). The majority (64%) of the sample had below average strengths, however, strengths varied significantly by race/ethnicity. Fifty-nine percent of African American youth, 61% of Hispanic youth, and 64% of American Indian/Alaskan Native (AI/AN) youth had below average strengths compared to 67% of Caucasian youth. Relative to Caucasian youth, smaller percentages of African American, Hispanic, and American Indian/Alaskan Native youth had severe impairment. (See Table 1).

In the unadjusted model (not shown), behavioral and emotional strengths were significantly associated with levels of functional impairment; youth with average and above average strengths were less likely to have any category of functional impairment (moderate (RRR: .49, 95% CI: .39–.62 and RRR: .25, 95% CI: .19–.32), marked (RRR: .28, 95% CI: .22–.37 and RRR: .11, 95% CI: .07–.16), and severe (RRR: .20, 95% CI: .15–.27 and RRR: .04, 95% CI: .02–.06)) compared to youth with below average strengths.



The results of the multinomial logistic regression, with the covariates included in the model to adjust for their effects, reveal youth with average strengths, as well as youth with above average strengths, were significantly less likely to have more severe categories of impairment (moderate (RRR: .46, 95% CI: .37–.58 and RRR: .23, 95% CI: .17–.31), marked (RRR: .26, 95% CI: .20–.34 and RRR: .10, 95% CI: .06–.15), and severe impairment (RRR: .19, 95% CI: .14–.25 and RRR: .03, 95% CI: .02–.06)) compared to youth with below average strengths. There were no significant race/ethnicity effects in these models. (See Table 2).

Both the Akaike Information Criteria (AIC) (19457.36,  $df = 44$  vs. 19495.29,  $df = 44$ ) and Bayesian Information Criteria (BIC) (19765.65,  $df = 44$  vs. 19803.58,  $df = 44$ ) suggest that the model with the interaction term between race and strengths included, is a better fitting model than one without the interaction term. A significant main effect for strengths remained in the model, such that youth with average strengths and youth with above average strengths continued to be less likely to have any level of functional impairment (moderate, marked, or severe) compared to youth with below average strengths. In addition, there was a significant main effect for race/ethnicity. Hispanic youth were less likely to have moderate (RRR: .53, 95% CI: .33–.87), marked (RRR: .55, 95% CI: .31–.98), and severe impairment (RRR: .43, 95% CI: .22–.83) compared to Caucasian youth. African American youth (RRR: .43, 95% CI: .23–.77) and American Indian/Alaska Native youth (RRR: .38, 95% CI: .16–.88) were less likely to have severe functional impairment compared to Caucasian youth. Several significant interactions between race and strengths emerged. Irrespective of ethnicity, youth with above average strengths were less likely to have moderate impairment compared to youth with below average strengths (See Table 3 and Figure 1).

However, Hispanic youth with above average strengths were more likely to have moderate impairment compared to Caucasian youth with above average strengths. The reverse was true for Hispanic youth with below average strengths; they were *less* likely to have moderate impairment than Caucasian youth with below average strengths.

There were also significant interactions with severe impairment (See Figure 2). Similar to the interaction between Hispanic and Caucasian youth, both African American and Caucasian youth with average strengths and above average strengths were less likely to have severe impairment compared to African American and Caucasian youth with below average strengths.

There was little difference in the proportion of the sample in the severe impairment category between African American and Caucasian youth with average strengths; however, African American youth with below average strengths were less likely to have severe impairment than Caucasian youth with below average strengths. African American youth with above average strengths were *more* likely to have severe impairment compared to Caucasian youth with above average strengths. There were no significant interactions between race and strengths when comparing American Indian/Alaskan Native youth and Caucasian youth, which could reflect the comparatively small sample of the American Indian/Alaska Native youth.

## Discussion

The results of the present study suggest that behavioral and emotional strengths may help protect youth from functional impairment and that even severely emotionally disturbed (SED) youth possess strengths. Consistent with the literature (Lyons et al., 2000; Oswald, et al., 2001; Walrath, Mandell, et al., 2004), youth with average strengths and youth with above average strengths had lower levels of impairment than youth with below average

strengths. These findings are consistent across settings and apply to youth in intensive mental health services, such as residential treatment (Lyons et al., 2000), as well as to youth entering community based mental health systems of care.

Previously, strengths and impairment have been conceptualized as opposites of a single construct, such that strengths were perceived, in some instances, as the absence of impairment (e.g., Masten, 2001; Tiet et al., 1998). Either youth possess strengths or they have functional impairment. The current study lends support to the theory that strengths and impairment are related, but distinct constructs, where youth can both possess strengths and functional impairment. The current study found that even SED youth, with presumably clinical levels of functional impairment, had behavioral and emotional strengths to draw upon. Recent studies (e.g., Oswald et al., 2001; Walrath, Mandell, et al., 2004) also support the notion youth can have both strengths and impairment and taken together, highlight the importance of incorporating strengths-based approaches to treating youth with mental health problems.

Race and ethnicity were significant modifying factors in the relationship between strengths and functional impairment. Both Hispanic and Caucasian youth with above average strengths were less likely to have moderate levels of functional impairment than youth with below average strengths; however, among the youth with above average strengths, Hispanic youth appeared to have more impairment than Caucasian youth. Conversely, among youth with below average strengths, Hispanic youth appeared to have less impairment than Caucasian youth. A similar pattern emerged with African American and Caucasian youth. Among youth with above average strengths, African American youth had more severe impairment than Caucasian youth, while among youth with below average strengths African American youth had less severe impairment than Caucasian youth. Thus, racial and ethnic minority youth appeared to have more impairment than Caucasian youth when they possess above average strengths, but less impairment than Caucasian youth when they possess below average strengths.

The contradictory association between strengths and impairment for Caucasian, Hispanic, and African American youth was unexpected and it is unclear what may be causing the differences. Further research that investigates how contextual and environmental factors affect minority and non-minority youth may shed some light. Poverty, residing in low-income high crime urban areas, and experiencing discrimination disproportionately affect minority families and youth (e.g., Bolland et al., 2007; U.S. Department of Health and Human Services, 1999). Perhaps even if minority youth possess numerous intrinsic strengths, the differences in experiences between Caucasian and minority youth may contribute to the continued disparities in functional impairment among youth with above average strengths. Incorporating an ecological perspective into treatment planning and intervention, so that clinicians consider youth strengths (and deficits) within the broader context of the youth's physical, cultural, and social environment, can help clinicians deliver more individualized, culturally competent care to youth and their families.

It is also possible that cultural, social, and contextual factors influence a caregiver's interpretation of a child's strengths and behavior. For example, a caregiver may be more sensitive to increases in aggressive behavior if those behaviors are perceived as inconsistent with the cultural, social, and/or developmental norms and expectations for the child. The caregiver may then be more likely to perceive the child as impaired and less likely to identify strengths. Conversely, a caregiver may be less likely to view a child as impaired if the immediate cultural, social, and/or developmental norms suggest that aggressive behavior is normative (e.g., it is perceived as assertive behavior or necessary to survival). In working with youth and their caregivers, clinicians should take particular care to understand

caregiver's attitudes toward and perceptions of youth behavior. For example, it may be helpful for clinicians, during the assessment or clinical interview, to ask caregivers how the youths' behavior is understood and use this information to engage the caregiver in the treatment planning process. In addition, further research is needed to understand how factors such as neighborhood characteristics and community norms influence caregiver's perceptions of child behaviors and can be utilized in the treatment process.

Alternatively, it may be that caregivers perceive certain strengths and coping strategies as adaptive but the strategies result in impaired functioning. Nicholas and colleagues (2008) present a conceptual framework for understanding strengths among African American youth. They discuss how African American youth may "employ [coping] strategies that either enhance or impair the quality of their functioning" (pg. 276). For example, African American youth may emotionally withdraw from stressful or volatile situations in which they feel helpless to change the situation (Nicholas et al., 2008). While disengagement may be a strength in certain situations, persistent disengagement could lead to impaired functioning. Additional research that investigates the specific strengths of racially/ethnically diverse youth and how these strengths are associated with impairment is needed.

While there are several important implications of the present study, certain limitations are noted. First, the sample, while large and includes youth from across the US, only includes youth with severe emotional disturbance that have accessed treatment. Although the results do not generalize to all youth, the focus on strengths among an SED sample is useful given efforts to utilize youth's strengths in mental health treatment. Strengths were measured from the caregiver's perspective, and not from the youth themselves. Thus, caregiver perceptions may not be an accurate reflection of the youth's actual strengths. Finally, this was a cross-sectional study; therefore, statements regarding causality can not be made. Longitudinal research that examines the effects of emotional and behavioral strengths on the functional impairment of youth is needed.

Despite the noted limitations, the results have several implications for youth mental health treatment. Behavioral and emotional strengths and functional impairment are neither unidimensional nor unrelated constructs. Youth with even the most severe functional impairment possess strengths. Clinicians should be aware of the youth's strengths and work to assess and incorporate strengths throughout treatment, which can lead to more positive treatment outcomes, especially with regard to family engagement (e.g., Rudolph & Epstein, 2000).

The results also suggest that contextual factors are critical to understanding functional impairment, especially for racial/ethnic minority youth. In addition to assessing strengths, clinicians should closely assess and address factors such as poverty, neighborhood characteristics, and social interactions and experiences that affect youths' behavior in treatment. Further research is needed to better understand the specific nature of strengths as it affects impairment across racial/ethnic groups. Specifically, it may be that certain *types* of strengths are more salient and protective for youth of one racial/ethnic group but not for another racial/ethnic group. Such information is essential to maximizing the use of strengths in treatment planning, and in developing and implementing effective, culturally sensitive youth treatment.

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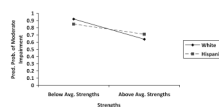


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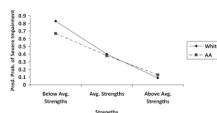
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**Figure 1.**  
Interaction between strengths and race/ethnicity on moderate impairment



**Figure 2.**  
Interaction between strengths and race/ethnicity on severe impairment



Table 1

## Sample Characteristics

Variables	Overall (n=8129) %	Caucasian (n=4498) %	African American (n=1983) %	Hispanic (n=1079) %	American Indian/A K Native (n=558) %
Gender					
Male	67.4	67.4	69.0	69.5	56.8
Female	32.6	32.6	31.0	30.5	43.2
Geographic Location					
Urban	33.1	26.1	45.5	51.5	10.5
Rural	38.9	45.4	23.5	18.2	80.4
Urban/rural	28.0	28.6	31.0	30.2	9.1
Family Income					
Less than \$15,000	49.3	42.3	60.2	55.6	54.2
\$15,000–\$24, 999	21.0	22.1	20.8	19.6	16.3
\$25,000–\$49,999	19.5	22.3	14.0	17.2	21.8
\$50,000+	10.2	13.3	5.0	7.6	7.7
Referral Source					
Mental Health	32.2	35.2	29.3	30.3	22.8
Juvenile Justice	18.9	19.1	21.2	17.4	11.5
School	13.5	11.4	17.7	17.3	7.7
Child Welfare	13.1	13.0	14.0	11.5	13.2
Health Care	1.5	1.8	1.0	1.9	2.0
Caregiver/Youth	9.9	8.8	8.2	6.0	31.5
Other	10.9	10.6	8.9	15.5	11.4
Risk Factors					
No risk factors	3.6	3.0	4.4	4.5	3.7
Youth only	2.4	2.0	2.5	3.7	3.2
Family only	31.9	30.6	37.2	27.3	32.0
Youth & family	62.1	64.4	55.9	64.5	61.1
Functional impairment					

Variables	Overall (n=8129) %	Caucasian (n=4498) %	African American (n=1983) %	Hispanic (n=1079) %	American Indian/A K Native (n=558) %
Minimal	7.9	6.3	9.7	9.0	11.8
Moderate	29.0	28.1	29.8	29.0	33.7
Marked	34.4	34.0	34.7	34.2	36.9
Severe	28.7	31.6	25.8	27.8	17.6
Behavioral & Emotional Strengths					
Below average	63.8	66.7	58.7	61.3	64.0
Average	27.5	26.3	29.9	29.2	25.7
Above average	8.7	7.1	11.4	9.5	10.3
Previous service use	87.8	91.0	85.3	85.6	75.3
Medicaid Eligible	70.0	66.3	80.4	66.2	68.9
Mean age	12.27	12.14	12.27	12.78	12.23

**Table 2**

Multinomial Logistic Regression between Functional Impairment and Behavioral &amp; Emotional Strengths

	Moderate Impairment	Marked Impairment	Severe Impairment
	RRR (95% CI)	RRR (95% CI)	RRR (95% CI)
<sup>a</sup> Strengths			
Average	.46 (.36–.58)**	.26 (.20–.34)**	.18 (.14–.24)**
Above average	.23 (.17–.32)**	.10 (.07–.16)**	.04 (.02–.06)**
<sup>b</sup> Race			
African American	.83 (.58–1.20)	.84 (.55–1.27)	.64 (.39–1.07)
Hispanic	.81 (.61–1.07)	.79 (.53–1.17)	.60 (.36–.99)*
American Indian/AN	.61 (.25–1.48)	.63 (.22–1.78)	.46 (.18–1.13)
<sup>c</sup> Female	.59 (.45–.77)**	.48 (.36–.63)**	.41 (.32–.54)**
<sup>d</sup> Geographic Location			
Rural	1.20 (.78–1.83)	1.08 (.64–1.80)	.63 (.30–1.33)
Urban/rural	.88 (.55–1.39)	.95 (.52–1.73)	1.12 (.46–2.73)
<sup>e</sup> Income			
\$15,000–\$24, 999	1.21 (.94–1.55)	1.24 (.99–1.55)	1.23 (.92–1.66)
\$25,000–\$49,999	.82 (.61–1.09)	.83 (.64–1.07)	.94 (.65–1.36)
≥\$50,000	.66 (.42–1.02)	.81 (.54–1.20)	.86 (.55–1.34)
<sup>f</sup> Referral Source			
School	.88 (.65–1.19)	.70 (.49–.99)*	.68 (.43–1.06)
Juvenile Justice	.64 (.44–.93)*	.70 (.45–1.10)	.98 (.57–1.69)
Child Welfare	.58 (.39–.85)*	.53 (.35–.80)*	.48 (.29–.80)*
Health Care	1.95 (.69–5.50)	1.49 (.50–4.41)	1.27 (.50–3.26)
Caregiver/Youth	.95 (.61–1.48)	.82 (.53–1.29)	.67 (.36–1.25)
Other	.70 (.45–1.09)	.67 (.43–1.05)	.61 (.35–1.04)
<sup>g</sup> Risk Factors			
Youth only	1.73 (.79–3.79)	2.10 (.89–4.94)	2.57 (.92–7.18)
Family only	1.22 (.73–2.03)	1.27 (.73–2.20)	1.36 (.67–2.76)
Youth & family	1.50 (.96–2.34)	2.06 (1.21–3.51)*	4.28 (2.09–8.75)**
<sup>h</sup> Previous service use	.99 (.74–1.34)	1.35 (.97–1.89)	2.30 (1.47–3.61)**
<sup>i</sup> Medicaid eligibility	.85 (.63–1.14)	.91 (.67–1.23)	.98 (.69–1.40)

<sup>a</sup>Reference group is Below average,<sup>b</sup>Caucasian,<sup>c</sup>Male,<sup>d</sup>Urban,<sup>e</sup><\$15000,

<sup>f</sup>Mental health agency,

<sup>g</sup>No risk factors,

<sup>h</sup>No previous service use,

<sup>i</sup>Not eligible for Medicaid

\*  
 $p < .05$ ,

\*\*  
 $p < .001$

**Table 3**

Multinomial Logistic Regression between Functional Impairment and Behavioral & Emotional Strengths with Interaction between Strengths and Race/Ethnicity

	Moderate Impairment	Marked Impairment	Severe Impairment
	RRR (95% CI)	RRR (95% CI)	RRR (95% CI)
<sup>a</sup> Strengths			
Average	.37 (.26–.52) **	.21 (.14–.30) **	.14 (.09–.21) **
Above average	.16 (.10–.25) **	.08 (.04–.14) **	.02 (.01–.04) **
<sup>b</sup> Race			
African American	.60 (.34–1.07)	.60 (.34–1.06)	.42 (.23–.76) *
Hispanic	.53 (.33–.86) *	.54 (.31–.97) *	.43 (.22–.82) *
American Indian/AN	.52 (.24–1.10)	.53 (.23–1.21)	.38 (.16–.88) *
Strengths × Race Interaction:			
Average × AA	1.53 (.92–2.53)	1.72 (1.00–2.98)	2.17 (1.26–3.76) *
Average × Hispanic	1.69 (.94–3.05)	1.62 (.94–2.81)	1.49 (.83–2.69)
Average × AI/AN	1.09 (.51–2.32)	1.09 (.46–2.54)	1.07 (.35–3.27)
Above avg. × AA	1.74 (.82–3.66)	1.32 (.66–2.65)	3.59 (1.48–8.69) *
Above avg. × Hispanic	2.60 (1.28–5.29) *	1.94 (.73–5.12)	1.49 (.40–5.58)
Above avg. × AI/AN	1.69 (.38–7.25)	1.90 (.54–6.64)	3.20 (.44–23.06)
<sup>c</sup> Female	.59 (.45–.77) **	.48 (.37–.63) **	.41 (.32–.54) **
<sup>d</sup> Geographic Location			
Rural	1.21 (.79–1.84)	1.08 (.65–1.81)	.63 (.30–1.33)
Urban/rural	.88 (.56–1.40)	.96 (.52–1.74)	1.13 (.47–2.74)
<sup>e</sup> Income			
\$15,000–\$24, 999	1.22 (.95–1.56)	1.25 (1.00–1.56)	1.24 (.92–1.67)
\$25,000–\$49,999	.82 (.61–1.09)	.83 (.64–1.07)	.93 (.64–1.36)
≥\$50,000	.66 (.42–1.01)	.81 (.54–1.20)	.86 (.54–1.35)
<sup>f</sup> Referral Source			
School	.88 (.65–1.18)	.70 (.49–.99) *	.67 (.43–1.05)
Juvenile Justice	.63 (.44–.92) *	.70 (.45–1.10)	.98 (.57–1.68)
Child Welfare	.57 (.39–.84) *	.53 (.35–.79) *	.48 (.29–.80) *
Health Care	1.92 (.67–5.51)	1.47 (.49–4.38)	1.25 (.48–3.25)
Caregiver/Youth	.94 (.60–1.47)	.81 (.52–1.27)	.66 (.36–1.24)
Other	.70 (.45–1.09)	.67 (.43–1.05)	.60 (.35–1.03)
<sup>g</sup> Risk Factors			
Youth only	1.76 (.83–3.77)	2.12 (.92–4.86)	2.60 (.96–7.06)
Family only	1.23 (.74–2.05)	1.28 (.74–2.23)	1.38 (.68–2.79)



	Moderate Impairment	Marked Impairment	Severe Impairment
	RRR (95% CI)	RRR (95% CI)	RRR (95% CI)
Youth & family	1.52 (.98–2.34)	2.08 (1.22–3.53) *	4.34 (2.13–8.85) **
<sup>h</sup> Previous service use	1.00 (.74–1.35)	1.37 (.98–1.92)	2.33 (1.50–3.64) **
<sup>i</sup> Medicaid eligibility	.84 (.63–1.13)	.91 (.67–1.23)	.98 (.68–1.39)

<sup>a</sup>Reference group is Below average,

<sup>b</sup>Caucasian,

<sup>c</sup>Male,

<sup>d</sup>Urban,

<sup>e</sup><\$15000,

<sup>f</sup>Mental health agency,

<sup>g</sup>No risk factors,

<sup>h</sup>No previous service use,

<sup>i</sup>Not eligible for Medicaid

\*  $p < .05$ ,

\*\*  $p < .001$