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Research article

Engaging mothers with substance use issues and their children in early intervention: Understanding use of service and outcomes

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ABSTRACT

Mothers who use substances need integrated, multi-sectoral intervention services to support substance use discontinuation. We explored mothers' service use at Breaking the Cycle, an early intervention and prevention program for pregnant and parenting women and their young children in Toronto, Canada. We conducted retrospective analyses of families' service records and client charts ($N = 160$). Aims were to 1) describe women's use of service, 2) examine how early engagement of pregnant women related to postnatal service use, and 3) examine the circumstances in which women ended their service relationship with Breaking the Cycle. Specifically, we examined circumstances at service ending relating to women's service goals; custody status with children; and global substance-use, parent-child relationship, and child development outcomes. We found that these vulnerable women were actively engaged in many services and for a long duration, early engagement was associated with greater service use, and greater service use was associated with more positive circumstances upon ending service. Results provide support for a relational approach to service that promotes not only the relationship between mother and child, and mother and service provider, but also highlights relationships among staff, between staff and management, and between community partners as integral to effective service delivery. Integrating positive relationships at all levels is critical to support vulnerable families with complex needs.

1. Introduction

Substance use during pregnancy, including both licit (e.g., tobacco, alcohol) and illicit (e.g., cocaine, methamphetamines, opioids) substance use is associated with harm to both mother and child (we use the terms *women* and *mothers* interchangeably, because the focus of this study is women in a parenting role) (e.g., Aghamohammadi & Zafari, 2016). Maternal substance use *postnatally* is further associated with parenting difficulties and risk for child maltreatment (e.g., Kelley, Lawrence, Milletich, Hollis, & Henson, 2015). Mothers who use substances are often limited in their capacity to respond effectively to their children's needs (Pajulo, Suchman, Kalland, & Mayes, 2006). Importantly, these women are often struggling with a host of interrelated issues that can affect both their substance use and parenting difficulties, including concurrent mental health difficulties, complex trauma histories, experiences of poverty, histories with the criminal justice system, and experiences of abuse and maltreatment from caregivers and/or partners (e.g., Mandavia, Robinson, Bradley, Ressler, & Power, 2016; Wong, Ordean, & Kahan, 2011). As such, mothers who use

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substances need integrated, multi-sectoral intervention services to support substance use discontinuation and improve parenting capacity.

Despite the complex needs of this vulnerable population, the majority of intervention programs for mothers with substance use issues in Canada do not include children in service, nor do they promote the mother-child relationship (Niccols et al., 2010). Barriers to effective services include a lack of childcare, or a focus on the individual without consideration of the family context and historical trauma. Research reveals the benefits of integrated interventions that address these barriers to service by, for instance, providing parenting services in addition to substance use service (Espinet, Motz, Jeong, Jenkins, & Pepler, 2016; Milligan et al., 2010; Moreland & McRae-Clark, 2018). Integral to these programs is a woman-centered focus, the inclusion of instrumental parenting support (e.g., childcare), and non-judgemental/non-stigmatizing provision of service (Moreland & McRae-Clark, 2018). Further, intervention services for mothers that do not *explicitly* address the relationship between mother and child remain lacking (Espinet et al., 2016). The current study focuses on one intervention that addresses this gap by providing not only instrumental and substance use support for mothers with substance use issues, but also a specific focus on strengthening and promoting the mother-child relationship.

2. Breaking the Cycle: a relationship-focused intervention

Breaking the Cycle (BTC) is an early prevention and intervention program for pregnant and parenting women using substances and their young children aged 0–6 years in Toronto, Canada. The program supports the development of substance-exposed children by addressing maternal addiction problems and the mother-child relationship through a comprehensive, integrated, cross-sectoral model. BTC operates in formal partnership with nine agencies, including services relating to child protection, addiction treatment, health, corrections and probation, and child mental health and development. Through a single access model, partner agencies offer guidance through the BTC steering committee, a senior clinical consultant for bi-monthly case formulation team meetings, and on-site frontline service where applicable.

BTC uses relational theory as a guiding, theoretical framework under which to operate. According to relational theory, people, institutions, and systems grow through relationships with others (Walker & Rosen, 2004). In intervention programs for mothers with substance use issues, relationships have recently been recognized as a key ingredient. That is, treatment for substance use issues were historically individually-focused (or male-focused; see Finkelstein, 1994). In contrast, researchers have recognized the need for services that are more family-focused, with services for both the mother and the child (e.g., childcare, early intervention for the child). For instance, in a review, Neger and Prinz (2015) found that treatment programs combining substance use treatment with a parenting component had better outcomes than programs only targeting substance use. Similarly, in a meta-analysis, Milligan et al. (2010) found that integrated treatment programs for mothers with substance use issues (i.e., that included at least one substance use treatment and one child treatment service) reduced drug and alcohol use more so than non-integrated programs.

Taking this a step further, we see the need for services that specifically promote the relationship between the mother and child. In addition to offering maternal services (e.g., addiction counseling) and child services (e.g., childcare), BTC offers dyadic or relationship-focused services specifically designed to foster the mother-child relationship (e.g., mother-child interactional support groups, home-based dyadic developmental guidance). In fact, in comparison to an integrated program which included instrumental parenting support but did not *directly* promote the mother-child dyadic relationship, BTC's relationship-focused approach has been linked to improved maternal mental health and relationship capacity (both programs supported a reduction in addiction severity; Espinet et al., 2016).

In line with relational theory, past research and practice highlight the importance of the therapeutic relationship between client and service provider/therapist. Treatment itself is seen as a relational act; the therapeutic alliance transcends treatment modalities and is central to treatment outcomes (Norcross & Lambert, 2011). Sommers-Flanagan (2015) discussed evidence-based relationship factors that are central to successful treatment or counseling, including the working alliance between service provider and client, forming an emotional bond, goal-consensus, unconditional positive regard, and empathic understanding. Empirical support linking relationship factors with treatment outcomes are strong. In fact, it can be difficult to disentangle relational acts from treatment methods, which is why researchers emphasize the essential role of the service provider-client relationship in any type of treatment or counseling (Lambert & Ogles, 2014; Sommers-Flanagan, 2015). With the understanding that the relationship between service provider and client is of the utmost importance, BTC focuses on promoting a supportive, non-judgemental, caring service provider-client relationship.

At BTC, the focus on healthy relationships extends *beyond* the mother-child and the client-service provider relationship. The women who come to BTC have limited role models for healthy relationships, their lives have often lacked any sense of physical or emotional safety, and they do not feel that they can trust people to help them be safe. They have a deep and honest desire to raise children who feel safe and are surrounded by healthy relationships, but they do not know how. As such, BTC was developed using a relational theoretical framework to consciously and deliberately guide all decisions, including: operational policies and procedures, research and evaluation methods, clinical practice, and expectations for how we think about and treat all people (see Fig. 1 for a conceptual diagram of this relational perspective). BTC operates with a core philosophy revolving around the promotion and modeling of safe and healthy relationships for women and their children. When a woman comes to BTC for the first time, she often lacks trust and expects that BTC will be yet another system that will hurt or disappoint her. Thus, BTC's goals are to: engage the woman; demonstrate safety; be empathetic, kind, and caring; show her compassion and dignity – all in a manner that is predictable, reliable, and consistent. Staff are able to foster healthy relationships between women and their children using therapeutic modalities (e.g., dyadic and group interventions) and supportive interactions. Staff model positive interactions amongst themselves and support women to consider healthier relationships with external service providers, including mandated services (e.g., child protection, legal

Fig. 1. Conceptual framework for a multilevel relational approach.

system). In this safe and supported context, women may consider making changes in their own patterns of interaction; thus, BTC becomes a place of practice for healthier relationships. Across decades of experience, we have come to understand that promoting healthy relationships across all levels of service development and delivery, as well as the integration of this relationship-based theoretical foundation in all aspects of programming and intervention is what makes the difference in the lives of vulnerable women and their children.

2.1. Service usage at Breaking the Cycle

Women at BTC typically have a history of complex trauma, concurrent mental health issues, interpersonal violence, involvement with the law, and unstable family lives (Motz, Leslie, Pepler, Moore, & Freeman, 2006). The vast majority of women at BTC (approximately 98%) are currently involved with child protective services, and/or were themselves involved with child protective services as a child. Due to stigma and judgement surrounding substance use during pregnancy or while parenting, women have often had a negative history of involvement with social services and supports. Given their histories, it is often difficult to engage women who use substances in service, gain their trust, and keep them actively participating (Pajulo, Pajulo, Jussila, & Ekholm, 2016). In a review, Greenfield et al. (2007) found that as many as 50% of patients in drug and alcohol treatment left treatment within the first month. In another study, Amaro, Chernoff, Brown, Arévalo, and Gatz, (2007) reported only 23–33% of women completed substance use treatment programs. A systematic review of integrated treatment programs (i.e., including at least one service related to substance use and one related to parenting) indicated completion rates between 76–91% for in-home programs, and 13–92% for outpatient programs (Moreland & McRae-Clark, 2018). Many of these outpatient programs consisted of a predetermined number of sessions, held weekly or biweekly (typically 12–24 sessions). Researchers have suggested that program factors related to treatment retention include women-focused treatment, provision of childcare, comprehensive services, and non-confrontational staff (Sun, 2006). At BTC, staff work to overcome barriers to service and support vulnerable families in both accessing and maintaining long-term involvement in service. Considering the specific challenges of the women at BTC, the first objective of the current study was to describe women's service usage.

2.2. Engagement in service

Decreasing barriers to and supporting engagement in service is crucial to mothers' discontinuation of substance use (Latuskie, Andrews, Motz, Leibson, Austin, Ito, & Pepler, 2018; Stone, 2015). Treatment readiness, or women's pre-treatment motivation, is essential to service usage and the effectiveness of substance use treatment (Jeong, Pepler, Motz, DeMarchi, & Espinet, 2015; Simpson, Joe, Rowan-Szal, & Greener, 1997). If mothers have had prior (positive) experiences in treatment or other counseling services (whether in relation to substance use, trauma, mental health, etc.), they may have already benefited from effectively using services and forming relationships with service providers. These previous experiences may enhance women's readiness for treatment, thus enabling them to engage more fully in services at BTC.

In addition to prior counseling, early engagement in comprehensive, integrated, relationship-focused service may support mothers' participation in post-natal service. Fostering a therapeutic alliance early in service can contribute to retention rates (Suchman, Pajulo, DeCoste, & Mayes, 2006; Suchman, Ordway, de las Heras, & McMahon, 2016). For mothers of young children, early engagement in service begins prenatally. Indeed, in a review of substance use programs for women, prenatal services were associated with longer length of stay and higher rates of completion (Ashley, Marsden, & Brady, 2003). At BTC, a pregnancy outreach program was developed to reduce barriers to accessing service that exist for pregnant women with substance use issues (Racine, Motz, Leslie, & Pepler, 2009). These early, antenatal experiences with supportive, relationship-focused, integrated care likely encourages women to continue service involvement after their children are born. The second objective of the current study was to understand how treatment readiness (prior treatment or counseling experience) and early engagement relate to service usage at BTC.

2.3. Circumstances upon ending service

Many substance-use treatment or service evaluations use relatively short or controlled time frames to understand the efficacy of a specific treatment program (e.g., Moreland & McRae-Clark, 2018; Suchman et al., 2016). Overall, these evaluations have identified that integrated, comprehensive services involving an interdisciplinary team and combined services across sectors are beneficial, particularly for mothers with complex needs (Milligan et al., 2010). Typically, women who complete a treatment program or spend longer time in service do better (e.g., in terms of substance use, mental health, employment, parenting attitudes) than those who do not complete a treatment program or spend less time in service (Conners, Grant, Crone, & Whiteside-Mansell, 2006; Neger & Prinz, 2015). The nature of BTC is such that the amount of time in service is not predetermined, but based on women's choices to become involved in a range of services. Because BTC is an early prevention and intervention program, women can remain in service until children are seven years old; some stay in service longer if they have multiple children. Thus, the third objective of this study was to explore women's circumstances upon service ending, in relation to their service use.

3. Current study

We have preliminary evidence that BTC's relational approach is effective in terms of improving addiction severity, maternal mental health, and relationship capacity (Espinet et al., 2016). However, we know less about the specific nature of women's use of services, as well as how service use at BTC relates to outcomes. Thus, our overarching goal was to consider the importance of a relationship-focused, integrated early intervention approach to support vulnerable women and their children, which has important implications for research, as well as for clinicians and service providers who aim to support vulnerable families. The first objective of the current study was to describe women's use of service (duration, frequency, and range of services) in an early intervention program that uses a multilevel relational approach to build relationship capacity, support substance use recovery, and promote the mother-child relationship and children's development. The second objective was to understand how treatment readiness and early engagement relate to postnatal service usage. We expected that women who had prior treatment or counseling experience and who were antenatally enrolled in service through BTC's pregnancy outreach program would be involved in service longer, use more services, and use a greater range of services than women without prior experience or those who were not engaged in service antenatally. The third objective was to explore the circumstances in which women ended their service relationship with BTC. We explored the reason for service ending, the custody (and change in custody) status of the child upon service ending, and overall counsellor ratings of substance use, parent-child relationship, and child development. We expected that women who were in service longer, attended more services, and participated in a greater range of services at BTC would end service more positively than women who were in service for a shorter length of time or those engaged in fewer services.

4. Method

4.1. Participants

Women were recruited for participation as part of a larger, longitudinal study examining changes in maternal substance use and other associated outcomes through service at BTC (see Espinet et al., 2016). During the intake process, all mothers were asked whether they would be willing to participate in research. They were informed that declining to participate would in no way affect their services at BTC. Of the total 168 women who consented to participate in the larger study, 8 never accessed services at BTC beyond the initial appointment; participants consisted of 160 women enrolled in service at BTC. At the time of intake, women were 16–50 years old (M = 29.80 years, SD = 6.80). Eleven percent of women had less than a grade 9 education, 44% completed between grades 9–11, and 45% completed high school. Women's gross monthly income ranged from $0-4200 ($M$ = $1098.48, SD = $772.10). Women reported that substance use generally began in their adolescent or early adulthood years (on average 13–14 years old for tobacco, alcohol, and cannabis; 17–18 years old for cocaine and hallucinogens; 19–21 years old for crack cocaine, heroin, and other opioids; older than 21 years old for amphetamines/methamphetamines). Although the vast majority of clients described poly-substance use, women reported that their primary problematic substance was crack cocaine (33%), alcohol (26%), cannabis (12%), cocaine (10%), other opioids (9%), heroin (6%), amphetamines/methamphetamines (2%), and hallucinogens (2%). Women reported that their secondary problematic substance was cannabis (28%), alcohol (26%), crack cocaine (14%), cocaine (13%), other opioids (10%), tobacco (6%), hallucinogens (2%), heroin (1%). Ninety-eight percent of women were involved with child protective services.

4.2. Procedure

Data were collected from clients' charts (including referral forms, mother and child intake forms, progress notes, and service ending forms). Due to individuals' very different use of service and length of involvement with BTC, available information varied widely across participants. Ethics approval was obtained from the research ethics board at York University.

4.3. Measures

4.3.1. Service usage

Women could participate in a range of services that addressed addiction, legal support, mental health, parenting, mother-child

Table 1
Service usage at Breaking the Cycle.

	Woman-Focused	Parent/Child-Focused	Individual	Group
Intake Appointments			X	
Pediatric Medical Appointments		X	X	
Home Visiting Program		X	X	
Probation Appointments	X		X	
Individual Counseling	X		X	
Relapse Prevention Group	X			X
Basic Like Skills Group	X			X
Emotion Awareness Group	X			X
Connections Group	X			X
Recovery Group	X			X
New Mom's Support Group		X		X
Learning Through Play Group		X		X
Making the Connection Group		X		X
Frequency of Service Use (Number)				
M (SD)	36.01 (35.50)	29.67 (32.60)	36.94 (45.31)	19.59 (22.43)
Minimum – Maximum	0 – 164	0 – 136	0 – 234	0 – 126
Frequency of Service Use (Proportion)				
M (SD)	.56 (.19)	.54 (.22)	.59 (.20)	.47 (.23)
Minimum – Maximum	.00 – .93	.00 – 1.00	.00 – 1.00	.00 – 1.00

Note: Services were categorized as woman- versus parent/child-focused, and separately categorized as individual versus group. Intake appointments could be related to either mother or child, so intake appointments were not categorized as either woman- or parent/child-focused.

interactional support, and child development. For this study, we assessed participation in the following services: intake assessment and engagement counseling, pediatric medical appointments, home visiting program, probation appointments, individual counseling, relapse prevention group, basic life skills group, emotion awareness group, *Connections* group (which focuses on interpersonal violence and healthy relationships; Breaking the Cycle, 2014), recovery group, new mom's support group, Learning Through Play Group (incorporated Hanen early language intervention programs; Pepper & Weitzman, 2004), and Make the Connection Group (designed to strengthen the mother-child relationship through play scenarios and videotape work; Watson & MacKay, 2006). Several variables were created based on women's participation in these services. Other services (basic needs support, childcare, developmental assessments, case management/service coordination, and phone calls) could be accessed at BTC, but were not included in the calculation of variables because they overlapped with other services being received at the same time (e.g., childcare occurred while mother was attending counseling or group services) or because they generally did not include a therapeutic component (e.g., phone calls were often reminder calls for upcoming appointments).

Duration of service use. Based on information from women's intake and service ending forms, total length of *duration of service use* was calculated as the length of time (in months, rounded to the nearest month) they were engaged in service, from the referral date (when service began) to their last date of service.

Frequency of service use (number of services). Services were categorized in two ways. From a clinical perspective, we were first interested in understanding whether patterns differed according to the focus of services: women's health and well-being or parenting/child health and well-being (woman-focused or parent/child-focused). Second, we were interested in how service usage differed based on the format of the service: individual or group. Thus, the same services were separately coded as individual or group services (see Table 1, Panel 1). *Frequency of service use (number)* was assessed by counting the number of times each woman attended woman- versus parent/child-focused and individual versus group services (frequency is separate for each categorization of service).

Frequency of service use (proportion of services). We counted the total number of times women were scheduled for services. *Frequency of service use (proportion)* was calculated as the number of times women attended service, divided by the total number of times they were scheduled for services. This proportion was calculated separately for woman- and parent/child-focused services, and for individual and group services.

Range of services used. To understand the breadth of women's service usage, we summed the number of different services used from the list above, to calculate the *range of services used.*

4.3.2. Treatment readiness: previous treatment or counseling

We assessed treatment readiness based on women's reports of previous treatment or counseling (yes/no). This involvement may have been related to addictions, mental health, or other issues. Half of women reported having previous treatment/counseling experience (50.3%).

4.3.3. Early engagement: antenatal enrolment

We operationalized early engagement as antenatal enrolment. This was based on the source through which women had been referred to service at BTC. Women were categorized as mandated to attend service (court mandated or through a child protection agency; 45.6%), referred by a health care professional (through a hospital, family doctor, mental health services, or other addictions services; 21.9%), self-referred or referred by a friend (8.8%), or referred through BTC's pregnancy outreach program (23.8%).

Women who were referred through the pregnancy outreach program had already received the same type of multilevel relational service that they would continue to receive at BTC. As such, we considered that women in the pregnancy outreach program (i.e., enrolled antenatally) who subsequently engaged in service at BTC were engaged early in relationally-focused services.

4.3.4. Reason for service ending

We examined the circumstances associated with families ending service at BTC. These reasons included: the service goals for the family had been met (and the family did not require other counseling services; 18.8%), a woman was stable in terms of addiction and parenting and had moved on to full-time school or employment (3.1%), a woman was stable in terms of addiction and parenting and had moved on to other counseling services (to support the mother, the child, or the mother-child relationship; 16.9%), the family had moved out of the catchment area (6.9%), a woman was incarcerated (1.9%), there has been an application for a woman's parental rights to be terminated (12.5%), or a women had consented to service but did not attend or engage in counseling support (40.0%).

4.3.5. Custody at service ending

Upon service ending, the custody status of the child was recorded as with mother (60.6%), in a kin placement (19.4%), or in foster care (20.0%). When custody status was with the mother, she was, in some cases, co-parenting with a partner (8.8% of total).

4.3.6. Change in custody

There was a change in custody status between intake and service ending for 26.3% of participants. In these cases, we assessed whether a change had occurred because the child had moved *to* mother having custody (i.e., child was in kin or foster care at intake and moved to custody of mother or both parents at discharge; 52.4% of cases wherein custody status changed) or whether the child had moved *away* from mother having custody (i.e., child was in custody of mother or both parents at intake and moved to kin or foster placement at discharge; 47.6% of cases wherein custody changed).

4.3.7. Counsellor ratings

Upon service ending, a counsellor who managed the family's case completed global ratings regarding the mother and child's situation at service ending, related to maternal substance use, the nature of the parent-child relationship, and the child's development and well-being. Each item was rated on a 4-point scale ranging from 1 = *Worse* to 4 = *Improved*.

5. Results

5.1. Objective 1: women's service usage at Breaking the Cycle

Duration of service use ranged from 0 to 93 months ($M = 17.43$ months, $SD = 16.79$). Only $n = 2$ women (1.3%) were in service for less than 1 month. Seventy-nine women were in service between 1 and 12 months (49.4%), $n = 42$ for between 13 and 24 months (26.3%), $n = 20$ for between 25 and 36 months (12.5%), and $n = 20$ in service longer than 24 months (12.5%). Frequency of service use (number) ranged from 0 to 234 appointments at BTC, averaging between 19–37 services attended (see Table 1, Panel 2 for descriptives separated by service category). A repeated measures analysis of variance (RMANOVA) with woman- and parent/child-focused services as the repeated measure indicated no difference between the number of woman- versus parent/child-focused services attended, $F(1, 88) = .25$, $p > 0.05$, $\eta^2 = .003$. A second RMANOVA with individual and group services indicated that women attended a greater frequency of individual than group services, $F(1, 116) = 118.37$, $p < .001$, $\eta^2 = .35$. Frequency of service use (proportion) ranged from 0 to 1, averaging between .47–.59 of services attended (see Table 1, Panel 2), indicating that, across categorization, women attended approximately half of the services they were scheduled to attend. A RMANOVA indicated no difference between the proportion of woman- versus parent/child-focused services attended, $F(1, 88) = .16$, $ps > 0.05$, $\eta^2 \leq 0.002$. A separate RMANOVA indicated that women attended a higher proportion of individual than group services, $F(1, 116) = 52.76$, $p < .001$, $\eta^2 = .31$. Finally, women used a range of 0–14 different types of services ($M = 6.04$, $SD = 3.48$).

5.2. Objective 2: associations between treatment readiness/early engagement and service usage

5.2.1. Treatment readiness

T-tests indicated that women with previous treatment/counseling experience had a longer duration of service use ($M = 20.92$, $SD = 17.18$) than women without previous experience ($M = 14.06$, $SD = 16.06$), $t(155) = 2.58$, $p = .01$. No differences were found between women with and without previous experience in the number or proportion of services attended, $ts(90–153) \leq 1.77$, $ps \geq .08$. However, women with previous treatment/counseling experience accessed a greater range of services ($M = 6.95$, $SD = 3.19$) than women without previous experience ($M = 5.05$, $SD = 3.55$), $t(155) = 3.52$, $p = .001$.

5.2.2. Early engagement

ANOVAs indicated that antenatal enrolment was related to duration of service use, $F(3, 156) = 5.80$, $p = .001$, $\eta^2 = .10$, such that women referred through the pregnancy outreach program had longer service use duration than women referred through any other means (see Table 2 for means and standard deviations). Antenatal enrolment was related to the frequency of service use (number) for woman-focused, $F(3, 91) = 6.53$, $p < .001$, $\eta^2 = .18$, parent/child-focused, $F(3, 112) = 5.63$, $p = .001$, $\eta^2 = .13$, individual, $F(3, 154) = 11.43$, $p < .001$, $\eta^2 = .18$, and group services, $F(3, 114) = 3.13$, $p = .03$, $\eta^2 = .08$. In all cases, women who were referred

Table 2
Means and standard deviations for service usage by antenatal enrolment reason.

	Mandated *M (SD)*	Health Care Professional *M (SD)*	Self-Referred *M (SD)*	Pregnancy Outreach Program *M (SD)*
Duration of Service Use	14.56[a] (12.58)	15.80[b] (15.13)	11.29[c] (23.15)	26.71[abc] (23.15)
Frequency (#)				
Woman-Focused	26.32[a] (26.33)	30.86[b] (24.67)	14.43[c] (13.60)	57.66[abc] (45.73)
Parent/Child-Focused	24.86[a] (29.92)	21.85[b] (19.53)	10.22[c] (10.72)	46.28[abc] (40.31)
Individual	25.58[a] (28.26)	32.54[b] (35.51)	16.43[c] (19.54)	70.97[abc] (66.49)
Group	20.00 (25.30)	14.70[a] (13.78)	5.40[b] (6.84)	26.69[ab] (24.40)
Frequency (prop)				
Woman-Focused	.52[a] (.22)	.55 (.19)	.44 (.25)[b]	.65[ab] (.10)
Parent/Child-Focused	.55 (.21)	.52 (.24)	.42 (.20)	.57 (.22)
Individual	.59 (.19)	.59 (.22)	.49 (.22)	.62 (.17)
Group	.48 (.24)	.45 (.23)	.33 (.21)	.51 (.22)
Range of Services Used	5.41[a] (3.27)	5.89[b] (3.31)	4.29[c] (2.53)	8.03[abc] (3.62)

Note: # = number of sessions attended. Prop = proportion of sessions attended. Shared superscripts within the same row indicate that means differ at $p < .006$.

through the pregnancy outreach program attended more services than women referred from other sources, with one exception (referral through the pregnancy outreach program did not differ from mandated service in the number of group sessions attended; $p > .05$). Antenatal enrolment was only related to frequency of service use (proportion) for woman-focused services, $F(3, 91) = 3.64$, $p = .02$, $\eta^2 = .11$, such that women referred through the pregnancy outreach program attended a higher proportion of woman-focused services than women referred from other sources (marginal compared to referral by health care professionals; $p = .09$). Women referred through the pregnancy outreach program also accessed a greater range of services than women referred from other sources, $F(3, 156) = 6.79$, $p < .001$, $\eta^2 = .12$.

5.3. Objective 3: associations between service usage and women's circumstances upon service ending

5.3.1. Reason for service ending

ANOVAs indicated women who ended service because goals were met had longer duration of service than all other women, $F(6, 153) = 5.08$, $p < .001$, $\eta^2 = .17$ (see Table 3 for means and standard deviations). Women who ended service because service goals were met attended more woman-focused services, $F(6, 88) = 2.72$, $p = .02$, $\eta^2 = .16$ (compared to school/employment, incarceration, or no engagement in service). These women also attended more parent/child-focused services, $F(6, 10)] = 2.87$, $p = .01$, $\eta^2 = .14$, individual services, $F(6, 151) = 5.80$, $p < .001$, $\eta^2 = .19$, and group services, $F(6, 111) = 2.59$, $p = .02$, $\eta^2 = .12$ (for parenting services, marginal for moved away, $p = .08$; for group services, no significance for school/employment and incarceration).

Table 3
Means and standard deviations for service usage by reason for ending service.

	Service Goals Met *M (SD)*	School/ Employment *M (SD)*	Other Counseling Services *M (SD)*	Moved *M (SD)*	Incarcerated *M (SD)*	Termination of Parental Rights *M (SD)*	No Engagement in Service *M (SD)*
Duration	31.23[abcdef] (20.65)	9.40[a] (4.56)	16.59[b] (18.01)	15.18[c] (14.85)	8.67[d] (9.61)	12.75[e] (9.48)	14.20[f] (14.03)
Frequency (#)							
Woman	54.54[abc] (40.51)	14.60[a] (13.85)	41.18 (43.90)	37.83 (24.49)	3.50[b] (4.95)	30.78 (28.67)	25.21[c] (28.05)
Parent/Child	50.17[abcd] (36.41)	18.40[a] (21.20)	24.32[b] (34.93)	27.88 (33.59)	16.00 (–)	21.00[c] (17.84)	22.40[d] (28.27)
Individual	75.97[abcdef] (52.55)	19.60[a] (16.59)	33.78[b] (54.17)	38.18[c] (44.37)	8.67[d] (6.51)	26.05[e] (35.11)	25.50[f] (31.71)
Group	33.00[abcd] (30.58)	19.40 (20.03)	13.88[a] (12.60)	14.63[b] (16.39)	6.00 (8.49)	14.67[c] (9.60)	15.93[d] (20.40)
Frequency (prop)							
Woman	.67[abc] (.12)	.56[d] (.16)	.63[ef] (.16)	.60[g] (.11)	.13[bdfghi] (.18)	.50[ci] (.29)	.49[aeh] (.18)
Parent/Child	.63 (.13)	.52 (.25)	.50 (.26)	.52 (.28)	.42 (–)	.56 (.21)	.49 (.23)
Individual	.66 (.14)	.59 (.20)	.62 (.19)	.59 (.23)	.53 (.15)	.61 (.19)	.53 (.22)
Group	.58[ab] (.16)	.53[c] (.25)	.46[d] (.25)	.40 (.33)	.13[bcde] (.18)	.47[e] (.24)	.43[a] (.22)
Range	9.37[abcde] (2.71)	7.20 (2.86)	4.85[a] (2.98)	5.55[b] (3.14)	3.67[c] (3.06)	4.95[d] (2.98)	5.42[e] (3.33)

Note: # = number of sessions attended. Prop = proportion of sessions attended. Woman = Woman−Focused. Parent/Child = Parent/Child−Focused. Shared superscripts within the same row indicate that means differ at $p < .05$. *SD* not shown for incarcerated (parenting # and prop) and post-hoc tests not conducted because number of women in that cell = 1.

Table 4
Means and standard deviations for service usage by custody status at service ending.

	Mother *M (SD)*	Kin Placement *M (SD)*	Foster Care *M (SD)*
Duration of Service Use	20.96[ab] (18.75)	11.68[a] (10.49)	12.31[b] (12.30)
Frequency (#)			
Woman-Focused	40.07 (37.59)	25.71 (21.34)	25.85 (34.06)
Parent/Child-Focused	34.24[a] (35.21)	24.76 (30.00)	15.80[a] (16.60)
Individual	46.46[ab] (50.20)	22.19[a] (28.64)	22.23[b] (34.76)
Group	22.46 (25.41)	17.05 (17.34)	11.24[a] (8.57)
Frequency (prop)			
Woman-Focused	.58 (.17)	.52 (.28)	.50 (.22)
Parent/Child-Focused	.55 (.21)	.50 (.21)	.50 (.24)
Individual	.59 (.19)	.61 (.23)	.55 (.20)
Group	.49 (.23)	.42 (.23)	.43 (.24)
Range of Services Used	6.93[ab] (3.48)	4.87[a] (3.35)	4.47[b] (2.74)

Note: # = number of sessions attended. Prop = proportion of sessions attended. Shared superscripts within the same row indicate that means differ at $p < .02$.

In terms of frequency of service use (proportion), women who met service goals attended a higher proportion of woman-focused services, $F(6, 88) = 5.45$, $p < .001$, $\eta^2 = .27$, and a higher proportion of group services, $F(6, 111) = 2.36$, $p = .04$, $\eta^2 = .11$ (compared to incarcerated, application for termination of parental rights [woman-focused only], or no engagement in service). Other significant contrasts are shown in Table 3. Proportion of parent/child-focused services, $F(6, 109) = 1.40$, $p > .05$, $\eta^2 = .07$, and individual services, $F(6, 151) = 1.77$, $p > .05$, $\eta^2 = .07$, were not related to women's circumstances upon service ending. Finally, women who met their service goals used a greater range of services than all other women (with the exception of school/employment), $F(6, 153) = 7.64$, $p < .001$, $\eta^2 = .23$.

5.3.2. Custody at service ending

ANOVAs indicated that duration of service use was related to custody at service ending, $F(2, 157) = 5.78$, $p = .004$, $\eta^2 = .07$, such that duration was longer for women with custody of her child, compared those with children in kin placement or foster care (see Table 4 for means and standard deviations). The number of woman-focused services attended, $F(2, 92) = 1.59$, $p > .05$, $\eta^2 = .03$, and group services attended, $F(2, 115) = 2.27$, $p > .05$, $\eta^2 = .04$, were unrelated to custody status. The number of parent/child-focused services, $F(2, 113) = 2.87$, $p = .06$, $\eta^2 = .05$ (marginal), and individual services, $F(2, 155) = 5.72$, $p = .004$, $\eta^2 = .07$, was related to custody at service ending, such that women with custody of their children attended more individual services than women for whom custody was kin placement, and they attended more parent/child-focused and individual services than women for whom custody was foster care. Frequency of service use (proportion) was not related to custody at service ending, $Fs(2, 92\text{-}155) \leq 1.46$, $ps > .05$, $\eta^2 s \leq .03$. A greater range of services used was related to mother having custody of the child at service ending, compared to the child being in kin placement or foster care, $F(2, 157) = 8.97$, $p < .001$, $\eta^2 = .10$.

5.3.3. Change in custody

In cases where children's custody changed between intake and service ending, *t*-tests indicated that women whose children's custody status changed *to* mother had longer service duration ($M = 22.00$, $SD = 14.71$) than women whose children's custody status changed *away* from mother ($M = 13.65$, $SD = 10.05$), $t(40) = 2.13$, $p = .04$. No differences were found between women whose children's custody changed *to* versus *away* from mother in terms of frequency of services (number or proportion), $ts(25\text{–}40) \leq 1.53$, $ps \geq .05$. Women whose children's custody status changed *to* mother accessed a greater range of services (marginally) ($M = 7.59$, $SD = 3.13$) than women whose children's custody status changed *away* from mother ($M = 5.65$, $SD = 3.33$), $t(40) = 1.95$, $p = .06$.

5.3.4. Counsellor ratings

Zero-order correlations indicated that duration of service use was associated with counsellors' ratings of improvement in terms of substance use, $r = .40$, $p = .003$, and the parent-child relationship, $r = .33$, $p = .03$. No relation was found between duration of service use and ratings of child development, $r = .23$, $p > .05$. Number of woman-focused services was associated with ratings of improvement in the parent-child relationship, $r = .31$, $p = .05$, and child development, $r = .34$, $p = .04$. Number of parent/child-focused services was associated with ratings of improvement in child development, $r = .36$, $p = .03$. Number of individual services was associated with ratings of improvement in substance use, $r = .34$, $p = .01$, and number of group services was associated with improvement in child development, $r = .47$, $p = .003$. Proportion of individual services attended was related to improvement in the parent-child relationship, $r = .35$, $p = .02$ and proportion of group services was related to improvement in substance use, $r = .32$, $p = .02$, the parent-child relationship, $r = .34$, $p = .02$, and child development, $r = .36$, $p = .02$. Finally, range of services used was associated with ratings of improvement in substance use, $r = .39$, $p = .004$, parent-child relationships, $r = .44$, $p = .002$, and child development, $r = .35$, $p = .03$.

6. Discussion

The overarching goal of this study was to examine service use in a relationally-focused intervention program for mothers with substance use issues and their young children. Specifically, objectives were to: 1) describe women's use of service, 2) understand how early engagement in services relates to service use, and 3) explore the circumstances associated with women ending their use of services. Overall, we found support for a relational approach in programming for mothers with substance use problems, in that these vulnerable women were actively engaged in many services and for a long duration, early engagement was associated with greater service use, and greater service use was associated with more positive circumstances upon ending service.

6.1. Use of service in a relationship-focused intervention program

Though there was large variability in service use, many women stayed in service for a long time (on average longer than a year) and used many services (on average six different services). Because the amount of time women spend in service at BTC is not predetermined, it is difficult to compare retention rates to other programs that often have specified time frames. However, we found that only 1.3% of women remained in service for less than a month, which corresponds to a much higher retention rate than was found by Greenfield et al. (2007), who found that up to 50% of patients left substance use treatment within the first month. Moreland and McRae-Clark (2018) found that between 13–92% of women completed outpatient programs that were typically between 3–4 months long. Importantly, we found that over half of women remained in service longer than one year. Building trusting relationships can be particularly difficult with vulnerable families who have often been mandated to attend service and/or have had rights to previous children removed (e.g., Neger & Prinz, 2015; Suchman et al., 2006). Women with child protection cases open are less likely to complete treatment (marginally; Knight, Logan, & Simpson, 2001). Yet, despite nearly all women having child protective service involvement, many families at BTC stayed in service for several years. Length of stay in service is one of the best predictors of treatment effectiveness (Conners et al., 2006; Neger & Prinz, 2015). The relatively long duration of service use at BTC suggests that, through a relational approach to service provision, BTC was able to engage and form relationships with vulnerable women and children. Indeed, these findings are particularly striking when considering this population of substance using mothers. That is, due to the precarious nature of addiction, relapse is an accepted part of addiction recovery. As such, one would expect a certain level of attrition and difficulty in maintaining long-term service use. BTC is a harm-reduction program, and in that way, staff continue to support women and maintain service use through a relational approach, even when there are 'slips' in recovery.

Women attended approximately half of the services they were scheduled to attend, demonstrating the complex needs and high-risk nature of this population. In addition to the difficulty of engaging women who have little to no prior history of trusting relationships, women at BTC have complex life circumstances often including poverty, homelessness, family dysfunction and violence, and concurrent mental health issues, all of which can also affect their substance use (Motz et al., 2006). Understanding families' backgrounds helps to explain why many women missed scheduled services. Although the reliability of attending treatment was moderate, the frequency of services attended was high, averaging 19–37 service appointments. Further, there was no difference between the number or proportion of woman- versus parent/child-focused services attended, indicating that women may recognize the importance of the joint focus on woman- and parent/child-focused services. The benefit of an integrated program is that both types of services can be accessed together (e.g., Niccols et al., 2010).

6.2. The importance of early engagement in service

In general, treatment readiness (previous experience in treatment or counseling) and early engagement (antenatal enrolment) were associated with longer duration of service use, higher frequency of service use (for early engagement), and a greater range of services used. We assessed early engagement as antenatal enrolment through BTC's pregnancy outreach program. Given that the pregnancy outreach program is itself a relationally-focused service, it may be that this antenatal enrolment increases a woman's experience in and understanding of a relational approach, which in turn encourages her to continue service use postnatally. Alternatively (or in addition), pregnancy may be a unique context that can be viewed as a window of opportunity for change (Pajulo et al., 2016; Racine et al., 2009). Building service relationships with vulnerable, pregnant women may be effective for long-term involvement in and use of a range of services for both mother and child. In fact, evidence suggests that children may be the real motivator for women's efforts to change (Jeong et al., 2015), again underscoring the importance of intervention for the mother, child, and the mother-child relationship for both service engagement and success (Espinet et al., 2016). Further, given the harms of substance use during pregnancy to both the fetus and the woman (Aghamohammadi & Zafari, 2016), engaging women antenatally to support substance discontinuation is essential.

6.3. Relationship-focused services relate to positive outcomes

As expected, women who attended BTC longer, attended a greater number of services, and accessed a greater range of services had generally more positive circumstances associated with ending service, relative to women who had shorter duration of service use, attended fewer services, and accessed a smaller range of services. Specifically, these women were more likely to end service because service goals were achieved compared to other reasons for service ending, more likely to have custody of their child (versus the child being in foster care or a kin placement), and were generally improved in terms of substance use, the parent-child relationship, and the child's development, according to counsellor ratings. For women for whom custody status changed while they were in service at BTC,

being in service longer and accessing a greater range of services was associated with having custody change *to* the mother, rather than *away* from the mother. Overall, this finding supports past research indicating that time in service is generally associated with better outcomes (Clark, 2001; Conners et al., 2006; Neger & Prinz, 2015), and highlights the success of long-term engagement in integrated, relationships-focused service for mothers with substance use issues and their children.

7. Limitations and future directions

This study included relatively objective measures of early engagement, service use, and circumstances upon service ending, rather than assessing women's subjective experiences of service at BTC. We do not know how women at BTC understand and conceptualize their own service use. For instance, just because women attend a service appointment does not necessarily mean they are using the service *well*, or to its fullest potential. Conversely, women might attend relatively few sessions, but use those sessions effectively. More research is needed to understand women's subjective experiences in integrated, relationally-focused service. At BTC, research suggests that women highly value compassionate, judgement-free relationships with service providers (Latuskie et al., 2018), and that explicitly supporting relationship capacity is an important service goal (Racine et al., 2016).

Given the nature of the services offered at BTC and the nature of the population served, the engagement and intake assessment process involves several meetings with clinical staff at BTC, which can take place across weeks or even months. These early appointments are used to understand each woman's service needs and see if BTC is the right fit, as well as to engage and try to build a relationship with women who are often inherently (and understandably) mistrustful of systems and service providers. Noted above, 40% of women who had consented to service did not engage in ongoing counseling support. There are several reasons why women may not have engaged in this level of service. Some may have been referred, attended initial meetings with BTC clinical staff, and it was decided that BTC was not the right service (i.e., this was not the correct referral). Sometimes there is crisis management that occurs, wherein BTC staff refer women to withdrawal management or intensive addiction treatment. Some women may have been unable or not yet attained a level of readiness to make a commitment to an intensive service. Some may have lived too far away, which would have been a substantial barrier to accessing support, and would have been referred to another agency. In the current study, we were unable to tease apart reasons for which women did not engage in service at BTC. Future research could consider focusing specifically on women who are unable to engage in service, to better understand potential barriers to continued service engagement.

We examined general outcomes associated with service use, including child's custody status and counsellor ratings of improvement. Though this provides a starting point for understanding the effect of a relationally-focused intervention program, future research could focus on how engagement in services at BTC relates to specific mother and child outcomes. Indeed, counsellor's rated improvement in terms of substance use, the parent-child relationship, and child development, yet counsellor ratings were not standardized or validated measures. Thus, counsellor ratings of improvements in women's lives may not accurately reflect life changes. Recent research indicates that, in comparison to standard integrated treatment (i.e., services that did not explicitly include a focus on the mother-child relationship), participating in service at BTC relates to increased relationship capacity and improved mental health functioning (Espinet et al., 2016). Thus, more research is needed to directly assess the association between duration of service use, frequency of service use, and range of service use on these and other standardized adjustment outcomes for mothers and children.

8. Conclusions: strong support for a relational approach

Vulnerable families require long-term, multifaceted/multi-sectoral, barrier free services that include intervention for the mother, child, and the mother-child relationship. This may be particularly true for mothers with substance use issues, given the negative impact of substance use on mothers, children, and parenting (see Neger & Prinz, 2015) and the unique barriers to treatment that may accompany substance use issues (e.g., stigma, judgement; Stone, 2015). Our results highlight that a relational approach seems to be incredibly effective in engaging vulnerable women and children in service and supporting success in service usage. Further, for women who were strongly engaged, outcomes measures were generally more positive. This was particularly true for women antenatally involved in BTC's pregnancy outreach program.

We contend that service providers, particularly those attempting to engage vulnerable populations such as mothers with substance use issues, should adopt a relational approach. A relational approach encompasses relationships at all levels of service development and delivery. At BTC, not only is the relationship between mother and child explicitly highlighted and supported (Espinet et al., 2016), so is the relationship between client and service providers. Modeling safe and healthy relationships among adults can support healthy relationships between parents and children. As such, relationships among staff, between staff and management, and among community agencies are explicitly discussed, supported, and understood to be an important factor in providing service to vulnerable families. At the organizational level, a relational approach can include ensuring that program policies and practices are trauma-informed and support safe and healthy relationships, ensuring that program spaces are physically and emotionally safe, and establishing relationships with community partners that will support women and children (see Fig. 1 for a visual depiction of this framework). Though others have underscored the importance of an integrated approach to service (e.g., providing parenting and substance use services, providing instrumental supports as well as counseling supports; Milligan et al., 2010; Moreland & McRae-Clark, 2018), our results support that this focus should be further extended to the integration of positive relationships at all levels to fully support vulnerable families. We urge policy makers to consider the implications of a relational approach to health service provision, and the additional resources and supports that may be necessary to enable service providers to implement these essential

services.

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Conflicts of interest

The author(s) declared no potential conflicts of interest.

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