Received: 28 April 2024 | Accepted: 7 January 2025

DOI: 10.1111/ijsw.12719

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF SOCIAL WELFARE

Out-of-home care placement patterns of children within the Swedish child welfare system: Findings from group-based trajectory modelling

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Funding information
Forskningsrådet för hälsa, arbetsliv och välfärd, Grant/Award Number: 2020-00274

Abstract

Children and adolescents in out-of-home care (OHC) represent a diverse population influenced by various family and placement characteristics, which significantly impact their development and long-term outcomes. However, there is a dearth of research exploring OHC placement characteristics, essential for understanding and supporting this population effectively. This study aimed to identify subgroups within the OHC population that share similar patterns of OHC placements across age and to describe these subgroups' distinct family and placement characteristics. Group-based trajectory modelling (GBTM) was applied to a total sample of Swedish children born 1990–1999 to identify subgroups with similar placement patterns. Six distinct trajectories of OHC placements were identified, revealing varying patterns of placement onset, duration, and type. Parental characteristics differed across trajectories, with a higher prevalence of disadvantaged factors among children entering care at younger ages. These findings underscore the importance of early intervention strategies and family-centred approaches for preventing OHC placements.

KEYWORDS

child welfare services, cohort study, group-based trajectory modelling, out-of-home care placements

INTRODUCTION

Children and adolescents that are placed in out-of-home care (OHC) constitute a remarkably diverse population, characterised not only by the varied pathways leading into care but also by the heterogeneous nature of their experiences during placement (Khoo et al., 2012; Lundström & Vinnerljung, 2001; Vinnerljung et al., 2000). The development of children is influenced by intricate interactions between the child's individual characteristics and their surrounding environment, and OHC contributes an additional layer of complexity, owing to the interplay between various placement characteristics (Lee & Holmes, 2021). This in turn influences outcomes that may unfold throughout their life course (Khoo et al., 2012; Lee & Holmes, 2021; Lundström & Vinnerljung, 2001;

Abbreviations: AIC, Akaike information criterion; BIC, Bayesian information criterion; GBTM, group-based trajectory modelling; OHC, out-of-home care; SWIFT90, The Swedish Families of the 1990s.

Vinnerljung et al., 2000). Yet, how OHC placement patterns evolve across age has hitherto been a largely unexplored issue, despite that the understanding of such patterns is arguably fundamental for providing appropriate support, improving outcomes, and promoting the well-being of children and adolescents within as well as beyond the system (Khoo et al., 2012; Vinnerljung et al., 2005).

Research into the composition of the OHC population has emphasised the diverse reasons for placing children in care. For example, children in OHC have often been exposed to adverse experiences (Berlin, 2020; Hessle & Vinnerljung, 1999; Lundström & Vinnerljung, 2001). Younger children commonly enter OHC due to deficiencies in their home environment, like neglect or maltreatment linked to parental substance misuse or psychiatric disorders, while for adolescents, the primary reason is typically their own disruptive behaviour (Andersson, 2005; Berlin, 2020; Hessle & Vinnerljung, 1999). However, in their study, Khoo et al. (2012) noted that a substantial proportion of adolescents entering care also documented home-related problems during childhood. The study observed that adolescents' past difficulties in the home environment were often overlooked, and child welfare investigations predominantly focused on the adolescents' current circumstances.

The heterogeneity within the OHC population extends beyond the reasons for placement. The varied nature of care experiences such as age at entry, the time spent in care as well as movements in and out of care further contribute to the diversity within this population (Kääriälä & Hiilamo, 2017; Lundström & Vinnerljung, 2001; Vinnerljung et al., 2000). Some children enter care at a young age and may stay with foster families throughout childhood, while others might have shorter stays during various life stages (Berlin, 2020).

This diversity in OHC experiences is likely to translate into heterogeneity in outcomes experienced by individuals within as well as those exiting OHC. Pre-placement factors likely interact with care experiences, contributing to various long-term outcome trajectories (Socialstyrelsen, 2023a). For example, a study by Vinnerljung and Ribe (2001) suggested a hierarchy of mortality risks among young adults formerly placed in OHC, with those experiencing long-term care at a higher risk than those placed in care for shorter durations. Another study showed higher rates of mental health problems among young adults placed in OHC as teenagers compared to those placed at younger ages (Vinnerljung & Hjern, 2014).

Despite the acknowledgment of vast heterogeneity within the OHC population, there have been a lack of studies explicitly examining age patterns in placements, leading to a critical knowledge gap regarding OHC population subgroups and their characteristics (Kääriälä & Hiilamo, 2017; Lundström & Vinnerljung, 2001; Vinnerljung et al., 2000, 2005). Utilising data from The Swedish Families of the 1990s (SWIFT90)—a national population-based cohort—the current study aims to identify subgroups within the OHC population that share similar patterning of placements as well as to describe these subgroups' distinct features based on various family and placement characteristics.

More specifically, this study aims to:

- Explore OHC placement trajectories of children and adolescents within the Swedish child welfare system (Research question (RQ) 1).
- Examine the characteristics of each placement trajectory in terms of the legal ground for placement and type of placement (RQ2).
- Describe the composition of familial socioeconomic and psychosocial circumstances within and across placement trajectories (RQ3).

HISTORICAL CONTEXT

The child welfare system in Sweden has experienced a number of changes over time, all of which are important in order to properly contextualise the current study. In the 1990s, there was a notable increase in OHC placements, reversing a trend of decline seen until the 1980s (Regeringskansliet, 2001). This shift can be attributed to the economic challenges and welfare reforms of the time, which likely increased the demand for social welfare assistance, leading to more children requiring placement in OHC (Palme et al., 2003). The rate of OHC placements increased by 33% between 1990 and 1999 (Lundström & Vinnerljung, 2001), and by approximately 22% in the period 1999–2004 (Sallnäs, 2009), particularly affecting adolescents, who comprised around half of all new placements (Lundström & Vinnerljung, 2001). Factors such as the rise in teenage OHC placements, unaccompanied asylum seekers, and overall population growth contributed to this trend (Berlin, 2020). By 2022, the number of children entering OHC had risen further, with 26,500 children receiving care, half of whom were over 15 years old (Socialstyrelsen, 2023b).

In Sweden, child welfare services, governed by the Social Services Act (SoL), facilitate voluntary placement of children and adolescents in OHC, often with parental cooperation. However, these placements may not always be entirely voluntary, as parents might feel coerced into agreeing to them (Gilbert et al., 2011; Svensson & Höjer, 2016). In cases where parents resist interventions when deemed necessary, the Care of Young Persons (Special Provisions) Act (LVU) complements SoL, enabling

authorities to intervene and ensure children's safety, even against parental objections. Most voluntary placements in the 1990s lasted less than 6 months, with a median duration of 4.4 months while compulsory placements usually tended to have a longer duration, with a median duration of 20.7 months (Lundström & Vinnerljung, 2001).

There had also been a significant shift in care utilisation in the 1990s (Hessle & Vinnerljung, 1999), with a decrease in foster care placements and an increase in institutional care placements. This may potentially be influenced by factors such as the privatisation of welfare services (Lundström & Vinnerljung, 2001; Palme et al., 2003). However, by 2023, the trend had reversed, with foster homes being the most common form of placement, accounting for 72% of all placements (Socialstyrelsen, 2023a). This shift may be attributed to concerns over the poor quality of institutional settings, potential hindrance to the reunification process, and a growing recognition of the poor health and social outcomes among children placed in institutional care (Johansson et al., 2008). Regarding age distribution, roughly 45% of children placed in foster care in the 1990s were teenagers, while almost all placements in institutional care comprised children aged 13 or older (Vinnerljung et al., 1999). This age distribution trend persists in contemporary cohorts, highlighting a consistent pattern over the years (Socialstyrelsen, 2023a).

METHODS

Data

Data from The Swedish Families of the 1990s (SWIFT90), a national population-based cohort, was used for this study. SWIFT90 comprises all individuals born between 1990 and 1999 in Sweden (n = 1,075,037), denoted as the index population. The index population was further linked to their biological and/or adoptive parents as well as their siblings, yielding a total sample of 3,292,417 individuals. Administrative national register data was available for this cohort between 1961 and 2022 (Table S1).

Study population and design

In this study, we examined OHC placement trajectories of children born in the 1990s, and explored their placement characteristics as well as their family circumstances 1 year before placement. For this, we used data from the index population (n = 1,075,037) and their biological parents (n = 1,371,912), as shown in Figure 1.

Individuals from the index population that could not be linked to their biological parents through the national registers were excluded from this study (n = 6185). Complete register-based data indicating parental socioeconomic and psychosocial conditions that could potentially be related to OHC placements was available from 1992 until 2022 (Table S1). Hence, children born before 1993 were excluded from this study (n = 370,763), to have complete information on the parents 1 year before placement for all children and adolescents.

Data regarding the number of placements for each child as well as the year, length, legal ground and type of care setting for each placement was obtained from the Child Welfare Intervention Register. For children who were never placed in OHC, a pseudo-random year between 1993 and 2020 was systematically generated as a proxy, such that the distribution of the years for those not placed mirrored that of the year of first placement among those placed.

Data on parental socioeconomic and psychosocial conditions was obtained from various national registers. This was measured 1 year before the first placement of the child in care, or 1 year before the proxy year generated for children who did not experience any placements. This approach aimed to capture acute familial circumstances immediately preceding placement and to ensure accurate temporality. A similar strategy has previously been used in a study using Danish data (Ejrnæs et al., 2011).

Children who did not have any recorded register data from either parent 1 year before, likely due to migration, were also excluded (n = 13,230). Children who died during the follow-up period (n = 4860) were included in the analysis but were censored in the data from the year of their death onward. Migration during the follow-up period was not addressed, as the register data do not provide specific details about the exact years these children might have been out of Sweden.

This led to a final analytical sample of 684,859 index children, of which 25,087 children experienced OHC placement at some point, while 659,772 children did not experience any placement. The final analytical sample thus included only children with complete information on parental conditions, along with complete placement details for those who experienced OHC placements. Register data on both biological parents were available for 96.7% of children (n = 662,127), while 3.3% of children (n = 22,732) had register data recorded for only one parent.

Variables

In this study, placement in OHC was the main variable of interest, which was defined as full-day interventions

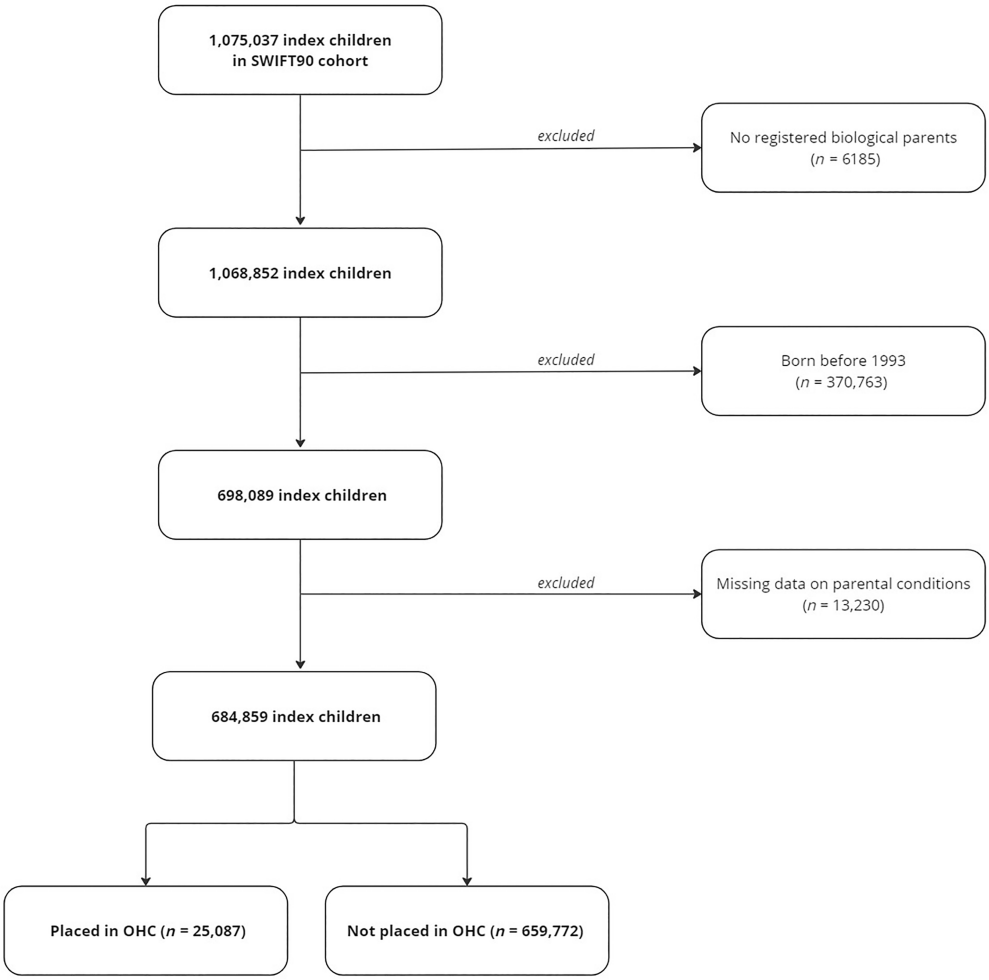

FIGURE 1 Formation of analytical sample.

that led to the placement of children for care outside their own homes at ages 0–20 years. OHC was operationalised as a binary variable, indicating whether a child experienced placement (yes/no). To model the various trajectories of placements (RQ1), data on the year of entry and the duration of each placement episode, along with the birth year of the child/adolescent was used to ascertain the ages at which a child was placed in care. A binary variable was created for each year of age, capturing the presence or absence of OHC at each age (i.e., age 0: no/yes, age 1: no/yes, and so on up to age 20).

To explore the legal basis of placements experienced (RQ2), children were then classified as having experienced only voluntary placements, only compulsory placements, or a combination of both across all placements that they experienced. Additionally, we classified children based on the type of placements as having experienced exclusively foster care, exclusively institutional care, or a combination of both across all placements (RQ2).

To explore familial factors potentially related to OHC placement (RQ3), we examined 10 parental characteristics, including mental health disorders, non-communicable diseases, sickness benefits, offending, low education, low income, social assistance, unemployment, disability pension, as well as parental death. We created a binary variable to indicate the presence of these factors in either parent 1 year before placement of the child. The selection of these variables was guided by previous studies investigating factors associated with placing children in OHC (Bebbington & Miles, 1989; Franzén et al., 2008; Lindsey, 1991). A detailed explanation of the rationale behind the selection and operationalization of these variables, can be found in Table S2.

The year of birth of the parents as well as the children were included in the statistical models as covariates to control for any period effects.

Statistical analysis

Group-based trajectory modelling (GBTM), a specialised application of finite mixture modelling (Nagin, 2014),

was used to identify subgroups of children among those placed in OHC with similar placement patterns across ages 0–20 years. GBTM has been frequently used in prior research to analyse developmental trajectories using repeated measurements of a specific outcome across age or time (Nagin, 2014; Nagin & Odgers, 2010). The model parameters are established through maximum likelihood estimation, determining the optimal number of groups and the suitable degree of the polynomial. For each group, the model calculates an individual's probability of belonging to that group, and membership is subsequently assigned based on the group with the highest probability for the individual.

In this study, the GBTM analysis employed a logistic (logit) model suitable for binary outcomes, with 21 time points corresponding to ages 0–20 years. Time was coded such that a 1-unit change corresponded to a 1-year increase in the age of the child. Models were systematically generated using Stata 17/SE, by sequentially testing 2–8 subgroup models. Model fit was evaluated based on several criteria including Bayesian information criterion (BIC), Akaike information criterion (AIC), entropy, average posterior probabilities and the odds of correct classification (Nagin & Odgers, 2010; Shah et al., 2014). Models with lower AIC and BIC values (closest to zero) were preferred. Entropy and average posterior probabilities were used to measure the clarity of group assignments, with higher values (closer to one) indicating more confident classifications (Nagin & Odgers, 2010). The odds of correct classification were also considered, with higher values indicating a greater probability that individuals are correctly assigned to their respective groups. Additionally, the alignment between observed and expected classification proportions was evaluated, with closer alignment indicating a more accurate and reliable model fit (Nagin & Odgers, 2010).

To calculate the median time spent in care by trajectories, we aggregated the durations of all placements that the child within a trajectory experienced, and determined the median value to represent the typical time spent in care per child within that trajectory.

The legal ground for placing children in OHC and the type of placement was evaluated by considering all placements that a child experienced. Based on the legal ground for placement, children were categorised into groups, distinguishing those with exclusively voluntary placements (based on SoL) or compulsory placements (based on LVU) and those with a mix of both, across ages 0–20 years. Considering the type of placement, children were categorised as having been placed only in foster care, only in institutional care or experiencing a combination of both across all placements experienced. Adjusted prevalence of placement characteristics within trajectories, controlling for parental and child birth years to account for any period effects, were calculated using logistic regressions and *margins* command. Bar graphs were used to visually present these results.

A separate logistic regression model was used to calculate the adjusted prevalence of parental socioeconomic and psychosocial characteristics by placement trajectories, that is, adjusted for birth years of the parents as well as the child. This data was then exported to Microsoft Excel, and visualised through heatmaps. A heatmap displays a matrix of data and uses colour to visualise the distribution and intensity of data points. In this study, conditional formatting tools in Microsoft Excel were applied to visually highlight variations in the adjusted prevalence of parental characteristics across different trajectories and compare these to the parental characteristics of children who never experienced OHC placement.

RESULTS

This study identified six distinct trajectories characterising the placement patterns of children in OHC. Based on model fit statistics (AIC, BIC, entropy, average posterior probabilities, odds of correct classification, and observed versus expected classification proportions), the relevance of the models to the research question in interest, as well as the stability of the identified solution, a six-group logit model with quadratic polynomial function was preferred (Table S3). Figure 2 shows an overview of the six OHC placement trajectories identified across ages 0–20 years. Each trajectory is characterised by varying median durations per placement and total time spent in care per child. Table 1 provides an overview of the distribution of children across different placement trajectories, including details on the median age at placement, median duration per placement, median total time spent in care per child, and the range of total time spent in care for each trajectory.

Trajectory 1, termed 'Childhood limited', comprises children that have higher probabilities of placement exclusively during childhood, spanning across ages 0–13 years, with a median total time spent in care of 7.7 years. This group is the smallest and accounts for about 4% ($n = 987$) of all children placed. Trajectory 2, 'Early childhood onset, high level across adolescence', is the second smallest group ($n = 1731$, 7%) and is characterised by high probabilities of OHC placement throughout childhood and adolescence. The median total time spent in care by children in this trajectory is 13.2 years. Trajectory 3 ($n = 2395$, 10%), 'Middle childhood onset, high level across adolescence', includes children with higher probabilities of being placed in care for

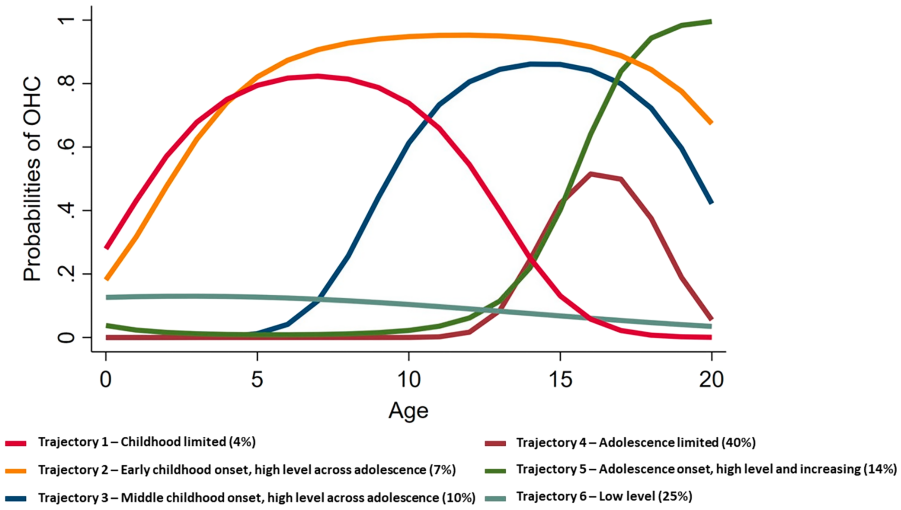

FIGURE 2 Placement trajectories according to age of placement ($n = 25{,}087$).

the first time around age 5, with these probabilities increasing across adolescence, with a median total time spent in care of 6.2 years. The most substantial group identified is Trajectory 4, denoted 'Adolescence limited', constituting 40% ($n = 10{,}591$) of all children placed in OHC. This group shows a peak in placement probabilities exclusively during adolescence, occurring between ages 13 and 20 years, and a relatively short median total time spent in care of 0.9 years. Trajectory 5, 'Adolescence onset, high level and increasing', includes individuals primarily placed in care during adolescence, with indications of increasing placement probabilities continuing into young adulthood ($n = 3445$, 14%). This trajectory also has a median total time spent in care of 0.9 years. A quarter of all placed children comprise Trajectory 6, 'Low level' ($n = 5938$, 25%). Children and adolescents in this group follow a trajectory with low probabilities of being placed for extended periods, typically experiencing shorter spans of placement across ages 0–20 years, and the shortest median total time spent in care of 0.3 years.

Figure 3 shows the adjusted prevalence of the legal basis on which children are placed in OHC across the six identified trajectories. The majority of children including those that are placed during childhood (Trajectory 1), those first placed during adolescence (Trajectories 4 and 5) as well as children experiencing short-term scattered placements (Trajectory 6) are mainly placed voluntarily in accordance with SoL (44%, 65%, 53%, and 70%, respectively). Children who begin placement during childhood with higher probabilities of continued placement during adolescence (Trajectories 2 and 3) more commonly experience multiple placements that may either be voluntary (SoL) or compulsory (LVU) (62% and 48% respectively).

The adjusted prevalence of the types of placements of children within the six identified trajectories is illustrated in Figure 4. Children who are placed exclusively during childhood and those initially placed during early or middle childhood (Trajectories 1, 2 and 3) predominantly experience a combination of placements in foster homes and institutional care, constituting 50%, 65%, and 58%, respectively. Children in these trajectories rarely experience exclusive institutional care placements (8%, 4%, and 9%, respectively). Adolescents who are likely to continue placement as young adults (Trajectory 5) also commonly experience mixed types of placements (48%), followed mainly by placements exclusively in institutional care (31%). In contrast, individuals placed exclusively during adolescence (Trajectory 4) and those with scattered placements (Trajectory 6), are nearly equally distributed between experiencing exclusive institutional care (38% and 42%, respectively) and exclusive foster care (37% and 39%, respectively).

Figure 5 presents a heat map illustrating the adjusted prevalence of 10 parental socioeconomic and psychosocial factors, observed 1 year before placement among the identified trajectories of placed children, comparing them to values observed among parents of children who were not placed in OHC (Trajectory 0). Overall, children who were never placed in OHC have a lower prevalence of the disadvantaged parental factors included in this study, in comparison to children placed across the various trajectories.

When comparing trajectories of placed children, those placed during earlier ages (Trajectories 1, 2, and 3), as well as those with scattered placements (Trajectory 6), have a higher prevalence of adverse parent-related factors across all observed characteristics, compared to those placed during adolescence (Trajectories 4 and 5). The largest differences across these trajectories are observed in the prevalence of social assistance. In Trajectories 1, 2,

TABLE 1 Descriptive statistics, by trajectory ($n = 684{,}859$).

	Total		Boys		Girls					
Trajectory	***n***	**%**	***n***	**%**	***n***	**%**	**Median age at placement**	**Median duration per placement**	**Median total time spent in care per child**	**Range of total time spent in care per child**
Children not placed in out-of-home care										
Trajectory 0										
Not placed	659,772		338,726	51.3	321,046	48.7				
Children placed in out-of-home care ($n = 25{,}087$)										
Trajectory 1										
Childhood limited	987	4.0	547	55.4	440	44.6	2 years	4.7 months	7.7 years	1.3 months to 16 years
Trajectory 2										
Early childhood onset, high level across adolescence	1731	7.0	941	54.4	790	45.6	2 years	3.9 months	13.2 years	0 months to 21.3 years
Trajectory 3										
Middle childhood onset, high level across adolescence	2395	10.0	1341	56.0	1054	44.0	10 years	3.4 months	6.2 years	0 months to 14.2 years
Trajectory 4										
Adolescence limited	10,591	40.	4783	45.2	5808	54.8	16 years	2.4 months	0.9 years	0 months to 7 years
Trajectory 5										
Adolescence onset, high level and increasing	3445	14.0	1700	49.4	1745	50.6	15 years	1.7 months	0.9 years	0 months to 9.6 years
Trajectory 6										
Low level	5938	25.0	3219	54.2	2719	45.8	6 years	1.9 months	0.3 years	0 months to 8.5 years

3, and 6, approximately 76%, 80%, 57%, and 57% of children have parents receiving such benefits, respectively, compared with 28% and 33% in Trajectories 4 and 5, respectively. These estimates are higher when compared to the prevalence of children with parents receiving social assistance among those that are not placed in care (Trajectory 0), which is around 7%. These differences can also be seen across other socioeconomic indicators such as income and employment. For example, in Trajectory 1, 2, 3 and 6, 51%, 55%, 37% and 48% children have parents with low income, respectively, and 51%, 56%, 37% and 48% have unemployed parents, respectively, while among adolescent placements in Trajectory 4 and 5, the prevalence of children with parents receiving low income are 30% and 33%, and unemployed parents are 24% and 28%, respectively. However, these estimates are lower among children that have not been placed in OHC (Trajectory 0), with 10% of their parents having a low income and 18% with unemployed parents. It is thus important to note that even in Trajectories 4 and 5, a notable proportion of children have parents that face socioeconomic difficulties, indicating that parental socioeconomic factors may still play a role in the placement of children in OHC during adolescence.

When comparing psychosocial characteristics, there is a higher prevalence of children with parents hospitalised

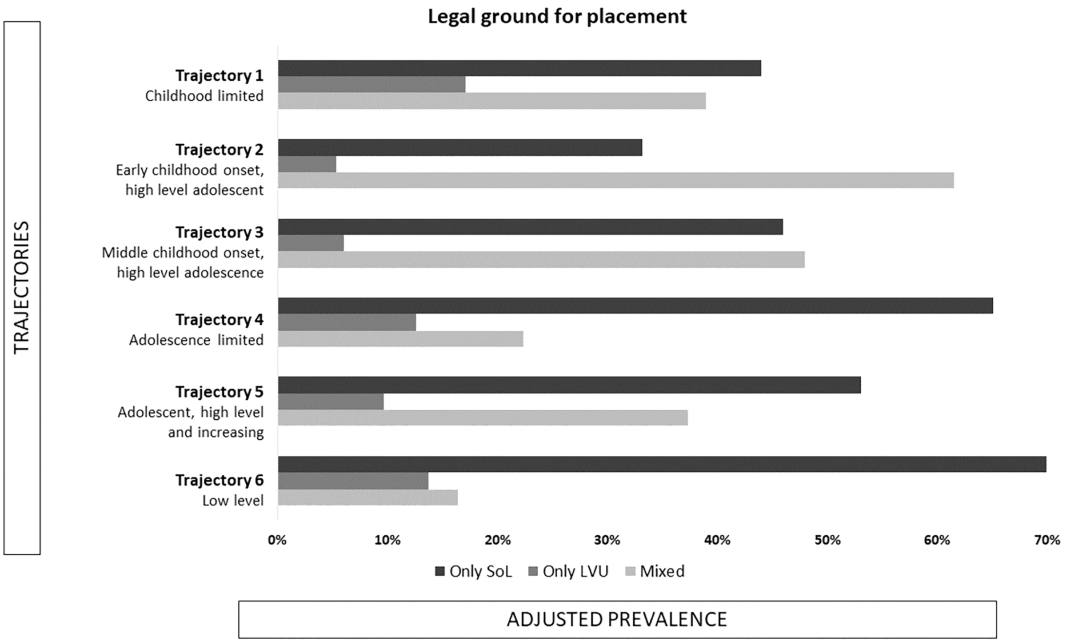

FIGURE 3 Adjusted prevalence of legal ground for placement, by placement trajectories ($n = 25{,}087$).

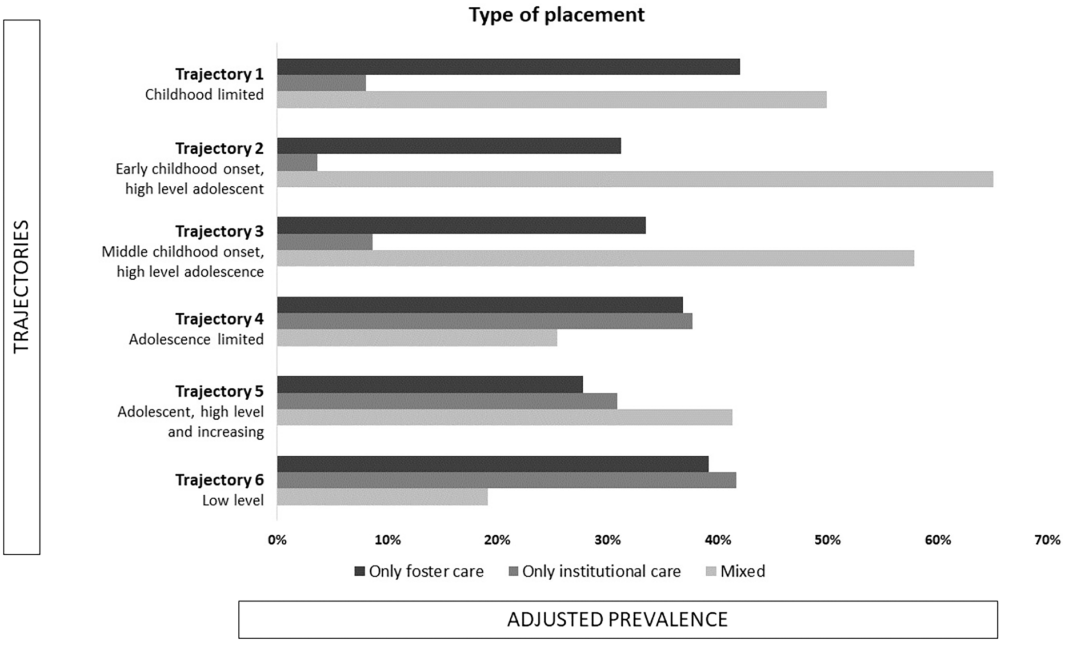

FIGURE 4 Adjusted prevalence of type of placement, by placement trajectories ($n = 25{,}087$).

for mental health disorders among those placed at younger ages (17%, 17% and 10% in Trajectories 1, 2 and 3, respectively) compared to those placed during adolescence (5% and 7% in Trajectories 4 and 5, respectively), and those having scattered placements (9% in Trajectory 6). These prevalence of mental health disorders are higher when compared to children in Trajectory 0 who do not experience any placements, with only 0.8% of their parents experiencing such hospitalisations. Similarly, a higher percentage of children placed at younger ages in Trajectories 1, 2 and 3, and those with single or scattered placements in Trajectory 6 have parents who have been involved in criminal offences (34%, 32%, 18%, and 18%, respectively), compared to those placed during adolescence in Trajectories 4 and 5 (9% and 11%, respectively). This again is higher compared to children not placed in care (Trajectory 0), with only 2% of their parents having a record of any offences.

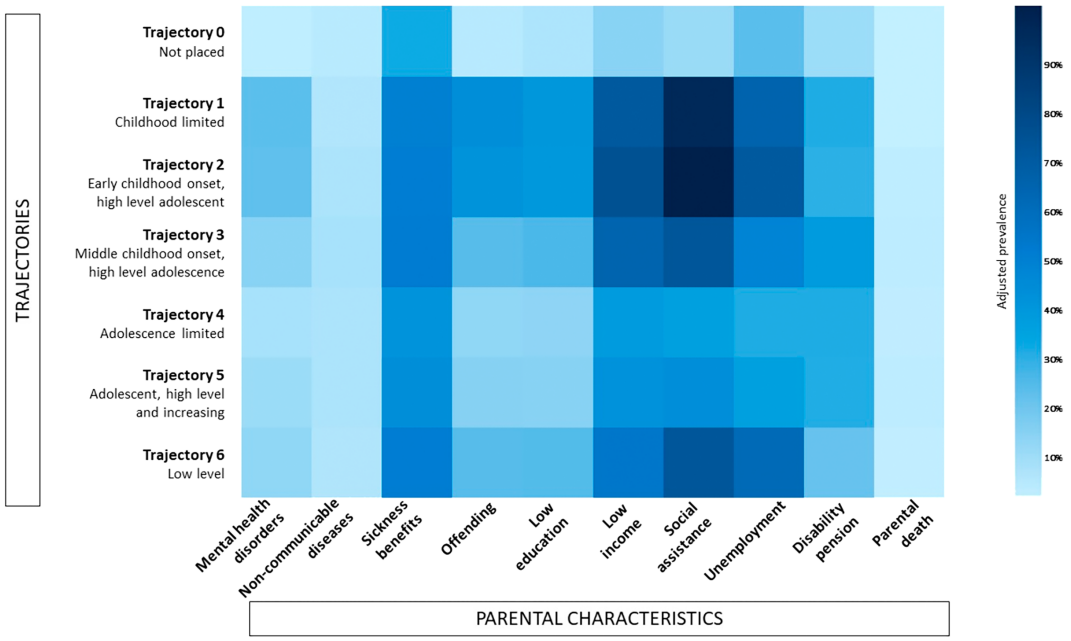

FIGURE 5 Heat map for adjusted prevalence of parental characteristics, by placement trajectories ($n = 684{,}859$).

When comparing the prevalence of children with parents receiving sickness benefits, there is almost an equal distribution across the different trajectories (38%, 40%, 40%, 32%, 34%, and 40% in Trajectories 1–6, respectively). The prevalence of children with parents receiving such benefits is lower among those not experiencing placements (24% in Trajectory 0). A similar pattern can also be noticed among children with parents receiving disability pension, with 24%, 22%, 29%, 24%, 24% and 16% receiving such benefits in Trajectories 1–6, respectively, compared to 7% in Trajectory 0.

There is a low prevalence of children, both placed and not placed in care, who have parents that died 1 year before placement, ranging from 0.5% to 1.5% among children placed in care across the different trajectories and 0.2% among those not placed. Similarly, 4%–5% of children placed in care across the different trajectories have parents that experienced hospitalizations due to non-communicable diseases compared to 2% among children not placed in care.

DISCUSSION

The primary goal of OHC placements is to provide children and adolescents with a nurturing environment to promote their well-being. However, there has been an increase in public discussions in recent years, leading to scrutiny and criticism of some of the fundamental aspects with regards to OHC placements (Lundström et al., 2021). Research has shown that the experience of being in OHC appears to be a significant indicator of compromised long-term health and psychosocial development (Kääriälä & Hiilamo, 2017; Sariaslan et al., 2022; Viner & Taylor, 2005). Practitioners, policymakers, advocates, and social scientists universally acknowledge the impact of OHC placements on children's and adolescents' future outcomes (Wulczyn, 2020), emphasising the necessity for dedicated attention and targeted action plans for this population. Children and adolescents with OHC experiences often face challenges and vulnerability across various domains, including education (Forsman, 2020), mental health (Almquist et al., 2020; Björkenstam et al., 2017; Brännström et al., 2020), involvement in crime (Lindquist, 2023), and mortality rates (Brännström et al., 2020; Vinnerljung & Ribe, 2001), compared to their counterparts who have not undergone placements.

However, it is important to acknowledge that the diversity within this population extends beyond the varied outcomes encountered by individuals transitioning out of care (Wulczyn, 2020). It also encompasses the diverse backgrounds and experiences of children and adolescents entering OHC. Treating them as a homogeneous group may obscure significant variations in their encounters within the public care system (Dregan & Gulliford, 2012). The timing of a child or adolescent's entry into care correlates with the impact of such placements on their life outcomes (Wulczyn, 2020), highlighting the importance of examining their placements through a longitudinal life-course perspective.

Placement trajectories

This study identified six distinct age patterns of OHC placement among children and adolescents in the Swedish context, highlighting the considerable heterogeneity within this population. Adolescents constituted the largest portion of new entrants into care, particularly concentrated between the ages of 13 and 20, typically spending around 2 months in care. This may potentially reflect efforts to prioritise family preservation by offering support during critical periods of vulnerability. Conversely, younger children entering care tend to spend a greater portion of their childhood within the system, raising concerns about the temporary nature of placements. Although the primary goal is to reunify children with their parents as soon as possible (Andersson, 2005; Hessle & Vinnerljung, 1999), rehabilitation efforts for parents facing substance abuse or mental health issues may be prolonged, leading to extended periods of the child remaining in care, making reunification challenging (Backe-Hansen et al., 2013). In such cases, long-term planning may be consistent with the family-oriented approach, wherein opting for stable placements outside the home might be viewed as a viable alternative when returning home is not feasible and does not align with the best interests of the child.

Trajectories characterised by short-term or scattered placements, like those in the 'Low level' category, may reflect either a single or fewer placements with a substantial gap in between, or alternatively, successful reunification. Conversely, they may also suggest resource limitations or challenges in establishing stable, long-term placements for children and adolescents.

Placement characteristics

With regards to the legal basis for placement, the Swedish child welfare system predominantly leans towards voluntary placements (SoL) over compulsory ones (LVU), as also evidenced by previous literature and real-world practices (Andersson, 2005; Hessle & Vinnerljung, 1999). Social workers are often sceptical about compulsory care due to potential negative consequences, such as trauma from separation, and thus try to avoid it, believing voluntary interventions to have better outcomes (Ponnert, 2007). When social services seek compulsory care, it typically involves prolonged instances of violence, neglect, and maltreatment, or significant behavioural problems exhibited by the adolescents themselves (Linell, 2017).

However, Larsson and Larusson (2023) note that an evident gap exists within these legal frameworks, whereby certain children in need of assistance fail to meet the criteria for compulsory care. In such cases, their guardians often do not consent to voluntary care, worsening the situation. This discrepancy highlights the complexity of ensuring adequate support for vulnerable children while navigating legal and ethical boundaries within the system (Larsson & Larusson, 2023). Addressing this gap necessitates a nuanced approach that considers the well-being and rights of the child alongside the concerns and circumstances of their guardians (ibid). Through comprehensive evaluation and collaboration, efforts can be made to bridge this divide and ensure the welfare of all children in need (ibid).

The complexity of placement patterns and outcomes is further highlighted by the varied abilities of foster homes and institutions to meet the needs of children (Socialstyrelsen, 2023a). Foster care emerges as the preferred option for young children entering care, while both foster homes and institutional care are nearly equally favoured among adolescents. Traditionally, foster care is known to provide a family-like atmosphere, focusing on caregiving, and promoting contact with biological parents. In contrast, institutional care potentially addresses behavioural and emotional issues in group settings (Johansson et al., 2008). However, it is unclear if institutional care effectively helps adolescents with behavioural problems or if family-style homes support maltreated children (Johansson et al., 2008). An essential question arising from these findings concerns the factors influencing adolescents' placements in foster homes versus institutional care. While institutional care may be linked to behavioural issues in adolescents, it is crucial to consider the impact of family-related problems, such as neglect or abuse within their own families, on their placement decisions. Recognising that what proves beneficial for one child may not necessarily be suitable for another highlights the importance of ensuring a well-suited match between children and their placement setting (Lindquist, 2023).

Furthermore, there has been a significant shift in institutional care, with nearly 80% now privately operated compared to its previous predominance in the public sector (Johansson et al., 2008). Despite public institutions having better-educated staff and a higher staff-to-resident ratio, they tend to be more selective in intake, serving youths with fewer problems, especially concerning delinquency and antisocial behaviour (Johansson et al., 2008). However, limited knowledge exists regarding treatment outcomes in residential care in Sweden, despite many youths spending extended periods in such settings. This highlights the need to better understand how youths' challenges interact with their care environments (Lyons & McCulloch, 2006).

Familial socioeconomic and psychosocial circumstances

Based on the parental characteristics of children and adolescents entering OHC, we observe that children with parents who are unemployed, receiving sickness benefits, having a low income, and relying on social assistance are prevalent across all trajectories. These findings align with those described by Franzén et al. (2008), which indicate that children whose mothers receive significant amounts of sickness benefit or long-term social assistance are disproportionately represented in the OHC population, suggesting a notable social selection in this process. Franzén et al. (2008) hypothesise two possible explanations for this. First, households receiving such financial support may not only be economically vulnerable but are also likely to encounter other risk factors, including substance abuse and family violence, which may ultimately lead to OHC placement, in the best interest of the child (Bullock et al., 2019; Stattin & Magnusson, 1996). Second, prolonged receipt of social assistance may necessitate frequent interactions with social services, leading to increased scrutiny and monitoring by authorities over time (Franzén et al., 2008; Lundström, 2000; Lundström & Wiklund, 2000) and thus possibly introduce identification bias.

Notably, the impact of parental socioeconomic and psychosocial factors appears to be weaker for teenagers entering care, indicating that adolescents placed in care may tend to come from less socially selected backgrounds compared to younger children. This disparity is largely attributed to the fact that a significant proportion of adolescent placements stem from behavioural issues rather than socioeconomic circumstances (Vinnerljung et al., 2001). Nevertheless, it is important to recognise that while adolescent placements may exhibit a weaker correlation with parental socioeconomic background, it still remains higher than that of individuals who are never placed in care. This suggests that adolescent entry into care may, to some extent, represent a delayed manifestation of pre-existing household challenges.

Strengths and limitations

This study makes a significant contribution to the understanding of OHC placement trajectories within the Swedish child welfare system by leveraging data from the SWIFT90 cohort, which is based on Sweden's extensive population-based register data. This comprehensive dataset allows us to longitudinally follow children from birth through childhood and adolescence, providing details of their experiences within the child welfare system. By utilising information available in these registers, we could capture various aspects of OHC placements, including their onset, duration, and type. This enabled the identification of distinct age patterns and placement characteristics, shedding light on the multifaceted dynamics surrounding OHC and providing insights into the heterogeneity observed within this population. Furthermore, the utilisation of data from the SWIFT90 cohort enabled the simultaneous tracking of two generations, facilitating the exploration of familial socioeconomic and psychosocial circumstances potentially influencing children and adolescents' entry into care. Additionally, the study's large sample size ensures the robustness and generalizability of findings at a national level, thereby strengthening its external validity and the reliability of its conclusions.

However, it is crucial to acknowledge certain limitations associated with the use of administrative register data in this study. First, reliance on administrative data alone may constrain the depth of understanding regarding individual circumstances and experiences. Analysing qualitative data to complement quantitative findings through a mixed methods study would give us deeper insights into the nuanced factors contributing to OHC placements. Additionally, acquiring data on in-home services, which is currently unavailable in the national registers, would also be beneficial, enabling researchers to comprehensively assess the effectiveness of interventions aimed at preventing family breakdowns. Furthermore, the incomplete register coverage on OHC placements in 2017 in Sweden introduces potential biases into the analysis, thereby affecting the accuracy and comprehensiveness of findings concerning recent trends in OHC placements. Moreover, due to the unavailability of outpatient care data for the entire follow-up period, only severe cases of parental mental health issues and non-communicable diseases necessitating hospitalisation were included, potentially overlooking less severe cases and thus limiting the scope of the study's findings. Additionally, the exclusion of children not born in Sweden but living in the country in the 1990s from the index population of SWIFT90 may introduce selection bias from a migration perspective. These limitations emphasise the need for caution when interpreting results.

Implications for research and practice

The findings from this study hold significant implications for both research and practice within the field of child welfare services and OHC placements. It emphasises the necessity to acknowledge the vast heterogeneity in the OHC population when further studying their life chances.

From a research perspective, the identification of distinct age patterns and placement characteristics provides a framework for further investigation into the factors influencing outcomes in OHC. Understanding these varying trajectories of placements can guide the development of targeted interventions aimed at improving the well-being and long-term outcomes of children and adolescents in care. Recognising the diversity within this population, there is also a critical need to intervene in the underlying family dynamics contributing to these placements, necessitating individualised approaches (Lindquist, 2023). Child welfare agencies should prioritise early intervention strategies and family-centred approaches to prevent OHC placements wherever possible. Collaboration among child welfare agencies, healthcare providers, and other community stakeholders is pivotal in designing interventions that address the complex needs of children and families.

In practice, these insights call for tailored approaches in policymaking and service provision to address the diverse needs of children and adolescents in OHC (Berlin, 2020; Khoo et al., 2012; Socialstyrelsen, 2023a). Implementing evidence-based practices informed by research findings can enhance support systems for this vulnerable population and improve their chances of achieving positive life outcomes.

CONCLUSIONS AND FUTURE RESEARCH

Highlighting the heterogeneity within the OHC population, this study identifies six distinct trajectories characterising the placement patterns of children in OHC within the Swedish child welfare system. These trajectories reflect varied experiences in terms of duration and timing of placements, legal grounds, and types of placements. Additionally, parental socioeconomic and psychosocial circumstances also differed across the trajectories, with children placed at younger ages having higher prevalence of adverse parental factors compared to those placed during adolescence. These findings underscore the interplay between family circumstances and the interventions of the child welfare system, emphasising the complex dynamics and multifaceted challenges faced by children and adolescents in OHC.

This study thus highlights the need for future research to explore the effectiveness of different placement settings, such as foster care versus institutional care, and their impact on life outcomes. By understanding the differential impacts of these settings, researchers and policymakers can make informed decisions regarding the optimal type of care setting that would suitably benefit the child according to their specific circumstances.

There is also a need to make individual-level data on in-home services more readily available. By gaining access to comprehensive information regarding the support services provided to families within their homes, researchers can better identify at-risk families early on. This could potentially help implement targeted interventions aimed at preventing the escalation of issues that may ultimately lead to OHC placements. By analysing the efficacy of various in-home support services and their impact on preventing family breakdowns, researchers can inform policy and practice to allocate resources effectively and tailor interventions to meet the specific needs of vulnerable families.

Future studies should also delve deeper into the predictive power of parental and family dynamics in OHC placements. By examining the intricate and potential causal interplay between parental characteristics, family dynamics, and the likelihood of OHC placements, researchers can develop risk assessment tools that enable early intervention and targeted support to identify families at heightened risk of OHC placements.

Moreover, longitudinal studies following families over time could help identify critical policy entry points to prevent placement disruptions and promote family reunification where appropriate.

FUNDING INFORMATION

This work was supported by the Swedish Research Council for Health, Working Life and Welfare (Grant No. 2020-00274).

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The Swedish Families of the 1990s (SWIFT90) cohort used in this study could be used to investigate the complex challenges faced by disadvantaged families. However, Swedish laws prevent sharing individual data publicly. Researchers can request access to SWIFT90 by contacting the project's principal investigator, Ylva B. Almquist. Data access is limited to the Department of Public Health Sciences at Stockholm University, and additional ethical approvals may be required.

ETHICS STATEMENT

The creation of the SWIFT90 cohort and the research conducted in this study has been approved by the Swedish Ethical Review Authority (No. 2021-00108).

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How to cite this article: Rajesh, T., Straatmann, V. S., & Almquist, Y. B. (2025). Out-of-home care placement patterns of children within the Swedish child welfare system: Findings from group-based trajectory modelling. *International Journal of Social Welfare*, *34*(2), e12719. https://doi.org/10.1111/ijsw.12719