Outcome Evaluation for Pregnant and Parenting Youth in Ottawa

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A collaborative effort by:
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St. Mary's Home
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Executive Summary

Rideauwood, St.Mary's Home and the Youville Centre: Young Mothers Substance Use/Mental Health Treatment Program

The Purpose

- To determine the unique needs and strengths that our target population possess in order to guide treatment planning and service delivery efficiently and effectively.
- To evaluate outcomes for pregnant/parenting mothers seeking educational and/or mental health and substance use services, in order to enhance both maternal and child physical and mental health outcomes.
- To build evaluation capacity within our agencies to examine both process and outcomes, with the goals of sustained program evaluation, evidence-informed service delivery and efficient resource allocation.

The Program

Our three agencies work together to serve ~90-120 young mothers annually who are struggling with substance abuse and mental health issues. Rideauwood's addictions counseling has been delivered in collaboration with and on-site at St. Mary's Home since 1997. This arrangement allows the counselor to be readily accessible for individual motivational counseling sessions, as well as to provide education and advocacy to help these young women assess their current situations, set goals, and successfully address their substance use and/or the use of their families and/or partners. Similar services have been offered by addictions counselors on site at the Youville Centre since 2001. All three agencies are located in a community setting in Ottawa. Together we provide childcare, high school education, Residential shelter, counselling services, and mother/infant integrated programming to young pregnant and/or parenting women. Our goals include: an elimination or reduction in substance abuse, relapse prevention, increased educational attainment and the amelioration of co-existing mental health issues.

The Plan

Outcomes were evaluated at three time points (at 1 month, 6 months, and 9 months) at each of the respective agencies using the Child and Adolescent Needs and Strengths-Pregnant and Parenting Youth (CANS-PPY) questionnaire (Time 1: n=77). The main benefit of our tool is that it addresses both the needs and strengths of the young women as individuals, but also in their role as a caregiver. Following motivational counseling at both St.Mary's and Youville Centre, scores on the Substance Use module were used as an indicator of change in substance use. Additional domains were evaluated to determine changes in Risk Behaviours, Daily Functioning and Mental Health Needs. The CAMH modified Global Appraisal of Individual Needs-Short Screener (GAIN-SS) was also completed at intake to determine what issues our clients present with upon arrival at our agencies (n=62). The Parenting Stress Index-4 (PSI-4) was used to evaluate changes in parental stress over the course of treatment (Time 1: n = 28). Finally, an internally developed Engagement Scale was used to evaluate the level of engagement in change-oriented counseling over time (Time 1: n =68).

The Results

Global and statistically significant improvements were observed in parental stress as assessed by the PSI, program engagement as assessed by our engagement scale, daily living factors and substance abuse behaviours as assessed by the CANS-PPY. The CANS-PPY and the CAMH modified GAIN-SS were able to capture the primary needs and strengths of our clients. Clients were presenting with a variety of complex needs, the most frequent included: several concurrent Mental Health Needs including depression, anxiety, substance use, and mood disturbances, difficulty with intimate relationships, problems with daily functioning, a number of special educational needs, high risk of victimization, and a history of trauma. Youth as Caregiver scores demonstrated many of the key parenting skills involved in caring for a young child required further development, in addition to a nearly universal lack of financial resources. Clients showed clinical improvements of varying magnitudes on many of the above stated needs/strengths, demonstrating improvements in outcomes following 9 months of substance use/mental health counseling, while attending other programming offered by the agencies. The complexity of the struggles faced by these young women and the improvements observed in this evaluation demonstrate the import and value of coordinated services that target the health and well-being of both child and mother as an integrated dyad.

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Introduction and Literature Review

Program Description

St. Mary's Home, Rideauwood Addiction and Family Services, and the Youville Center work collaboratively to serve pregnant and parenting youth in Ottawa. Together these agencies have 150 years of experience working in the community to offer a wide range of support services to young, often single, pregnant and parenting mothers who require assistance in education, childcare and mental health/substance use.

St. Mary's Home has a long history in providing both residential and outreach support services to young pregnant and parenting women since 1933. Today, it is comprised of a Residence, and a Young Parent Outreach Centre, which includes the satellite Achievement Centre for Immaculate High School. Rideauwood has been providing substance abuse and mental health counselling to youth, adults and family members dealing with substance abuse issues since 1976. Rideauwood's addiction counselling has been delivered in partnership with--and on site at--St. Mary's Home since 1997. Since 1987, Youville Centre, a registered charity that serves adolescent mothers and their children, has provided trauma-informed, holistic programs and services including: crisis intervention, intensive mental health therapy and treatment, addiction counselling, collaborative problem solving, a licensed child development program with a focus on infant mental health, attachment-based parenting programs with intervention and treatment, and a fully accredited secondary school.

The multi-faceted programming that Rideauwood, St.Mary's Home and Youville Centre offers to young pregnant and parenting mothers with substance use issues targets the prenatal and the early post-partum years as a window of opportunity (Schonkoff & Phillips, 2000). Pregnancy is considered to be a motivational period, wherein young mothers are driven to engage most readily in change-oriented counseling and services, and for the most part, want to do what is best for their newborns (Finnegan,

2013). We use this time to enhance the young parents' knowledge on how to make positive life changes that will result in improved mental health and well-being for both themselves and their children.

Research has demonstrated that comprehensive treatment programs providing pre- and postnatal medical care alongside addiction and psychosocial counseling demonstrate improved maternal and infant health outcomes, and early intervention results in more pronounced improvements (Ordean and Kahan, 2011). Within each of our agencies, the substance use and mental health counseling services are offered in a single location alongside medical, educational, child care, and integrated mother/infant programming to allow for convenient and easier access to our services. This "one stop" approach has been shown to reduce some of the barriers that many young women requiring treatment face, as transportation and scheduling can often be difficult with young children (Finnegan, 2013).

In the past, the majority of services provided to families involved in substance use during pregnancy have had a child-centered approach, with minimal concern for the physical and mental health and well-being of the mothers (Greaves et al., 2003; Boyd & Marcellus, 2007). Indeed, it is often the case that the well-being of the child is protected through limitations placed on the mother, rather than enhancing the mental health, safety and parenting skills that the mother may possess (Poole & Greaves, 2008). Recently agencies and research have been pushing for national frameworks guiding the effective support and treatment for mothers and pregnant women in a mother/women-centered, harm reduction oriented and collaborative treatment approach (Parkes et al,. 2008; Watkins & Chovanec, 2006; Poole & Urquhart, 2010). The efficacy of such an approach has been recently demonstrated by Center on the Developing Child at Harvard University. In their 2009 report they found that models of care which simultaneously addressed mother's mental health needs as well as their caregiving roles and their children's development have not only an impact on improving the mothers' well-being but also improve child outcomes and cognitive development. Our programs align with these initiatives, and have long histories of providing integrated programming for both mothers and their children. Appropriate focus on

supporting Secure Attachment in the child and bonding between mother and child dyad is fostered during the early postnatal period and is critical for healthy developmental outcomes in children. Without intervention, this bond can often fail to develop independently in young at-risk families. Further, experiencing unresolved substance use, mental health issues or traumatic experiences can lead to a disorganized attachment in the child (Espinoza et al., 2001), patterns of which exhibit stability across generations (Main & Hesse, 1990). However, early identification of poor bonding and targeted counseling improves outcomes significantly (Niccols et al., 2012; O'Higgins et al., 2013).

Purpose of the Evaluation

The concern of our three agencies is to evaluate the progress and outcomes of young mothers with substance abuse issues; regardless of which agency they are primarily in the care of, what stage of treatment they are in, or where they are physically located. Our goal is to consistently and accurately assess the changes that our clients undergo while being supported by our programs and to evaluate the ability of our programs to enhance both maternal and child substance use and mental health outcomes. Using the evaluation tools identified, we aim to determine what the unique needs and strengths of our population are, and to use these to guide treatment planning and service delivery efficiently and effectively. Through this evaluation project we also hope to build evaluation capacity within our agencies and to ensure that front-line staff implement evidence-informed practices and appropriately allocate resources. The three agencies have collaboratively developed a Program Logic Model (Appendix i) stating the goals and components of programming, as well as the short-, medium- and long-term outcomes desired, as they support this vulnerable population.

Literature Review

The prevalence of substance abuse during pregnancy has increased over the last three decades, both in Canada and the United States (Keegan et al., 2010; Finnegan, 2013). However, as substance

abuse is consistently under-reported in this population primarily due to fears of child welfare involvement and loss of custody (Poole & Isaac, 2001), prevalence rates are likely much higher than current estimates suggest (Ordean & Kahan, 2011). Adolescent mothers are known to be at an even higher risk of substance use/abuse (Chapman and Wu, 2013) and are often faced with complex issues such as economic and social disadvantages, as well as intimate partner violence (Holden et al., 2012). In fact, adolescent mothers as compared to adult mothers, are 2 to 3 times more likely to be victimized by their partner, their child's father or another family member (Gessner & Perham-Hester, 1998; Wiemann et al., 2000). Two-thirds of women who suffer from substance abuse problems also suffer from comorbid mental health issues such as anxiety and depression, which can be exacerbated by pregnancy (Evans et al., 2001). Children exposed to any variety of illicit drugs in utero present with a multitude of health and developmental consequences at birth and beyond, including fetal alcohol spectrum disorder (FASD) and drug dependency at birth (Health Canada, 2000).

With a lack of support and intervention, such circumstances can result in intergenerational cycles of mental illness, substance abuse, and poor child development outcomes (Health Canada, 2000; Finnegan, 2013). One of the primary goals of our substance use and mental health treatment is to break this cycle of addiction, and child maltreatment/developmental delays by educating and empowering these young families to enhance their quality of life and prevent them from falling back into the cycle. Through identifying and fostering the development of the strengths and skills required for optimal daily functioning in their roles as both youth and parent, we can come closer to breaking this cycle.

Methodology

Participant Characteristics

Data was obtained predominately from female youth between the ages of 16 and 20 seeking the services of St. Mary's Home (SMH)/Rideauwood (RW) or Youville Centre (YC). Data was collected for all clients receiving services between September 2013 and August 2014. While we included data from new clients admitted to our programs throughout the course of the grant cycle in our analyses, data for new clients admitted past June 30, 2014 were not included in the sample, as to provide adequate time for data analysis and interpretation. Therefore, each of the agencies will have supported a greater number of youth over the course of the year than are discussed in this evaluation. Our initial sample size at admission into counselling (T1) for the CANS-PPY tool was 82 female youth, however, 5 of these individuals failed to provide informed consent (Appendix ii), and therefore our T1 sample for the CANS-PPY was comprised of 77 female youth. At six months into treatment (T2) our sample size was reduced by 21% (n=56) and our 9 month into treatment (T3) sample was reduced by an additional 27%, resulting in a final T3 sample size of 37. Of the 77 youth that had a CANS-PPY completed at T1, 78% (n=62) had an accompanying GAIN-SS provided. To establish the profile of the average client (see Results) we used all available data at T1. In analyses of CANS-PPY data, only clients with multiple assessments were included.

Our Team

Our evaluation project was funded by the Centre for Excellence in Child and Youth Mental Health, and we were provided with support from our assigned consultants from the Centre throughout the course of the grant cycle. Our evaluation team also consisted of a large number of individuals with varying amounts of experience in program evaluation and with differing roles at each of the respective agencies. The evaluation team included: the Executive Directors from each agency, Research and Evaluation Manager (RW), 2 Program Coordinators (SMH and YC), 3 Student Support Staff (YC), 3 full-

time and 1 part-time substance use and mental health counsellors, and a student research assistant (PhD Candidate at Carleton University). Our team met/participated in teleconferences monthly, both independently and with the Centre, for the first 8 months of the evaluation project, and later on depending on project needs. Data was collected by staff and counsellors at each agency and kept in client files. Copies were coded with unique identifiers and passed on to the research assistant who entered the data into databases (Excel and SPSS).

Data Sources and Collection Timelines

Measurement Tool	Administration Timeline
GAIN-SS Standardized)	Intake (at admission)
CANS-PPY (Standardized)	Time 1: within 30 days of admission Time 2: 6 months into program Time 3: 9 months into program
Engagement Scale (Internal)	Corresponding with CANS-PPY
PSI (Standardized; YC Only)	Corresponding with CANS-PPY

See Appendix iii for a process chart outlining the completion of each of the proposed measurement tools. Our Evaluation Framework outlining evaluation questions as well as measurement tools and methodology can be found in Appendix iv.

Measurement Tools

Global Appraisal of Individual Needs-Short Screener (GAIN-SS) (Appendix v)

Upon admission into the program, clients were screened with the CAMH modified version of the Chestnut Health Systems GAIN-SS tool. This tool was used to quickly assess whether they require follow up with a substance abuse counsellor. For those clients that demonstrated a need for substance abuse counselling, copies of their screener were made and given to RW and YC evaluation staff who entered them into a database on-site. For clients for which substance abuse issues arose later, GAIN data was obtained from the intake staff and added to the database. This screener provides valuable information

as to the mental health and substance uses issues experienced by clients when they first come into our program.

Child and Adolescent Needs & Strengths-Pregnant & Parenting Youth (CANS-PPY) (Appendix v)

The CANS-PPY is a modified version of the CANS Comprehensive Assessment, a Comunimetric assessment tool (see Lyons, 2009 for a comprehensive description of Communimetrics) "for Pregnant and Parenting Youth", that was completed collaboratively by multiple staff involved in working with the client. The CANS-PPY was designed to aid in clinical decision making, conceptualize the young mothers emotional, behavioural and health needs, assess their strengths to draw upon or develop, and finally to assess the effectiveness of treatment and whether individual goals and outcomes are achieved. Each of the 86 items of the CANS-PPY are reliable, validated and have a direct impact on treatment planning (Rautkis & Hdalio, 2001). As such each level of an item translates to an action level specific to that item, however all levels are categorized into general rules explained further in Table 3.

Table 1: Generalized Descriptions of the Action Ratings of the CANS-PPY

Action Ratings*	Needs Items Descriptor	Strengths Items
1	No need for action.	A centerpiece strength that can be the focus of a strength-based plan.
2	A need for watchful waiting to see whether action is needed or prevention planning.	A useful strength that can be included in a strength based plan.
3	A need for action.	An identified strength that could be developed to become useful.
4	A need for immediate or intensive action.	No strength has been identified.

*Action levels 1and 2 are considered non-actionable ratings, and levels 3 and 4 are considered actionable items requiring professional intervention or support. Although any changes in level are considered meaningful, a change between actionable and non-actionable ratings is most significant with treatment goals.

Ensuring Inter-Rater Reliability on the CANS-PPY

Training and certification on how to complete the CANS-PPY was conducted by each of the counseling staff (as well as directors and managerial staff) prior to the use of the tool in our evaluation project

(canstraining.com). Staff require recertification on a yearly basis to maintain reliability at a minimum of 0.7, based on case vignettes. As one of the Student Support staff at Youville Centre was heavily involved in the development of the CANS-PPY, in collaboration with Dr. John Lyons (founder of the Praed Foundation), staff/counsellors from YC facilitated multiple moderation meetings throughout the course of the project. During these meetings, complex cases were discussed and counselors agreed upon appropriate ratings to ensure consistency between agencies. Inter-rater reliability has been shown to be high for the CANS, with reliability estimates ranging from 0.79 to 0.89, depending on whether the tool was administered using information from case files, vignettes or live in-person experience with clients (Anderson et al., 2003).

Client Engagement Scale (Appendix vii)

A single item developed by the evaluation team to assess the client's willingness to engage in change oriented counselling. The tool was inspired by the levels of motivation in Prochaska and DiClemente's transtheoretical model of behavioural change.

Parenting Stress Index (PSI) - Youville Centre Only

The PSI is a psychometric tool that is validated, reliable and widely used to assess the relative stress in the parent-child relationship. This tool is completed by parents and is regularly used at the Youville Centre to provide early identification of potentially dysfunctional mother-child interactions, parenting stress and risk for child abuse and/or neglect (Raver, Gershoff, & Aber, 2007). This measure focuses on assessing stress in three domains of the young mothers life; parental stress from attempting to adapt to the demands of parenthood, child stress stemming from the child's behaviour or perceived behaviour, and environmental stress that arises from the daily living and situational stressors on the mother. Each of these domains has additional subcomponents addressing various aspects of the mother-child relationship.

Methodological Limitations

One of the main methodological limitations that we experienced during our evaluation project was the delay in staff training on use of the CANS. The tool was finalized in November 2013 and while the staff at YC were involved in the development of the tool and had been trained on its administration fairly early, the staff at RW and SMH were not certified to administer the CANS-PPY as quickly. Therefore, there was some delay in data collection on the clients at SMH in the early days of the evaluation. Once staff were certified on administration of the CANS, this problem was rectified and data collection proceeded as expected.

Data Analysis

For the results reported here, data collected from each of the agencies has been combined. Therefore, results pertain to the entire population of clients receiving substance abuse counselling regardless of which primary agency they were seen at.

As the GAIN-SS was measured at only one time point (admission), we calculated the number of clients flagging for follow-up in each domain, as well as how many individuals were flagging concurrently on multiple disorders. This was useful in determining the primary issues being reported at admission, as well as for making decisions as to whether or not clients required support from a substance use/mental health counsellor upon admission.

The PSI-4 data was analyzed through repeated measures ANOVA and by paired t-test. These tests were performed to examine whether the change in average parenting stress over time were significantly reduced over the course of treatment. We also calculated the number of individuals who fell within each of the 4 percentile ranges over time. These include: Defensive Responders (0-15th percentiles), Normal Range (16th-84th percentiles), High Range (85th-89th percentiles) and Clinically Significant Range (90th percentile and above).

The Engagement scale data was analyzed using the Wilcoxon signed-rank test for ordinal data, examining the state of change that the clients fell into at the point of admission into the program and then again after ~9 months of treatment.

Analyses for outcome measures on the CANS-PPY were broken into two categories. Firstly t-tests were rung to asses which items demonstrated changed. Paired t-tests were run on the overall needs and strengths domains and Wilcoxon signed-rank tests were performed to identify which individual items changed between each time points. Secondary analysis focused on changes in actionable ratings and only those that had the tool completed at all three time points (n=37). For each item within the CANS-PPY that was relevant to our primary evaluation questions, we monitored the individuals with an actionable rating (a 2 or 3) at T1 to determine how many exhibited improvement by T3. We also examined those with a non-actionable rating (a 0 or 1) at T1, to determine whether any of these individuals demonstrated new or increased needs by T3. Using this method, we were able to determine how many of our clients were achieving success in reducing needs and augmenting or developing strengths over the course of treatment (Lyons, 2009).

Client Profile

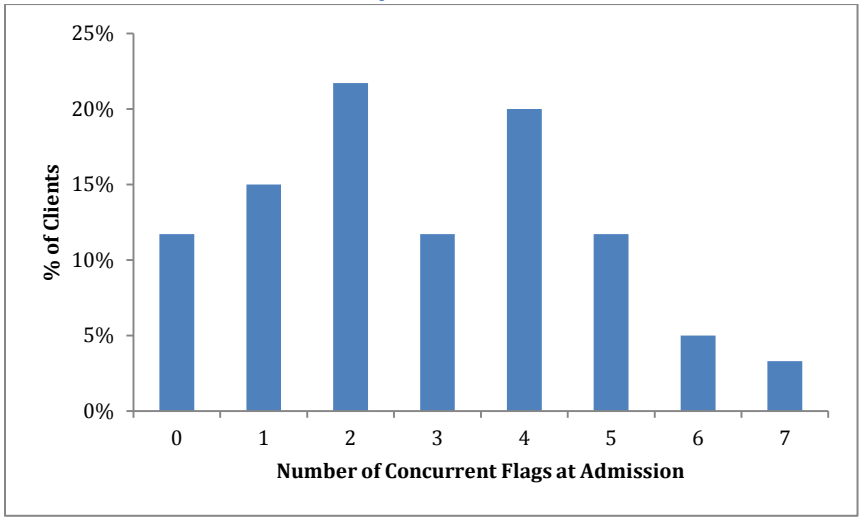
The GAIN-SS, CANS-PPY, PSI, and client engagement scale were administered as closely to admission as possible in order to establish both a baseline to evaluate change facilitated by our programs, as well as to assess the needs and strengths of our clients for tailored service plans. These tools demonstrated that although the motivation all the young women have to access our services is the same; their desire to learn how to effectively care for their child, the supports they need to accomplish this goal varies greatly. Most of the young women were presenting with a variety of complex needs and clinically significant difficulties across a variety of life domains and stressors. Furthermore these client profiles are very different individual to individual. This result demonstrates the usefulness of these tools in facilitating the tailored treatment plans but also make it difficult to discuss population norms.

Administration of the GAIN-SS identified that 88% of clients required follow up for at least one behavioural health disorders, and 73% of clients were flagging for multiple disorders. The most prevalent issues screened were; internalizing disorders (79%) such as depression, anxiety and mood disorders, post-traumatic stress disorder (52%), and psychosis (45%). See Table 4 and Figure 1 for more information.

Table 2: Behavioural Disorders Screened by the GAIN-SS

Domain Creator	Domains Screened (n = 62)	Frequency	Percentage (%)
Chestnut Health Systems Original Domains	Internalizing Disorder	49	79
	Externalizing Disorder	20	32
	Substance Disorder Screener	15	24
	Crime/Violence Screener	3	5
CAMH Additional Domains	Eating Disorder Screener	22	35
	Post-Traumatic Stress Disorder Screener	32	52
	Psychosis Screener	28	45
	Problem Gaming and Internet Usage Screener	6	10

Figure 1: Concurrent Disorders Screened by the GAIN-SS



Although individuals need to have had significant (meaning persisted for two or more weeks, kept coming back, kept the client from meeting their responsibilities, and/or made the client feel like they couldn't go on) problems within the past year on at least three of the five items in order to flag on the GAIN-SS's original four domains; responses to individual items can provide further insight into the client's situation upon entering the program. In the internalizing disorder domain, 80% of clients reported recent significant difficulty with depression, 82% with sleep disturbances, 87% with episodes of anxiety, and 75% with distress around past events/trauma. Response rates to all of the items can be seen in Appendix viii.

Strong agreement was observed between the GAIN-SS, and the CANS-PPY on most domains. The CANS-PPY is a much more detailed assessment that further clarified areas perceived by the GAIN-SS and identified additional areas for targeted treatment. It provided evidence that the most common areas of support required by clients was a need for aid with forming and maintaining relationships with their friends, family members and/or romantic partners (86%), treatment of at least one mental health issue (84%), support to obtain financial stability (84%), most have special educational needs (76%), and have traumatic histories (68%).

Table 3: Assessed Need for Intervention by the CANS-PPY at Admission

Domain (n = 77)	Frequency	Percentage (%)
Executive Functioning	44	57
Risk Behaviours	46	59
Emotional Regulation Skills	36	47
Educational Needs	65	84
Cognitive Functioning	31	41
Social Skills	45	58
Language	11	14
Daily Functioning	32	42
Mental Health Needs	65	84
Trauma	53	68
Overall Health	35	46

Lack of financial stability was so impairing that at admission 12% of the young mothers and their children lacked a stable housing environment. These young families were living on the street, in shelters, in boarding homes, and couch surfing.

Table 4: Living Situation at Admission

Housing (n = 74)	n	Percentage (%)
Own apartment/home	36	49%
With parent(s)/Family home	18	24%
With other family members/relatives	8	11%
Shelter	5	7%
Share place with friends/peers	3	4%
Couch Surfing/Street	2	3%
Rooming/Boarding House	2	3%

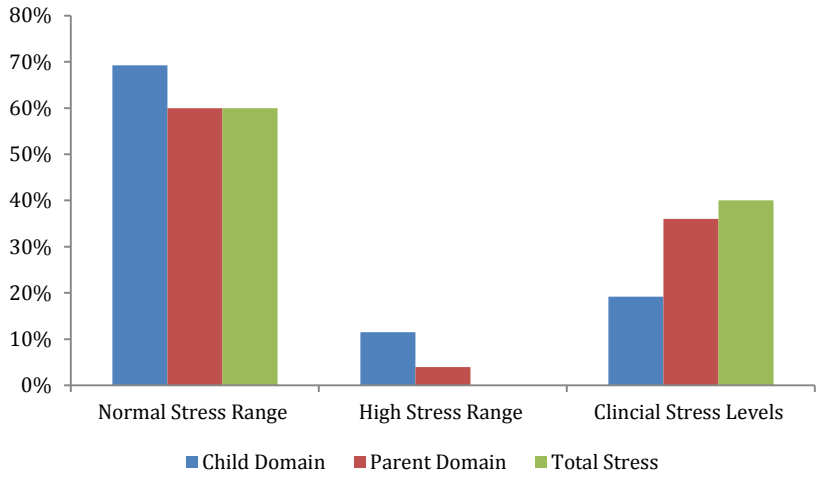
The GAIN-SS and CANS-PPY were in disagreement was with regards to substance abuse. All of the young women being evaluated here participated in substance abuse counselling, but only 24% of clients flagged on the substance abuse screener on the GAIN-SS (49% on CANS-PPY). Some clients were engaging in counselling to maintain behaviours, and others were doing so due to the impact of another's substance use, but this is still an under-representation of the number of clients needing intervention. As the GAIN-SS is a self-reported measure this low identification may be related to client fears around seeking help with substance use and the impact it may have on retaining custody of their child.

Results

PSI – Changes in Parental Stressors

Clients demonstrated a split between clinically high and normal stress ratings at admission (n = 28), with 11% of scores flagged as invalid by the PSI-4's defensive responding scale. This scale is used to identify when young mothers were responding to the questionnaire with the intent to present a favourable impression of themselves and their relationship with their children. Excluding those invalid scores, total stress levels were considered to be in either a normal range (60%) or in a clinically significant category indicative of dysfunctional parent-child interactions (40%), with no clients falling into the high stress range. The most significant distress was observed on the client's personal adjustment to parenting (parent domain) and their perception of their own personal characteristics (36% clinically significant). In general, young mothers felt more positive about stress related to their child's characteristics (child domain) and their interactions with their child (19% clinically significant).

Figure2: Parental Stress Levels at Admission



Repeated Measures ANOVA was performed across all three time points and only revealed a statistically significant reduction in stress with regards to the Child Domain $F(1.5,21.5) = 3.52$, $p = 0.05$ (Greenhouse-Geisser corrected due to violation of the assumption of sphericity). However as the change in PSI across

was not consistent through time, paired t-tests comparing the average percentile ranks of clients between each time point were performed. These t-tests revealed no statistically significant changes between admission and six months into treatment, and in fact slight non-significant increases in stress were observed, see Figure 3. Statistically significant improvements were observed in every domain between T2 and T3, see Table 7.

Figure 3: Average percentile ranks on the PSI in each domain over time.

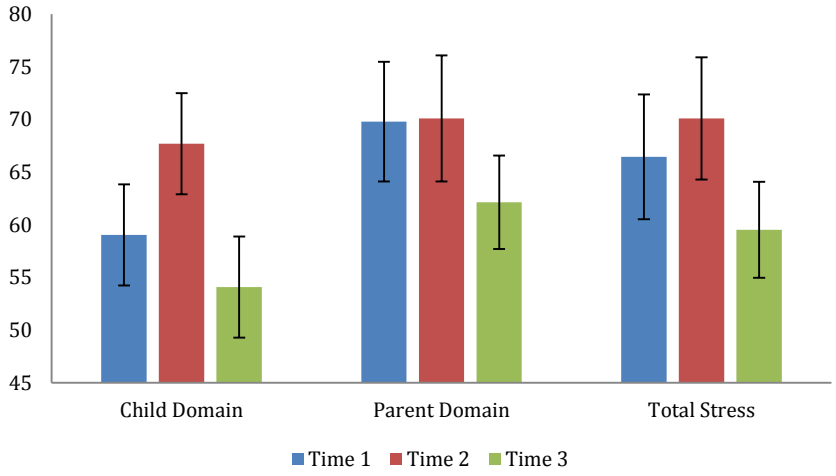


Table 5: PSI Significant Changes between Six and Nine Months in Treatment

PSI Domain (n = 26)	Change T2-T3	p-value
Child Stress Domain	13.37	<0.01
Parent Stress Domain	10.11	0.01
Total Stress	12.26	<0.01

A trend towards increased stress levels early in treatment does not necessarily indicate a lack of improvement. This result may underscore the importance of developing trust/rapport and the stigma and fear these young women feel about discussing their struggles with perceived authority figures. This supposition was supported by results from the engagement scaled discussed below.

Engagement Scale – Changes in Program Engagement

The Engagement Scale demonstrated that at baseline 41% of the young mothers were not yet willing to acknowledge that their thoughts or behaviours were problematic and required change, see Table 8. By the end of treatment statistically significant improvements were observed; $Z = 5.51$, $p < 0.01$, and 71% of clients were trying to either modify their unhealthy behaviours or maintain their new healthier behaviours.

Table 6: Engagement in Change Oriented Behaviour (Client Engagement Scale)

Readiness Level (n = 68)	Stage of Change	% at Baseline	% at Exit
Not Ready (0)	Pre-contemplative	4%	10%
Getting Ready (1)	Contemplative	37%	9%
Ready for Behavioural Changes (2,3,4)	Preparation	32%	10%
	Action	22%	34%
	Maintenance	4%	37%

CANS-PPY - Overall Results

Repeated measures analysis on the CANS-PPY demonstrated statistically significant improvement in the areas of the clients' lives that were in need of support $F(2,35) = 7.864$, $p < 0.01$ as well as in the development of client strengths $F(2,33) = 12.668$, $p < 0.01$. These improvements refer to overall client changes in the total scores for all of the Needs or Strengths domains (see Figures 4 & 5).

Figure 4: Decrease in Overall Need Scores through Time on the CANS-PPY

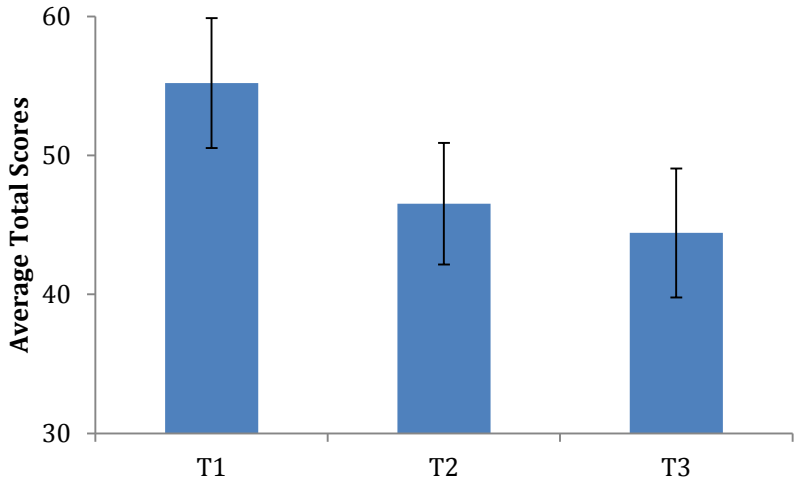
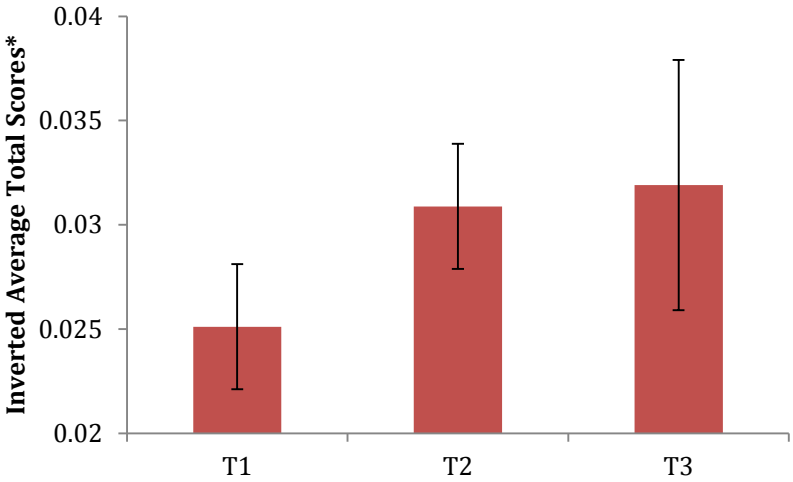


Figure 5: Development in Overall Strengths through Time in the CANS-PPY



*Scores were inverted (1/average score) to emphasize the building upon of strengths occurring. In the CANS-PPY lower scores are considered more positive than higher scores, unaltered averages at each time point were; T1 = 39.8, T2 = 32.4, T3 = 31.3.

Wilcoxon signed-rank indicated statistically significant improvements across 21 items on the CANS-PPY between T1 and T2, see Table 9. Similar tests also found significant improvements across 11 items between T2 and T3, see Table 10. As observed below in Table 9, early in treatment a number of parental strengths are built upon to give the client the skills needed to parent effectively, in addition actions are taken to address the traumatic pasts and secure the safety of the young mother and child.

Later in treatment (Table 10) the improvements observed were focused around meeting the young mother needs to succeed in life and build upon their individual strengths. Improvements were observed throughout treatment in the mother's development of life skills necessary for healthy and effective daily functioning.

Table 7: CANS-PPY Significant Improvements between Admission and Six Months into Treatment

Domain and Item	n	Change T2-T1	p-value
Risk Behaviour –Victimization	61	0.28	<0.01
Emotional Regulation – Anger Control	61	0.23	0.01
Social Skills – Social Functioning	60	0.32	<0.01
Social Skills – Building Relationships	60	0.28	<0.01
Daily Functioning – Life Skills*	60	0.17	0.04
Mental Health Needs – Anxiety	60	0.23	0.01
Trauma – Emotional Abuse	60	0.35	<0.01
Trauma – Witness to Family Violence	59	0.29	0.02
Trauma – Witness to Community Violence	59	0.24	0.03
Trauma – Intrusions	60	0.50	<0.01
Trauma – Reaction To Disclosure	60	0.45	<0.01
Youth Strengths – Resiliency	60	0.28	0.05
Youth Strengths – Community Involvement**	60	0.25	0.08
Parent Strengths – Knowledge of Child	57	0.21	0.03
Parent Strengths – Stable Living situation	57	0.39	0.01
Parent Strengths – Environmental Cues	57	0.39	<0.01
Parent Strengths – Physical Health	57	0.28	0.03
Parent Strengths – Empathy for Child	56	0.27	0.01
Parent Strengths – Family Stress	57	0.37	<0.01
Parent Strengths – Safety	56	0.43	<0.01
Parent Strengths – Attachment Difficulties	56	0.29	0.03

*Demonstrated significant improvements at both time points.
**Indicated a significant trend towards improvement at p = 0.1 level. This is a less rigorous level of significance than demonstrated in other items.

Table 10: CANS-PPY Significant Change between Six and Nine Months in Treatment

Domain and Item	n	Change T3-T2	p-value
Educational Needs – Academic Persistence	32	0.50	<0.01
Educational Needs – Educational Attainment	32	0.56	<0.01
Cognitive Flexibility Skills – Adaptations to Life Change	35	0.34	0.03
Daily Functioning – Life Skills*	35	0.31	0.02
Mental Health – Substance Use**	35	0.20	0.09
Youth Strengths – Resourcefulness	35	0.26	0.05
Youth Strengths – Relationship Permanence	35	0.26	0.05
Youth Strengths – Spirituality/Religion	35	0.46	<0.01
Youth Strengths – Talents/Interests**	35	0.37	0.07
Parent Strengths – Involvement in Care	34	0.56	<0.01
Substance Use – Parental Influence**	12	0.58	0.06

*Demonstrated significant improvements at both time points.
**Indicated a significant trend towards improvement at p = 0.1 level. This is a less rigorous level of significance than demonstrated in other items.

The presence of so many statistically significant improvements on the CANS-PPY is encouraging but fails to encompass the clinical and practical significance of improvements on the parent and child's lives. On the CANS-PPY the distinction between an actionable item, requiring intervention, and a non-actionable has more impact on the client's life than their average change. The patterns of change through time in the frequency of clients requiring intervention on the CANS-PPY is discussed further by domain below.

CANS-PPY – Changes in Actionable Scores

Legend for figures 6 through 12:

In Figures 6 through 14 coloured bars represent rating changes from the first assessment at admission until the third assessment nine months into treatment.

Dark blue bars represent the % of young mothers demonstrating an actionable need for intervention at admission which has been improved enough to no longer require professional support by T3.

Light blue bars indicate no need for action was identified at any point throughout treatment.

Yellow bars represent an actionable need being identified at T1 and still requiring professional support/intervention at T3.

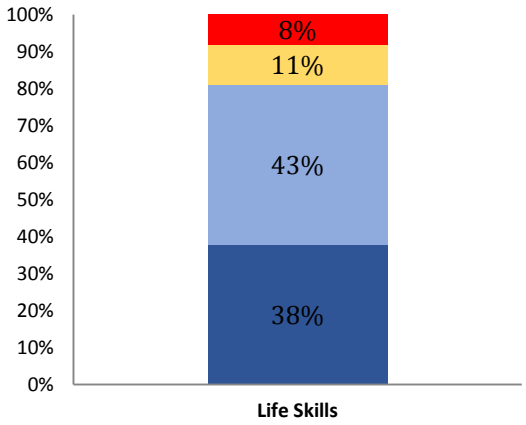
Red bars indicate the development or revelation of an actionable need that was not assessed at admission but which was apparent later in treatment.

As such dark blue and red bars indicate a change in actionable need throughout treatment while yellow and light blue bars indicate an unchanged need. Further red and yellow bars indicate an actionable item at T3, and blue bars indicate those which may cope independently. The results discussed below focus primarily on the clients which demonstrate a change in actionable levels throughout treatment, either a) the need being resolved (dark blue bars) being compared to no resolution (yellow bars), or b)evidence of it occurring later in treatment (red bars) compared to no need ever being identified (light blue bars).

Daily Functioning Domain:

Figure 6 illustrates the changes over time seen in the Daily Functioning CANS-PPY domain that is comprised of one item, Life Skills, which addresses the youths ability to perform basic tasks required for independent living at an age appropriate level. 37 clients had the CANS-PPY completed at both T1 and T3, and of these clients 18 demonstrated an actionable need at T1 (dark blue and yellow bars). The other 19 young parents gave no evidence of struggles that required intervention (red and light blue bars). By 9-months (T3) into treatment 14 of the 18 (78%) clients demonstrating a need at admission had improved to non-actionable levels. Alternatively, 3 of the 19 (16%) clients that did not demonstrate a need at T1 did show evidence of requiring professional assistance in this area by T3.

Figure 6: Changes in Daily Functioning

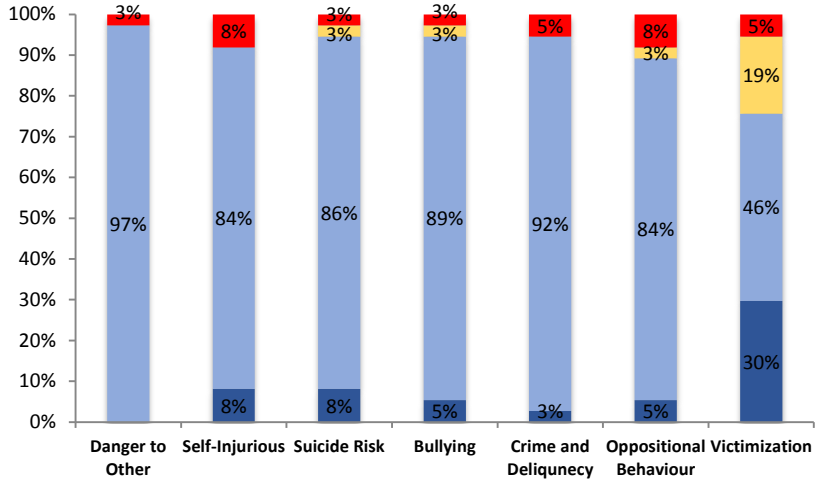


Risk Behaviours Domain:

The most common high risk scenario being engaged in at admission was that the young mothers living situation or behaviours put her at risk of physical, sexual, or psychological abuse. 44% of clients had recently been victimized and/or had a significant risk of being re-victimized in the near future. Following 9 months of support at either YC or SMH, actionable ratings on Victimization exhibited a dramatic decrease, with 61% of clients moving to a non-actionable risk/no current risk of Victimization.

Very few of our clients demonstrated other actionably risky behaviours at T1, as can be seen in Figure 7 (light blue and yellow bars). The small number of individuals (n's range from 1 to 3) that were participating in other risk behaviours at T1 demonstrated improvements, with almost all showing reduced need by T3 [e.g. self-injurious behavior (100%), suicide risk (75%) and oppositional behavior (100%)]. However an equal number of young women which were not identified with these risk behaviours early in treatment but were demonstrating a need for intervention at 9 months into treatment.

Figure 7: Changes in Risk Behaviours



In the Risk Behaviour domain of the CANS-PPY for an item to be considered actionable there must be a present danger to the client. Although not considered an actionable need, an additional 35% of clients communicated suicidal thoughts and/or a suicide attempt outside of the past month. This brings the total number of clients which at admission have a history of suicide attempts and/or which are communicating suicidal ideation up to 50% of all clients in our counselling programs.

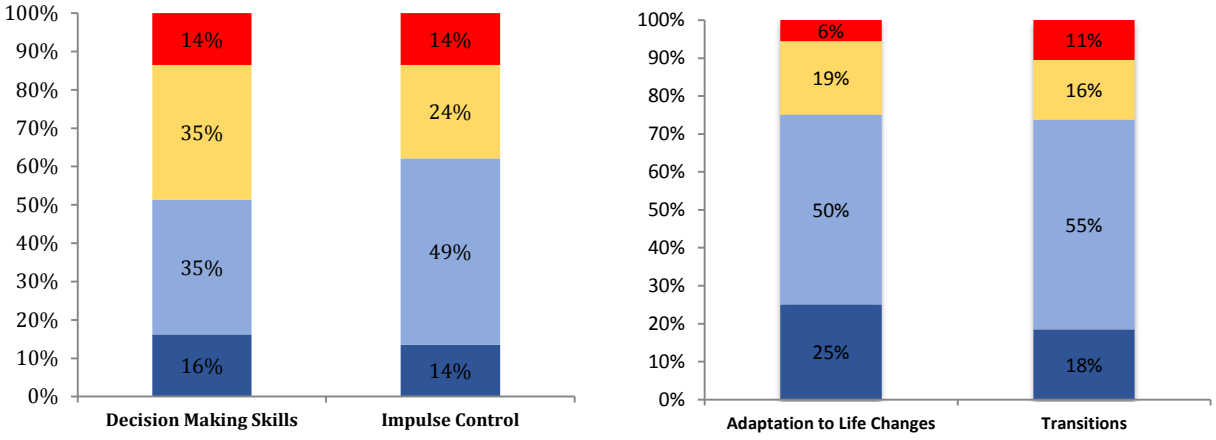
Executive Functioning & Cognitive Flexibility Domains:

Overall 63% of the young mothers were assessed as needing support to strengthen or aid in their Executive Functioning and/or Cognitive Flexibility abilities at T1. These domains relate to the youth's ability to make decisions, comprehend and anticipate the consequences of their actions, sustain appropriate impulse control and adapt to environmental and global changes. Needs in these areas can make it difficult for youth to succeed in structured environments, school, maintaining a job and/or understanding how their actions may have harmful impact on their life. In general, the number of young mother requiring educational support was very high, but those youth with difficulties in executive functioning or cognitive flexibility were even more likely to require support for an educational need/goal

(15% more likely than non-cognitive need identified clients) or require special education classes (8% more likely).

Through treatment some clients demonstrating poor Executive Functioning did show improvements in Decision Making (32%) or Impulse Control (36%) by T3, the majority of clients continued to require support. With regards to Cognitive Flexibility, a little over half of the young women (56%) developed the ability to adapt to significant life changes, a particularly important skill when parenting a young child or infant. The ability to make transitions relating to their own and/or their child's life also exhibited some improvement, with 54% of the girls with actionable need at T1 showing little to no trouble with global transitions at T3.

Figure 8: Changes in Executive Functioning (left) and Cognitive Flexibility (right).

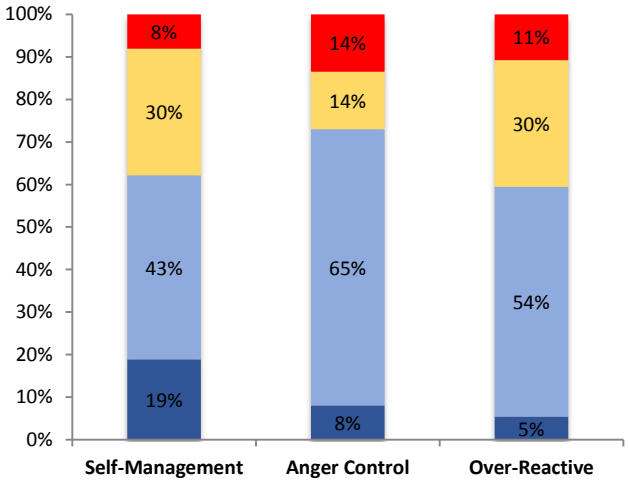


Emotion Regulation Skills Domain:

Almost half of all young mothers (47%) required support with at least one aspect of their emotional regulation. The most common need was around possessing the self-management skills to respond with developmentally appropriate emotional behaviour (39%). After 9 months of treatment, only 39% of clients demonstrated enough improvements on the self-management of their emotions to no longer require professional support. Likewise 38% of clients learned to manage their anger and 15%

became less over-reactive while interacting with others or interpreting social situations (Figure 9) but Emotional Regulation difficulties continued to be an a of ongoing work for most (yellow bars).

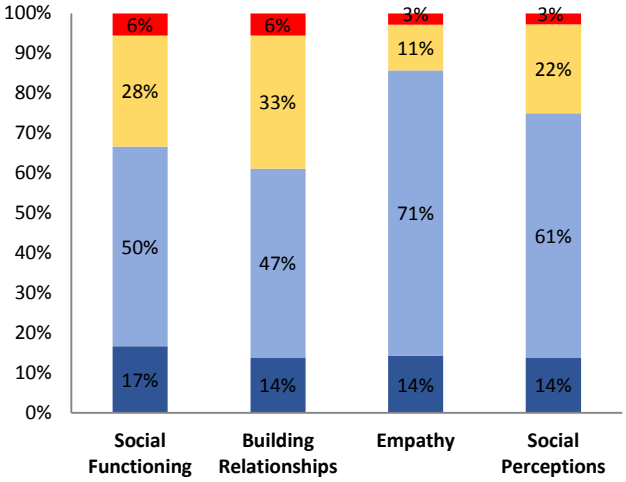
Figure 9: Changes in Emotional Regulation Skills



Social Skills Domain:

Clients showed reduced need on all items within the Social Skills domain by T3, with the most prominent change seen in Empathy, with 56% of clients demonstrating the ability to empathize with others by T3 (Figure 10). 53% of clients also showed an increased ability to interact well with others in various contexts, including with peers, adults, during group work, etc. by T3, as measured by the Social Functioning item. 30% also demonstrated improvement in building relationships, and 39% showed an increased ability to properly interpret social cues, which allows them to perform better in social situations both in and outside of school.

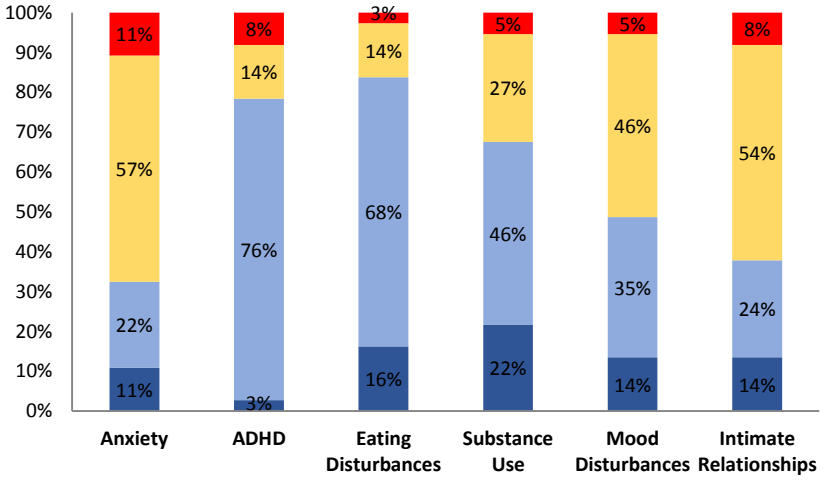
Figure 10: Changes in Social Skills



Mental Health Domain:

73% of clients were assessed as requiring support on the mental health items for mood disturbances (55%), anxiety/depression (59%) or both. Of the clients reporting need at T1, 16% showed improvement on Anxiety, and 23% show improvement on Mood Disturbances (which includes instances of depression; Figure 12), by T3. While improvements were observed , it is clear that there is room for improvement in alleviating some of the mental health difficulties experienced by our clients.

Figure 11: Changes in Mental Health Needs



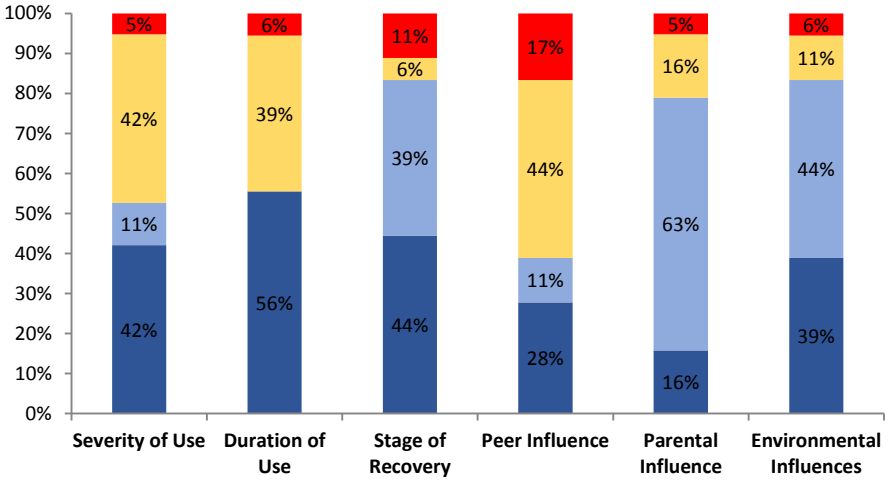
CANS-PPY Changes in Substance Use Behaviour

To assess the changes observed in Substance Use in our client population two indicators were used. The first was the Substance Use item within the Mental Health Needs domain. The CANSY-PPY found improvements in the use of alcohol and illegal drugs, and/or misuse of medications for recreational purposes (Figure 12). 49% of clients were assessed as high need on the substance use item at admission and of those clients almost half (44%) were able to demonstrate consistent abstinence and recovery behaviour by T3. Further a few clients that did not demonstrate an actionable need at admission did show evidence of a Substance Use problem at T3 (11%).

The second (group of) indicator(s) used to determine substance use outcomes was the Substance Use Module, to be completed only if a client rated an actionable score on the Substance Use item in the Mental Health Needs domain. This module explores the needs as they related to the Substance Use item, but with additional sub-components. The items within this module include: Severity of Use (or frequency of usage), Duration of Use, Stage of Recovery (willingness and depth of commitment to change), Peer Influences, Parental Influences, and Environmental Influences.

Clients which had a Substance Use Module completed at all 3 time points, decreased the scores across all items within the module. The greatest improvements (moving from actionable to non-actionable; i.e. dark blue divided by the sum of dark blue and yellow bars) in order of magnitude, were seen in: Stage of Recovery (88%), Environmental Influences (78%), Duration of use (59%) and Severity of Use (50%).

Figure 12: Changes in the Substance Use Module.



Knowledge Exchange and Sustainability Plan

Internally between partnered agencies information was shared through regular team meetings, moderation meetings with counselling and evaluation staff, and of end of year of the information with the executive directors of all three agencies. Representatives from our agencies have and will continue to disseminate the results of our evaluation through the communities of practice and collaborative bodies that they belong to. The Networks decided upon as most appropriate for presentation and discussion are listed below by regional level.

Regional

- Child and Youth Mental Health Network
- Addiction and Mental Health Network of Champlain
- Champlain Addiction Coordinating Body
- Young Parent Support Network of Ottawa

Provincial

- Addiction and Mental Health Network
- Children's Mental Health Ontario
- ONTCHILD / YPRO
- Ontario Community Outreach Program for Eating Disorders

National

- The Canadian Council for Substance Abuse.

The results of this evaluation have provided a wealth of information on the varied client profiles of the youth at admission, the impact of our services, and the development of an assessment tool that gives voice to our clients unique situation while supporting the decision making and treatment goals of the counsellor. The value of this initiative is clear to the partnered agencies and that the efforts of this evaluation need to be sustained. Now in place, this process will be maintained through the commitment and partnership of our three agencies, the capacity building conducted through the past year and initiatives being under taken to secure future funding.

Conclusion

Pregnant and parenting young women with substance abuse issues face many barriers in accessing integrated support and treatment services for themselves and their infants and/or young children. In the past, treatment programs for substance using pregnant women have focused on protecting the health and well-being of the child or fetus, with little acknowledgement of the same needs in the mother herself (Greaves et al., 2003; Boyd & Marcellus, 2007; Hodgkinson et al., 2014). Often the well-being of the child is protected through limitations placed on the mother, rather than enhancing the mental health, safety and parenting skills that the mother may possess (Poole & Greaves, 2008). The results of this evaluation demonstrated that the young women receiving our services presented with a complex profile of co-morbid mental health issues, histories of trauma and abuse, as well as pronounced social and economic disadvantage. These young women had a clear need for coordinated treatment and social services to improve their own mental health and wellbeing, as well as to prevent the intergeneration cycles of substance abuse and poor early childhood developmental outcomes associated with this population (Health Canada, 2000).

It is the position of the partnered agencies that targeting the needs of the young mothers and involving the child in treatment and supports, best facilitates the bond and secure attachment that should develop between parent and child (Center on the Developing Child at Harvard University, 2009; Niccols et al., 2012; O'Higgins et al., 2013). Focus on treating the mother-child unit together allowed for the comprehensive outcomes observed in our evaluation, not only with regards to substance use, but also the significant improvements in daily life, mental health, program engagement, and parenting skills that were observed. This development of maternal strengths and provision of social supports ultimately serves the needs of both mother and child.

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Appendices

Appendix i: Logic Model

Appendix ii: Consent Form

Appendix iii: Evaluation Matrix

Appendix iv: Process & Outcome Evaluation Framework

Appendix v: CAMH-Modified GAIN-SS

Appendix vi: CANS-PPY Assessment Tool

Appendix vii: Engagement Scale

Appendix viii: CANS-PPY Scores at Admission

Appendix ix: Signed Accounting Summary of Expenses