



Infant and Child Development Services Evaluation Report

March 1 – November 30 2017

Background

Outpatient Mental Health Services

Children's Centre Thunder Bay (CCTB) is an organization which serves children, youth, and their families within the District of Thunder Bay. Their aim is to improve children's and youth's quality of life by addressing social, developmental, behavioural, and mental health needs. In addition, CCTB strives to strengthen the family's capacity to care for children and build the community's capacity to support children, youth, and families. CCTB's mental health services are divided into age groupings which include Infant and Child Services (ICS; 0-6 years), Youth Services (YS; 7-12 years), and Adolescent Services (AS; 13-18 years). This evaluation report is based on the outcomes of **Infants and Children** who completed outpatient mental health services between March 1 and November 30 2017.

Child and Adolescent Needs and Strengths (CANS)

The CANS is a well-established assessment tool developed by Dr. John Lyons and is used in mental health settings to assess a child or adolescents needs and strengths. The CANS is intended to serve as a clinical tool to gather essential information from clients in order to inform treatment decisions and to monitor treatment progress and outcomes.

Scoring

- Each CANS item is scored on a **4-level rating system**.
- These ratings are indicative of **action levels** which are distinct for **need and strength items** as shown below.
- The clinician considers a **30-day window** for ratings in order to make sure assessments reflect a youth's current functioning.
- CANS ratings of a **2 or 3 represent action level** items and a degree of functional impairment which requires remediation.

Rating	Needs Items	Strengths Items
0	No evidence of need	Centerpiece strength
1	Requires monitoring or prevention	Useful strength
2	Need identified, action required	Strength must be significantly built upon
3	Immediate action required	No strength identified

Background

Child and Adolescent Needs and Strengths (CANS)

Internal Consistency

Each CANS item is grouped with other items into various domains that capture important areas of mental health functioning.

Domains:

- Life Functioning Domain & Risks
- Child Behavioural/Emotional Needs
- Child Strengths
- Caregiver Needs and Strengths

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

The table below highlights the internal consistency scores for each CANS domain used in this evaluation. Internal consistency **values above .70** are considered **good and reflect sound psychometric properties for each domain**.

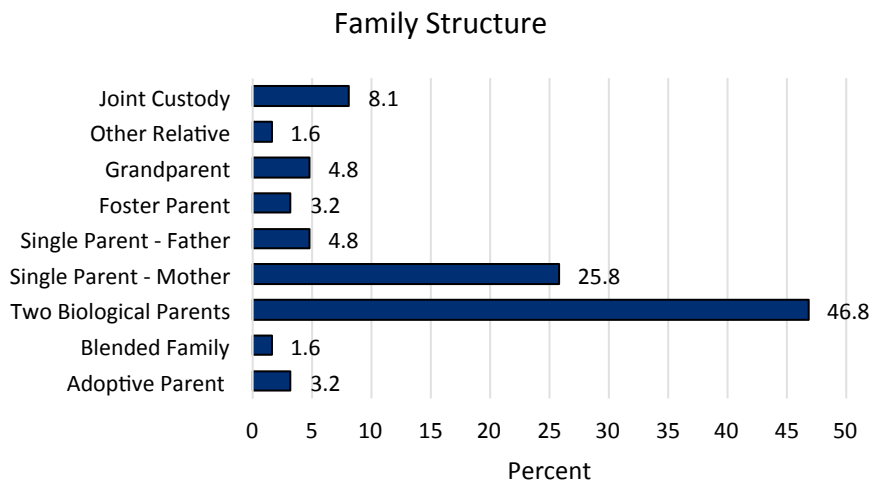
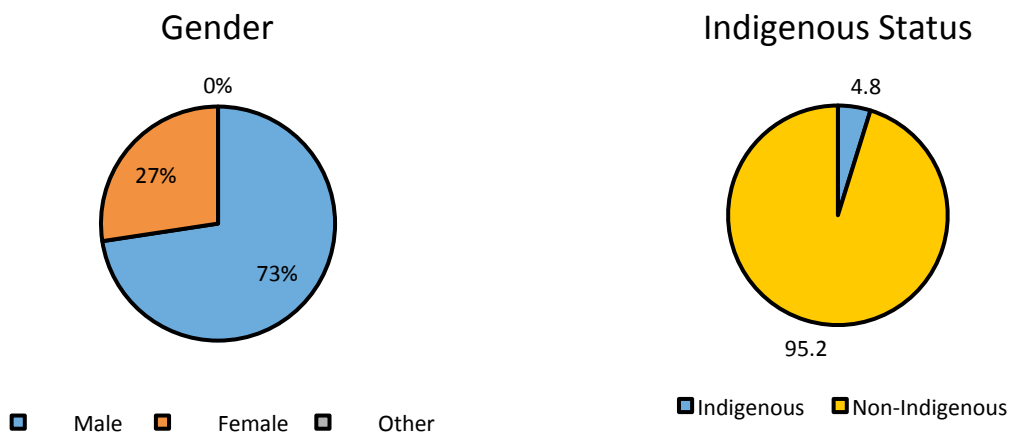
CANS Domains	Number of Domain Items	Alpha Coefficient
Life Functioning Domain & Risks	23	.78
Child Behavioural/Emotional Needs	14	.71
Child Strengths	7	.70
Caregiver Needs and Strengths	19	.94



Demographics

Population:

- There were a total of **62 children** who completed service over the nine month period of this evaluation.
- The mean of age of children was **3.53 (S.D. = 1.38) years at the first referral** and **5.24 (S.D. = 1.46) years at closing**.
- Roughly **73% of the children were male**, most commonly coming from homes with **two biological parents or a single mother**. About **3.2% of these youth were adopted**, with **4.8% living with a grandparent**, and another **3.2% being in foster care**.
- **100%** of clients indicated **English as their preferred language**.
- Other demographic information about these children can be found in the figures below.



Outcomes

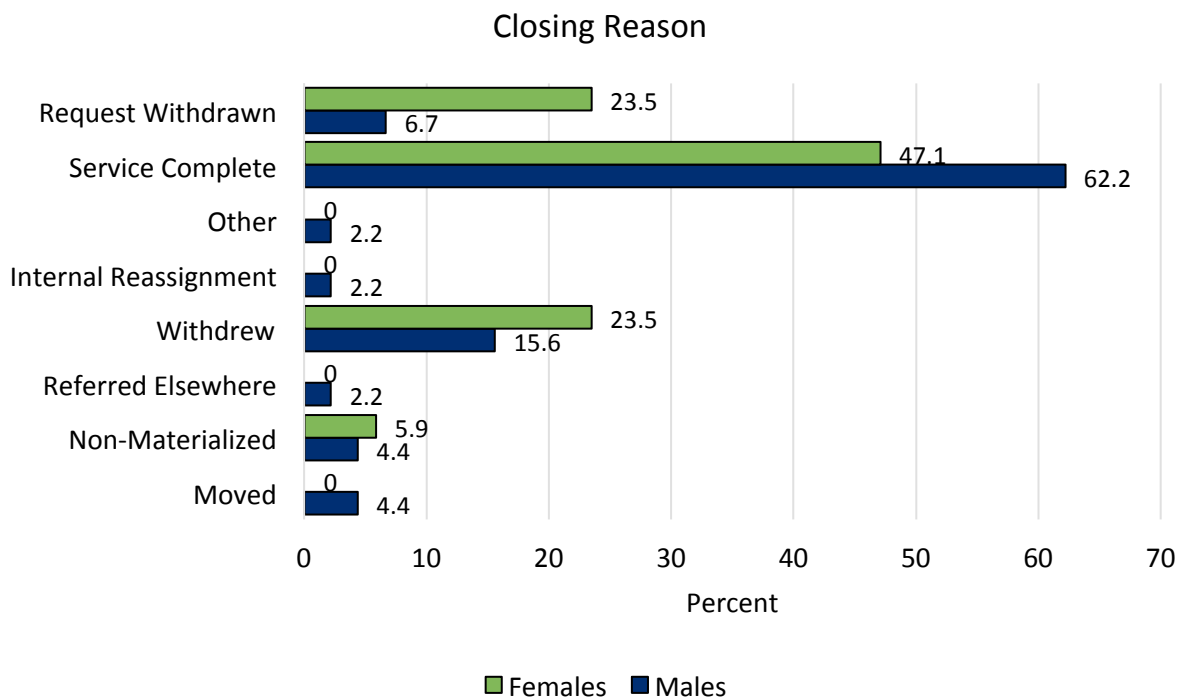
Client Engagement and Treatment Participation

Closing Reasons

An important goal for successful mental health services is client engagement and the ability to follow through with a full course of treatment. As can be seen in the figure below, many clients **successfully participated** in treatment with **roughly 47.1% of female and 62.2% of male children completing a full episode of care.**

Important to note are those youth and their families **who did not fully complete service.** An important number of children and their families **prematurely ended service and withdrew from treatment (23.5% of females; 15.6% of males).** A small number of youth **non-materialized** and did not start service following a referral. This included **5.9% of female children and 4.4% of male children.** When taken together, clients who **withdrew or non-materialized represented roughly 29.4% of female and 20.0% of male children.** There appears to be a **tendency for female children and their families being less successful in completing a full episode of care.**

It was also noted that **23.5% of female and 6.7% of male children withdrew their request for service when contacted to start treatment.** These families indicated that **difficulties had been resolved** while waiting for mental health service. **This occurred more frequently in this younger age group when compared to youth over the age of 6.**



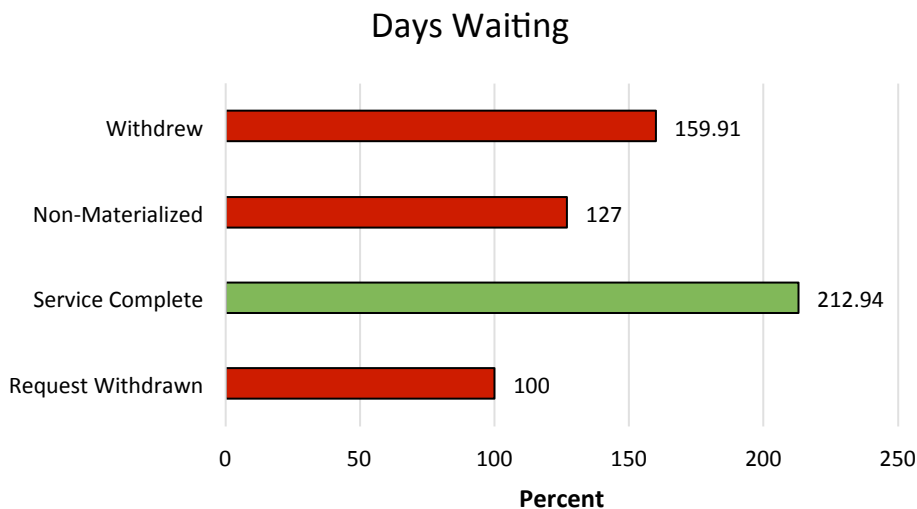
Outcomes

Client Engagement and Treatment Participation

Days Waiting

An important benchmark for service engagement is that youth begin services within three months of their referral to CCTB. In this group of preschool children, **22.8% (n = 13) began to receive service within 90 days of their referral.** The significance of achieving this waitlist benchmark can be seen when looking at youth who successfully completed service versus those who withdraw or non-materialized.

Youth who non-materialized (M = 127 days), prematurely withdrew from service (M = 159.9 days), or withdrew their request for service (M = 100 days) did not wait considerably longer for service when compared to youth who successfully completed service (M = 212.9 days). Roughly **63% of families successfully completed service. Of the 37% of families who did not complete service, the majority or roughly one half were related to a premature withdrawal from service (11 families or 19.3% of clients).** This suggests that families can be engaged in service, but that an important number drop out of service prematurely. Surprisingly, **families who dropped out of service waited considerable less time for service (128.3 days) than did those families who successfully completed treatment (212.9 days).**

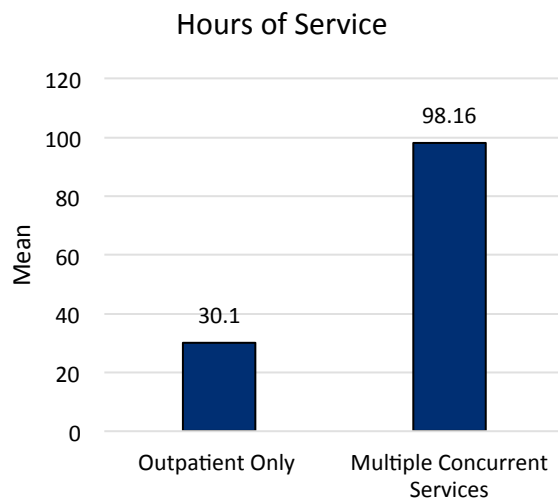
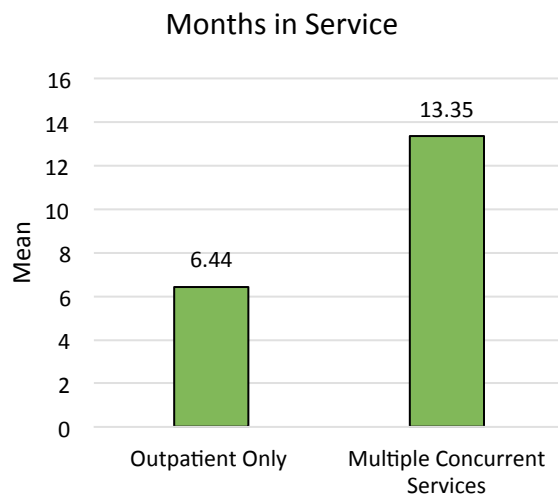


Outcomes

Client Engagement and Treatment Participation

Intensity of Service

As another measure of service need, clients were broken down into children who utilized the outpatient service only versus those children and families who required outpatient services plus other complementary services such as Day Treatment, speech, or parenting interventions. As can be seen, roughly **40.4% of children and their families in ICS required additional services beyond just outpatient interventions**. Importantly, the impact on treatment duration can be seen in the figures below.



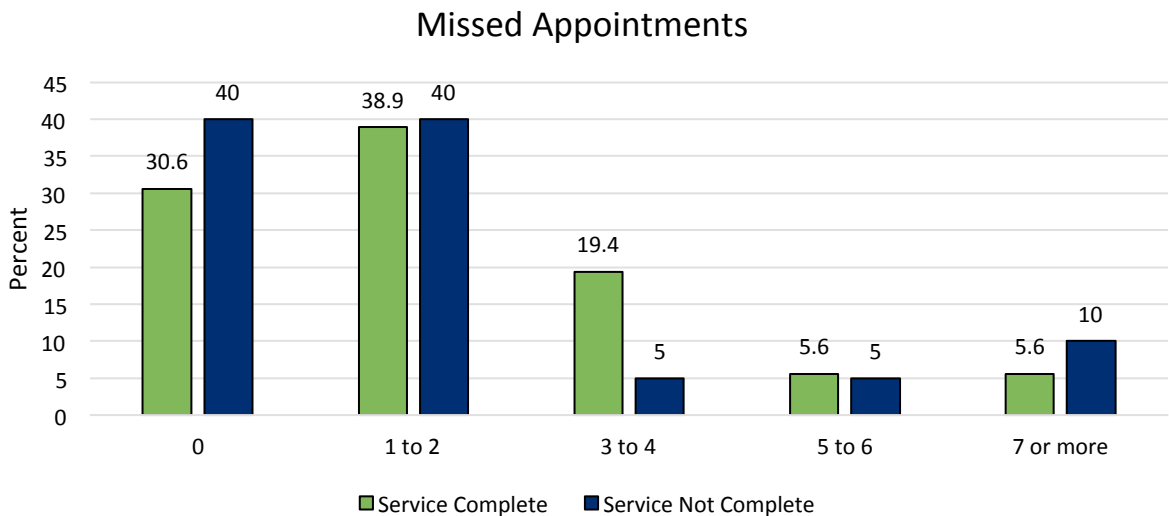
Children who had concurrent mental health services were in treatment **roughly two times longer** and received **roughly three times more service hours** than youth who received outpatient service only.

Outcomes

Client Engagement and Treatment Participation

Missed Appointments

Another important factor of engagement in treatment is the level of follow through with appointments. If clients frequently miss appointments, it represents a disruption in service and lack of continuity in working on treatment goals. If there are frequent missed appointments, it may represent the presence of barriers to service or lack of engagement by therapists. As can be seen in the figure below, most clients who **successfully completed service had few attendance problems with appointments**. Roughly **69.5% of these clients missed two or fewer appointments over the course of service**. Only about **11.2% of the service complete clients missed five or more appointments** over the 12 months of service typically given to these clients. This suggests that within successful episodes of care, a small minority of clients require persistence, flexibility, or some form of supports to ensure provision of the ICS service .



Outcomes

Treatment Outcomes: Individual CANS items

Information about the frequency of each individual CANS item for children in the outpatient mental health program is broken down by gender, concurrent service use, and by service completion is displayed in Appendix A. At the CANS individual item level, analyses can be done examining the treatment success within that area of functioning. The tables below provide a **summary of the outcomes achieved on a selection of the most frequently presenting need items and all strength items**. The outcome for each of these individual items can be classified into the following categories:

- Initial** = percentage of youth who were identified with an actionable need item at the start of treatment
- Clinical Progress** = percentage of youth who had an actionable need item at the start of service and improved in that area of functioning. *Note: This category only examines clients who displayed an actionable need for each individual item at pre-treatment.
- Worsening** = percentage of clients where an actionable need item was identified at the start of service and this item increased in severity. *Note: This category only examines clients who displayed an actionable need for each individual item at pre-treatment.

As can be seen, a high number of children are **struggling within child care centres, in their social functioning, peer relationships, emotional regulation, adaptability, and oppositional/ defiant behaviours**. Within these areas, the **greatest treatment effects occurred in social functioning, oppositional and defiant behaviours, and functioning with the preschool setting**.

Importantly, there were several areas where **minimal success was achieved**, even though they were commonly occurring need issues. This included **impulsivity, persistence, and peer relationships**. These latter areas require greater attention in service provision and how best to deliver services for these specific problem areas.

Boxes highlighted in yellow indicates the item displayed statistically significant results.

	Initial N (%)	Clinical Progress N (%)	Worsening N (%)	Effect Size	r
Preschool/Daycare	13 (59.1)	10 (76.9)	0 (0)	.94	.002
Social Functioning	12 (50)	6 (50)	0 (0)	.51	.011
Regulatory	14 (58.3)	9 (69.2)	0 (0)	.56	.002
Impulsivity/Hyperactivity	9 (37.5)	3 (33.3)	0 (0)	.09	.317
Oppositional	7 (29.2)	7 (100)	0 (0)	.48	.011
Family Stress	7 (29.2)	2 (33.3)	0 (0)	.34	.102
Adaptability	14 (60.9)	3 (23.1)	0 (0)	.25	.046
Persistence	8 (34.8)	2 (28.6)	0 (0)	.14	.083
Peer Relationships	15 (62.5)	3 (20)	0 (0)	.13	.317

*Note: Effect Size and Significance includes the entire ICS population.

Outcomes

Treatment Outcomes: Domain Level CANS

Examination of treatment outcomes across various subgroups of ICS children as well as the overall total sample possessing a **pre- and post- CANS score reveals statistically and clinically meaningful positive outcomes for the children**. As seen in the table below, **ICS children who took part in services demonstrated a small to moderate level improvement in their mental health functioning and overall functioning**. There was **no change in the identified Strengths or Caregiver Strengths and Needs** as a result of participating in services.

Domain	Pre-Treatment Mean (SD)	Post Treatment Mean (SD)	Effect Size	r
Life Functioning and Risks	11.35 (6.09)	9.43 (5.69)	.33	.000
Child Behavioural Emotional Needs	8.48 (4.39)	6.78 (3.54)	.43	.000
Child Strengths	7.09 (2.95)	6.96 (2.60)	.05	.700
Caregiver Strengths and Needs	10.00 (8.93)	9.39 (9.20)	.07	.157
Total	37.09 (18.45)	32.74 (17.87)	.24	.002

Treatment Outcomes: Service Complete vs. Service Not Complete

Outcomes for children and families who successfully completed service were compared to those families where service, for different reasons, was not successfully complete. While the sample size was small, the available information suggests that **children and families who do not successfully complete service present more severe difficulties and impairment**. The **level of severity is almost twice that seen by those children and families who successfully complete service**. This suggests that there is a small group of children who are difficult to engage in service or make meaningful progress in addressing their mental health needs.

	Pre-Treatment CANS Mean (SD)	Post-Treatment CANS Mean (SD)	Effect Size
Service Complete (N = 18)	31.39 (14.51)	26.72 (12.07)	.35
Service Not Complete (N = 5)	56.80 (16.24)	53.60 (18.56)	.18

Outcomes

Treatment Outcomes: One Outpatient Service and Multiple Concurrent Services

When treatment outcomes were examined by those children who had **outpatient only**, it was noted that **treatment outcomes were much smaller**. These results are displayed in the figure below. However, examination of pre-service levels of problems identified on the CANS shows that these **youth entered service with only mild to moderate level impairment**. Thus, **weaker outcomes stemmed from the fact that these children had little room for change and were already at a high level of functioning**. This is less a reflection of treatment effectiveness as it shows that there are some children in this service who are attending service in more a preventative manner and do not present with severe or chronic difficulties.

ICS Treatment Outcomes by CANS Domains: Outpatient Service only (N=13)

Domain	Pre-Treatment Mean (SD)	Post Treatment Mean (SD)	Effect Size	r
Life Functioning and Risks	9.00 (5.32)	7.85 (5.58)	.21	.018
Child Behavioural Emotional Needs	6.38 (3.01)	5.38 (2.10)	.39	.021
Child Strengths	6.46 (2.99)	6.38 (2.75)	.03	.829
Caregiver Strengths and Needs	8.62 (9.34)	8.62 (9.35)	0.0	1.00
Total	30.46 (16.64)	28.23 (16.64)	.13	.041

As shown in the figure below, **children with more severe problems and required multiple concurrent interventions experienced significant and meaningful change**. This occurred on both the **Life Functioning and Child Behavioural-Emotional Needs domains**, which obtained **moderate effect size of improvement**. Similar to the **overall results** shown above, there was **little to no change in the Child Strengths and Caregiver Needs and Strengths domains**.

ICS Treatment Outcomes by CANS Domains: Concurrent Service (N=10)

Domain	Pre-Treatment Mean (SD)	Post Treatment Mean (SD)	Effect Size	r
Life Functioning and Risks	14.40 (5.87)	11.50 (5.40)	.51	.006
Child Behavioural Emotional Needs	11.20 (4.52)	8.60 (4.27)	.59	.006
Child Strengths	7.90 (2.85)	7.70 (2.31)	.08	.764
Caregiver Strengths and Needs	11.80 (8.50)	10.40 (9.40)	.16	.072
Total	45.70 (17.80)	38.60 (18.55)	.39	.015

Summary and Conclusions

Results from this evaluation of the ICSS service highlight a number of very positive treatment outcomes. There were also some areas of weakness which should be considered in the provision of future services. Key service delivery findings and recommendations are summarized below.

- Roughly three-quarters of children referred for service were male coming predominantly from families with two biological parents.
- Roughly 47% of female and 62% of male children successfully completed service. This suggests that the majority of clients were able to engage in services and follow through with appointments to the end of intervention.
- Not all youth who participated in services were able to make progress or improvement. This was observed in the failure to engage some of the youth who sought out services. Roughly 23% of female and 16% of male children ended service prematurely. There was also a significant minority of clients who withdrew their request for service when contacted (23.5% of female & 6.7% of male children).
- It was noted that length of wait time did not appear to negatively affect the likelihood of service completion. This differed from children over the age of 6 where wait times resulted in a lower rate of follow through with treatment services.
- Most clients who successfully completed service had few attendance problems with appointments. Roughly 69.5% of these clients missed two or fewer appointments over the course of service. Only about 11.2% of the service complete clients missed five or more appointments over the 12 months of service typically given to these clients.
- Children who had concurrent mental health services were in treatment roughly two times longer and received roughly three times more service hours than children who received outpatient service only.
- The most common presenting issues for children referred to ICS children included behaviour problems in child care centres, social functioning, peer relationships, emotional regulation, adaptability, and oppositional/ defiant behaviours.

Summary and Conclusions

- Strong treatment effects occurred in children's overall social functioning, oppositional and defiant behaviours, emotional regulation skills, and behaviour within child care settings.
- Minimal treatment success was seen with issues related to impulsivity and peer relationships. These latter areas require greater attention in service provision and strategies on how best to intervene.
- Within the broad CANS domains of Life Functioning and Child Behavioural and Emotional Needs, statistical and clinically meaningful results were obtained falling within the moderate effect size range of improvements.
- There were no improvements observed in the CANS domains of Child Strengths and Caregiver Functioning. This suggests that greater attention in treatment services could be focussed on building child strengths and assisting caregivers in their role in caring for their children.
- Treatment services with children with more severe problems requiring multiple concurrent services experienced significant and meaningful improvements. This suggests that services with children who have more severe problems was equally effective to that found with children who had moderate level problems.

Appendix A: Frequency of Individual CANS Items for Youth in the YS Service

Domains	Gender		Concurrent		Service Complete		Overall
	Male N (%)	Female N (%)	Yes N (%)	No N (%)	Yes N (%)	No N (%)	N (%)
Life Functioning Domain & Risks							
Family	6 (31.6)	0 (0)	5 (45.5)	1 (7.7)	4 (21.2)	2 (40)	6 (25)
Living Situation	5 (26.3)	0 (0)	4 (36.4)	1 (7.7)	3 (15.8)	2 (40)	5 (20.8)
Preschool/Daycare	11 (61.1)	2 (50)	8 (72.7)	5 (45.5)	9 (52.9)	4 (80)	13 (59.1)
Social Functioning	11 (57.9)	1 (20)	6 (54.5)	6 (46.2)	10 (52.6)	2 (40)	12 (50)
Recreation/Play	3 (15.8)	0 (0)	2 (18.2)	1 (7.7)	2 (10.5)	1 (20)	3 (12.5)
Developmental	0 (0)	1 (20)	0 (0)	1 (7.7)	1 (5.3)	0 (0)	1 (4.2)
Motor	3 (15.8)	0 (0)	2 (18.2)	1 (7.7)	3 (15.8)	0 (0)	3 (12.5)
Communication	5 (26.3)	0 (0)	2 (18.2)	3 (23.1)	2 (10.5)	3 (60)	5 (20.8)
Medical	1 (5.3)	0 (0)	0 (0)	1 (7.7)	1 (5.3)	0 (0)	1 (4.2)
Physical	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Relationship Permanence	3 (15.8)	1 (20)	2 (18.2)	2 (15.4)	1 (5.3)	3 (60)	4 (16.7)
Autism Spectrum	3 (15.8)	0 (0)	3 (27.3)	0 (0)	2 (10.5)	1 (20)	3 (12.5)
Parent Sibling Problems	3 (15.8)	1 (20)	1 (9.1)	3 (23.1)	3 (15.8)	1 (20)	4 (16.7)
Eating	5 (26.3)	0 (0)	1 (9.1)	4 (30.8)	3 (15.8)	2 (40)	5 (20.8)
Adjustment to Trauma	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Birth Weight	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Pica	0 (0)	1 (20)	1 (9.1)	0 (0)	0 (0)	1 (20)	1 (4.2)
Prenatal Care	2 (10.5)	0 (0)	1 (9.1)	1 (7.7)	2 (10.5)	0 (0)	2 (8.3)
Labour/Delivery	3 (15.8)	0 (0)	2 (18.2)	1 (7.7)	2 (10.5)	1 (20)	3 (12.5)
Substance Exposure	2 (10.5)	0 (0)	1 (9.1)	1 (7.7)	1 (5.3)	1 (20)	2 (8.3)
Maternal Availability	6 (31.6)	0 (0)	4 (36.4)	2 (15.4)	3 (15.8)	3 (60)	6 (25)
Self-Harm	1 (5.3)	0 (0)	1 (9.1)	0 (0)	1 (5.3)	0 (0)	1 (4.2)
Abuse/Neglect	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Child Behavioural/Emotional Needs							
Attachment	3 (15.8)	0 (0)	2 (18.2)	1 (7.7)	2 (10.5)	1 (20)	3 (12.5)
Regulatory	12 (63.2)	2 (40)	8 (72.7)	6 (46.2)	9 (47.4)	0 (0)	14 (58.3)
Failure to Thrive	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Depression/Sad	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Anxiety/Worry	4 (21.1)	1 (20)	3 (27.3)	2 (15.4)	4 (21.2)	1 (20)	5 (20.8)
Atypical Behaviour	1 (5.3)	0 (0)	1 (9.1)	0 (0)	1 (5.3)	0 (0)	1 (4.2)
Impulsivity/Hyperactivity	6 (31.6)	3 (60)	3 (27.3)	6 (46.2)	8 (42.1)	1 (20)	9 (37.5)
Oppositional	5 (26.3)	2 (40)	5 (45.5)	2 (15.4)	5 (26.3)	2 (40)	7 (29.2)
Aggressive Behaviour	5 (26.3)	1 (20)	6 (54.5)	0 (0)	3 (15.8)	3 (60)	6 (25)
Intentional Misbehaviour	1 (5.3)	0 (0)	1 (9.1)	0 (0)	1 (5.3)	0 (0)	1 (4.2)
Self-Injurious Behaviour	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Elimination	1 (5.3)	0 (0)	1 (9.1)	0 (0)	1 (5.3)	0 (0)	1 (4.2)
Sensory Reactivity	3 (15.8)	2 (40)	3 (27.3)	2 (15.4)	4 (21.1)	1 (20)	5 (20.8)
Sleep	1 (5.3)	2 (40)	0 (0)	3 (23.1)	3 (15.8)	0 (0)	3 (12.5)
Child Strengths							
Family	6 (31.6)	0 (0)	4 (36.4)	2 (15.4)	3 (15.8)	3 (60)	6 (25)
Extended Family	5 (26.3)	0 (0)	2 (18.2)	3 (23.1)	2 (10.5)	3 (60)	5 (20.8)
Interpersonal	3 (15.8)	0 (0)	1 (9.1)	2 (15.4)	1 (5.3)	2 (40)	3 (12.5)
Adaptability	13 (72.2)	1 (20)	8 (80)	6 (46.2)	10 (55.6)	4 (80)	14 (60.9)
Persistence	6 (33.3)	2 (40)	5 (50)	3 (23.1)	6 (33.3)	2 (40)	8 (34.8)
Curiosity	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Peer Relationships	13 (68.4)	2 (40)	8 (72.7)	7 (53.8)	11 (57.9)	4 (80)	15 (62.5)

Appendix A: Frequency of Individual CANS Items for Youth in the YS Service

Domains	Gender		Concurrent		Service Complete		Overall N (%)
	Male N (%)	Female N (%)	Yes N (%)	No N (%)	Yes N (%)	No N (%)	
Caregiver Needs and Strengths							
Supervision	4 (21.1)	1 (20)	2 (18.2)	3 (23.1)	2 (10.5)	3 (60)	5 (20.8)
Involvement	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Empathy for Child	1 (5.3)	0 (0)	0 (0)	1 (7.7)	0 (0)	1 (20)	1 (4.2)
Organization	2 (10.5)	0 (0)	1 (9.1)	1 (7.7)	1 (5.3)	1 (20)	2 (8.3)
Social Resources	4 (21.1)	0 (0)	2 (18.2)	2 (15.4)	1 (5.3)	3 (60)	4 (16.7)
Residential Stability	3 (15.8)	0 (0)	2 (18.2)	1 (7.7)	1 (5.3)	2 (40)	3 (12.5)
Access to Childcare	4 (21.1)	0 (0)	2 (18.2)	2 (15.4)	1 (5.3)	3 (60)	4 (16.7)
Family Stress	7 (36.8)	0 (0)	5 (45.5)	2 (15.4)	4 (21.1)	3 (60)	7 (29.2)
Parental Responsiveness	4 (21.1)	1 (20)	2 (18.2)	3 (23.1)	2 (10.5)	3 (60)	5 (20.8)
Caregiver Resourcefulness	3 (15.8)	0 (0)	1 (9.1)	2 (15.4)	1 (5.3)	2 (40)	3 (12.5)
Understanding of Impact of own Behaviour on Child	4 (21.1)	0 (0)	2 (18.2)	2 (15.4)	1 (5.3)	3 (60)	4 (16.7)
Knowledge of Rights & Responsibilities	3 (15.8)	0 (0)	1 (9.1)	2 (15.4)	1 (5.3)	2 (40)	3 (12.5)
Knowledge of Service Options	3 (15.8)	0 (0)	1 (9.1)	2 (15.4)	1 (5.3)	2 (40)	3 (12.5)
Knowledge	2 (10.5)	0 (0)	1 (9.1)	1 (7.7)	1 (5.3)	1 (20)	2 (8.3)
Physical	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Mental Health	5 (26.3)	0 (0)	4 (36.4)	1 (7.7)	3 (15.8)	2 (40)	5 (20.8)
Substance Use	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Developmental	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Safety	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)