

**OUTCOME TRAJECTORIES FOR YOUTH SERVED IN
RESIDENTIAL TREATMENT FACILITY SETTINGS OR THE
COMMUNITY THROUGH THE HOME AND COMMUNITY BASED
SERVICES MEDICAID WAIVER**

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& Division of Integrated Community Services for Children and Families in the
New York State Office of Mental Health
In collaboration with the
New York State Coalition for Children's Mental Health Services
Presented at the
Children's Mental Health Services Staff Development Training Forum, Saratoga
NY
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Background: Previous Research

Outcome Trajectories for Adolescents in Residential

Treatment: A Statewide Evaluation, John S. Lyons, (et al), *Journal of Child & Family Studies*, Vol. 10, No. 3, September 2001 pp. 333–345

- *Conducted among Residential Treatment Facility providers in a Western State during 1990's- analyses suggested that the effectiveness of residential treatment may be limited to the reduction of risk behaviors and depression and improved management of psychosis.*
- *There was little evidence that the facilities in this study were successful at improving functioning. In addition, the study indicated that residential treatment may have unintended adverse outcomes on anxiety and hyperactivity.*
- *The study also found significant variation in outcomes across sites, with adolescents in one site getting reliably worse during the course of residential treatment.*

Study Objectives

- To replicate previous study Lyons et al., 2001 and extend analysis by including a comparison of changed trajectories for youth in Residential Treatment Facilities (RTF) and Home and Community Based Waiver Services (HCBS-Waiver).
- To profile the psychiatric symptoms, risk behaviors and functional impairment of youth served in RTF and HCBS-Waiver using existing administrative data;
- To examine the trajectories of change in symptoms, risk behavior, functional impairments, child strengths and family strengths over the course of an episode of care;
- To examine demographic factors associated with these change trajectories.

Background: Setting

- NYS Office of Mental Health offers Residential Treatment Facility (RTF) and Home and Community Based Services Waiver (HCBS-Waiver) services for youth ages 5 - 21 who have higher behavioral health needs within the public mental health system.
- RTF serves approximately 960 youth per year in residential treatment settings and HCBS-Waiver serves approximately 2,700 youth per year in community settings using a wraparound-like program model.
- Both programs are central components of New York State's (NYS) public mental health system of care for youth.
- NYS is transitioning public mental health services to Medicaid Managed Care. Important policy questions need to be addressed regarding how to effectively serve youth in the least restrictive setting.

Method: Population & Data Source

- Population & Study Design:

Youth receiving services in RTF (N=2,419, 99.8%) or HCBS-Waiver (N=7,817, 100%) during 2008-2102 with at least one set of CAIRS Admission indicators;

The Study is a repeated measures within and between group design.

- Data Source:

- All data were extracted from CAIRS (Child & Adult Integrated Reporting System)

- Admission, follow-up and discharge assessments on youth symptoms, behaviors and functional impairment as well as youth and family strengths domains were included.

- Youth demographics, primary diagnosis at admission, custody status and family characteristics were also obtained from CAIRS.

Method: Statistical Analysis

- *Descriptive*

T-test were used to compare average level of youth symptoms, risk behaviors and functional impairment at admission were compared between RTF and Waiver

- *Multivariable*

Mixed random effect repeated analysis was used to model each child's change trajectory on each indicator as a log-linear function of time over the course of the episode. Change trajectories were examined separately for youth in HCBS-Waiver or RTF settings.

*Models included the main effects of log transformed time, controlling for effects of Program (Waiver vs. RTF), Unit (RTF provider or Waiver provider), age, gender, custody status, primary diagnosis at admission and family characteristics.
(In progress)*

Method: Analytical Constructs

Dependent variables were: youth symptoms, risk behaviors, functional impairment, child and family strengths

- Prevalence of symptoms, risk behaviors and functional impairment were coded as having any indication of problem or as having a severe level of problem;
- Symptoms, risk behaviors and functional impairment domain items were coded on a 5-point Likert scale ranging from 0 (not-evident) to 4 (severe).
- Risk behaviors were coded on a 5 point Likert scale from 0 (never) to 4 (always)
- Child and family strengths were coded on a 4-point Likert scale with 1 indicating the most need (Not true/not like the child) and 4 indicating the greatest strength (very true/very much like the child).

Method: Analytical Constructs

- Independent variables:

Time: time since admission was log transformed to show the predicted amount of change within 9 months of admission (also from 9 to 24 months)

(Models controlling for below are IN PROGRESS)

Program Type (RTF or Waiver)

Program (RTF provider or Waiver provider)

Custody status: In foster care (Y/N)

Primary Diagnosis at admission was categorized as: ADHD, Mood, Schizophrenia, Disruptive Behavior, Anxiety or other

Age was categorized as: 5-12, 13 and older

Gender

Table 1: Comparisons of domain-level mean scales at admission between youth served in RTF and Waiver using t-test.

Domain	RTF (n=2419)	Waiver (n=7817)	t value	p> t
Behavioral Symptoms	1.21	1.03	-11.23	<.0001
Risk Behavior	0.66	0.56	-6.65	<.0001
Functional Impairment	1.86	1.51	-18.35	<.0001
Child Strength	2.31	2.38	6.99	<.0001
Family Strength	2.86	3.11	8.73	<.0001

Table 2: Average Length of Stay (LOS)

Program	At least 1 Assessment		At least 2 Assessments		At least 3 Assessments	
	N	Avg LOS (days)	N	Avg LOS (days)	N	Avg LOS (days)
Residential Treatment Facility - Children & Youth	2419	515.8	2280	529.4	1021	617.4
Home and Community Based Services (HCBS) Waiver	7817	350.4	7744	351.4	4965	448.0

Behavioral Symptoms Domain

Consists of 25 items Grouped into the following categories:

Emotional Symptoms: Suicidal ideation, Psychotic symptoms, Depression, Anxiety, Phobias , Eating disorder, Hyperactive, and Impulsive.

Behavioral Symptoms: Temper tantrums, Sleep disorders, Enuresis / Encomprehis, Physical complaints, Developmental delays, Peer interactions, Self-injury and Runaway.

Dangerous/Aggressive Behavior: Dangerous to self, Dangerous to others, Verbally aggressive, and Physically aggressive.

Substance Abuse: Alcohol abuse and Drug abuse.

Sexually Related: Sexually inappropriate, Sexually acting out and Sexually aggressive.

CAIRS – Behavioral Symptom Domain

Symptoms / Behaviors (Select one response)

Indicate the degree to which each of the following interfere with this child's performance of daily activities and / or major role requirements ON ADMISSION to this program.

Scale: 0 - Not evident 1 - Mild 2 - Moderate 3 - Marginally severe 4 - Severe U - Unknown

Y - Yes

N - No

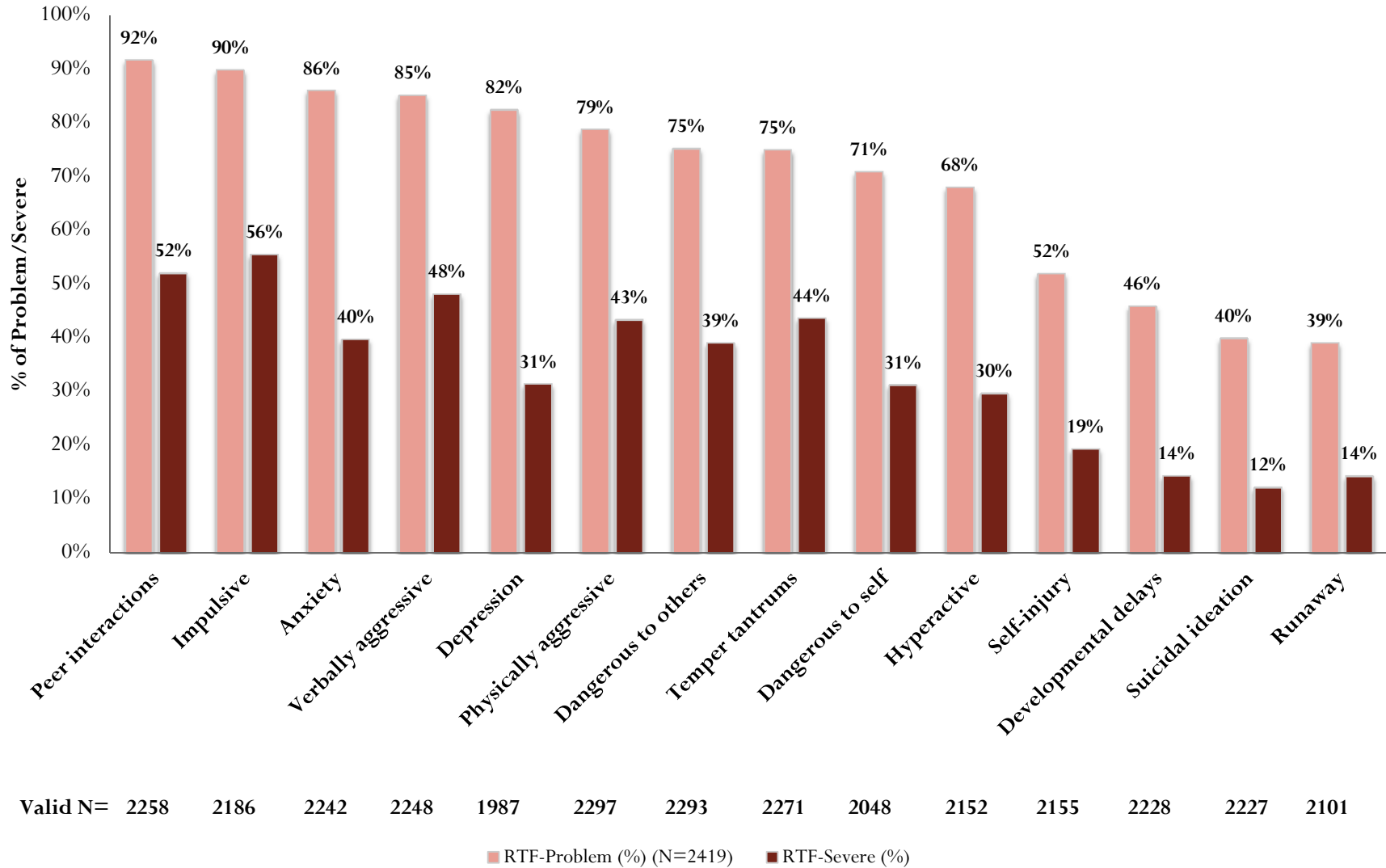
	Current						History		
	0	1	2	3	4	U	Y	N	U
Suicidal ideation	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Psychotic symptoms (e.g. hallucinations)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Depression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxiety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Phobias	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Dangerous to self	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Dangerous to others	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Temper tantrums	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Sleep disorders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Enuresis / Encopresis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Physical complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alcohol abuse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drug abuse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

	Current						History		
	0	1	2	3	4	U	Y	N	U
Developmental delays	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Sexually inappropriate	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Sexually acting out	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Sexually aggressive	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Verbally aggressive	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Physically aggressive	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eating disorder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer interactions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hyperactive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impulsive	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-injury	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Runaway	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Other, please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Reset Other

RTF

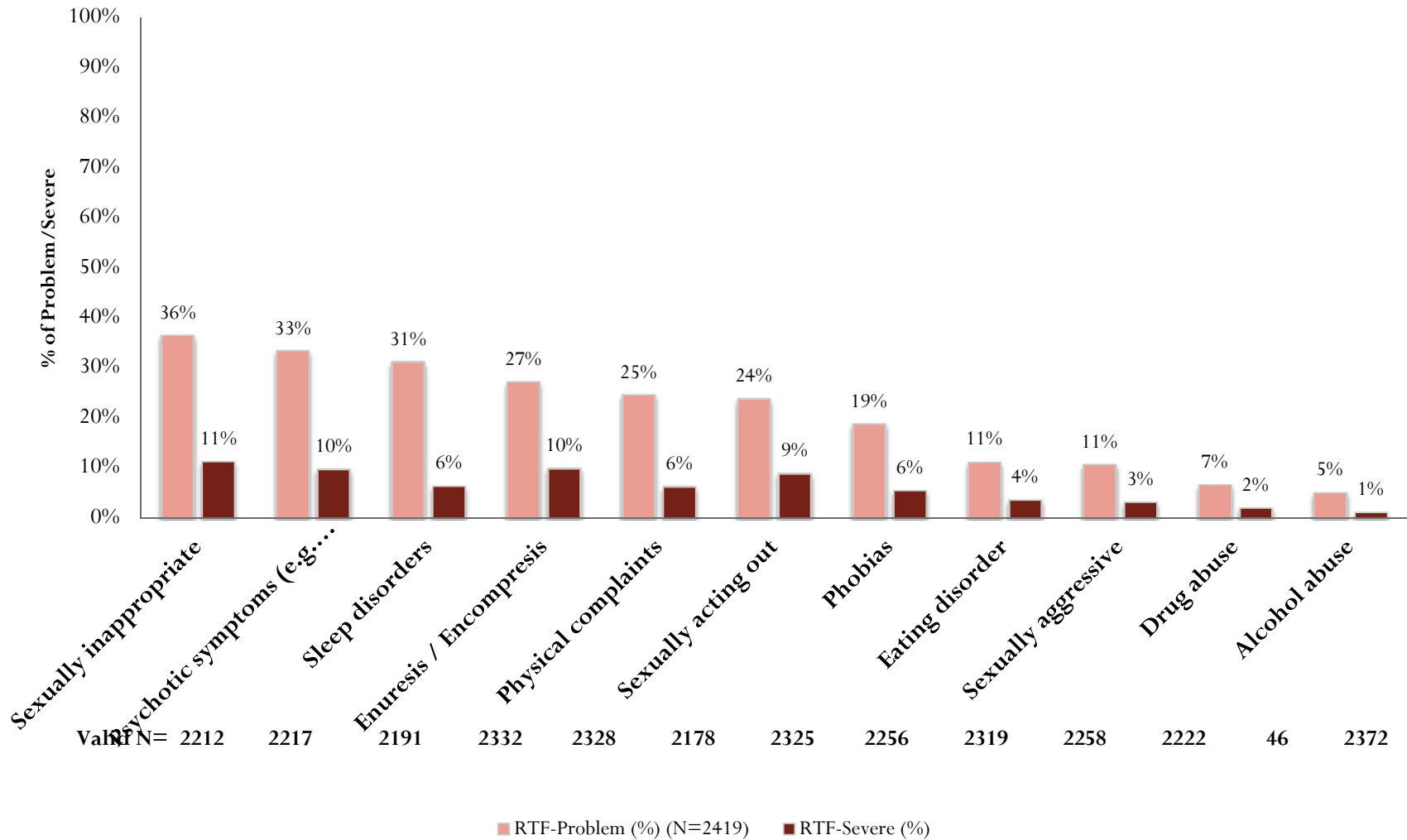
Symptom Domain: Prevalence of Any Problem and Prevalence of Severe Problem at Admission to RTF



Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

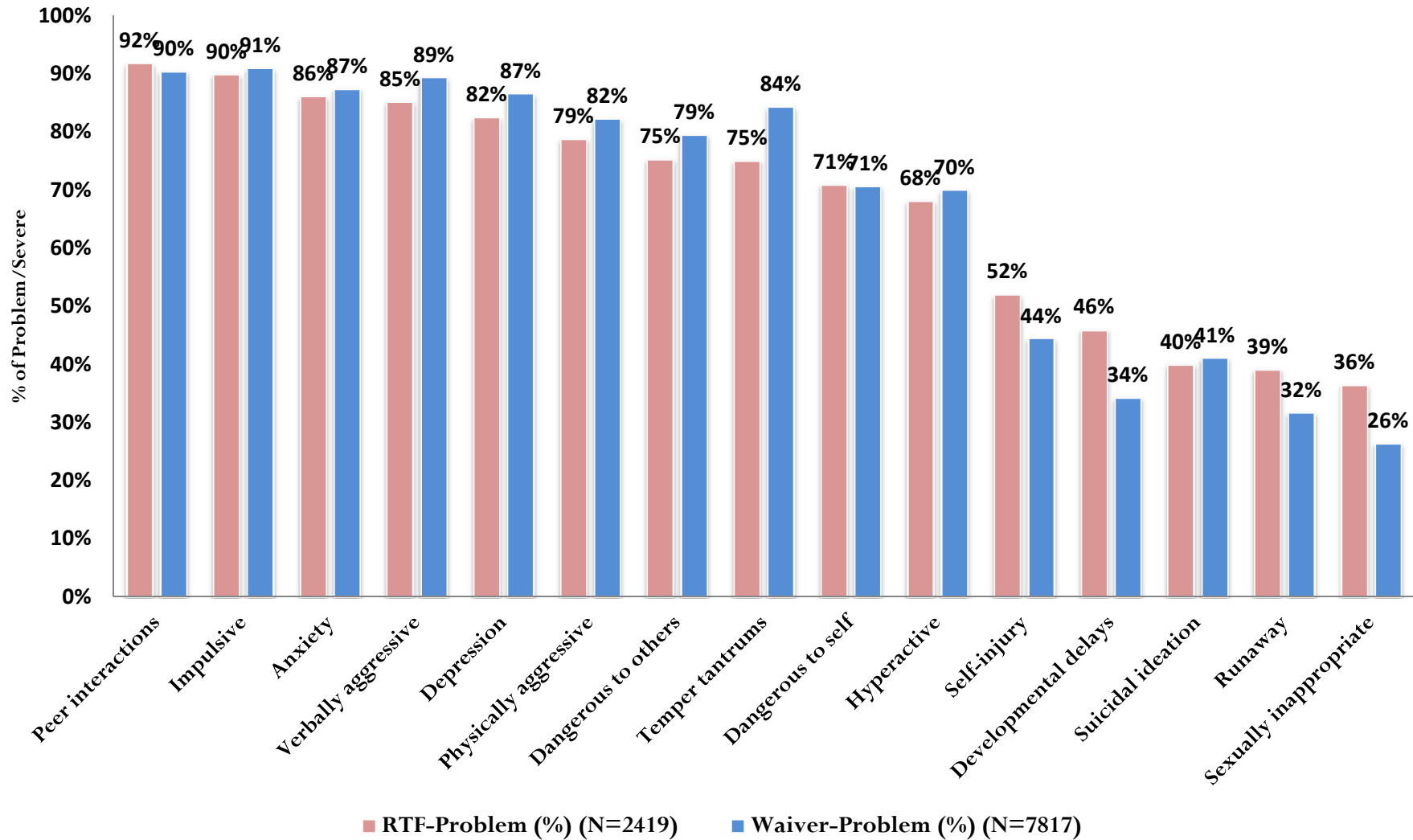
RTF

Symptom Domain: Prevalence of Any Problem and Prevalence of Severe Problem at Admission to RTF (Continued)



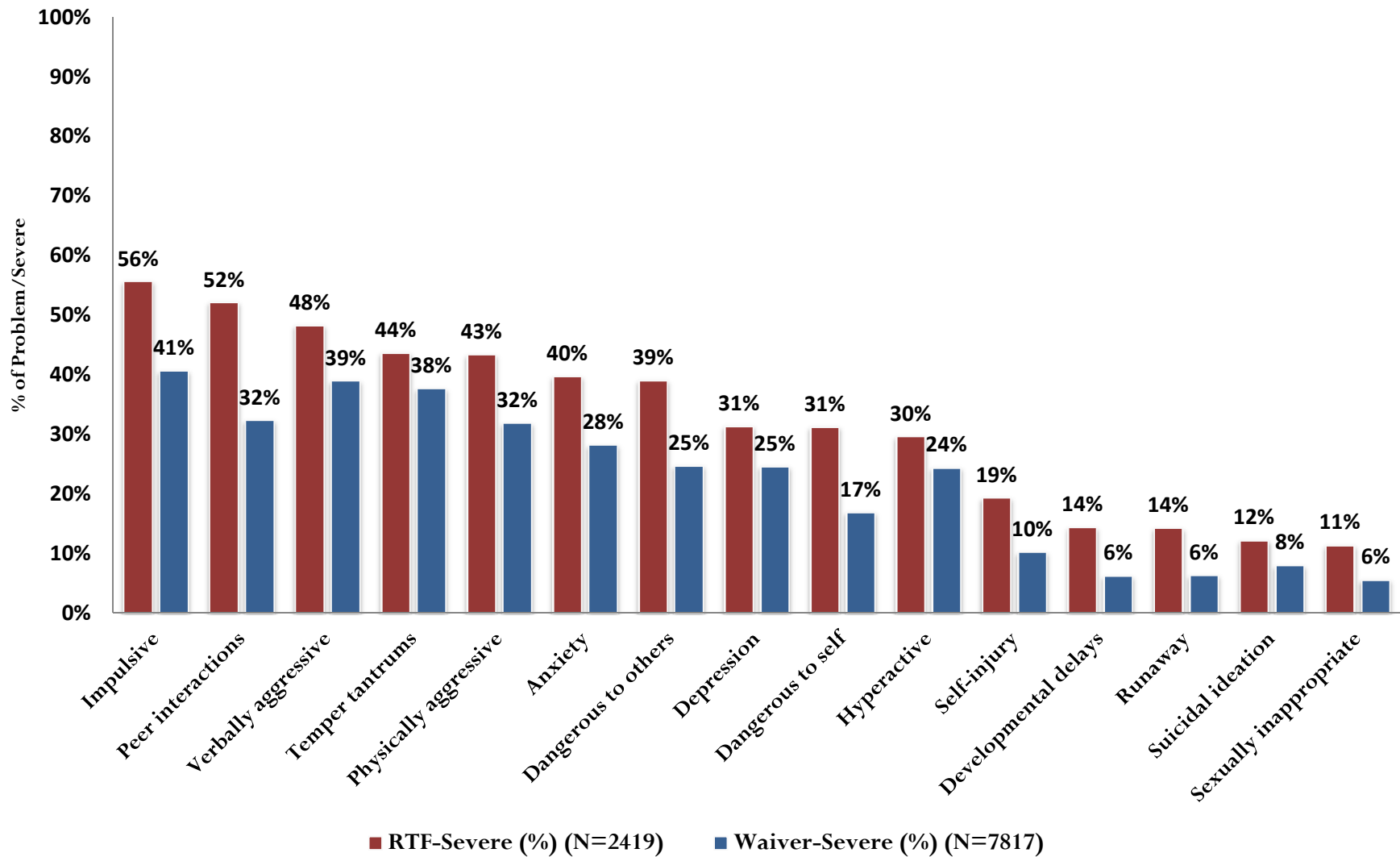
Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

RTF vs Waiver - Symptom Domain: Prevalence of Any Problem at Admission



**Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
 Showing top 15 RTF items with highest problem rate.**

RTF vs Waiver - Symptom Domain: Prevalence of Severe Problem at Admission

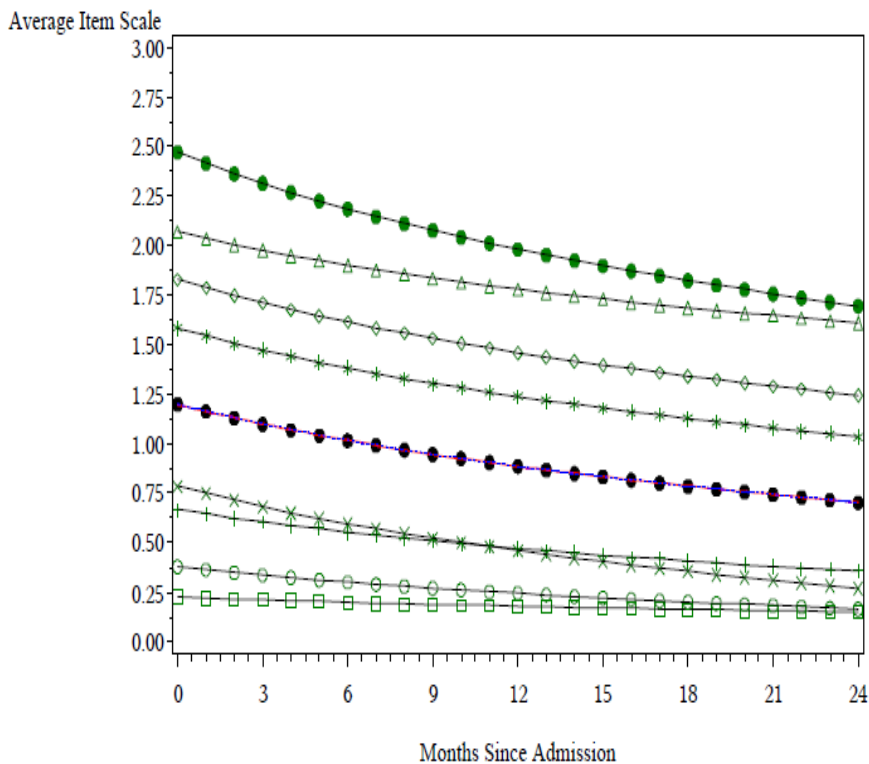


**Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
Showing top 15 RTF items with highest severe problem rate.**

RTF vs HCBS-Waiver: Change Trajectory on Behavioral Symptoms Domain— Items related to Emotional Symptoms

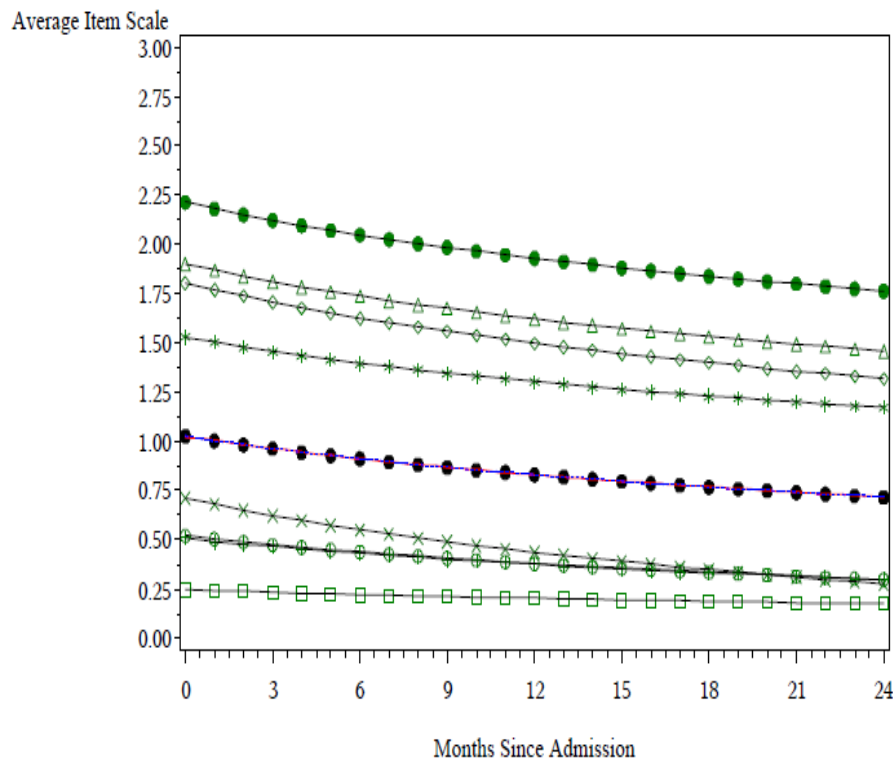
Graph1.1-1: RTF-Change Trajectory on Behavioral Symptoms Domain— Items related to Emotional Symptoms*

Graph1.1-1: Waiver-Change Trajectory on Behavioral Symptoms Domain— Items related to Emotional Symptoms*



DESCRIPTION ●●● Domain-Avg(25 items) ▲▲▲ Anxiety
 ◇◇◇ Depression □□□ Eating disorder
 *** Hyperactive ●●● Impulsive
 ○○○ Phobias +++ Psychotic symptoms
 *** Suicidal ideation

*All items are significant at 0.05 level.
 Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)



DESCRIPTION ●●● Domain-Avg(25 items) ▲▲▲ Anxiety
 ◇◇◇ Depression □□□ Eating disorder
 *** Hyperactive ●●● Impulsive
 ○○○ Phobias +++ Psychotic symptoms
 *** Suicidal ideation

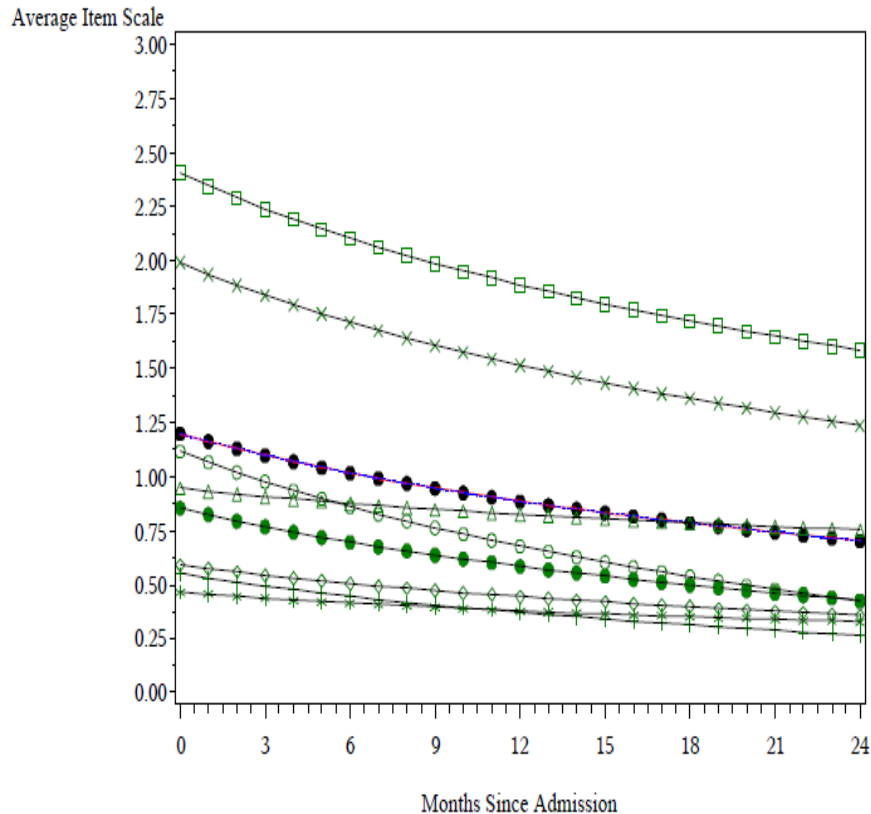
*All items are significant at 0.05 level.
 Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)

RTF vs HCBS-Waiver: Change Trajectory on Behavioral Symptoms

Domain— Items related to Behavioral Symptoms

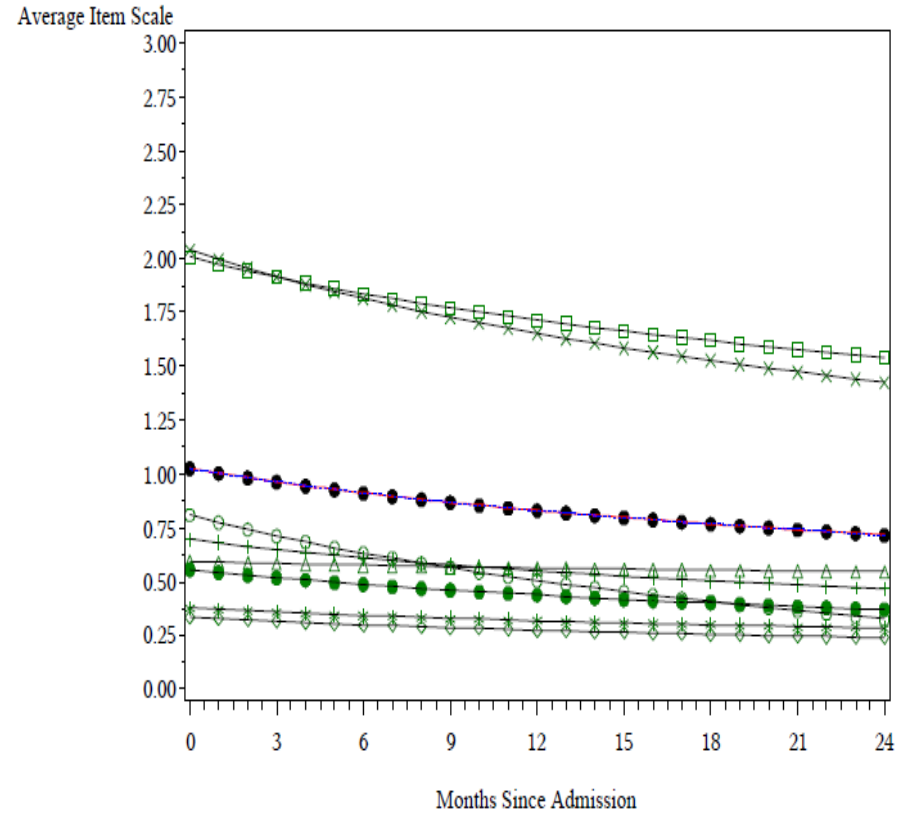
Graph1.1-2: RTF-Change Trajectory on Behavioral Symptoms Domain— Items related to Problem Behavior*

Graph1.1-2: Waiver-Change Trajectory on Behavioral Symptoms Domain— Items related to Problem Behavior*



- DESCRIPTION
- Domain-Avg(25 items)
 - ◇◇◇ Enuresis / Encompris
 - *-* Physical complaints
 - Self-injury
 - ××× Temper tantrums
 - △△△ Developmental delays
 - Peer interactions
 - Runaway
 - + + + Sleep disorders

*All items are significant at 0.05 significance level.
Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)



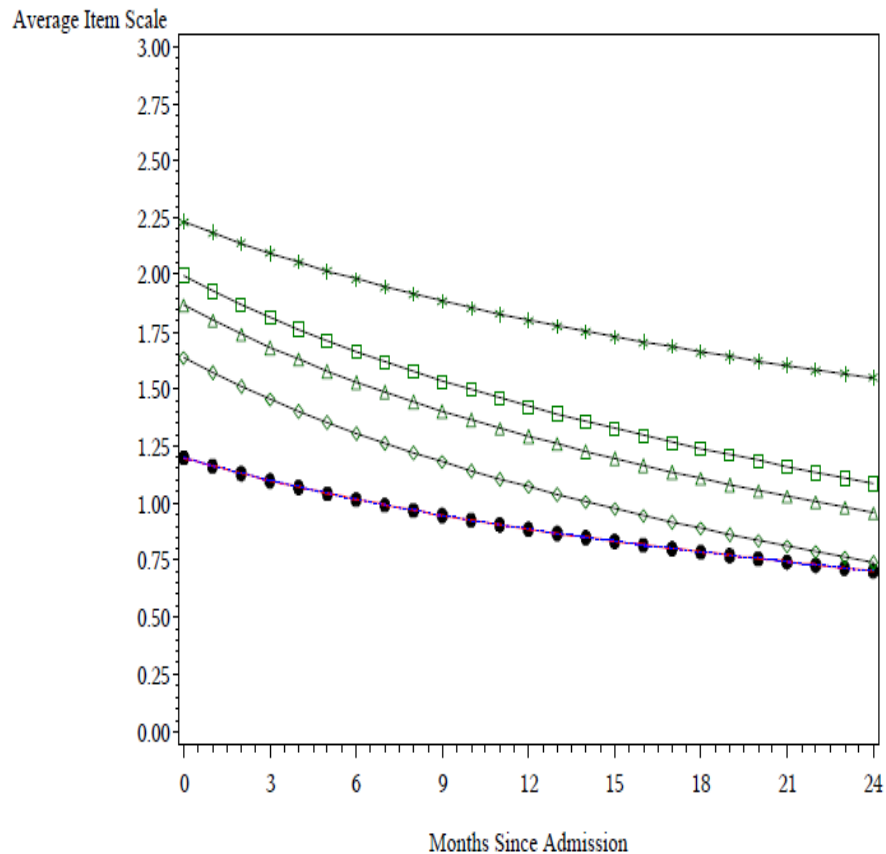
- DESCRIPTION
- Domain-Avg(25 items)
 - ◇◇◇ Enuresis / Encompris
 - *-* Physical complaints
 - Self-injury
 - ××× Temper tantrums
 - △△△ Developmental delays
 - Peer interactions
 - Runaway
 - + + + Sleep disorders

*All items are significant at 0.05 significance level.
Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)

RTF vs HCBS-Waiver: Change Trajectory on Behavioral Symptoms Domain— Items related to Dangerous/Aggressive Behavior

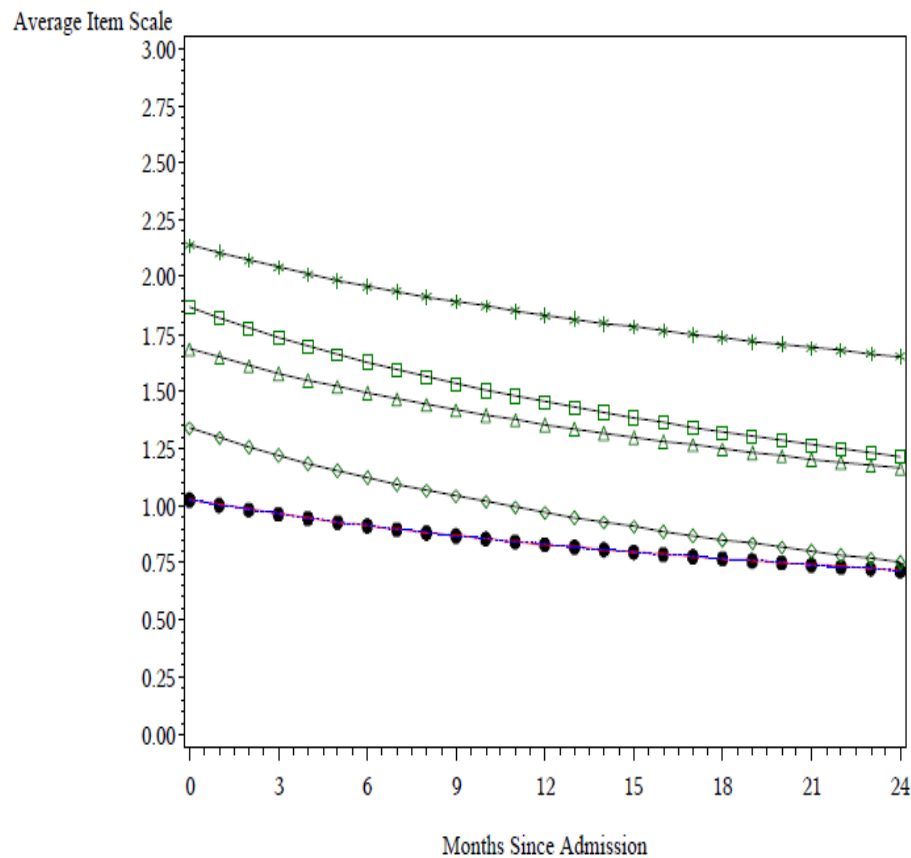
Graph1.1-3: RTF-Change Trajectory on Behavioral Symptoms Domain— Items related to Dangerous/Aggressive Behav

Graph1.1-3: Waiver-Change Trajectory on Behavioral Symptoms Domain— Items related to Dangerous/Aggressive Behavior*



DESCRIPTION ●●● Domain-Avg(25 items) ▲▲▲ Dangerous to others
 ◆◆◆ Dangerous to self ■■■ Physically aggressive
 --* Verbally aggressive

*All items are significant at 0.05 level.
 Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)



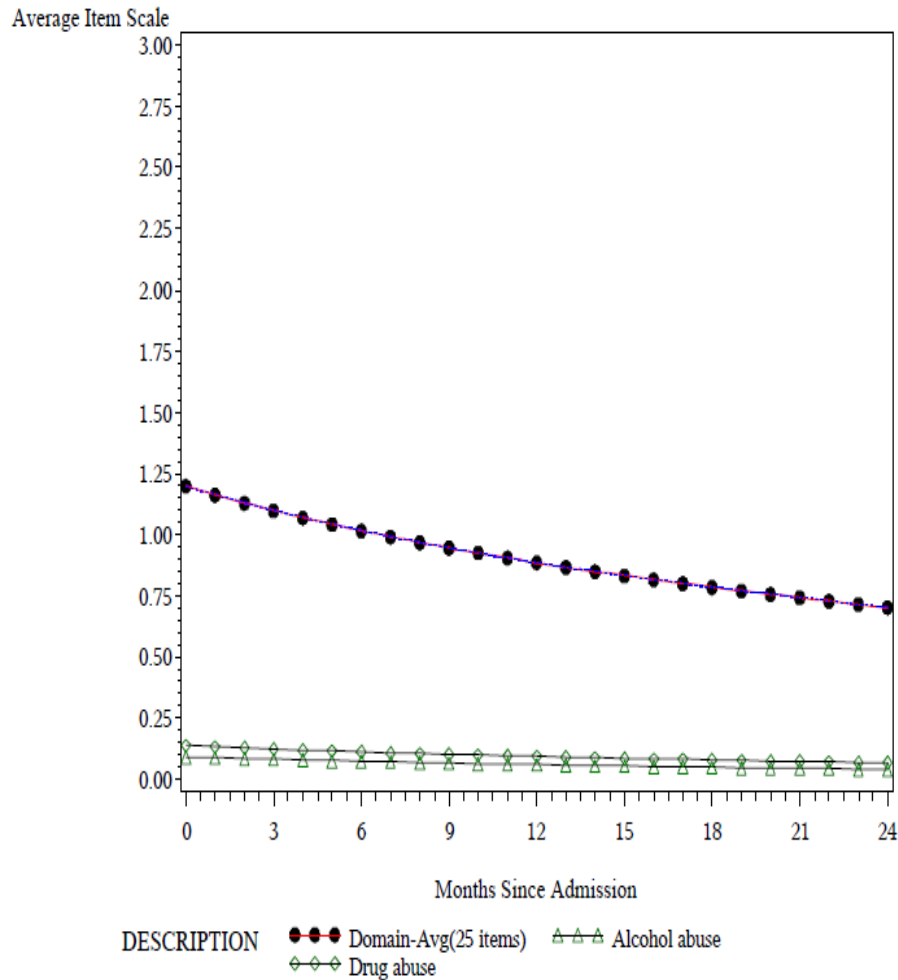
DESCRIPTION ●●● Domain-Avg(25 items) ▲▲▲ Dangerous to others
 ◆◆◆ Dangerous to self ■■■ Physically aggressive
 --* Verbally aggressive

*All items are significant at 0.05 level.
 Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)

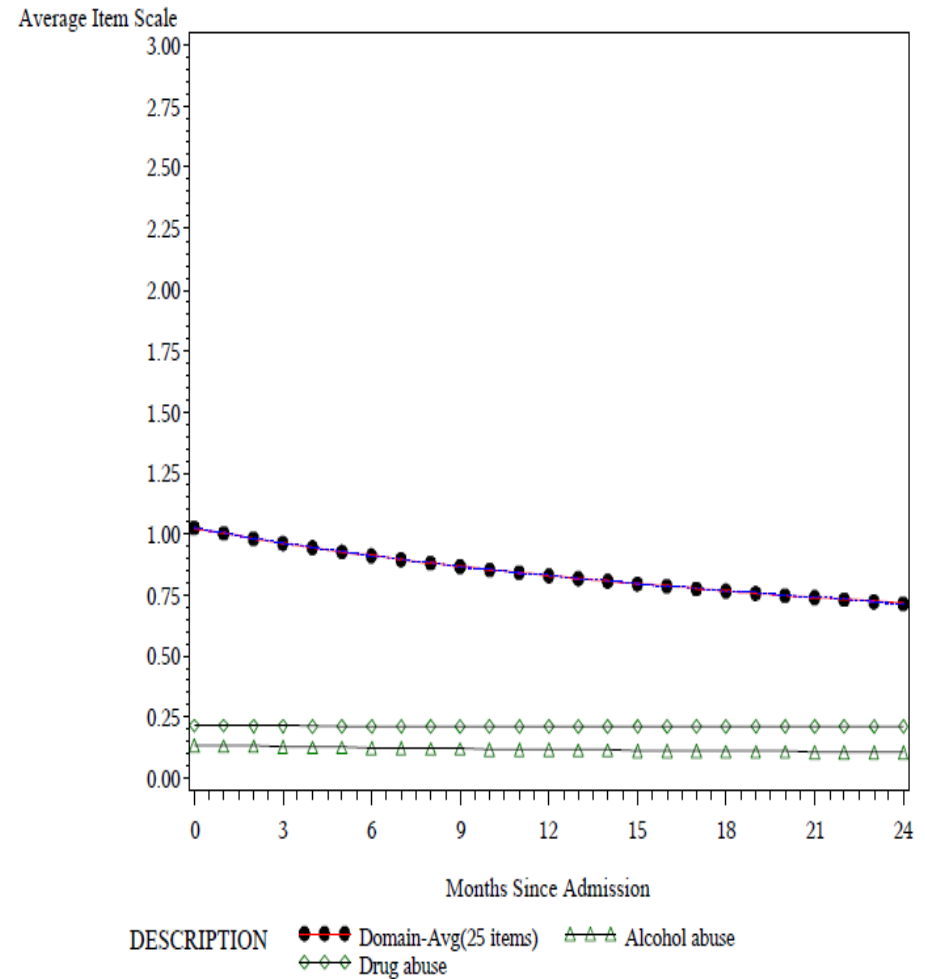
RTF vs HCBS-Waiver: Change Trajectory on Behavioral Symptoms Domain— Items related to Substance Abuse

Graph1.1-4: RTF-Change Trajectory on Behavioral Symptoms Domain– Items related to Substance Abuse*

Graph1.1-4: Waiver-Change Trajectory on Behavioral Symptoms Domain– Items related to Substance Abuse*



*All items are significant at 0.05 level.
Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)



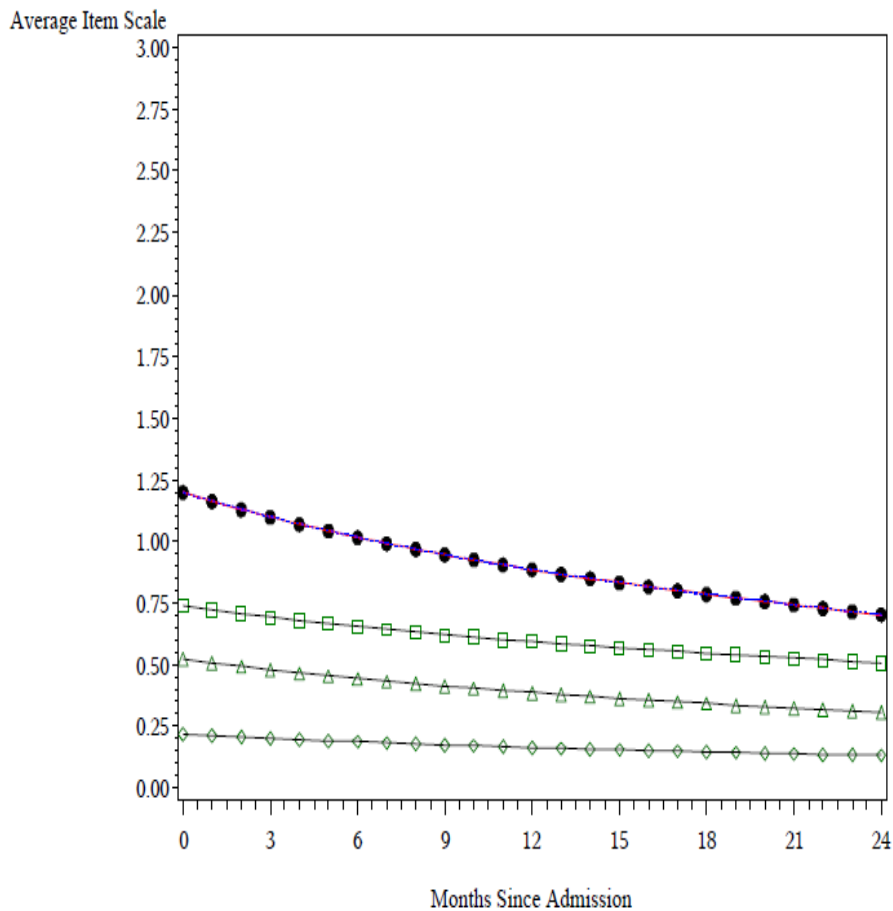
*All items are significant at 0.05 level except Drug Abuse.
Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)

RTF vs HCBS-Waiver: Change Trajectory on Behavioral Symptoms

Domain— Sexually Related Items

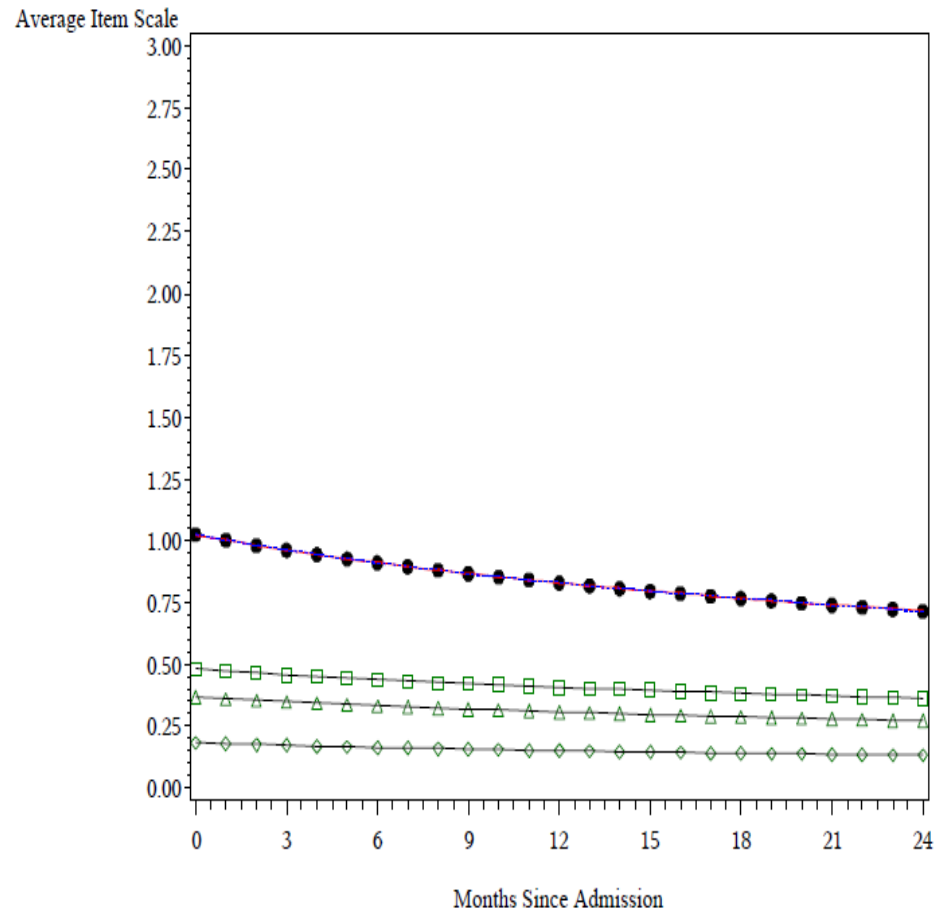
Graph1.1-5: RTF-Change Trajectory on Behavioral Symptoms Domain– Sexually related items*

Graph1.1-5: Waiver-Change Trajectory on Behavioral Symptoms Domain– Sexually related items*



DESCRIPTION ●●● Domain-Avg(25 items) ▲▲▲ Sexually acting out
 ◆◆◆ Sexually aggressive □□□ Sexually inappropriate

*All items are significant at 0.05 level.
 Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)



DESCRIPTION ●●● Domain-Avg(25 items) ▲▲▲ Sexually acting out
 ◆◆◆ Sexually aggressive □□□ Sexually inappropriate

*All items are significant at 0.05 level.
 Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)

Risk Behavior

Suicide attempts

Destruction of property

Cruelty to animals

Fire setting

CAIRS - Risk Behaviors Domains

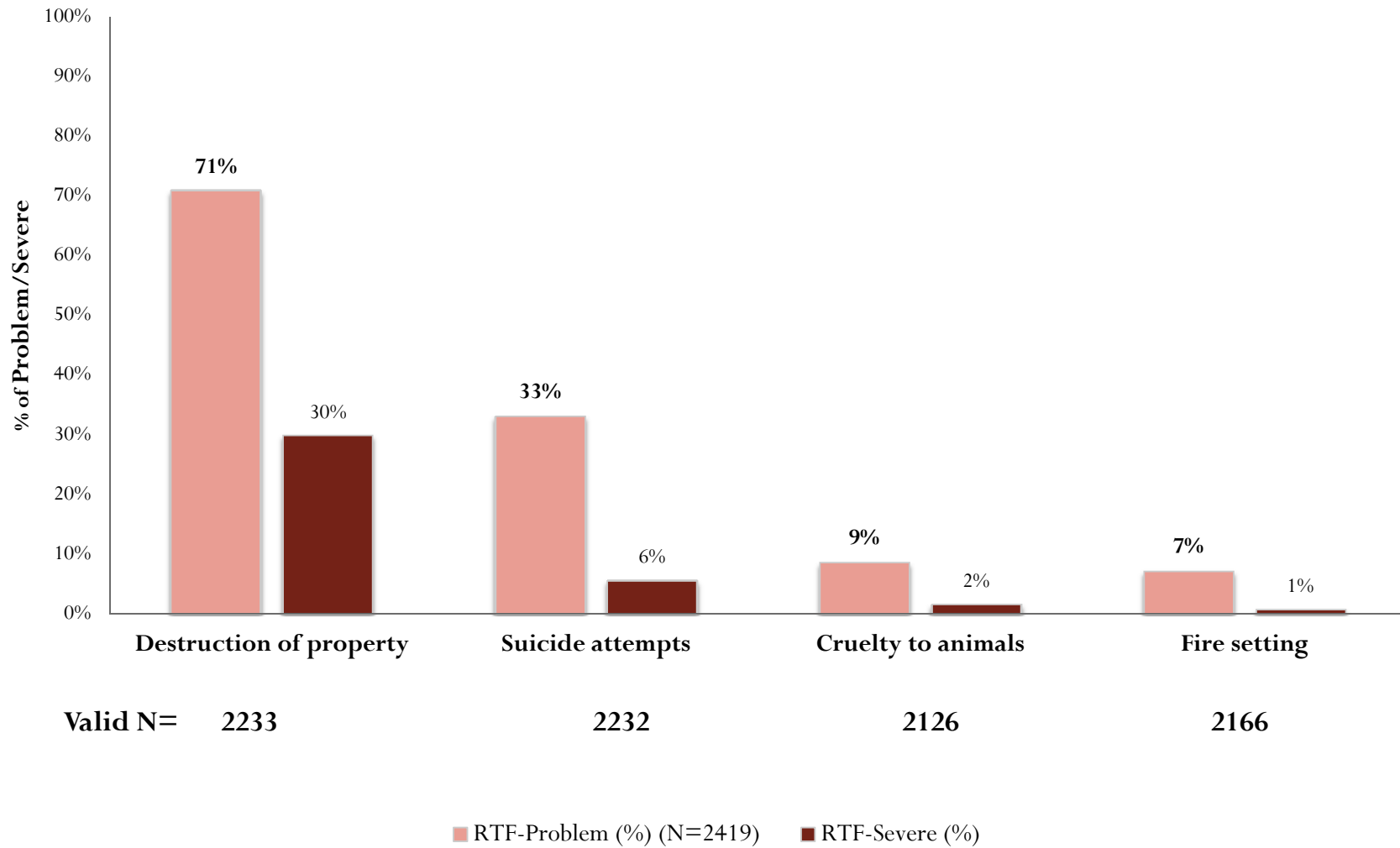
Symptoms / Behaviors continued... (Select one response)

Indicate the level that most accurately reflects the frequency with which the child engaged in each of the following behaviors in the past 18 months (Select one response).

Scale: 0 - Never 1 - Rarely 2 - Sometimes 3 - Often 4 - Always U - Unknown Y - Yes N - No

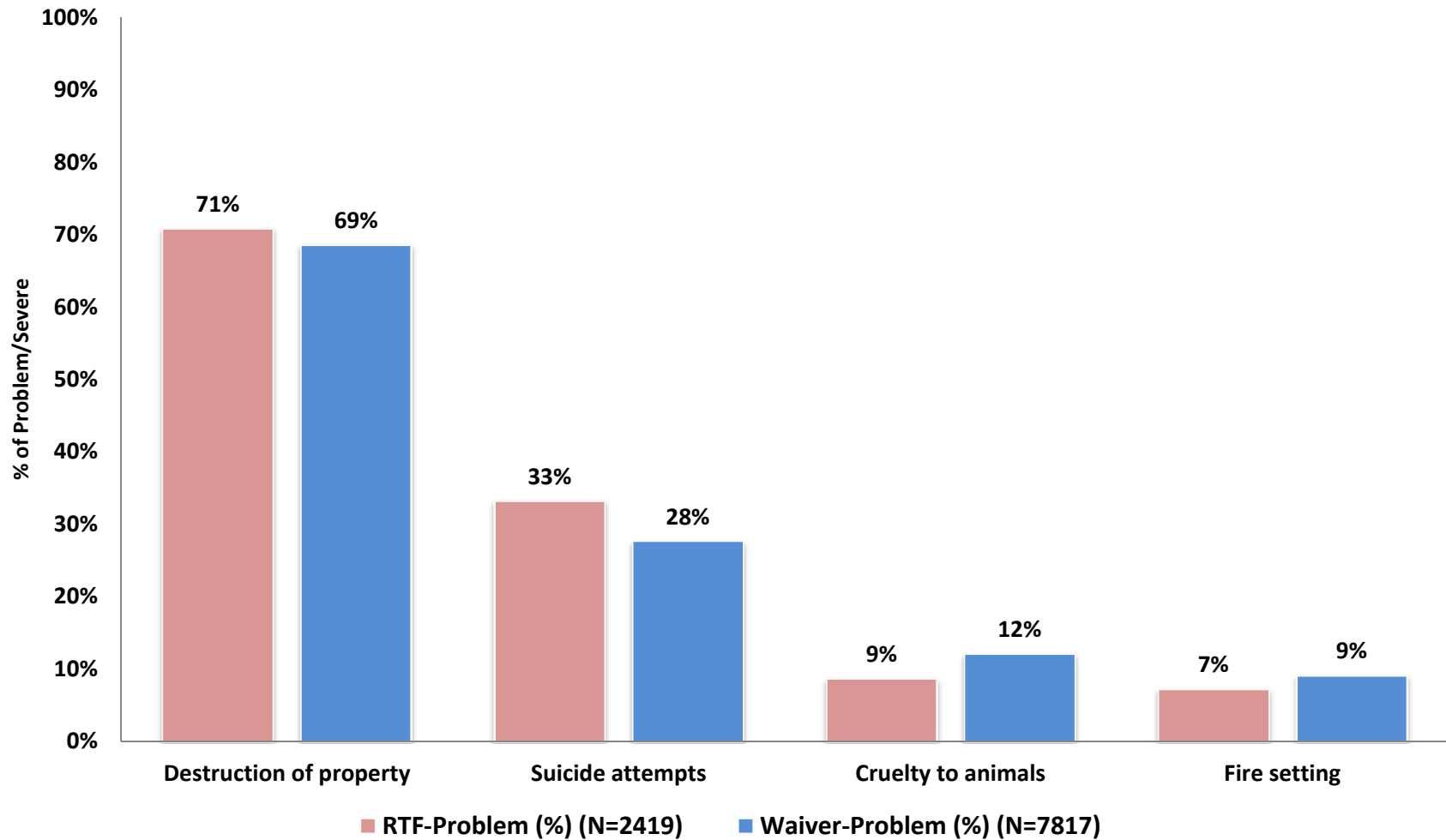
	Current					History				Current					History				
	0	1	2	3	4	U	Y	N	U		0	1	2	3	4	U	Y	N	U
Suicide attempts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Cruelty to animals	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Destruction of property	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Fire setting	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Risk Behaviors Domain: Prevalence of Any Problem and Prevalence of Severe Problem at Admission to RTF



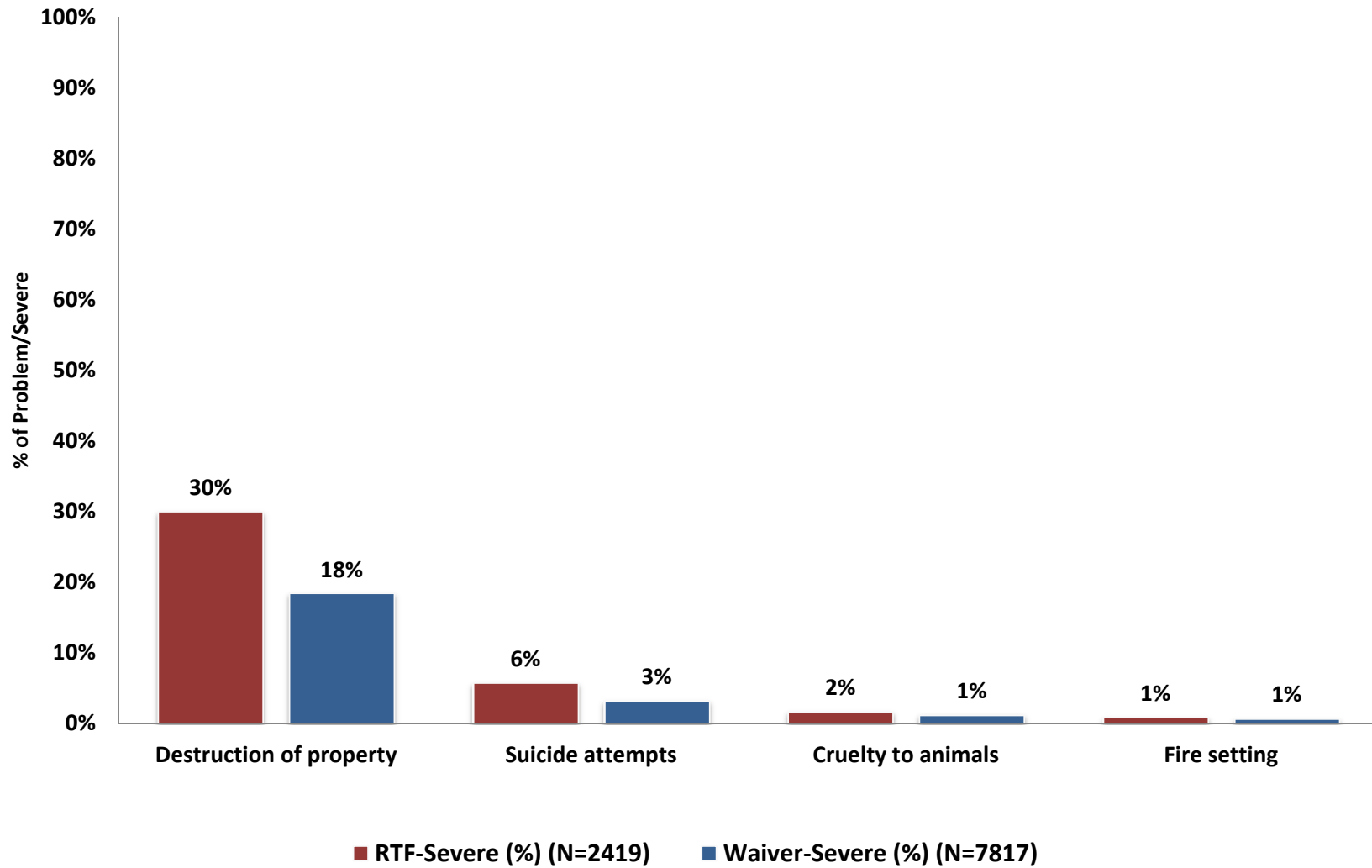
Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

RTF vs Waiver - Risk Behavior Domain: Prevalence of Any Problem at Admission



Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

RTF vs Waiver - Risk Behavior Domain: Prevalence of Severe Problem at Admission

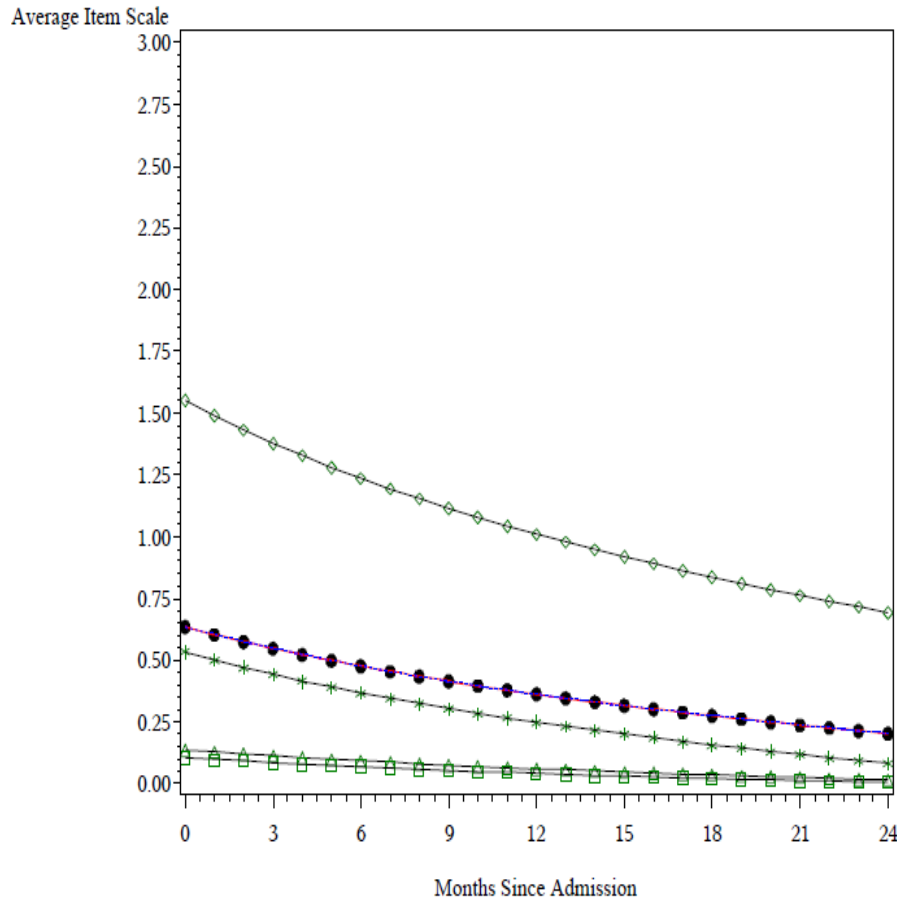


Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

RTF vs HCBS-Waiver: Change Trajectory on Risk Behavior Domain

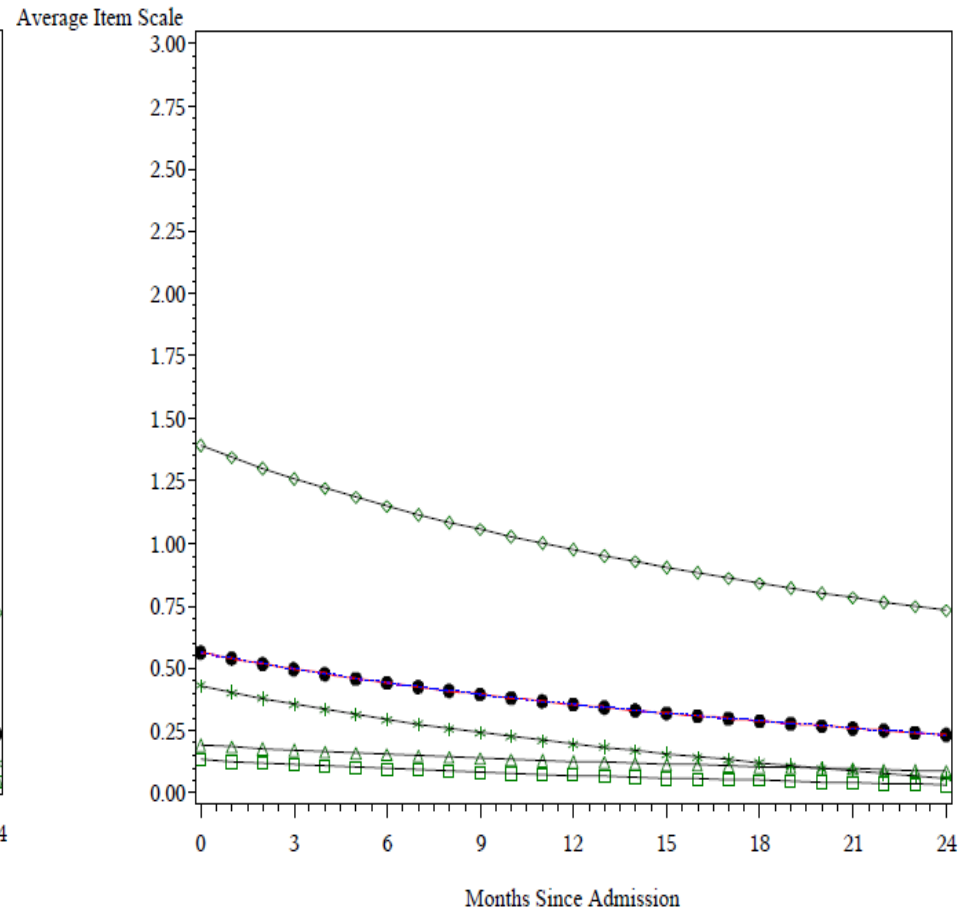
Graph2.1: RTF-Change Trajectory on Risk Behaviors Domain*

Graph2.1: Waiver-Change Trajectory on Risk Behaviors Domain*



DESCRIPTION ●●● Domain-Avg ▲▲▲ Cruelty to animals
 ◇◇◇ Destruction of property □□□ Fire setting
 *** Suicide attempts

*All items are significant at 0.05 level.
 Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)



DESCRIPTION ●●● Domain-Avg ▲▲▲ Cruelty to animals
 ◇◇◇ Destruction of property □□□ Fire setting
 *** Suicide attempts

*All items are significant at 0.05 level.
 Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)

Functional Impairment

Self-care

Social relationships / functioning

Cognitive functioning / communication functioning

Self-direction

Motor functioning

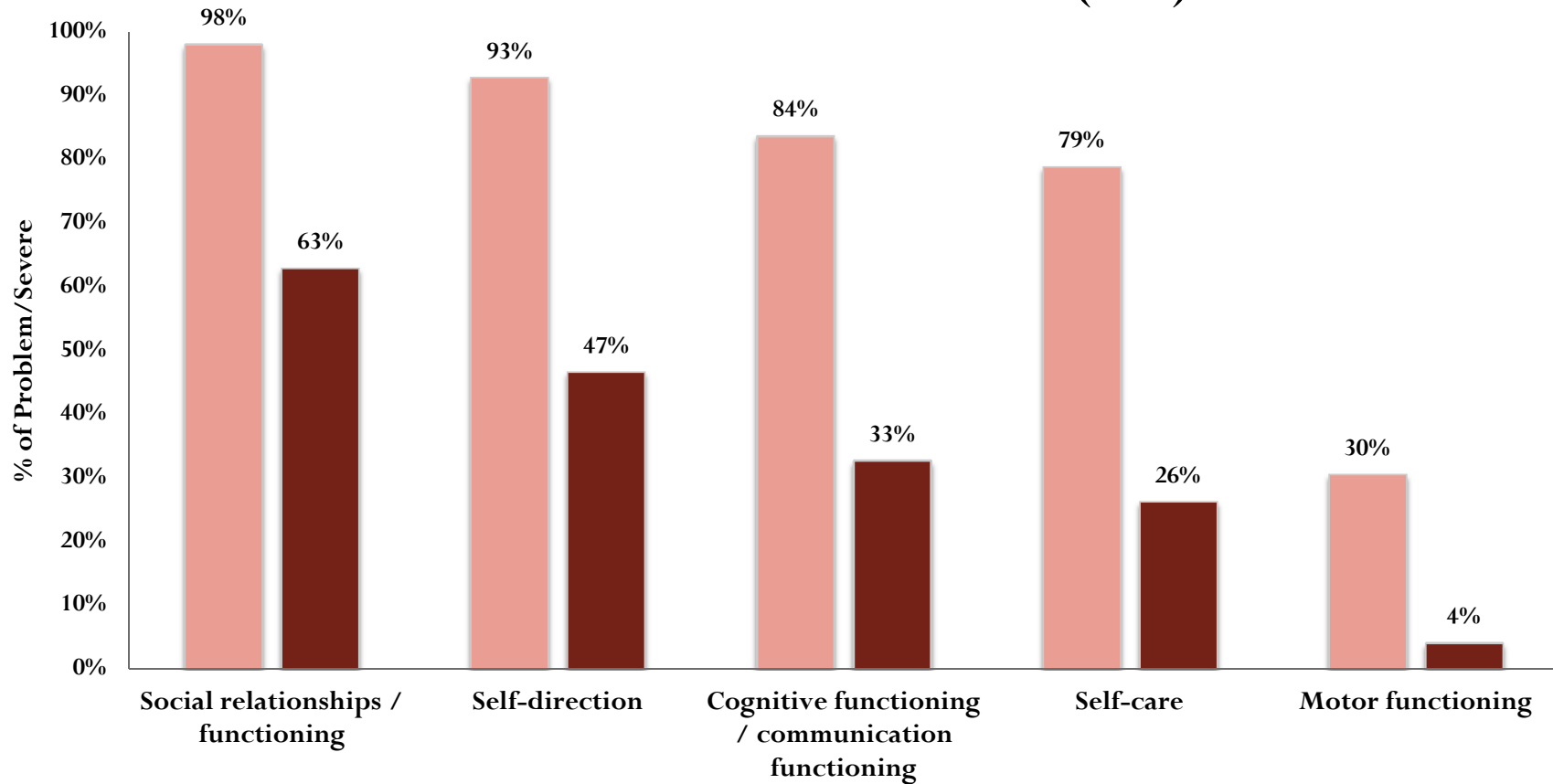
CAIRS Functional Impairment Domain

Areas of functional impairment (Select one response)

Scale: **0** - Not evident **1** - Mild **2** - Moderate
3 - Marginally severe **4** - Severe **U** - Unknown

	0	1	2	3	4	U
Self-care	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social relationships / functioning	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cognitive functioning / communication functioning	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-direction	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motor functioning	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Functional Impairment Domain: Prevalence of any Problem and Severe Problem at admission (RTF)



Valid N= 2357

2293

2343

2302

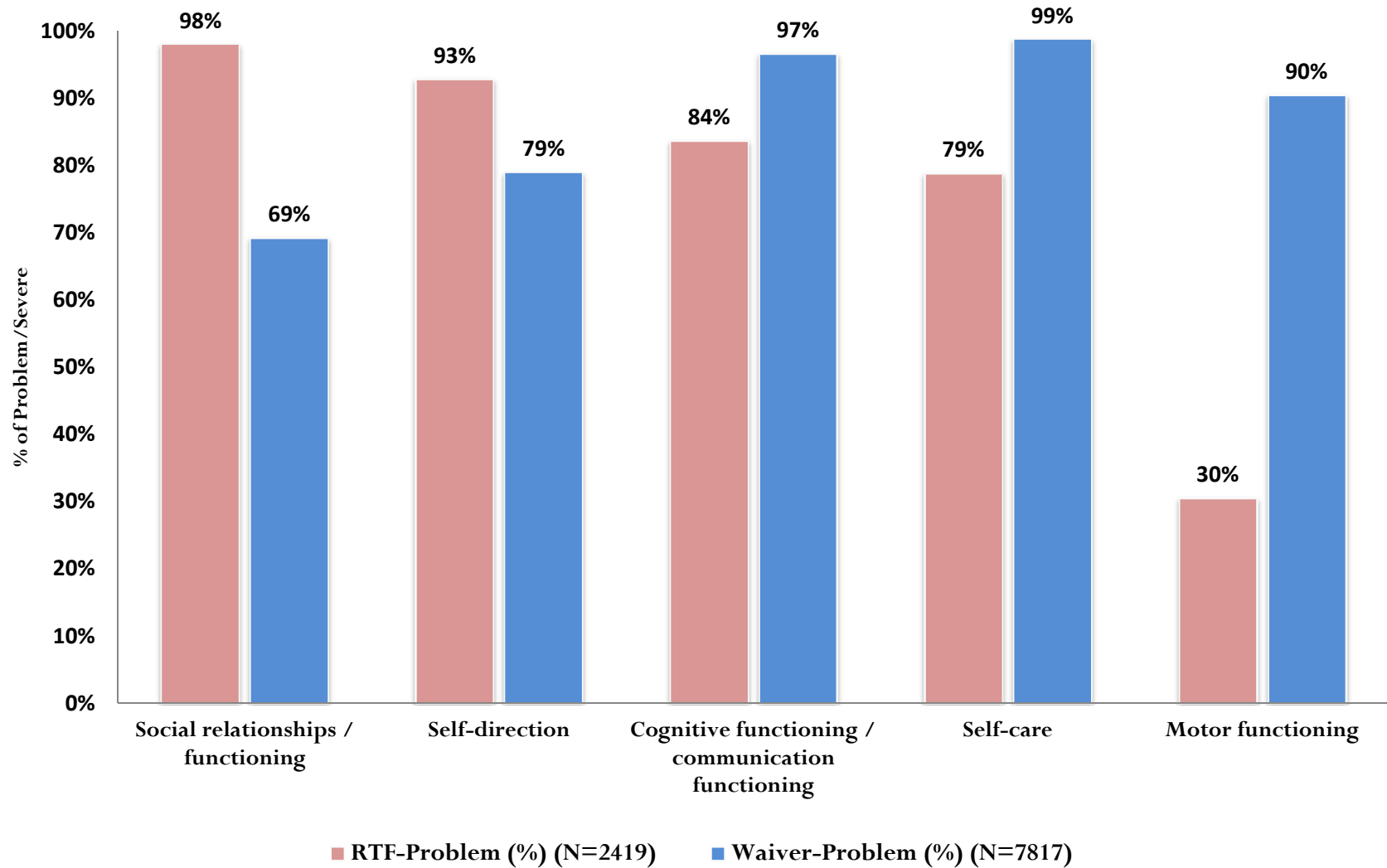
2298

2219

■ RTF-Problem (%) (N=2419) ■ RTF-Severe (%)

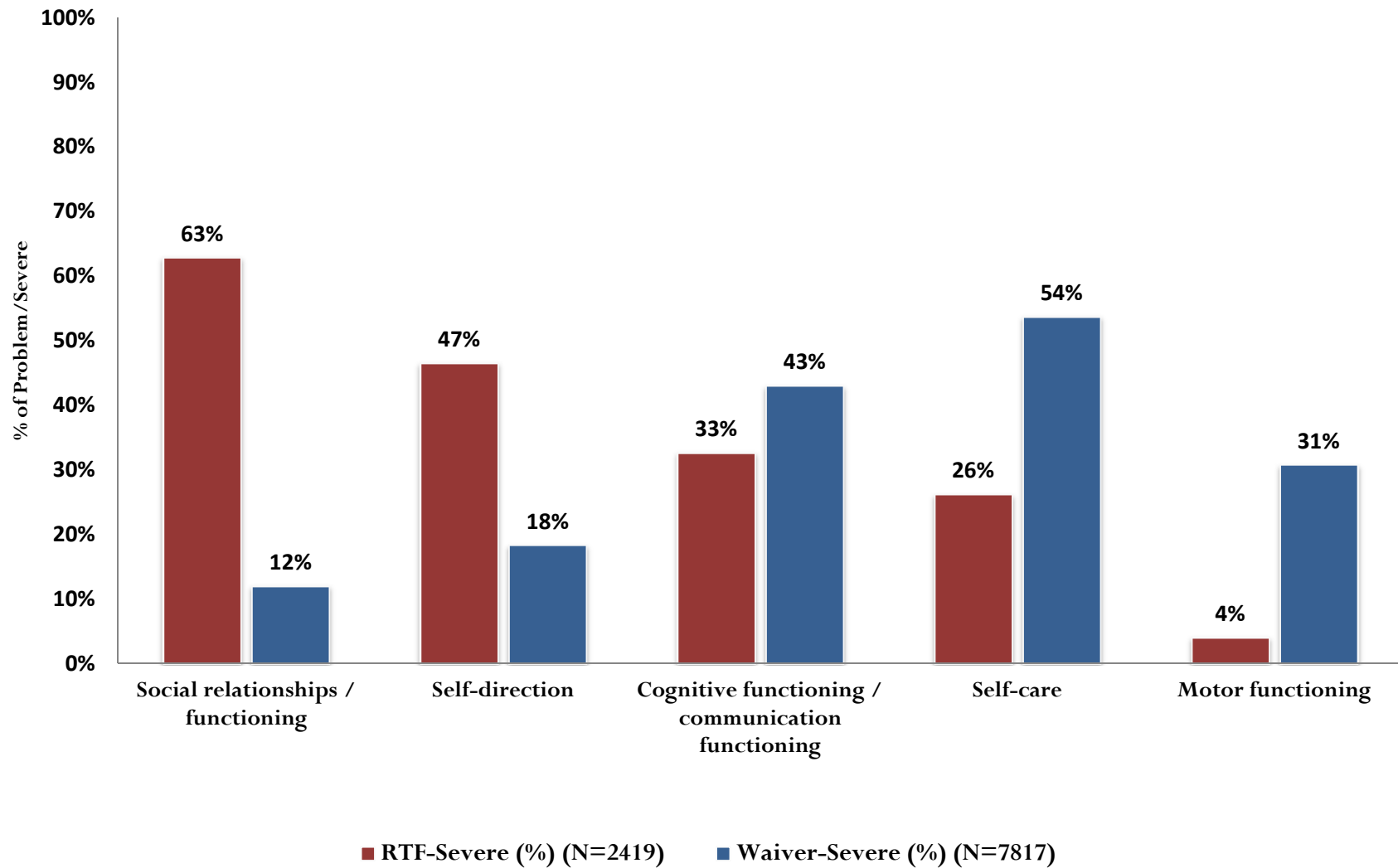
Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

RTF vs Waiver - Functional Impairment Domain: Prevalence of Any Problem at Admission



Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

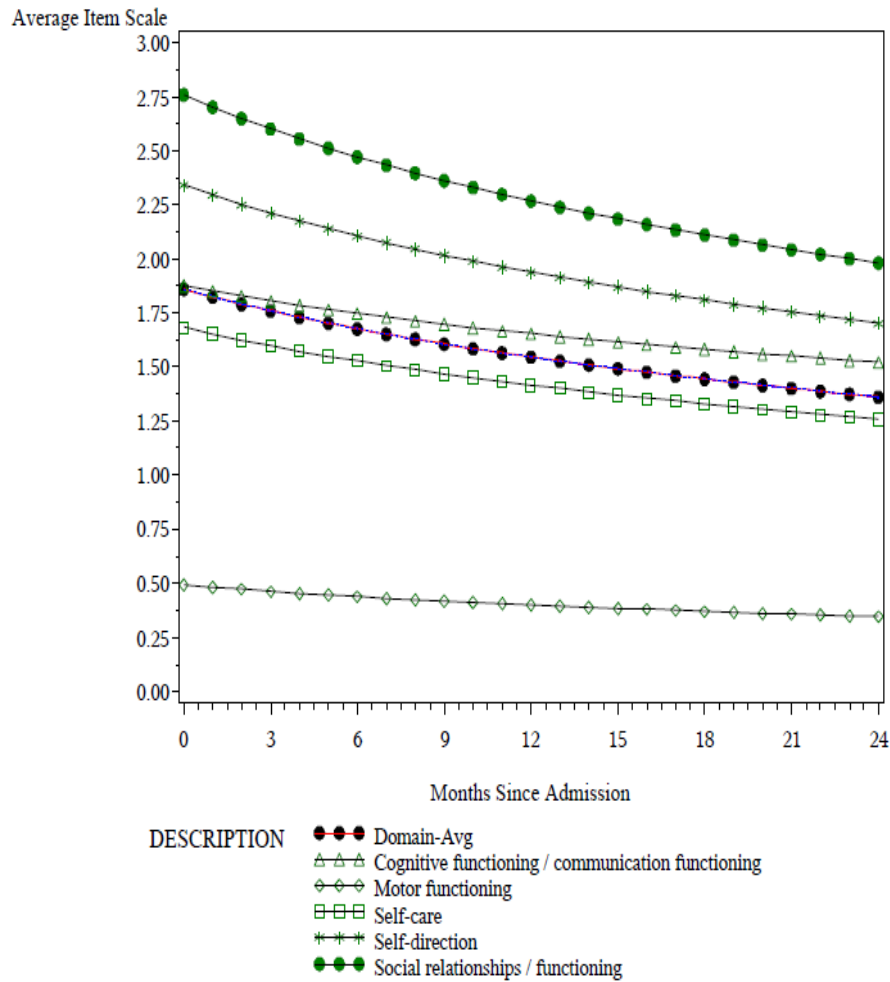
RTF vs Waiver - Functional Impairment Domain: Prevalence of Severe Problem at Admission



Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

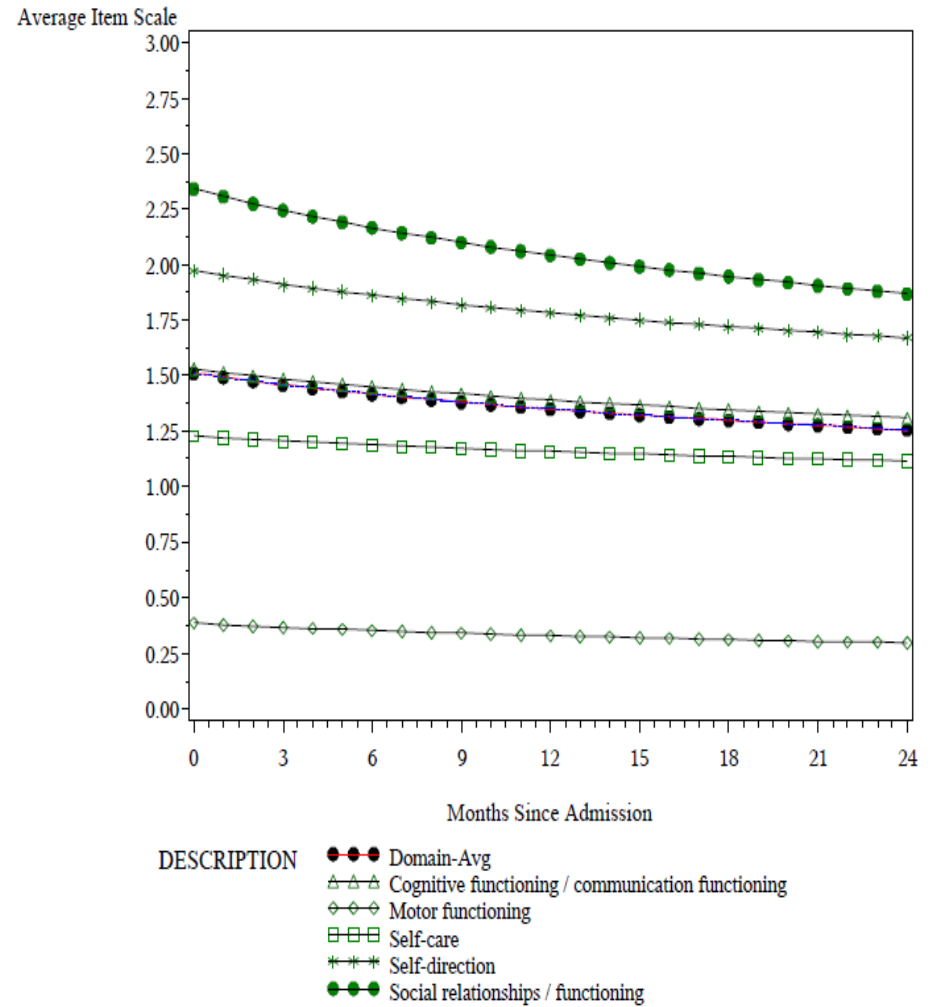
RTF vs HCBS-Waiver: Change Trajectory on Functional Impairment Domain

Graph3.1: RTF-Change Trajectory on Functional Impairment Domain*



*All items are significant at 0.05 level.
Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)

Graph3.1: Waiver-Change Trajectory on Functional Impairment Domain*



*All items are significant at 0.05 level.
Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)

Child Strength

Child identifies personal strengths

Maintains positive family relations

Uses anger management skills

Expresses remorse for behavior that hurts or upsets others

Considers consequences of own behavior

Accepts closeness and intimacy of others

Attends school regularly

Respects the rights of others

Accepts responsibility for own actions

Enjoys a hobby and / or special interest

Has friends / is popular with peers

Performs well in school

CAIRS: Child Strength Domains

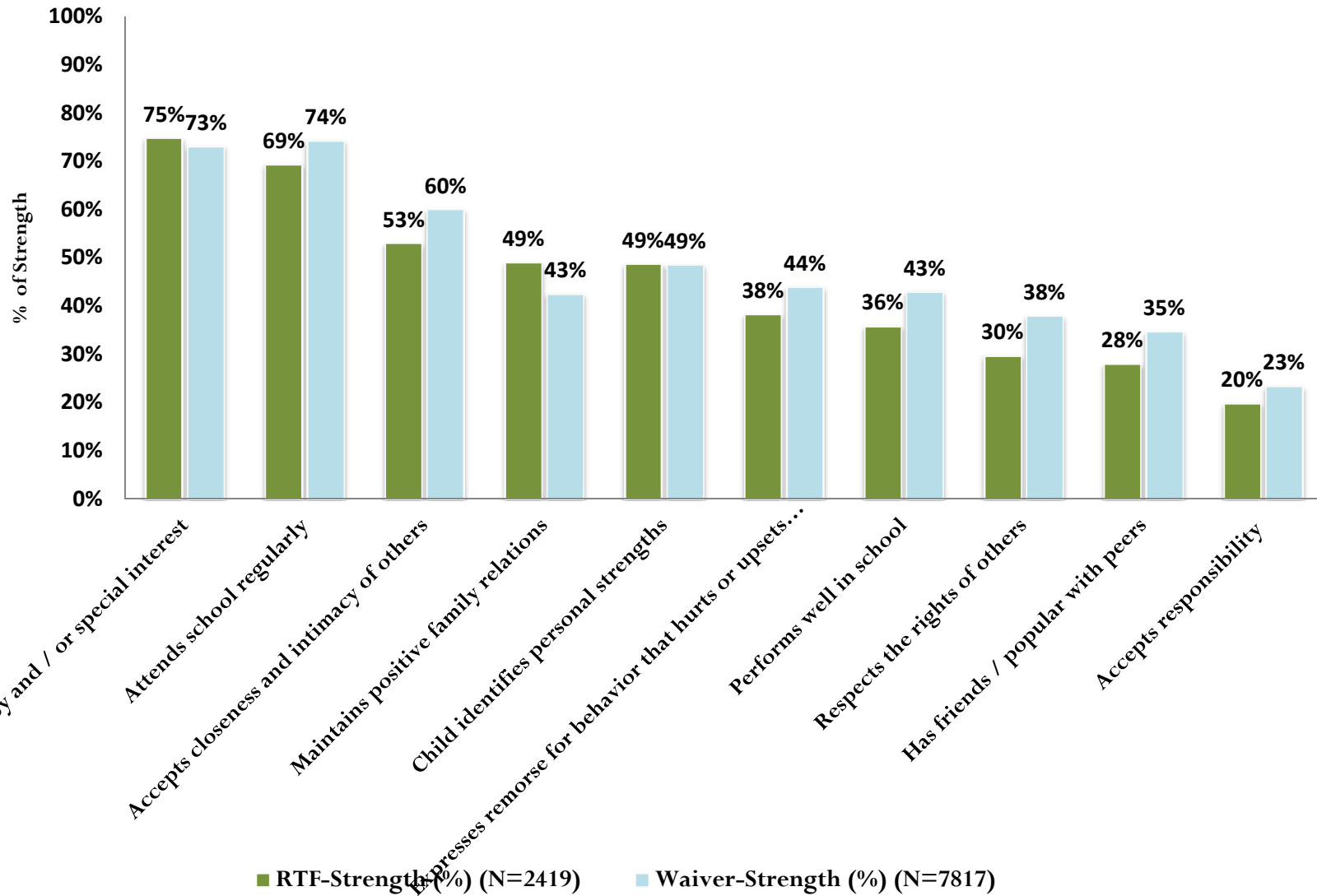
Child Strengths (Select one response)

Scale: 1 - Not at all like the child 2 - Not much like the child 3 - Like the child 4 - Very much like the child U - Unknown

	1	2	3	4	U		1	2	3	4	U
Child identifies personal strengths	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Respects the rights of others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Maintains positive family relations	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Accepts responsibility for own actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Uses anger management skills	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Enjoys a hobby and / or special interest	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expresses remorse for behavior that hurts or upsets others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Has friends / is popular with peers	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Considers consequences of own behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Performs well in school	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accepts closeness and intimacy of others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Other, please specify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attends school regularly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>						

Reset Other

RTF vs Waiver - Child Strength Domain: Prevalence of Strength at Admission

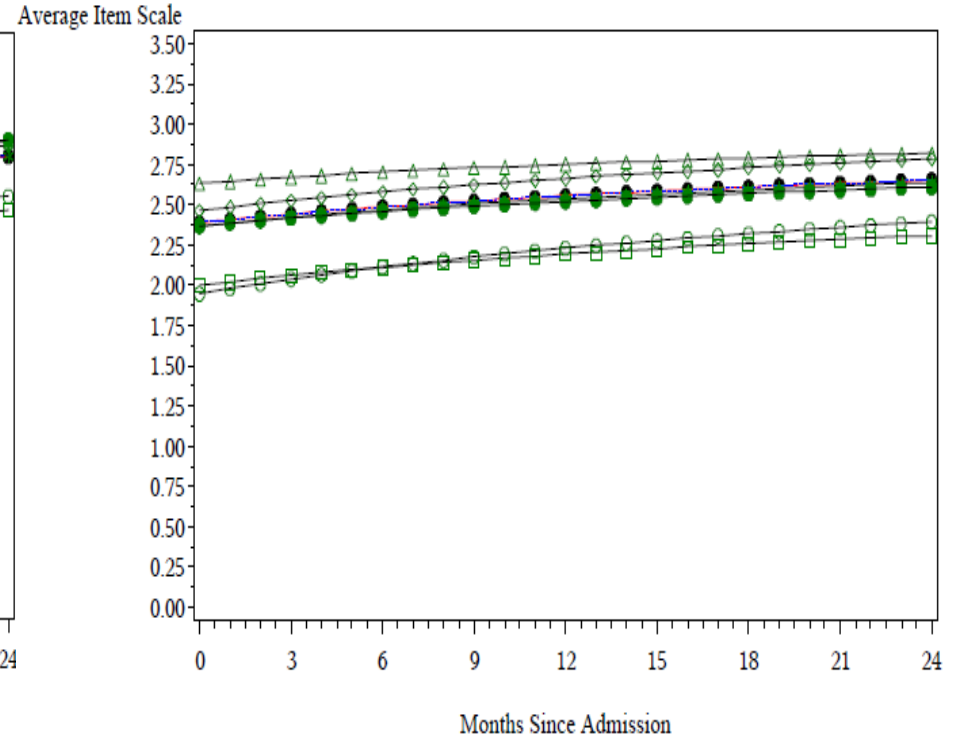
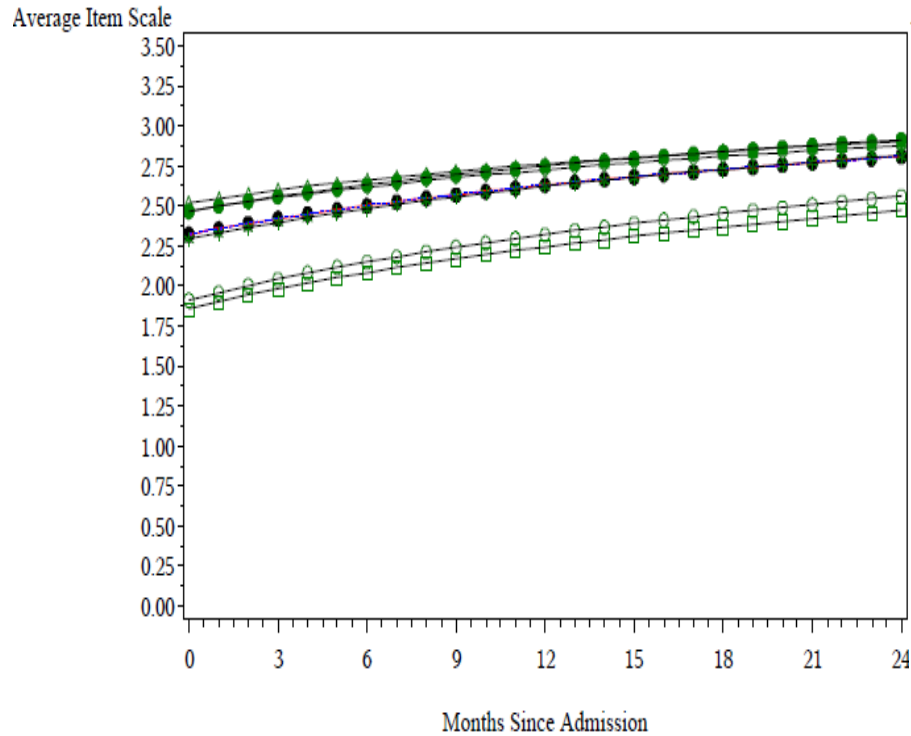


Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

RTF vs HCBS-Waiver: Change Trajectory on Child Strength Domain

Graph4.1: RTF-Change Trajectory on Child Strength Domain*

Graph4.1: Waiver-Change Trajectory on Child Strength Domain*



- DESCRIPTION
- Domain-Avg
 - △-△-△ Accepts closeness and intimacy of others
 - ◇-◇-◇ Child identifies personal strengths
 - Considers consequences of own behavior
 - *-*-* Expresses remorse for behavior that hurts or upsets others
 - Maintains positive family relations
 - Uses anger management skills

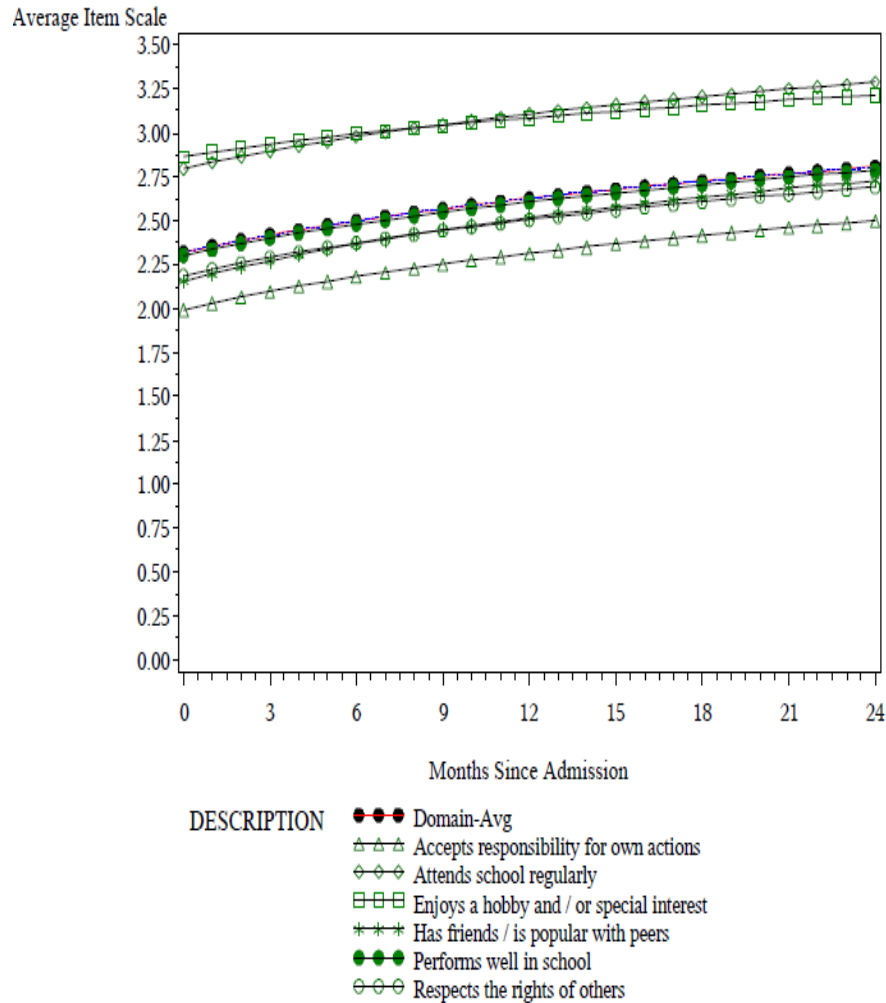
- DESCRIPTION
- Domain-Avg
 - △-△-△ Accepts closeness and intimacy of others
 - ◇-◇-◇ Child identifies personal strengths
 - Considers consequences of own behavior
 - *-*-* Expresses remorse for behavior that hurts or upsets others
 - Maintains positive family relations
 - Uses anger management skills

*All items are significant at 0.05 level.
Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)

*All items are significant at 0.05 level.
Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)

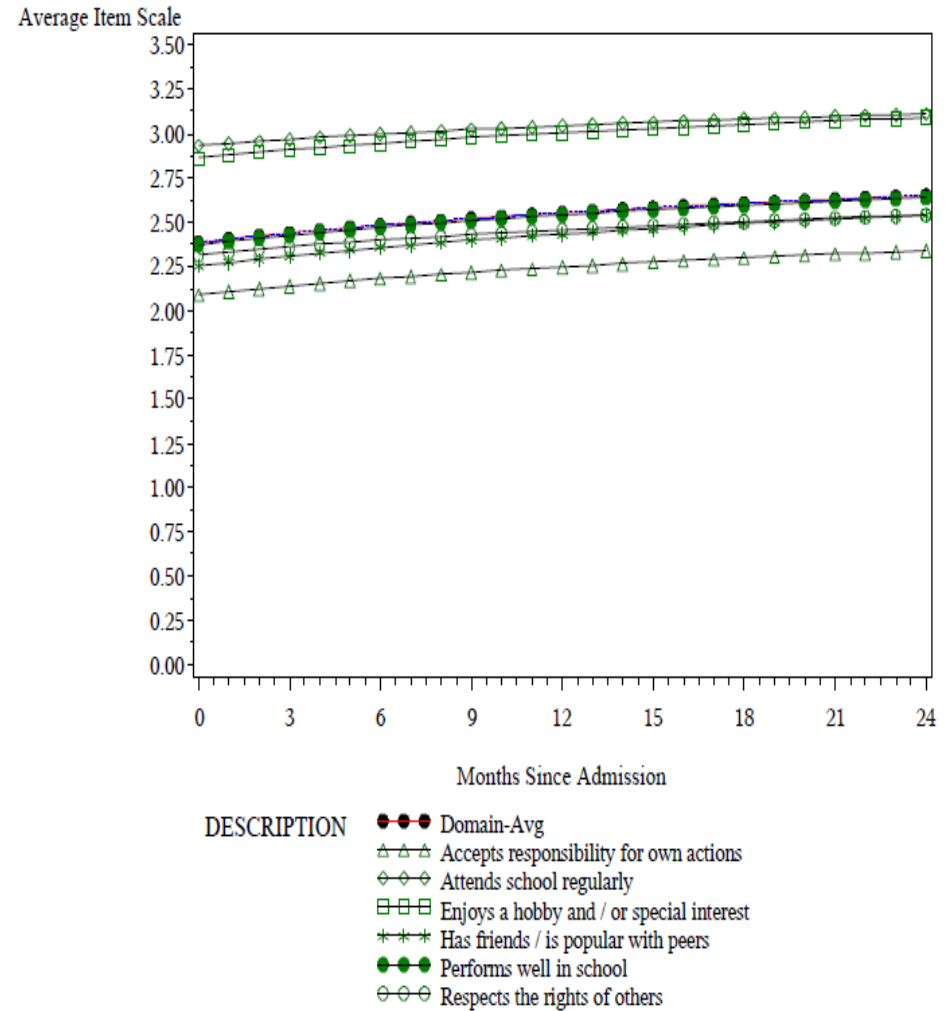
RTF vs HCBS-Waiver: Change Trajectory on Child Strength Domain

Graph4.1: RTF-Change Trajectory on Child Strength Domain (Con.)*



*All items are significant at 0.05 significance level.
Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)

Graph4.1: Waiver-Change Trajectory on Child Strength Domain (Con.)*



*All items are significant at 0.05 significance level.
Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)

Family Strength

Primary caregiver provides food, clothing, shelter

Primary caregiver provides age-appropriate supervision

Primary caregiver is able to give medications as ordered

Primary caregiver responds supportively to this child's emotion

Primary caregiver is able to manage / protect child

Primary caregiver is motivated to help with treatment

CAIRS: Family Strength Domains

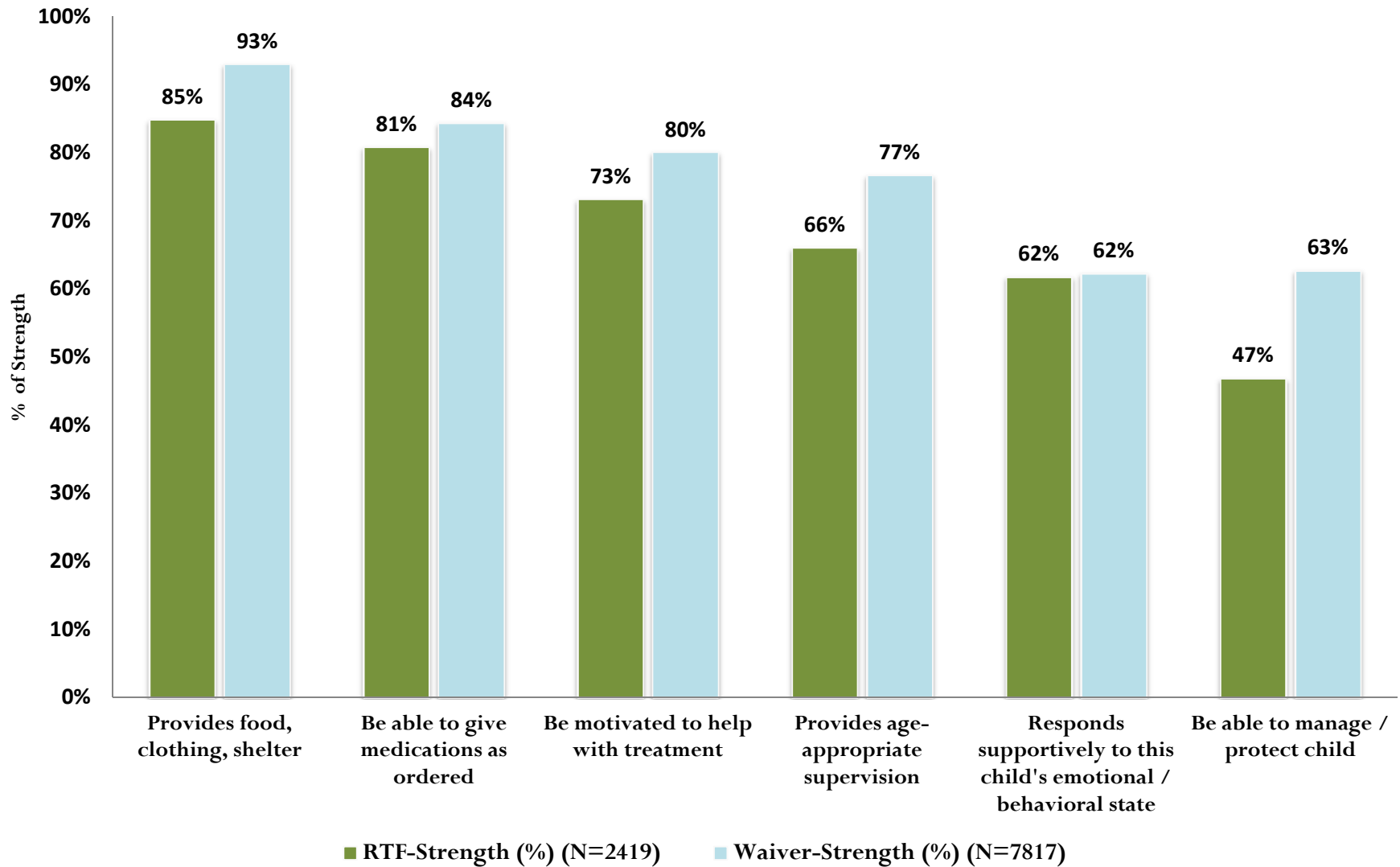
Family Strengths (Select one response)

Indicate the strengths of the person(s) primarily responsible for the child. If the child is currently in a community residential program, refer to the adult(s) in the child's primary living situation just prior to admission.

Scale: **0** - Not at all true **1** - A little true **2** - Somewhat true **3** - Usually true **4** - Very true
NA - Not applicable **U** - Unknown

	0	1	2	3	4	NA	U
Primary caregiver provides food, clothing, shelter	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Primary caregiver provides age-appropriate supervision	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Primary caregiver is able to give medications as ordered	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Primary caregiver responds supportively to this child's emotional / behavioral state	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Primary caregiver is able to manage / protect child	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Primary caregiver is motivated to help with treatment	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

RTF vs Waiver - Family Strength Domain: Prevalence of Strength at Admission

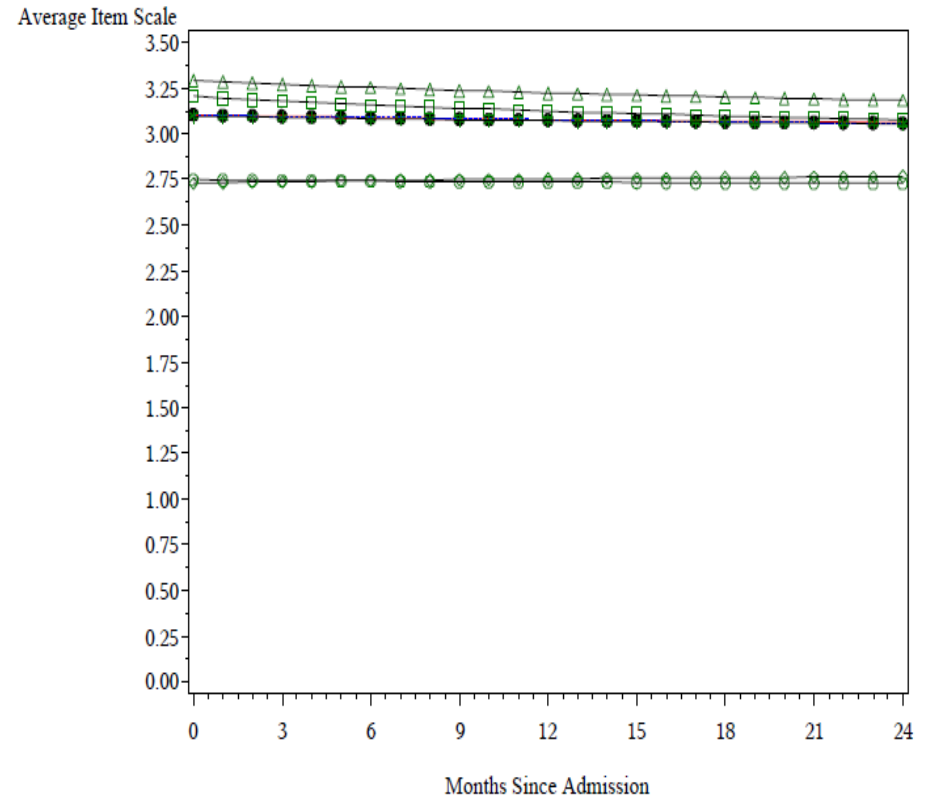
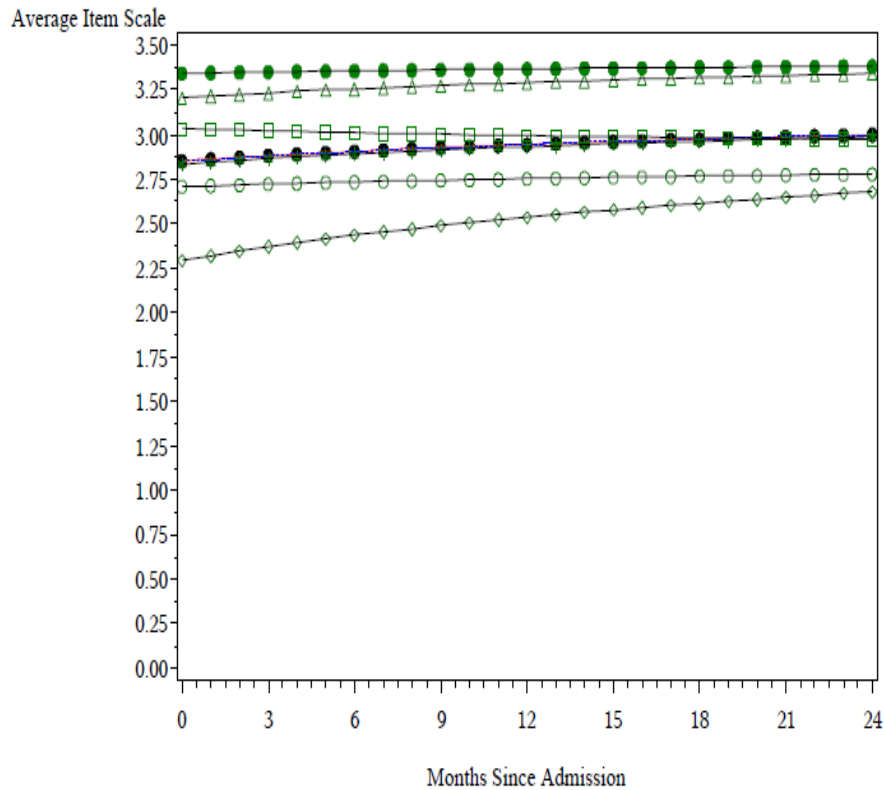


Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

RTF vs HCBS-Waiver: Change Trajectory on Family Strength Domain

Graph5.1: RTF-Change Trajectory on Family Strength Domain*

Graph5.1: Waiver-Change Trajectory on Family Strength Domain*



- DESCRIPTION
- Domain-Avg
 - △-△-△ Primary caregiver is able to give medications as ordered
 - ◇-◇-◇ Primary caregiver is able to manage / protect child
 - Primary caregiver is motivated to help with treatment
 - *-*-* Primary caregiver provides age-appropriate supervision
 - Primary caregiver provides food, clothing, shelter
 - Primary caregiver responds supportively to this child's emotional / behavioral state

- DESCRIPTION
- Domain-Avg
 - △-△-△ Primary caregiver is able to give medications as ordered
 - ◇-◇-◇ Primary caregiver is able to manage / protect child
 - Primary caregiver is motivated to help with treatment
 - *-*-* Primary caregiver provides age-appropriate supervision
 - Primary caregiver provides food, clothing, shelter
 - Primary caregiver responds supportively to this child's emotional / behavioral state

*All items are significant at 0.05 level except Primary caregiver provides food, clothing, shelter, and Primary caregiver is motivated to help with treatment; and Primary caregiver responds supportively to this child's emotion. Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)

*All items are significant at 0.05 level except Primary caregiver responds supportively to this child's emotion. Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)

Conclusion & Discussion

- Youth served in RTF had significantly higher scores (more severe) in symptoms, risk behaviors and functional impairment when admitted compared with youth served in HCBS-Waiver.
- In terms of youth & family strengths, youth served in RTF had significantly lower scores (more need) when admitted compared youth served in HCBS-Waiver.
- Change trajectory analysis showed statistically significant improvement in all symptoms, risk behaviors and functioning items for youth served in either RTF or HCBS-Waiver programs.
- Notable were significant improvements in symptoms/behavior found with peer interactions, impulsive, verbally aggressive, anxiety, social relationships/function and self-direction which each had an average admission score of 2+ (moderate/marginal severity).

Conclusion & Discussion (continued)

- Among child strength items, on ‘uses anger management skills’ and ‘considers consequences of own behavior’ had the most noticeable improvements with a change of 0.32, 0.31 for RTF youth in 9 months and 0.22, 0.16 for Waiver youth.
- The overall Family Strength level had improved significantly for youth in RTF, however, it declined slightly for youth in Waiver.
- In all the five selected domains, youth served in RTF had greater improvement in level of indicators within 9 months of admission compared to Waiver youth, which can be visualized by the steeper slopes of scale trajectories.
- The slope of trajectory becomes flatter over time, implying more effective treatment during the beginning stage. The scales of change in each item were more noticeable during the first-year of services.

Limitations/Future Study

- Youth served in either RTF or HCBS-waiver had positive change trajectories over time in care in terms of symptoms, risk behaviors, functioning and strengths. Differences in the psychiatric profiles of children served in RTF and Waiver were also noted which may help in the future to determine children's effective placement in the mental health system.
- The effects of demographics, custody status, primary diagnosis and family characteristics on change trajectories will be examined in future analysis.
- Proc Mixed procedure is used for predicting the continuous outcome change, but the dependent variable "scale" is discrete.
- The Glimmix procedure may be utilized to fit generalized linear mixed models with discrete outcomes.