

Predictors of placement instability for sexually abused children served by child protection services

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ABSTRACT

For children placed in out-of-home care, experiencing placement instability is associated with deleterious mental health effects. As children in out-of-home care due to sexual abuse are generally found to experience more placement instability than those who never experienced sexual abuse, the main objective was to determine risk factors for their heightened risk of placement instability. A secondary objective was to determine whether prior mental health problems are associated with their risk of placement instability. This study combined data from public health services and a child protective agency. Two hundred and two sexually abused children who experienced out-of-home care at least once between 2001 and 2021 were included. A Cox proportional hazard regression analysis was performed to determine whether sex, age, socioeconomic status, type of first out-of-home care setting, and mental health disorder diagnoses before subjects' placement were associated with subsequent out-of-home placement instability. Analyses suggest that sexually abused children placed in out-of-home care face a greater risk of placement instability when they received a prior diagnosis of an internalizing disorder and when they were first placed in foster rather than kinship care. Understanding which factors may predispose sexually abused children in out-of-home care to experience greater placement instability can help practitioners and program implementers identify which placed children may need increased support. Attachment-based interventions could prevent placement disruptions and their associated mental health consequences.

1. Introduction

By and large, research regarding child sexual abuse has primarily centred on prevalence, risk factors, and short and long-term consequences, while child protection research examining children who experienced sexual abuse tend to focus on investigation, prosecution, and treatment. However, there is surprisingly only scarce information about the out-of-home placement trajectories of these children when they receive child protection services, and even fewer studies have sought to understand what leads these children to experience multiple placement moves. However, it would be of particular importance to prevent this phenomenon, especially for children who have already faced the significant traumatic experience of sexual abuse. This study thus attempts to address this gap in the literature by examining a variety of risk factors associated with placement instability for children who were sexually abused, with the eventual goal of helping practitioners identify which of these children may need increased support when they

are placed in out-of-home care.

2. Background

Child sexual abuse is a prominent worldwide issue, as international meta-analytic data suggest that 18 % of women and 8 % of men report having been sexually abused before age 18 (Stoltenborgh et al., 2011, 2015). In Quebec, the context of this study, when child sexual abuse is reported to authorities and is deemed substantiated, child protective services can remove children from their family environment and place them into out-of-home care if their security and development are compromised. Approximately 17 % of children who receive child protective services concerning their reported sexual abuse are placed (Esposito et al., 2017).

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2.1. Psychological consequences of childhood sexual abuse

Although not all sexually abused children develop mental health difficulties (Collin-Vézina et al., 2013; Sawyer & Hansen, 2014), child sexual abuse is a non-specific risk factor for greater subsequent mental health service use (Cutajar et al., 2010; Daigneault et al., 2017; Guha et al., 2019) and numerous mental health disorders (Ensink et al., 2020; Hillberg et al., 2011; Maniglio, 2009; Tyler, 2002). In particular, some studies report that sexually abused children tend to present higher levels of internalized and externalized problems than children who have experienced other forms of abuse (Crea et al., 2018; Lewis et al., 2016; McWey et al., 2010). A potential explanation is that sexually abused children often face multiple co-occurring forms of maltreatment (Vachon et al., 2015). Indeed, Cyr et al. (2012) find that in a sample of children followed by child protective services, all of the children who experienced sexual victimization also experienced another category of victimization in the past year. According to the cumulative risk theory, cumulative exposures exacerbate each maltreatment effect (Masten & Wright, 1998). In turn, these exacerbated effects can lead to a greater risk of developing behavioral problems and functional impairments (Layne et al., 2014; Liming et al., 2021). Likewise, Finkelhor et al. (2009) find that the lifetime number of victimizations experienced by a child correlates closely with their level of psychological distress. Thus, due to their high likelihood of multiple types of maltreatment experiences, sexually abused children may require increased support in out-of-home care settings and may present different patterns of out-of-home placement trajectories compared to children who experienced other forms of abuse.

2.2. Out-of-home care placement trajectories of sexually abused children

Little is known regarding the placement trajectories of sexually abused children, as studies seeking to understand the association between child maltreatment and out-of-home care placements often categorize sexual abuse under the general rubric of maltreatment. Only one study, to our knowledge, has examined multiple characteristics of the placement trajectories of sexually abused youth compared to those who experienced other forms of maltreatment (Esposito et al., 2017). The authors found that when sexually abused children were placed, a longer period separated them from reunification with their families than children who were placed for a different maltreatment reason. Also, when sexually abused children had severe behavioral problems, they were at greater risk of being placed than their counterparts with similar behavioral problems who were not sexually abused. However, it is likely that other confounding factors beyond sexual abuse may explain these differences.

Other studies have compared a specific characteristic of sexually abused children's placement trajectories to that of children who experienced other forms of maltreatment: placement instability, which occurs when children in out-of-home care change placement settings repeatedly. Numerous studies have found that sexually abused children in out-of-home care tend to experience greater placement instability than those who experienced other forms of maltreatment (Crea et al., 2018; Eggertsen, 2008; Holland & Gorey, 2004; James et al., 2004; Nalavany et al., 2008; Osborn et al., 2008). While there are limited explanations for this increased placement instability, one theory is that sexually abused children likely have more difficulty forming attachment bonds with adults responsible for them in their placement settings due to their more likely emotional and behavioral problems, which, in turn, may explain their more frequent placement interruptions (Nalavany et al., 2008). This explanation is consistent with findings that sexual abuse increases children's vulnerability to disorganized and insecure forms of attachment (Cyr et al., 2010; Ensink et al., 2020; Fresno et al., 2014; van Hoof et al., 2015). Nevertheless, other studies have not found that sexual abuse is associated with greater risks of placement instability (Esposito et al., 2017; McGuire et al., 2018).

2.3. Psychological consequences of placement instability

Despite some inconsistencies in the literature regarding the types of abuse associated with greater placement instability, its damaging effects on children's mental health warrants attention (James et al., 2004; McGuire et al., 2018; Mishra et al., 2020; Osborn et al., 2008; Rubin et al., 2007). For instance, Koh and colleagues (2014) found that children who lived in at least three different out-of-home care placement settings had more psychiatric diagnoses than those who resided in less than three placement settings, despite their similar number of diagnoses pre-placement. Moreover, qualitative studies examining the perspectives of adults who had been placed in their youth find that placement instability, especially when it is rapid, leads to children feeling rejected, unwanted, in danger, and powerless (Chambers et al., 2018; Chambers et al., 2020; Hyde & Kammerer, 2009; Rostill-Brookes et al., 2011; Skoog et al., 2015; Unrau, 2007).

2.4. Placement instability risk factors

Several risk factors of placement instability for children in out-of-home care have been identified. Administrative and policy decisions tend to explain most first and second placement changes (James, 2004). Children from socioeconomically disadvantaged areas tend to experience more unstable placements (Andersen, 2014; Esposito et al., 2017), while children in out-of-home care who have a greater number of successive caseworkers face a greater likelihood of multiple placement changes (Eggertsen, 2008; Rock et al., 2015). Additionally, the type of placement setting has been found to contribute to placement instability. Children placed in kinship care (i.e., with family members other than their parents) tend to experience the least placement changes (James, 2004; Jedwab et al., 2019; Konijn et al., 2019; Rock et al., 2015; Winokur et al., 2018), followed by those placed in group homes, foster families, and emergency accommodations (Connell et al., 2006).

Personal risk factors for placement instability have also been identified, such as older age at placement (Barber & Delfabbro, 2004; Eggertsen, 2008; Esposito et al., 2014; Jedwab et al., 2019; Konijn et al., 2019; Park & Ryan, 2009; Rock et al., 2015) and being a male (Esposito et al., 2014; Jedwab et al., 2019; Park & Ryan, 2009), although sex is not always a significant factor (Eggertsen, 2008; Konijn et al., 2019). Behavioral problems manifesting prior to a child's placement in out-of-home care have also been investigated. Meta-analyses studying risk of placement disruption find that behavioral problems significantly predict subsequent placement instability (Konijn et al., 2019; Oosterman et al., 2007), while additional reviews and more recent studies also support this association (Eggertsen, 2008; Jedwab et al., 2019; Rock et al., 2015; Vreeland et al., 2019).

Beyond behavioral problems and their associated symptoms, children diagnosed with a mental health disorder tend to face greater placement instability (Koh et al., 2014). However, it remains unclear whether specific mental health disorders pose a heightened risk. Some findings nevertheless suggest that children with conduct disorders (Ward & Skuse, 2001), attachment disorders (Strijker et al., 2008), depression (Barth et al., 2007), and clinically significant dissociation and trauma symptoms (Akin et al., 2021; Clark et al., 2020; Kisiel et al., 2020) are more at risk of experiencing placement instability. Moreover, meta-analytic findings suggest that externalizing problems have a greater influence on the risk of experiencing placement instability than internalizing problems (Konijn et al., 2019).

Only one study to our knowledge has examined placement instability risk factors for sexually abused children more specifically, finding that older age at first placement, having requested youth criminal justice services, and facing more socioeconomic disadvantages were risk factors for this subgroup (Esposito et al., 2017). Moreover, it was found that sexually abused youths' behavioral problems did not influence their risk of experiencing placement instability, while this was the case for placed youth who were not sexually abused (Esposito et al., 2017).

2.5. Prior study limitations

Few studies have compared how different mental health disorder diagnoses are associated with placement instability, often studying mental health as an overarching construct rather than distinguishing between different disorders and symptom profiles. Additionally, little is known regarding which factors predict greater and more rapid placement instability for children who experienced sexual abuse, although they represent a subgroup generally found to experience greater placement instability and they largely present more mental health difficulties than children placed for other reasons, thus justifying the importance of examining this group distinctly.

2.6. Purpose of the study

The main objective of the present study was to determine which combination of factors could predict a greater risk and more rapid onset of placement instability for sexually abused children in out-of-home care. A secondary objective was to determine which types of mental health disorders diagnosed before these children's first out-of-home care placement and their associated health service use frequency and comorbidity were risk factors for subsequent placement instability. No specific hypotheses were set forth as information is scarce concerning the placements of sexually abused children, and we cannot rely entirely on studies of placed children in general since sexually abused children form a distinct at-risk subgroup. Understanding which factors predispose sexually abused children to experience placement instability can help identify children that may need increased support once placed to prevent multiple placement disruptions and their associated deleterious mental health effects.

3. Materials and methods

The present study employed a longitudinal observational design, an ideal choice to document associations underpinned by causal mechanisms (Black, 1996), especially when an experimental study cannot be conducted for practical and ethical reasons. Four ethical committees granted authorization certificates for obtaining administrative data before beginning the study: the child protection agency, the information commissioner's office, the public health services authority, and the first author's university ethical review board.

3.1. Procedures and sample

Three data sources were merged to create the dataset used in this study: (1) clinical-administrative data from the Child Protective Service (CPS) of a large Canadian city collected from each child's very first service request with the CPS – the earliest service request being March 8th, 1993 – until October 14th, 2021, which was accessible in the *Plateforme informationnelle pour le bien-être de l'enfant (PIBE)*; and medical-administrative data collected between January 1st, 1996, and March 31st, 2013, from (2) the area's public health services authority (RAMQ); and (3) the Ministry of Health and Social Services (MHSS).

All children for whom a sexual abuse report was substantiated between January 1st, 2001, and December 21st, 2010, at the CPS of a large Canadian city were initially selected for a larger study ($n = 955$). Deterministic matching between CPS and administrative public health services data using each subject's health insurance number, full name, address, and date of birth was successful for 92 % ($n = 882$) of the sample. For the current study, a sub-sample of subjects was retained, as only those who had been placed in out-of-home care were relevant to the study objective. Thus, the subjects who were placed in out-of-home care at least once were identified ($n = 321$, 36 %). An initial out-of-home placement was defined as a subject's first entry into a placement setting outside of their family environment for at least 72 h following an initial maltreatment investigation.

However, 70 % ($n = 224$) of this sample was born before January 1st, 1996, the date at which mental health medical data for this study is available, meaning that the entirety of these children's medical data before their first placements was not accessible. Since only 2 % of the mental health diagnoses occurred in the first five years for subjects whose complete medical data were available (i.e., those born after January 1st, 1996), it was deemed acceptable to include subjects for whom medical data was available from ages five and older in the present study. Therefore, only the subjects born on or after January 1st, 1991, were included ($n = 202$). This final selection enabled maintaining an appropriate sample size while limiting potential missing information for mental health diagnoses and services to 2 %. It was found that the subjects in the final sample were not statistically significantly different from others who were placed in out-of-home care but who were excluded in terms of sex ($X(1) = 0.661, p = .416$) and socioeconomic status ($t(319) = -1.495, p = .136$). However, it was found that subjects included in the final sample were likely to be older when first placed in out-of-home care than those who were excluded from the final sample ($t(319) = 4.826, p < .001$). Fig. 1 presents a flow chart detailing how the final sample was built. Table 1 provides the descriptive characteristics of the final sample. The statistical comparison of these characteristics between children who experienced placement instability and those who did not are provided in Table 3.

As for the ranges of length-of-follow-up, data was examined between March 8th, 1993 (i.e., the earliest first service request to CPS in the sample) and October 14th, 2021 (i.e., the end of the study period). The ranges of length-of-follow-up varied according to the date of each subject's first service request with CPS and whether they experienced placement instability or reached the age of 18. For subjects who experienced placement instability, the range between their first service request with CPS until the date at which they experienced placement instability was from 101 to 6292 days, with an average of 1829.53 days ($SD = 1450.69$). For those who did not experience placement instability, the range of length-of-follow-up went from 289 to 6552 days, with an average of 4185.76 days ($SD = 1532.78$).

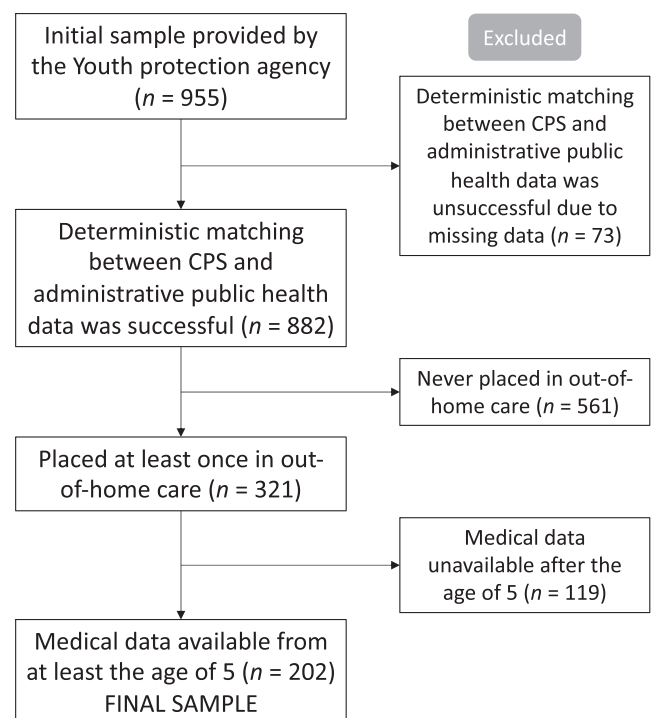


Fig. 1. Flow chart documenting inclusion criteria, exclusion criteria, and the number of subjects included in the final sample.

Table 1
Descriptive characteristics of the sample (n = 202).

	Total (n = 202)		No placement instability (n = 83, 41 %)		Placement instability (n = 119, 59 %)	
	n	%	n	%	n	%
Sex						
Female	140	69 %	63	76 %	77	65 %
Male	62	31 %	20	24 %	42	35 %
Age at first placement						
0–12 years	143	71 %	48	58 %	95	80 %
13–17 years	59	29 %	35	42 %	24	20 %
Comorbidity of mental health disorders pre-placement						
0 diagnoses	112	55 %	44	53 %	68	57 %
1–2 types of diagnoses	62	31 %	26	31 %	36	30 %
3–6 types of diagnoses	28	14 %	13	16 %	15	13 %
Type of initial placement setting						
Kinship care	27	13 %	15	18 %	12	10 %
Foster care	127	63 %	42	51 %	85	71 %
Residential care or other	48	24 %	26	31 %	22	19 %
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Material deprivation	53.00	26.30	53.16	26.66	52.90	26.15
Social deprivation	62.83	29.71	62.92	28.39	62.77	30.72
Number of CPS personnel involved with the child pre-placement	9.40	8.90	11.01	9.599	8.28	8.229
Number of mental health consultations pre-placement	7.57	20.01	11.60	27.70	4.76	11.39

3.2. Measures

3.2.1. Independent variables

Sociodemographic data. Subjects' age and sex at the time of their first out-of-home placement were documented based on the CPS data. Age at first placement was measured as a dichotomous variable by categorizing each child as initially being placed between ages (1) 0 and 12 years or (2) 13 and 17 years. Sex was a nominal variable, with the female sex as the reference group. Subjects' socioeconomic status was estimated with the RAMQ data, using their neighbourhood's material and social deprivation indexes based on their respective postal codes when sexual abuse was first reported. These two percentile indices were calculated according to the 2006 assignment program's June 1st, 2009 version (Hamel, 2009; Pampalon, 2010). A higher score indicated greater socioeconomic disadvantage.

Youth criminality preceding the first out-of-home placement. Whether youth received a request for youth criminal justice services before first being placed was measured as a nominal variable based on the CPS data. A request was considered indicative of severe behavioral problems.

Type of initial placement setting. The first type of out-of-home care setting children were placed in for over 72 h was computed as a categorical variable, comprised of three types of placement settings: (1) kinship care; (2) foster care; (3) rehabilitation center or another type of placement setting (e.g., an intermediate resource). This variable was based on CPS data.

The number of CPS personnel involved with the child. The number of CPS personnel assigned to each subject's case before their first placement was estimated based on the employees' identification numbers in each child's file, available in the CPS data. CPS personnel included caseworkers and other personnel involved in different steps of the reporting, assessment, and follow-up services.

Mental health before the first out-of-home placement. Three indicators were examined to estimate the mental health of subjects before their first placement based on the RAMQ-MHSS data: (1) types of

mental health diagnoses received pre-placement, (2) frequency of mental health service use pre-placement, and (3) comorbidity of mental health disorder diagnoses pre-placement. First, to determine what types of mental health problems subjects had before their first placement, mental health disorder diagnoses were divided into six categories based on the International Classification of Diseases (ICD-10) codes (see Table 2 for sample frequencies and descriptions of mental health disorder diagnoses and Table 3 for the statistical comparison between children who experienced placement instability and those who did not) to reflect the types of mental health difficulties associated with the risk of placement instability in the literature: (1) externalizing disorders; (2) internalizing disorders; (3) stress-related disorders; (4) intellectual disabilities or developmental disorders; (5) other childhood disorders; (6) other mental health disorders. Six dichotomous variables indicating whether the child had received each type of diagnosis before being placed for the first time were created. Second, a continuous variable measuring the extent of children's mental health service use was calculated based on the number of times a subject consulted outpatient services or was hospitalized for mental health problems before being placed for the first time. Finally, to measure the comorbidity of subjects' mental health problems before their first placement, a categorical variable indicating whether the subjects received (1) zero, (2) one or two, or (3) three or more types of mental health diagnoses based on the six identified categories (see Table 2) before their first placement was created.

3.2.2. Dependent variable: Placement instability

Placement instability was assessed by measuring the total number of placement changes subjects experienced, based on the CPS data. Placement changes were only considered if placements lasted longer than 72 h to account for respite or emergency placements that were not part of a subject's long-term plan. Earlier findings from Esposito et al. (2014) suggest that the first and second placement moves tend to happen quickly and are often the result of a child moving from an emergency placement to a more suitable longer term home. For children who change placements a maximum of two times, the risk of placement instability tends to stabilize over time, while for those who change placement settings a third time, the risk of placement instability is found to continuously increase over time, indicating the beginning of an unstable placement trajectory (Esposito et al., 2014). Accordingly, James' (2004) findings suggest that first and second placement changes are usually explained by administrative and policy reasons rather than individual factors, which were more emphasized in the current study. Indeed, first and second placements often confound moves related to urgent temporary placements and administration of placement resources. Thus, based on the total number of placement changes, a dichotomous measure of placement instability was created according to whether subjects experienced (0) less than three placement changes or (1) three or more placement changes (i.e., placement instability).

The follow-up period for the dependent variable starts from the date of each child's first placement into out-of-home care to either the date of the third placement change, for those who experienced at least four placement settings, or for those who did not experience four placement settings, to the end of the study period (October 14th, 2021) or the child's 18th birthday, whichever came first.

3.3. Analytic method

A Cox proportional hazard regression analysis (Cox, 1979) was used to examine which factors contribute to the risk that a child will experience at least three placement changes after their initial placement. This type of analysis has two important functions (Singer & Willett, 2003): it allows for determining the speed at which an event occurs and the factors associated with its occurrence, as well as for the analysis of censored cases that do not experience the event investigated during the study (i.e., placement instability). The dataset was built, transformed,

Table 2
Categories of mental health disorders and prevalence in the sample (n = 202).

Type of mental health disorder	Mental health disorders included within the category	ICD-10 codes	Number of children with this type of mental health diagnosis pre-placement		
			Total n	No placement instability	With placement instability
Externalizing disorders	Attention-deficit hyperactivity disorders; conduct disorders; mental and behavioral disorders due to psychoactive substance use	F900 to F929; F10-F19	47 (23 %)	25 (30 %)	22 (19 %)
Internalizing disorders	Emotional disorders with onset specific to childhood; mood [affective] disorders; phobic anxiety disorders; other anxiety disorders; obsessive-compulsive disorder; somatoform disorders; other nonpsychotic mental disorders	F930 to F939; F300 to F399; F400 to F429; F450 to F489	55 (27 %)	20 (24 %)	35 (29 %)
Stress-related disorders	Reaction to severe stress and adjustment disorders; dissociative and conversion disorders	F430 to F439; F440 to F449	11 (5 %)	5 (6 %)	6 (5 %)
Intellectual disabilities and/or developmental disorders	Pervasive and specific developmental disorders; intellectual disabilities	F800 to F89; F70 to F79	26 (13 %)	15 (18 %)	11 (9 %)
Other childhood disorders	Disorders of social functioning with onset specific to childhood and adolescence; tic disorder; other behavioral and emotional disorders with onset usually occurring in childhood and adolescence	F940 to F949; F950 to F959; F980 to F989	27 (13 %)	11 (13 %)	16 (13 %)
Other mental health disorders	Mental disorders due to known physiological conditions; schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders; behavioral syndromes associated with physiological disturbances and physical factors; disorders of adult personality and behavior; unspecified mental disorder	F00 to F09; F20 to F29; F50 to F59; F60 to F69; F99	29 (14 %)	14 (17 %)	15 (13 %)

and analyzed using SPSS version 27.

The analytic process was comprised of four main steps. First, the proportional hazards assumption was assessed by comparing estimated $-\ln(-\ln)$ survival curves. Second, to ensure that there is no linearity among covariates, an ordinary least squares linear regression was conducted with covariates used in the final hazard models, to determine the variance inflation factor estimates (VIF). If the values of VIF exceed 5, they are regarded as indicating multi-collinearity (Frees, 2004). The VIF estimates ranged from 1.071 to 1.711, indicating no issues of linearity between covariates in the models. Third, the Cox proportional hazards model was examined to determine which covariates predicted the cumulative risk that a child will have experienced at least three placement changes. Finally, survival analyses were conducted with the Kaplan-Meier method (Kaplan & Meier, 1958) to measure to what extent the speed at which children experienced placement instability was affected by relevant covariates.

4. Results

4.1. Sample characteristics

The sample studied included 202 children placed in out-of-home care by CPS. Of the overall cohort of children, 59 % ($n = 119$) changed placements three or more times, thus experiencing placement instability according to the definition used in this study. Conversely, 41 % ($n = 83$) changed placements less than three times within the follow-up period. Subjects experienced an average of 6.32 different placement settings ($SD = 5.94$) during the study period. More female (69 %) than male (31 %) children were included in the sample, and most children were initially placed into out-of-home care before age 13 (71 %). Children's first placement setting was either foster care (63 %), residential care (24 %), or kinship care (13 %). Regarding their mental health before being placed for the first time, 45 % of children had received at least one mental health disorder diagnosis, and the average number of consultations these children had for mental health problems before being placed was 7.57 ($SD = 20.01$). Regarding the mental health disorder diagnoses these children received before being placed for the first time, the most frequent types were internalizing disorders (27 %) and externalizing disorders (23 %). Table 2 presents the frequencies of each type of mental health disorder diagnosis subjects received before being placed, while the statistical comparison of the frequency of these disorders between

children who experienced placement instability and those who did not are provided in Table 3.

4.2. Preliminary analyses

As the final sample size was relatively small ($n = 202$), creating a parsimonious model using only some of the initial covariates was deemed necessary to maintain appropriate power. The rule of thumb in Cox models is that there should be a minimum of ten events per covariate (Peduzzi et al., 1995). Considering the exploratory nature of the present study, univariate Cox regressions were completed with each potential covariate to select the most relevant ones (see Table 3). Those with a p -value below 0.20 (diagnosis of an internalizing disorder pre-placement, type of initial placement setting, and diagnosis of an intellectual disability or developmental disorder pre-placement) were then retained for the final Cox proportional hazards model. Other covariates with a p -value above 0.20 that were particularly relevant in the literature and reflected the ecological factors associated with placement instability were also retained (age at first placement, sex, material deprivation, social deprivation, and diagnosis of an externalizing disorder pre-placement). Although stress-related disorders and youth criminality have been associated with placement instability in the literature (Akin et al., 2021; Clark et al., 2020; Kisiel et al., 2020; Esposito et al., 2017), these variables were not selected for the final Cox proportional hazards model as their frequencies in the sample were very small (respectively $n = 11$ and 6).

4.3. Cox regression results

Table 4 presents the multivariate Cox proportional hazard regression estimates for the risk of experiencing placement instability (i.e., changing placement settings at least three times compared to changing placements less than three times). The increased risk of placement instability was statistically explained by having been diagnosed with an internalizing disorder before being placed into out-of-home care and by first being placed into foster care rather than kinship care. Children diagnosed with an internalizing disorder before being placed in out-of-home care were two and a half times more likely to experience placement instability than children without this diagnosis. Additionally, the risk of placement instability was nearly two times greater for children first placed into foster care compared to children first placed into kinship

Table 3

Preliminary univariate Cox regression analyses of each of the potential covariates for the final model.

Covariate	Beta	S.E.	Wald	<i>p</i>	Adj. HR ^a	95 % CI
Age at first placement (0 to 12 years = 0)	0.088	0.237	0.137	0.711	1.092	[0.686, 1.738]
Sex (female = 0)	0.238	0.192	1.534	0.216	1.269	[0.871, 1.848]
Type initial placement setting (kinship care = 0)			4.046	0.132		
Foster care	0.574	0.309	3.462	0.063	1.776	[0.970, 3.251]
Residential care or other	0.320	0.360	0.791	0.374	1.377	[0.680, 2.789]
Material deprivation	-0.001	0.003	0.063	0.802	0.999	[0.992, 1.006]
Social deprivation	0.000	0.003	0.001	0.979	1.000	[0.994, 1.006]
Number of CPS personnel involved with the child pre-placement	-0.006	0.012	0.234	0.629	0.994	[0.972, 1.017]
Dx of an externalizing disorder pre-placement	-0.040	0.239	0.028	0.868	0.961	[0.602, 1.535]
Dx of an internalizing disorder pre-placement	0.493	0.205	5.757	0.016*	1.637	[1.094, 2.447]
Dx of a stress-related disorder pre-placement	0.179	0.420	0.183	0.669	1.197	[0.525, 2.725]
Dx of an intellectual disability and/or developmental disorder pre-placement	-0.422	0.317	1.775	0.183	0.656	[0.352, 1.220]
Dx of another childhood mental health disorder pre-placement	-0.053	0.269	0.039	0.844	0.948	[0.560, 1.607]
Dx of another mental health disorder pre-placement	0.019	0.277	0.005	0.945	1.019	[0.592, 1.756]
Number of mental health consultations pre-placement	-0.008	0.006	1.591	0.207	0.992	[0.981, 1.004]
Covariate	Beta	S.E.	Wald	<i>p</i>	Adj. HR ^a	95 % CI
Comorbidity of mental health disorders pre-placement (0 Dx = 0)			1.223	0.543		
1-2 types of diagnoses	0.208	0.208	0.992	0.319	1.231	[0.818, 1.851]
3-6 types of diagnoses	0.210	0.289	0.529	0.467	1.234	[0.701, 2.172]

* *p* < .05.

** *p* < .01.

^a Adj. HR = Adjusted hazard ratio.

care.

4.4. Survival analysis

Table 5 shows the mean and median length of time (in days) until children experience placement instability whether they were diagnosed

with an internalizing disorder before being placed into out-of-home care.¹ The mean number of days until children experience placement instability was shortest for children with an internalizing disorder diagnosis before being placed compared to children without one (i.e., 1635 vs 3066 days). This result indicates that children with a prior internalizing disorder diagnosis were significantly at risk of experiencing placement instability almost four years earlier ($\chi^2 = 15.875$, *p* = .015) than their counterparts without this diagnosis.

5. Discussion

The goal of this study was to determine which combination of factors was associated with a greater risk and more rapid onset of placement instability for sexually abused children placed in out-of-home care. The results suggest that children with an internalizing disorder diagnosed pre-placement and those first placed in foster care rather than kinship care were significantly more at risk of both experiencing placement instability and experiencing it more rapidly, when controlling for age, sex, material and social deprivation, externalizing disorder diagnosis, and intellectual disability or developmental disorder diagnosis pre-placement.

5.1. Interpretation of the main findings

5.1.1. Internalizing disorders

Sexually abused children diagnosed with an internalizing disorder were 2.5 times more likely to experience placement instability and to do so nearly four years sooner than those without this diagnosis pre-placement. These results are concordant with meta-analytic findings concerning the general population of placed children (Konijn et al., 2019), which suggest that internalized problems moderately increase the risk of placement instability (*r* = 0.37). However, although an internalizing disorder diagnosis pre-placement was found to be the most robust predictor in the current study, findings should be interpreted with caution considering the small number of observations and large confidence intervals.

The effect of internalizing disorders on subsequent placement instability is likely due to three main reasons. First, children with internalizing disorders tend to be more withdrawn (Chesmore et al., 2017; Tandon et al., 2009), and may, in turn, have more difficulties forming relationships with their caregivers, a factor that has been associated with greater risks of placement instability (Leathers, 2006). Withdrawn children may also receive less attention and personalized care, which could otherwise have helped prevent their experience of multiple placement breakdowns. Second, considering that internalizing disorders tend to be less observable and more challenging to detect than externalizing disorders (McGinnis et al., 2019; Mian, 2014), children diagnosed with an internalizing disorder are likely to have particularly severe symptoms, which in turn may be associated with greater placement instability. Finally, the significant effect may be attributable to the greater proportion of females in our sample, suggesting a possible interaction of internalizing disorders and sex, as females tend to have more internalizing problems diagnoses than males (Lewis et al., 2016; Martel, 2013; Sterba et al., 2007).

5.1.2. Type of first placement

The other significant risk factor of placement instability for sexually

¹ Survival analysis was not conducted with the variable pertaining to the type of first placement setting as the Cox regression results revealed that there was only a significant difference between two types of settings (i.e., foster and kinship care) in terms of increasing the risk of placement instability, while there was no significant difference between all three types of settings (see Table 4, where *p* = .074 for the variable "Type of initial placement setting"). This rendered the survival analysis with the Kaplan-Meier method non-significant.

Table 4

Final Cox proportional hazard model of placement instability for sexually abused children at initial placement (n = 202).

Covariates	Beta	S.E.	Wald	p	Adj. HR ^a	95 % CI
Child Characteristics						
Sex (female = 0)	0.384	0.213	3.242	0.072	1.468	[0.967, 2.231]
Age at first placement (0–12 years = 0)	0.400	0.280	2.039	0.153	1.492	[0.862, 2.583]
Material deprivation	0.000	0.004	0.006	0.936	1.000	[0.993, 1.007]
Social deprivation	−0.002	0.003	0.446	0.504	0.998	[0.992, 1.004]
Types of mental health diagnoses received pre-placement						
Externalizing disorder (no disorder = 0)	−0.582	0.323	3.235	0.072	0.559	[0.297, 1.054]
Internalizing disorder (no disorder = 0)	0.922	0.259	12.673	<0.001**	2.514	[1.513, 4.177]
Intellectual disability and/or developmental disorder (no disorder = 0)	−0.564	0.342	2.716	0.099	0.569	[0.291, 1.113]
Type of initial placement setting (Kinship care = 0)						
Foster care	0.632	0.316	3.987	0.046*	1.881	[1.012, 3.498]
Residential care or other	0.248	0.374	0.440	0.507	1.282	[0.616, 2.669]

* p < .05.

** p < .01.

^a Adj. HR = Adjusted hazard ratio.**Table 5**

Mean and median survival time of placement instability by internalizing disorder diagnosis pre-placement.

	Mean survival time (days)	Median survival time (months)	Logrank test (χ^2)
No internalizing disorder diagnosis	3066.02	494.00	15.88*
Internalizing disorder diagnosis	1634.65	258.49	

*p < .05.

abused children in the current study was an initial placement in foster care rather than kinship care. Specifically, children first placed in foster care were nearly twice as likely to experience placement instability than those in kinship care. This result is concordant with meta-analytic and review findings concerning placed children in general, which suggest strong evidence that kinship placements are most stable (Konijn et al., 2019; Rock et al., 2015). A possible explanation is that kinship foster parents appear to be more dedicated and personally involved than non-kinship foster parents, offering care unconditionally and feeling a greater sense of duty towards children in their care (Andersen & Fall-esen, 2015; Rock et al., 2015), potentially preventing placement breakdowns. Additionally, children in kinship care tend to exhibit less psychopathology than those placed in other care settings (Winokur et al., 2014; 2018), which may decrease their risk of later placement instability, suggesting a potential interaction between these factors.

5.1.3. Externalizing disorders

An interesting finding was that contrary to most of the literature, no significant effect of externalizing disorder diagnosis on subsequent placement instability was observed. Rather, the presence of an externalizing disorder pre-placement was even found to be marginally associated with a lower risk of subsequent placement instability. This contradicts meta-analytic findings regarding placed children who faced various forms of abuse, which have revealed that the effect of externalizing problems on placement instability is the greatest of all factors studied (Konijn et al., 2019; Oosterman et al., 2007).

While the reasons for this discrepancy are unclear, the fact that only sexually abused children were included in the current study, rather than placed children in general, may explain that no effect of externalizing disorder diagnosis on the risk of placement instability was found. The only study to our knowledge that compared the placement trajectories of sexually abused youth to those who experienced other forms of abuse found that behavior problems did not significantly influence the risk of placement instability for youth served for child sexual abuse, while it did for youth placed in out-of-home care for other reasons (Esposito et al.,

2017). Those results support the current study's findings, although these authors' measures of externalizing problems differed from those used in the current study. Additionally, Esposito and colleagues (2017) only found this difference when they controlled for youth criminality, a proxy of severe behavioral problems. Yet, in the current study, too few subjects exhibited criminal behavior requiring services for this factor to be considered in the analyses. Esposito and colleagues (2017) also only included subjects older than ten years, while the current study's subjects were on average 8.5 years old when they were first placed, suggesting that criminality and severe behavior problems may only increase the risk of placement instability for older children and teens. This is somewhat consistent with Aarons et al. (2010) findings that behavioral problems assessed pre-placement are only found to be a risk factor for placement instability for children aged above six years at the time of their placement. Moreover, it is possible that the non-significant effect of externalizing disorders on subsequent placement instability may be attributable to the overrepresentation of females in our sample of sexually abused children. Indeed, girls who have been sexually abused are generally found to be less likely to experience externalizing problems than sexually abused boys (Crea et al., 2018).

Overall, it remains unclear why children who were sexually abused and who have a diagnosis of externalizing problems are not found to be more at-risk of placement instability than their counterparts without this diagnosis. The impact of sexually abused children's generally more complex mental health clinical picture on placement instability as well as interactions between their mental health and other factors such as sex would have to be examined more thoroughly in future studies.

5.1.4. Other factors

Intriguingly, no other risk factors frequently associated with placement instability in the literature, such as sex, age at placement, and socioeconomic status, were statistically significant predictors in the current study. This may be because these factors are less important within this subgroup of sexually abused children than among children exposed to other forms of abuse. On the other hand, it may be due to the relatively small sample size of this study compared to other research using similar methodologies with a larger sample. This may have confounded unique effects or rendered them more difficult to detect. Moreover, the definition of placement instability used in the current study, i.e., a minimum of three placement moves, may have made it more difficult to detect differences between groups, as some children in the "no instability" group still experienced one or two placement changes. Other studies have instead measured placement instability as a continuous variable (e.g., Akin et al., 2021; McGuire et al., 2018), while some have used a smaller number of placement changes as their cut-off to define placement instability (e.g., Clark et al., 2020; Koh et al., 2014). Others have compared children with no placement moves to those who experienced at least three placement moves (e.g., Esposito et al., 2017),

which may have allowed more distinction between groups and rendered the detection of significant differences between groups based on sex, age at placement and socioeconomic status more easily detectable than in the current study.

5.2. Implications for practice

The current study results suggest that child protection providers should be particularly mindful of sexually abused children who have been diagnosed with an internalizing disorder and who have been placed in foster care to take suitable measures to prevent these children's more likely placement instability. Considering that internalizing symptoms may be more challenging to detect due to their inward nature (McGinnis et al., 2019; Mian, 2014), regular screening for these before and during a child's placement trajectory is essential to enable case-workers' prompt interventions (Hurlburt et al., 2010).

Moreover, interventions to prevent placement breakdown should address two main features, especially for children in foster care. The first is the attachment bond between foster parents and the children in their care, as the disengagement and withdrawal of both parties are associated with greater placement instability (Leathers, 2006). Examples of associated interventions include the "Video-feedback Intervention to promote Positive Parenting and Sensitive Discipline in Foster care" (Juffer et al., 2008; Schoemaker et al., 2020) and the "Basic Trust Intervention" (Colonnesi et al., 2013; Zeegers et al., 2020). Second, interventions should address foster parents' knowledge of the impact of childhood sexual trauma (Konijn et al., 2021), as foster parents who have trauma-informed attributions of children's behaviors are more likely to respond in ways that help establish secure and stable relationships (Kelly & Salmon, 2014; Sullivan et al., 2016). An example of this type of intervention is the trauma-informed parenting training "Caring for children who have experienced trauma" developed by the National Child Traumatic Stress Network (Grillo & Lott, 2010).

In the case of placed teenagers, who frequently report powerlessness and exclusion from decision-making processes in the face of placement instability (Chambers et al., 2020), advocacy for their voices to be considered and better addressing their concerns and needs would likely be beneficial to prevent placement breakdown by reinforcing the bonds between adolescents and foster caregivers. In addition, creating team decision-making activities that involve adolescents placed in out-of-home care has been found to improve youths' emotional and behavioral symptoms and promote their optimism about their futures (Chambers et al., 2020; Leathers et al., 2021), a worthy goal and means to prevent placement breakdown.

5.3. Strengths and limitations

The major strength of this study is that it was the first to consider the impact of such a wide range of risk factors on the placement instability of children who experienced sexual abuse and, of note, the influence of a variety of mental health disorder diagnoses on placement instability. Although studies have addressed the influence of mental health disorders in general and the effects of externalizing and internalizing problems on placement instability, few have considered the influence of various mental health disorders on placement instability within the same study. In doing so, it was possible to capture a more stringent construct of mental health problems. Moreover, the current study's longitudinal design shed light on the temporal pathways between the diagnosis of mental health disorders and subsequent placement instability. Indeed, administrative health data permitted the identification of all mental health disorder diagnoses occurring for subjects before their placement, rather than only assessing their mental health during their placement trajectory. Additionally, this study measured the stability of all placements occurring during the observation period rather than only during one targeted placement spell, allowing to grasp a more extensive portrait of participants' placement trajectories.

Results should nevertheless be interpreted in light of certain limitations. First, administrative health data limited the investigation of disorders to children who received mental health diagnoses. Other subjects likely exhibited mental health problems below clinical thresholds or without them being noticed and diagnosed by their physician, highlighting issues of inter-rater reliability between medical professionals and disparities in access to mental health care. This may also have led to an underestimation of the extent to which certain diagnoses impacted the risk of placement instability. Second, administrative data provided limited information about children's specific contexts. File reviews and interviews with a sample of children could have provided a better understanding of other factors impacting their placement trajectories (Brownell & Jutte, 2013), such as their rapport with caregivers and caseworkers, birth parent characteristics, and social support. Third, the limited sample size restricted the number of covariates included in the final model to preserve appropriate power. Other diagnoses such as stress-related disorders would likely have been relevant to investigate had there been a greater number of events in this diagnostic category, while controlling for the co-occurrence of multiple forms of maltreatment would also have been relevant. Furthermore, the way in which covariates were chosen to be retained for the final model may have affected the findings, as both covariates that were marginally significant in univariate analyses as well as covariates that had been found to be significant in other pre-existing studies were included, which may have reduced statistical power and thus the capacity to observe statistically significant effects if they were smaller. Finally, although measuring the stability of all placements occurring during the observation period rather than only during one targeted placement spell allowed to grasp a more extensive portrait of participants' placement trajectories, it may have confounded the constructs of placement stability and reunification in the current study. Indeed, it is possible that participants with more placement moves are also those who experienced more reunification attempts or other types of placement exits (e.g., adoption or guardianships). Accordingly, children with a diagnosis of an internalizing disorder prior to being placed may have been more likely to experience reunification attempts, which could explain why they appear to experience a higher risk of placement instability. This reasoning may also explain why certain factors reported in previous studies as being predictors of placement instability fail to stand out in the current study. Accounting for reunification attempts in future studies would be relevant to further clarify the association between the factors examined in the current study and placement instability.

6. Conclusions and future directions

The current study suggests that for sexually abused children placed in out-of-home care, a prior internalizing disorder diagnosis and being placed in foster rather than kinship care increased the risk for subsequent placement instability at least twofold. Children most at-risk of placement instability should be given particular care and appropriate resources to promote better attachment bonds with their foster parents as well as early detection and treatment for internalizing disorders to prevent multiple placement breakdowns. Government policies must sustainably provide funding for specialized psychological care and prevention for children in out-of-home care. Future studies are needed to replicate the current findings with a larger sample to determine whether other mental health diagnoses also increase the risk of subsequent placement instability and to better understand the interactions between mental health diagnoses, age at placement, and sex. Moreover, as disorder comorbidity is frequent (Levy et al., 2016; Willner et al., 2016), studies addressing various comorbidity profiles through cluster analyses to determine which combination of pre-placement mental health diagnoses are risk factors for placement instability would be highly relevant.

CRedit authorship contribution statement

Lauranne Gendron-Cloutier: Conceptualization, Methodology, Validation, Formal analysis, Investigation, Data curation, Writing – original draft, Visualization, Project administration. **Isabelle Daigneault:** Conceptualization, Methodology, Investigation, Resources, Writing – review & editing, Supervision, Project administration, Funding acquisition. **Tonino Esposito:** Conceptualization, Methodology, Validation, Writing – review & editing, Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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