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Predictors of out-of-home placement following residential treatment

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ABSTRACT

Objective: There is a lack of research examining predictors of out-of-home placement (OOHP) following residential treatment (RT). The current study examined how various child and family factors predict OOHP at discharge and 6-months post-discharge for a RT sample.
Methods: Three hundred and eighty-three children (11.92 years, $SD = 2.63$, 293 boys) with serious mental health disorders were assessed using the Brief Child and Family Phone Interview (BCFPI) and placement information forms at admission, discharge, and 6-months post-discharge from RT.
Results: OOHP at discharge was predicted by older age, OOHP at admission, child welfare involvement, deliberate self-harm, a history of physical abuse, neglect, witnessed domestic violence, and a poor family situation ($p<.05$). At 6-months post-discharge, OOHP was predicted by dual diagnosis, OOHP at admission, child welfare involvement, neglect, and witnessed domestic violence ($p<.05$).
Conclusions: Pre-treatment factors are predictive of OOHP following RT. Identifying these key predictors and developing permanency planning options for children to promote stability and consistency is essential. A systemic evidence-based approach is imperative in promoting resilience for children at risk of OOHP, including family intervention and collaboration with the community.

1. Introduction

Residential treatment (RT[1]), a type of out-of-home placement (OOHP[2]), provides tertiary care for children with serious mental health disorders (SMHD[3]; St. Pierre, Leschied, Stewart, & Cullion, 2008). OOHP refers to the placement of a child outside of his/her direct family home due to family circumstances that place the child at risk, such as abuse or inadequate care, and/or a child's own developmental and/or behavioral/emotional problems. Examples of OOHP include foster care, kinship care, group homes, RT, inpatient psychiatric care, and correctional facilities (Garnier & Poertner, 2000; Landsverk, Davis, Ganger, Newton, & Johnson, 1996). Controversy exists regarding the usefulness of RT in preventing additional OOHPs and poor outcomes with indications that less restrictive and less expensive treatment options may be more beneficial (Holstead, Dalton, Horne, & Lamond, 2010). Very few research studies examine discharge and post-discharge placements following RT and those that do focus on removal from home due to child welfare concerns or developmental disabilities. This paper examines the extant literature to identify predictors of OOHP for children with mental health and/or co-morbid developmental problems and assesses evidence for these predictors using data collected on those in treatment for these issues.

1.1. Predictors of OOHP

The strongest identified risk factor associated with OOHP is behavior problems, such as aggression, non-compliance, and defiance (Farmer, Mustillo, Burns, & Holden, 2008; Park, Solomon, & Mandell, 2007). For example, Farmer et al. (2008) found that children who were placed in foster care and other OOHPs had more severe behavioral problems than those of intact families. However, many of these children have been exposed to abuse/neglect and related trauma, which is often associated with major mental health problems (Burge, 2007; Heflinger, Simpkins, & Combs-Orme, 2000).

Consistent support for increased rates of placement instability for older children has also been noted (Barth et al., 2007; Farmer, Southerland, Mustillo, & Burns, 2009; James, Landsverk, & Slymen, 2004; Klee, Kronstadt, & Zlotnick, 1997). For example, James et al. (2004) found that children within the child welfare system (CWS[4]) who were greater than 8 years of age were more likely to have an unstable placement pattern. Older children have also been found to have higher rates of behavioral problems than younger children, possibly further influencing the relationship between age and placement

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[1] RT — residential treatment.
[2] OOHP — out-of-home placement.
[3] SMHD — serious mental health disorder.
[4] CWS — child welfare system.

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instability (Burge, 2007). Findings related to gender and OOHP, to date, have been inconsistent (Barth et al., 2007; Farmer et al., 2008, 2009; James et al., 2004, 2006; Smith, Stormshak, Chamberlain, & Bridges Whaley, 2001).

Several studies, including those examining RT populations, have shown that prior placement history is associated with current OOHP (Baker, Wulczyn, & Dale, 2005; Farmer et al., 2009; Newton, Litrownik, & Landsverk, 2000). For example, Baker et al. (2005) found that children who were discharged to OOHP following treatment were more likely to have experienced prior psychiatric hospitalization and previous OOHP. Additional risk factors of OOHP following RT include a history of substance use, self-harm, and suicide attempts (Baker et al., 2005; Farmer et al., 2009). Research has also found disability-specific patterns indicating that children with severe developmental disabilities have an increased likelihood of placement instability (Allen, Lowe, Moore, & Brophy, 2007; Pfeiffer & Baker, 1994). Children with more severe and profound levels of intellectual disability also tend to display difficulties with emotion regulation and behavioral control (Allen et al., 2007).

Evidence for the association between family risk factors and OOHP is mixed due to a lack of research focus in this area and little clarity regarding measurement (Farmer et al., 2009; Kortenkamp, Geen, & Stagner, 2004). Findings do suggest, however, that certain family factors such as family functioning (e.g., family conflict, social support, and parenting skills) are related to unstable placement patterns. Specifically, Sunseri (2004) found that children with higher functioning families are eight times more likely to be discharged to less restrictive settings following RT than those with lower family functioning. Conversely, children from families of domestic violence have higher rates of reunification instability (Farmer et al., 2009). Children of caregivers with poor mental health, substance abuse problems, and/or criminal involvement have also been found to be more likely to be placed in OOHP following RT (Baker et al., 2005; Shaw, 2006). These findings demonstrate the sheer vulnerability of children in OOHP. Not only do they tend to have their own mental health problems, disabilities, and histories of placement instability, but they also come from families with histories of abuse and parental mental health problems.

Although numerous factors associated with OOHP have been identified by previous research, very few studies have examined predictors of OOHP following RT. Not all children in RT return to their family home following treatment, although this is the ultimate goal. Knowledge of child and family variables that are associated with OOHP following RT is essential for the development of more tailored interventions to prevent further OOHPs for these children. In this study, the predictive power of various child and family factors on OOHP at discharge and 6-months post discharge from RT was examined. Based on the most influential predictor variables identified in previous research and the variables available for examination, it was hypothesized that being older, prior OOHP, child welfare status, increased behavioral problems, having a history of abuse (physical and sexual) and neglect, substance abuse, intellectual disability and/or family dysfunction would predict OOHP.

2. Material and methods

2.1. Participants

This study used a cohort sample of 6- to 17-year-old children with SMHD who were admitted to a RT facility. The participants were consecutive admissions over a 5-year period at a tertiary mental health care facility in Ontario. At this facility, children with mental health disorders and children with dual diagnoses (i.e., mental health disorder and developmental disability) are treated. Consent was obtained from parents/guardians for their child's data to be used for research purposes. Twenty-seven parents/guardians did not provide consent for their child's data to be used for research purposes and were thus excluded. A total of 383 children with complete admission and discharge data were analyzed in this study ($M = 11.92$ years, $SD = 2.63$, 293 boys). Of these children, 95 (24.8%) had a dual diagnosis. The remainder had mental health disorders but not a developmental disability.

2.2. Setting

Children were referred to RT through their local community single-point-of-access mechanism. This intake procedure uses standardized clinical measures and a "least intrusive intervention" approach to practice. This process attempts to ensure that adequate community treatment efforts have been exhausted prior to enrolment in RT. All treatment models were based on current best practice, which included structured behavioral milieu and individualized intervention strategies. The living milieu treatment, led by psychiatrists, psychologists, and social workers, promoted interpersonal skill development along with psychotropic medication and psychosocial, family-oriented, and educational interventions.

Individualized plans of care for children were reviewed monthly by the family/guardian, community care coordinator, and clinicians. Discharge dates were flexible, based on the child's progress and needs. The average length of stay for residents was 2.47 months with a range of less than 1 month to 27 months ($SD = 2.40$). However, outpatient services were often utilized both at preadmission and post-discharge. Post-discharge follow-up may have involved outreach assistance in the home or classroom, and ongoing therapeutic contact, including medication monitoring. Active involvement and support of the parent/guardian was essential and indeed mandatory for the child to be admitted. Most children returned home on the weekends during treatment. Including these aspects within the treatment plan ensured easier transition back to a less structured environment following treatment.

2.3. Procedure

This study was approved by the Research Ethics Board (REB) at Western University, London, Ontario, Canada. Consent was sought from caregivers at admission for the use of their children's data for research purposes outside of the agency. Only those who consented were included in this analysis. Data was collected from various measures at three time periods: admission (Time 1), discharge (Time 2), and 6-months post-discharge (Time 3). At Times 1 and 3, the administered measures included the Brief Child and Family Phone Interview (BCFPI) and Service Information Form. At discharge, the Discharge Location Form was completed.

2.4. Measures

The BCFPI provides a measure of the type/severity of children's problems. It is a standardized parent phone-interview consisting of 81 forced-choice questions. This tool consists of five broadband subscales: Externalizing, Internalizing, Total of 6 Mental Health Domains, Global Functioning, and Global Family Situation. The subscales are measured using normative *t*-scores. Children with t-scores of 70 and above are considered to be in the clinical range (Cunningham, Pettingill, & Boyle, 2006). The BCFPI also contains other items that can be used to measure the presence or absence of various behavioral and abuse events. Items such as deliberate self-harm, physical abuse, sexual abuse, neglect, and witnessed domestic violence were included in this study based on past studies that have found these to be important predictors of OOHP. These items were interpreted by the parents/caregivers and answered accordingly, based on their understanding of the item. The psychometric properties of the BCFPI have been established and are based on the mapping of items to the Diagnostic and Statistical Manual of Mental Health Disorders criteria (Cunningham et al., 2006). A detailed

description of the BCFPI in addition to its reliability and validity has been reported elsewhere (e.g., Boyle et al., 2009; Cunningham, Boyle, Hong, Pettingill, & Bohaychuk, 2009).

The Discharge Location Form includes two questions completed by the child's primary counselor. The location to which the client was discharged was identified and clinical judgment whether this placement was likely to be successful, using a scale from *1 not at all successful* and *7 very successful*, were collected. This form was created by the researchers.

Service Information Form. Caregivers were asked to complete this form at admission and at 6-months post-discharge. The forms differed slightly at different time points but generally included questions asking about the child's current residence, mental health, previous service use, child welfare status, placement history, and special education needs. This form was created by the researchers.

During the initial 4-year period, families of discharged clients were called to collect retrospective information about OOHP. Using a telephone script, based on the Service Information Form, the caregiver was asked the child's current place of residence and placement history since discharge. For all admissions during the last year of the study, OOHP information was collected at all data collection time points prospectively.

2.5. Analysis

Thirteen predictor variables were examined in this study. The dichotomous predictor variables included gender, placement status at admission (OOHP or in-home with parents), dual diagnosis, child welfare status (a child whose guardian was the CWS or whose family was involved with the CWS was considered to be involved with the CWS), deliberate self-harm, physical abuse, sexual abuse, neglect, and witnessed domestic violence. The continuous predictor variables included age, externalizing and internalizing behaviors (higher scores indicate problem symptoms/behavior), and family functioning, as measured by the BCFPI *Global Family Situation* score (higher scores indicate poor family functioning). To determine whether significant associations existed between the predictor variables of interest and type of placement at discharge and 6-months post-discharge, a chi-square analysis (with Fisher's exact test when appropriate) was performed for categorical independent variables and an ANOVA was performed for continuous independent variables. Variables were judged to be statistically significant if $p<.05$. All statistical analyses were conducted using SPSS software, version 19 (SPSS, Chicago, IL, USA).

3. Results

3.1. Descriptive analyses

Table 1 provides the descriptive statistics of the child/family variables analyzed in this study. About one in four children (24.8%) had a dual diagnosis (SMHD and developmental disability) and about 14% were involved with child welfare. Mental health problems were severe with externalizing and internalizing mean scores in the clinical range. A little over one in three children (36.6%) engaged in deliberate self-harm. In terms of abuse and neglect, 28.4% of the children had a history of physical abuse, 11.1% experienced sexual abuse, and 23.8% experienced some form of neglect. Substance use was reported by parents for 10.3% of the children. Family dysfunction was very prevalent as the majority of the families had BCFPI *Global Family Situation t*-scores in the clinical range and a little over half (53.3%) of the children had witnessed domestic violence.

Table 1
Child and family variables of sample of children.

Variable	n (%)	Mean (SD)
Age		11.92 (2.63)
Gender		
Male	293 (76.5)	
Female	90 (23.5)	
Dual diagnosis		
No	288 (75.2)	
Yes	95 (24.8)	
Child welfare status		
Child is CAS/Crown ward	48 (13.8)	
Parent is child's guardian	301 (86.2)	
Deliberate self-harm		
No	203 (63.4)	
Yes	117 (36.6)	
Physical abuse		
No	232 (71.6)	
Yes	92 (28.4)	
Sexual abuse		
No	288 (88.9)	
Yes	36 (11.1)	
Neglect		
No	246 (76.2)	
Yes	77 (23.8)	
Substance use		
None	280 (89.7)	
A little/a lot	32 (10.3)	
Witnessed domestic violence		
No	151 (46.7)	
Yes	172 (53.3)	
Externalizing behavior		82.58 (9.89)
Internalizing behavior		70.22 (15.48)
Global family situation		104.77 (23.42)

3.2. Placement characteristics at various time points

Fig. 1 displays the distribution of in-home and OOHP at the three time points [admission ($n=347$), discharge ($n=344$) and 6-months post-discharge ($n=189$)]. There were 292 (84.1%) children admitted from home and 55 (15.9%) admitted from out-of-home. Of the 292 children admitted from home, 283 (representing 96.7%) were discharged back home with parents and eight (2.8%) were in OOHPs. At 6-months post discharge, 124 children (representing 43.8%), were still living at home with their parents whereas 32 children (representing 11.3%), were in OOHPs. For the remaining 127 children (44.9%), information on their placement status at 6-months post-discharge was missing. Also, of the 55 children with OOHP at admission, eight (representing 14.5%) were discharged back home with their parents whereas 45 (representing 81.8%) were still in OOHP at discharge and the remaining two were missing information regarding their placement status at discharge. At 6-months post-discharge, two of the eight children that were in-home with parents at discharge were still living at home with their parents whereas two of the eight children were in OOHP and information on the placement status for the remaining four children were missing. Of the 45 children with OOHP at discharge, four (8.9%) were living at home with their parents at 6-months post discharge, 22 (44.9%) were still out-of-home at 6-months post-discharge, and information on the placement status for the remaining 19 children (42.2) were missing at 6-months post-discharge.

Due to the difficulty in collecting follow-up data from high-risk families and retrospective data on post-discharge placement, children with missing values were handled using listwise deletion. Further exploration of missing values suggested that these missing values on placement status at discharge were random and not related to child's age, gender, child welfare status, or dual diagnosis. Similarly, missing values on placement status at 6-months post-discharge were random and not related to child's age, gender, or child welfare status. However, children with missing values on placement status at 6-months post-discharge were more likely to have mental health problems only as opposed to dual diagnosis. Thus, we believe that not including missing values does not bias the results reported in Tables 2 and 3.

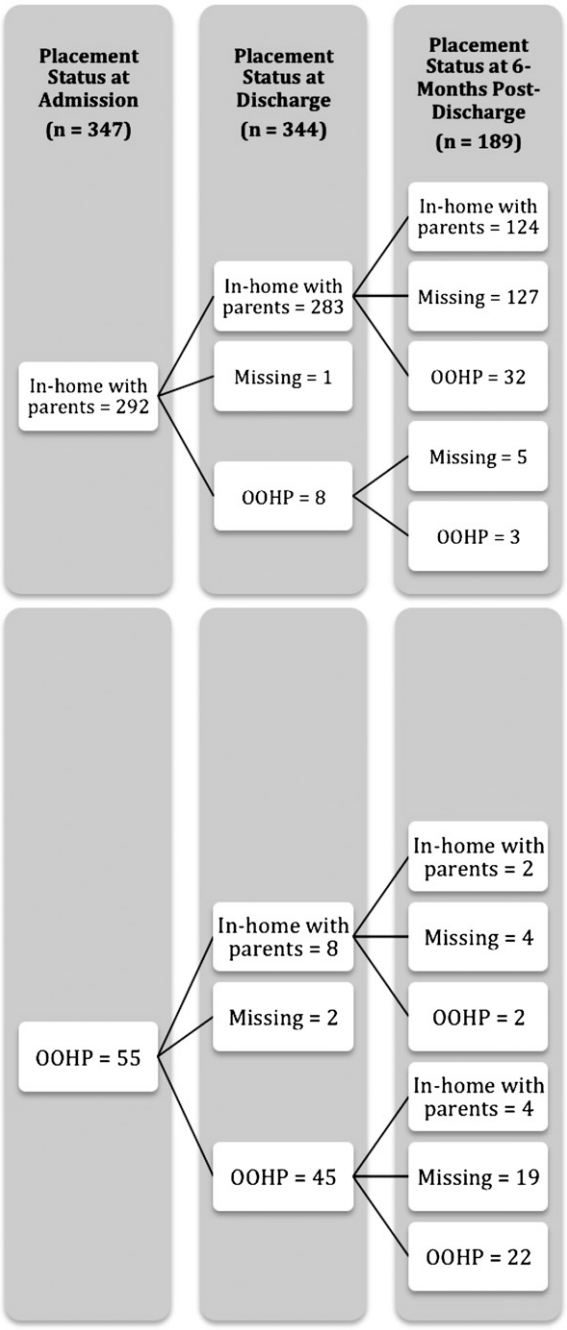

Fig. 1. Placement status at admission, discharge, and 6-months post-discharge. *Note*. OOHP = out-of-home placement, Missing = children whose placement status is unknown; at admission, 36 individuals were missing placement status information.

3.3. Predictors of OOHP at discharge

There were significant associations between OOHP at discharge and a number of independent variables. The average age of children in OOHP at discharge was significantly greater than the average age of children in-home with parents at discharge ($OOHP_M = 12.77$ versus $In\text{-}home_M = 11.80$; $F = 6.57$, $p < .05$). No significant association was found between gender, dual diagnosis, and OOHP at discharge. However, placement status at admission was significantly associated with OOHP at discharge. For instance, 84.9% of children, whose placement status at the time of admission was out-of-home, were placed out-of-home at discharge, compared to 2.7% of children, whose placement status at the time of admission was in-home with parents, who were placed out-of-home at discharge ($\chi^2 = 232.19$; $p < .001$). Similarly, the proportion of children with child welfare involvement that was placed out-of-home at discharge (87.0%) was significantly greater than the proportion of children with parents as the guardian that was placed out-of-home at discharge (5.3%) ($\chi^2 = 195.88$; $p < .001$). About 24% of children who engaged in deliberate self-harm were placed out-of-home at discharge compared to about 13% who never engaged in deliberate self-harm that were placed out-of-home at discharge ($\chi^2 = 5.74$; $p < .05$).

As hypothesized, children with a history of physical abuse, neglect, and witnessed domestic violence in the household were all more likely to be placed out-of-home at discharge. About one in three children (31%) who experienced physical abuse compared to one in ten who had not experienced physical abuse were placed out-of-home at discharge ($\chi^2 = 19.10$; $p < .001$). About 42% of children who were neglected compared to 8.5% of children who were not neglected were placed out-of-home at discharge ($\chi^2 = 42.00$; $p < .001$). Close to 23% of children who witnessed domestic violence compared to 9% of children who did not witness domestic violence were placed out-of-home at discharge ($\chi^2 = 10.61$; $p < .001$) (see Table 2). No significant association was observed between sexual abuse, substance use, and OOHP at discharge. Similarly, the association between internalizing and externalizing behaviors and OOHP at discharge failed to reach statistical significance. However, in examining the relationship between placement status at discharge and *Global Family Situation* scores, we found that the average *Global Family Situation* score for children with OOHP was significantly higher than their counterparts at home with parents ($OOHP_M = 112.47$ versus $In\text{-}home_M = 103.58$; $F = 4.39$, $p < .05$).

Table 2
Child and family variables associated with placement at discharge.

Variable	Out-of-home (n = 56) n (%)	In-home (n = 291) n (%)	Statistical value
Age — Mean (SD)	12.77 (2.61)	11.80 (2.57)	$F = 6.57^{*}$
Gender			$\chi 2 = 0.61$ ns
Male	41 (15.3)	227 (84.7)	
Female	15 (19.0)	64 (81.0)	
Placement stratus at admission			$\chi 2 = 232.19^{***}$
Out-of-home placement	45 (84.9)	8 (15.1)	
In-home with parents	8 (2.7)	283 (97.3)	
Dual diagnosis			$\chi 2 = 0.01$ ns
No	42 (16.2)	217 (83.8)	
Yes	14 (15.9)	74 (84.1)	
Child welfare status			$\chi 2 = 195.88^{***}$
Child welfare involvement	40 (87.0)	6 (13.0)	
Parent is child's guardian	16 (5.3)	284 (94.7)	
Deliberate self-harm			$\chi 2 = 5.74^{*}$
No	24 (12.8)	164 (87.2)	
Yes	24 (23.8)	77 (76.2)	
Physical abuse			$\chi 2 = 19.10^{***}$
No	21 (10.1)	186 (89.9)	
Yes	26 (31.0)	58 (69.0)	
Sexual abuse [a]			$\chi 2 = 0.81$ ns
No	41 (15.5)	223 (84.5)	
Yes	6 (22.2)	21 (77.8)	
Neglect			$\chi 2 = 42.00^{***}$
No	19 (8.5)	204 (91.5)	
Yes	28 (41.8)	39 (58.2)	
Substance use [a]			$\chi 2 = 0.07$ ns
No	42 (16.5)	212 (83.5)	
Yes	5 (18.5)	22 (81.5)	
Witnessed domestic violence			$\chi 2 = 10.61^{***}$
No	12 (8.8)	125 (91.2)	
Yes	35 (22.9)	118 (77.1)	
Externalizing behavior Mean (SD)	84.41 (8.21)	81.90 (10.33)	$F = 2.67$ ns
Internalizing behavior Mean (SD)	69.15 (17.92)	70.27 (15.05)	$F = 0.21$ ns
Global family situation Mean (SD)	112.47 (23.35)	103.58 (22.75)	$F = 4.39^{*}$

Note. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$, ns = not significant.
[a] Fisher's exact test.

Table 3
Child and family variables associated with placement at 6-months post discharge.

Variable	Out-of-home (n = 64) n (%)	In-home (n = 138) n (%)	Statistical value
Age — Mean (SD)	12.30 (2.89)	11.83 (2.35)	F = 1.51 ns
Gender			$\chi 2 = 1.89$ ns
Male	47 (29.4)	113 (70.6)	
Female	17 (40.5)	25 (59.5)	
Placement status at admission			$\chi 2 = 41.63^{***}$
Out-of-home placement	25 (80.6)	6 (19.4)	
In-home with parents	35 (21.9)	125 (78.1)	
Dual diagnosis			$\chi 2 = 7.86^{**}$
No	33 (25.0)	99 (75.0)	
Yes	31 (44.3)	39 (55.7)	
Child welfare status			$\chi 2 = 26.64^{***}$
CAS/Crown ward	17 (81.0)	4 (19.0)	
Parent is child's guardian	43 (25.4)	126 (74.6)	
Deliberate self-harm			$\chi 2 = 0.09$ ns
No	29 (38.2)	47 (61.8)	
Yes	8 (34.8)	15 (65.2)	
Physical abuse			$\chi 2 = 1.20$ ns
No	27 (34.6)	51 (65.4)	
Yes	10 (47.6)	11 (52.4)	
Sexual abuse [a]			$\chi 2 = 1.00$ ns
No	33 (37.9)	54 (62.1)	
Yes	4 (33.3)	8 (66.7)	
Neglect			$\chi 2 = 7.32^{**}$
No	22 (29.7)	52 (70.3)	
Yes	15 (60.0)	10 (40.0)	
Substance use [a]			$\chi 2 = 0.63$ ns
No	35 (36.8)	60 (63.2)	
Yes	2 (50.0)	2 (50.0)	
Witnessed domestic violence			$\chi 2 = 10.48^{***}$
No	14 (24.1)	44 (75.9)	
Yes	23 (56.1)	18 (43.9)	
Externalizing behavior Mean (SD)	70.23 (9.84)	70.74 (11.35)	F = 0.05 ns
Internalizing behavior Mean (SD)	61.61 (16.62)	61.90 (16.30)	F = 0.01 ns
Global family situation mean (SD)	83.13 (31.42)	85.04 (22.96)	F = 0.09 ns

Note. *p<.05, **p<.01, ***p<.001, ns = not significant.
[a] Fisher's exact test.

3.4. Predictors of OOHP at 6-months post-discharge

In Table 3, we present the results on child and family variables associated with OOHP at 6-months post-discharge. There were slight changes in the magnitude of the significant values with some variables exceeding the p<.05 threshold. Age, gender, deliberate self-harm, physical abuse, sexual abuse, substance use, externalizing and internalizing behavior, and *Global Family Situation* score were all not associated with OOHP at 6-months post discharge. However, we found OOHP at 6-months post-discharge to be significantly predicted by the following: OOHP at admission, having a dual diagnosis, being involved with child welfare, experiencing neglect, and witnessing domestic violence. Four out of five children who were out-of-home at admission compared to one out of five children in-home with parents at admission were in OOHPs at 6-months post-discharge ($\chi^2 = 41.63$; p<.001). A little over 44% of children with dual diagnosis compared to 25% of children with no dual diagnosis were in OOHP at 6-months post-discharge ($\chi^2 = 7.86$; p<.01). Similar to the results on OOHP at discharge, we found that the proportion of children with child welfare involvement that were placed out-of-home at 6-months post-discharge (81.0%) was significantly greater than the proportion of children with parents as the guardian that were placed out-of-home at discharge (25.4%) ($\chi^2 = 26.64$; p<.001). Sixty percent of children who were neglected compared to 30% of children who were not neglected were in OOHP at 6-months post-discharge ($\chi^2 = 7.32$; p<.01). Lastly, more than half (56%) of children that witnessed domestic violence compared to 24% that did not witness domestic violence were in OOHP at 6-months post-discharge ($\chi^2 = 7.32$; p<.01).

4. Discussion

This study examined predictors of OOHP following RT for a sample of 383 children. The children examined had severe behavioral problems, with mean externalizing and internalizing scores in the clinical range. Close to 40% had engaged in self-harming behavior, compared to about 17% in the general Canadian youth population, demonstrating the severity of mental health problems in this particular sample (Nixon, Cloutier, & Jansson, 2008).

A number of child and family characteristics were found to be associated with OOHP including: (1) OOHP at admission, (2) dual diagnosis, (3) child welfare involvement, (4) a history of abuse/neglect, (5) deliberate self-harm, (6) the presence of domestic violence, (7) poor family situation, and (8) age. As hypothesized, prior placement history was predictive of placement status at discharge and follow-up from RT, which is also supported by previous research (Baker et al., 2005; Farmer et al., 2009). It is possible that some children admitted from home with parents may have problematic family situations, experienced various forms of abuse, or witnessed domestic violence that may lead to placements within foster homes or in RT. It is also probable that for some of these children, their guardian is the CWS; hence, they may not have parents at home to return to. In support of this, children who had experienced abuse and/or neglect were more likely to be discharged to an OOHP, which is also consistent with previous research (Barber, Delfabbro, & Cooper, 2001; Courtney, Piliavin, Grogan-Kaylor, & Nesmith, 2001; Sunseri, 2004).

As expected, family-level variables were predictive of placement status. At discharge, family situation was found to predict OOHP and domestic violence was found to predict OOHP at discharge and follow-up. Similar results have been found elsewhere (e.g., Farmer et al., 2009; Sunseri, 2004). The presence of abuse/neglect and violence within the home are grounds on which child welfare agencies may remove children from the home due to safety concerns related to recurrent abuse cycles. More generally, children are removed from their homes when the family environment places them at risk for unhealthy development (e.g., neglect). It is probable that children in OOHP at admission are more likely to have histories of abuse and family violence and come from a strained family environment than children who reside in-home prior to RT, which supports the previously stated findings that OOHP at admission predicts OOHP following RT.

Having a dual diagnosis was also associated with a higher likelihood of OOHP at 6-months post-discharge only. Research has consistently found that children with a developmental disability and mental health disorder are at risk for OOHP, indicating the importance of dual diagnosis as a predictor variable (Allen et al., 2007). Children with dual diagnosis may respond well to RT and their families may also feel rejuvenated after receiving respite while their child received treatment (Stewart, Kam, & Baiden, in press). This may partially explain why having a dual diagnosis did not predict OOHP at discharge. However, it is also possible that over time, parents of children with dual diagnosis may no longer be able to cope with the difficulty of raising a child with dual diagnosis, and thereby turn to treatment at a residential facility. This finding highlights the importance of continued family support services even after residential treatment is completed.

Lastly, older age was found to predict OOHP at discharge, which research examining child welfare populations and children with developmental disabilities has also found (Barth et al., 2007; Farmer et al., 2008). For example, Barth et al. (2007) found that the strongest predictor of placement instability for children in the CWS was being older than 11 years. Younger children are more dependent on their family and have less mobility than older children who may choose to leave unsafe homes themselves. In addition, young children are smaller and may be more manageable for parents than adolescents who have mental health and developmental disabilities. Also, some parents may feel more overwhelmed and unable to cope with older children, resulting in OOHP. This may partially explain why older

children in this study were more likely to live in OOHP. It is also possible that the younger children respond better to RT and are more likely to be discharged home following treatment. However, the child's symptoms may worsen once returned home, and old patterns may resurface, resulting in an OOHP at follow-up time periods. This highlights the importance of involving family in treatment.

Contrary to expectations, behavioral problems and child substance abuse did not predict OOHP. However, approximately 85% of the sample presented with behavioral problems, which reflects the tertiary nature of this sample. The homogeneity of this sample in terms of severity of behavioral problems may be a reason for this finding. In regards to substance use, no substance use was reported for about 90% of the children, suggesting a low base rate for this specific mental health issue. The relatively small number of children who use substances may also be attributed to the fact that children younger than 10 years are unlikely to use substances and that caregivers, who are often unaware of their children's substance use, reported this information.

4.1. Limitations

Placement information at 6-months post-discharge was not originally collected during the assessment period. Research assistants retrospectively contacted previous clients to gather this outcome data via telephone interviewing. As a result, there were relatively high amounts of missing information between discharge and follow-up. A potential bias may have occurred, as it is possible that it was difficult to contact certain families due to the transient nature of certain families (e.g., frequent moves/relocations). However, demographic information of children whose placement information at 6-months post-discharge was known was comparable to those whose placement information was unknown, indicating that this limitation likely has minimal effect on the results. Secondly, the sample was obtained from a tertiary care facility for children with complex mental health and developmental needs. It is possible that symptom severity was significantly higher than other children placed in RT. Hence, generalizability of the results may be limited. Thirdly, there was no control group. Although a control group would have allowed for the comparison of children in treatment to similar children on a waitlist and increased the validity of the study, placing children on a waiting list with complex needs and denying them immediate treatment would be unethical. Another limitation of this study is that most of the children involved in this study were in a relatively short-term RT facility, which differs from many other RT centers where children may have average stays of 1 year or more. This may limit the generalizability findings to other RT centers. In addition, the length of stay in treatment for children varied considerably and may be a confounding factor in the current study. Also, the BCFPI is not normed for children with intellectual disabilities and therefore limit the collection of certain types of behaviors more relevant for this subpopulation (e.g., pica). Lastly, this study did not conduct a multivariate analysis to determine whether the findings reported in this study would still remain significant when other variables are controlled. This is an important area of research for future studies.

4.2. Clinical implications

This study has important implications for clinicians working with children with mental health problems and dual diagnosis in RT, as well as other OOHP settings. The findings suggest that currently RT could better support needs related to OOHP risk factors (e.g., dual diagnosis) to reduce future OOHP. Given that prior OOHP was a key predictor of continued placement instability, especially for those with developmental disabilities, alternative treatment approaches (e.g., 8 am to 8 pm day treatment programs) may be more advantageous for the family and service sector. This may provide support to the family to enhance the likelihood that the child could remain in the home or a stable foster care placement for children without available families, while receiving treatment, and at the same time, would result in less costly treatment options for the service sector.

Services focused on the risk factors identified should be detailed in RT plans for all children, requiring a larger focus on systemic practices. Families should be involved in the planning of treatment longitudinally while addressing family risk factors, such as domestic violence and abuse, which would aid in the maintenance of treatment gains and potentially reduce drop out rates (Affronti & Levison-Johnson, 2009; Hair, 2005). Community and family education about the detrimental and long-lasting impact of domestic violence is essential to break the intergenerational abuse cycle (Baiden, Stewart, & den Dunnen, in press). This is in line with the current shift in the CWS to a focus on family preservation and treatment of the family unit, rather than child protection, to prevent future OOHP and child maltreatment (Lindsey, Martin, & Doh, 2002).

Developing in-depth care plans prior to admission, based on exhibited child/family risk factors, to enhance discharge planning and prevent placement instability is essential. Children in OOHP use mental health services at rates approximately five to eight times those of other vulnerable populations of children at risk, such as those who live in poverty, demonstrating the need for earlier and more targeted assessment to prevent long term mental health problems (Landsverk, Garland, & Leslie, 2002). This reinforces the need for proper identification of child and family needs before difficulties become entrenched and intractable. Care plans developed in conjunction with community partners and parents/guardians would ensure that all parties are aware of the issues, goals, and outcomes of treatment, including explicit identification of prevention strategies for OOHP. Such plans would also increase the supports available (e.g., booster sessions, respite) for children and families once treatment is complete (Affronti & Levison-Johnson, 2009; Hair, 2005; Mathias, Eckel, & Hirdes, 2011; Stewart, Currie, Arbeau, Leschied, & Kerry, in press; Stewart et al., 2010). These care planning guidelines incorporate best practice initiatives to reduce waiting lists and to enhance triaging to proper placement options across multiple sectors. This detailed assessment information can also assist with organizational issues (e.g., quality assurance and accreditation) and facilitate collaborations between organizations.

5. Conclusions

The reported findings herein demonstrate the importance of comprehensive assessments at admission and treatment plans to address risk factors and prevent placement instability for children in RT. A systemic approach is imperative in promoting resilience for children at risk, incorporating family intervention and community services. For children at risk of OOHP, early identification, strategic treatment planning, and comprehensive discharge options with extensive follow-up are important. The development of an integrated, cross-sectoral standardized suite of instruments such as the international interRAI Child and Youth assessment system (Stewart et al., 2012) would aid in providing more effective assessment and treatment plans for children at risk of OOHP. This assessment system could enhance evidence-based practice, provide additional data to identify factors associated with treatment sustainability, and provide organizations and service sectors with more comprehensive knowledge for service system transitions for children with complex mental health presentations.

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