The Danish Child Protection System in Light of Register-Based Research

Ph.D Dissertation
Mads Bonde Ubbesen
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Social Science and Business
Aarhus University
Nordre Ringgade 1
8000 Aarhus C
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Paper 1:


Paper 2:


Paper 3:

English summary

The objective of this Ph.D. dissertation is to explore how children in the Danish child protection system are processed from a register based research perspective and with a special focus on stability.

Central themes in current research in child welfare practice concerns the need for a more explorative approach in order to build a foundation on which better evidence focused research can be established. Further, stability is for many good reasons the guiding line child protection system, but is only scarce explored in a Danish context. Therefore the objective of this thesis is of high relevance.

The dissertation consists of an introductory essay and three research papers. The intention with the introductory essay is to place the three produced papers within the larger research area of child welfare research. The essay consists of two parts. In the first part the background for the research project is outlined. Current themes, obstacles, and needs are described with a special focus on register based research. Subsequently, central events on the pathway through care is described in order to introduce the Danish child protection system and in order to describe how various sources influence how children are processed in child protection systems. The second part introduces the empirical works of the dissertation. Main findings are outlined and limitations and suggestions for further research are discussed.

The empirical foundation of the dissertation is data obtained by linking several administrative data systems using the Danish civil registration system. Since 1968 all persons living in Denmark have been assigned an individual identification number (CPR). CPR is used across several registration systems, which can be linked via CPR; hence, it becomes possible to make very reliable descriptions and analyses of the population.
The first paper explores reunification and re-entries for children entering out-of-home care for the first time before their third birthday during 1991-2001 (N=3928). Reunification is usually considered a good outcome, but unfortunately some children are later returned to care. Hence, reunification and reentry are central transitions of interest in the description of pathways through care. Graphs of cumulative incidences are used to describe the processes of reunification and re-entry. Cox regression is used to estimate the covariates associated with reunification and re-entry. Results indicate that 39% of all children who enter care reunify with their families within five years of care. 22% of these children re-enter care within two years. Thus results suggest that the vast majority experience stability either in the form of long term care or successful re-unifications. Results further point to complex patterns of predictors for these transitions.

The second paper explores the temporal stability of rates and predictors for entry into care. Placing a child in out-of-home care is one of the most radical measures a child protection system can decide to take and there is an essential interest in describing the probability of entering care on a population level. The study population is defined as all children entering care before their third birthday from birth cohorts 1981–2008 (N = 11,034). Furthermore, a control population consisting of a randomly assigned quarter of the Danish child population from the same birth cohorts is used (N = 515,773). The overall likelihood for entering care is found to be decreasing over time. This is likely a cause of an increased focus on preventive services. Furthermore, results reveal two trends: relative rates of entry are significantly decreasing for children whose mother has a psychiatric history prior to the child’s birth; relative rates are significantly increasing for children whose mother or father was unemployed in the year prior to the child’s birth.

The third paper explores the transition from in-home based care to placements in out-of-home care. During the last decades there has been an increased focus on preventing out-of
home care placements in Denmark and an increased use of in-home based care has been observed. But the transition from in-home care to out-of-home care is not explored on Danish data. The study includes all children who entered the child protection system of a larger regional social service system in Denmark from 1993-2006 (N=9,961). Graphs of cumulative incidences are used to describe the transition into out-of-home care within two years after in-home based care started. Cox regression models are used to estimate co-variates of child- and parental characteristics. Results indicate that the majority of children do not enter out-of-home care, but that risks differ among age groups.

**Dansk Resumé (Danish Summary)**

Dette ph.d projekt har til formal at undersøge hvordan registerdata kan belyse hvordan børn i det danske børneværn behandles og oplever stabilitet.

De centrale temaer i forskning i børneværnsforskning i disse år er blandt andet behovet for en mere detaljeret viden om hvordan forskellige børn eksponeres forskelligt idet det kan danne et bedre evidensbaseret forskningsgrundlag. Samtidig er stabilitet af mange gode grunde den overordnede retningslinje for praksis overfor udsatte børn og unge. Derfor er dette ph.d projekt meget relevant.

Afhandlingen består af en introduktionsdel samt tre videnskabelige artikler. Hensigten med introduktionsdelen er at indplacere de tre videnskabelige artikler i det større forskningsområde indenfor indsatser overfor udsatte børn og unge. Introduktionsdelen består af to dele. I første del skitseres baggrunden for projektet. Væsentlige temaer, forhindringer og forskningsbehov skitseres med et særligt fokus på registerforskning. Efterfølgende, beskrives centrale begivenheder og forhold i børns vej igennem børneværet. Hensigten er både at introducere det danske system og beskrive hvordan forskellige kilder influerer hvordan børn
behandles i systemet. Anden del introducerer de tre artikler hvorefter hovedkonklusioner skitseres og begrænsninger go forslag til videre forskning diskuteres.


Den anden artikel udforsker temporal stabilitet i rater og prædiktorer for anbringelser. Når et barn anbringes er det udtryk for én af de mest radikale foranstaltninger overfor udsatte børn og unge og der er derfor en essentiel interesse i at beskrive sandsynligheden for at blive anbragt på et populationsbaseret niveau. Populationen som studeres er defineret ved allé børn som anbringes inden de fylder tre år fra fødselscohorterne 1981-2008 (N=11,034). Derudover bruges også en kontrolpopulation bestående af et tilfældigt udsnit af en fjerdedel af børn fra
samme fødselskohorter (N=515,773). Resultaterne viser at sandsynligheden for at blive anbragt er faldende. Dette skyldes højst sandsynligt den øgede opmærksomhed på forebyggelse og målrettede indsatser. Derudover indikerer resultaterne to udviklingstilbøjeligheder: relative rater for anbringelser er signifikant faldende for børn med psykisk syge mødre; relative rater er signifikant stigende for børn hvis mødre eller fædre er udenfor arbejdsmarkedet i barnets fødselsår.

The Danish Child Protection System in Light of Register-Based Research

In Denmark, children in general do well and grow up under circumstances that are relatively unproblematic. Some children, however, experience circumstances during their childhood that can potentially harm their development. In such cases, the child protection system can decide to employ several measures to intervene in order to promote resilience and secure the child's sound development.

The overarching framework of this dissertation is the use of register-based research to understand and improve the practices of the child protection system. The dissertation consists of this introductory essay and three papers that individually, from three different but complementary perspectives, contribute to how register-based research can be used to understand processes in the Danish child protection system.

The intention of the introductory essay is to situate the three produced papers within the larger field of child welfare research. The essay consists of two parts. In the first part, the background for the research project is outlined. Current themes and obstacles are described with a special focus on register-based research, and two current needs for research are identified. The first concerns the need for a more descriptive and explorative approach in order to advance toward more evidence-based research. The second concerns the need to explore how the Danish child protection system provides stability for children at risk. Subsequently, central events on the path to care are described in order to introduce the Danish child protection system and in order to describe how various sources influence how children are processed in child protection systems.
The second part introduces the empirical work of the dissertation. The main findings are outlined, and limitations and suggestions for further research are discussed.

**Background**

*The Realm of Child Welfare Research*

International research on children at risk is a confusing field and an interdisciplinary field in which different specialties within the social sciences meet. This circumstance creates research challenges.

*An international perspective.*

Words used to describe children at risk and related interventions vary and are therefore difficult to compare. “Children at risk,” “foster-care children,” “looked-after children,” and “vulnerable children” are all phrases used to describe the target group. “In-home services,” “preventive services/measures,” “family preservation programs,” “foster care,” “family foster care,” “residential care,” “out-of-home care,” and “family therapy” are all examples of interventions that target this group of children. Sometimes, the terminology is confusing. For instance, “foster care” in the U.S. is used broadly to describe children placed in out-of-home care, whereas “foster care” in Europe refers to a specific type of out-of-home care in which children are placed in a family-like setting. Research has started to identify how different child protection systems are organized and how children are processed differently (Gilbert, Parton, & Skiveness, 2011), and differences in legislation and data registration are often sources of incommensurable conditions (Thoburn, 2007; Tilbury & Thoburn, 2008). Thus, comparisons of findings from different child protection systems should be done with caution. Nevertheless, the comparative perspective is important for understanding the exposure of child protection
systems and moving the field forward in terms of methodological advantages regarding how to do research on and understand processes in child protection systems.

**Methodological variations.**

Research on child welfare varies with regard to methodology. In each of the papers produced for this research project, a review of the variations in research design is included, based on the quantitative research relevant to the specific paper. It is clear that there is no agreement on which designs and methodology should be used to investigate processes in out-of-home care systems. Different types of data sources, different follow-up periods, different comparison groups, different statistical methods, and different variables are only a few examples of the difficulties encountered in comparing findings from studies directly. One of the main tasks of future research, therefore, is to make clearer the implications and advantages of various methodologies. Concerning more traditional qualitative research methods, interviews of children and social workers, anthropological studies of institutional life, discourse analyses of legislative text, and reports have all been employed in studies of child welfare.

**Theoretical frameworks.**

The theoretical frameworks used to study how children at risk grow up and are influenced by child protection systems also vary. In general, theories of child development are not scarce (Berk, 2003). However, there is a lack of theories appropriate for register-based research. Based on a review of the empirical research on and the theoretical frameworks applied to studies of children’s transition out of care, Stein (2006) argued that there is a need for more theoretically grounded research. The more longitudinal and statistical-oriented studies generally make no reference to theoretical frameworks. In the best-case scenario, the underlying rationale advocates a variable-focused approach that strives to explain behavior as a function of specific regularities.
Developmental psychopathology.

Developmental psychopathology is an example of such an approach and is used in the present research project as a theoretical base. It is a large research orientation that implements various ontological levels, multiple methodologies, and theoretical viewpoints with the common goal to study the origins and course of individual patterns of behavioral maladaptation and resilient outcomes (Chicchetti, 2006; Sroufe & Rutter, 1984). Developmental psychopathology provides a framework that is widely accepted and useful for understanding children’s development into adulthood. A central aspect of developmental psychopathology is research on the risk and protective factors involved in maladaptation and resilience (Chicchetti, 2006; Kazdin, Kraemer, Kessler, Kupfer, & Offord, 1997). Development occurs in a complex interplay between risk factors and protective factors. An overabundance of risk factors might result in maladaptive outcomes, but the presence of sufficient protective factors might deflect this development. Risk factors therefore do not always lead to maladaptive outcomes; conversely, protective factors do not always lead to resilient or adaptive outcomes. Within this framework, it is clear that the intention of child protection services is to provide sufficient care and act as a protective factor, thereby deflecting maladaptive development characterized by various risk factors. As a starting point, this research project uses the perspective provided by developmental psychopathology in the operationalization and understanding of how different factors influence a child’s development.

Life course theory.

Life course theory has also been used as a theoretical base in this research project. It has many conceptual overlaps with developmental psychopathology. Broadly speaking, life course refers to the theoretical orientation “that encourages the study of changing lives in changing contexts’ and has been used widely to understand and describe how people develop through the different social arenas in life (Elder, 2006, p. 667). Several concepts in the theoretical
framework of life course are important. Life course describes individual development through the notion of *pathways*—a metaphor of life as a distance traveled over time. As such, pathways should be understood as "sequences of social positions in and between organizations and institutions" (Elder, 2006, p. 680). Through the notion of *trajectories*, life course introduces a term to describe the specific elements of pathways. A trajectory is a sequence of linked states within a conceptually defined range of behaviors or experiences (e.g., education, occupational career, or contact with the social service system) (Elder, 1985). Thus, childhood development is constituted by multiple interwoven trajectories. Trajectories consist of significant events, and these can be described through the notion of *transitions*. Transitions refer to changes in the states (e.g., in care or out of care) within trajectories. Therefore, both transitions and trajectories are elements of established pathways and can be used as analytic tools to understand specific conceptualized elements and their influence on children’s pathways through childhood.

Even though the present research project has a theoretical base, it should be emphasized that it is hard to translate register-based research into a theoretical framework because data is typically collected for administrative purposes rather than research purposes. Hence, choosing a given theory and then deciding what data the theory needs in order to study a specific phenomenon becomes difficult. It usually works the other way around: First, the data is collected, and then the research question that the data will be used to answer is formulated. This is the premise of register-based research.

In sum, the realm of child welfare research is composed of various methodological and theoretical orientations, of which only one is register-based research. Both methodological differences within register-based research and differences among child protection systems make it hard to compare studies directly. Also, it is hard to situate register-based research within an existing theoretical framework in the area of child development.
The Need for Descriptions of What Is Inside the Black Box

One of the current major themes in child welfare research is the search for evidence. But, for methodological reasons, causal relationships between different child welfare trajectories and later outcomes are very hard to identify. This section briefly outlines this issue and argues that a more descriptive approach is needed.

Long-Term Outcomes

The overall aim of the legislation targeting children at risk is to "provide them with the same opportunities for self-expression, personal development, maturity, and health as their contemporaries, despite their individual problems" ("Consolidation Act on Social Services (Serviceloven)," 2013, Art. 46). Thus, the task for the child protection system is to promote resilient outcomes for children at risk. Yet, according to several register-based studies, young adults who were formerly in child protection systems fare worse than their age-appropriate peers in adult life on outcomes pertaining to mental health, somatic health, criminal convictions, educational attainments, self-support, mortality, and tendencies toward teenage parenthood (S. H. Andersen & Fallesen, 2010; Kristofersen & Clausen, 2008; Olsen, Egelund, & Lausten, 2011; Pandiani, Schacht, & Banks, 2001; Vinnerljung & Ribe, 2001; Vinnerljung & Sallnäs, 2008; Vinnerljung, Sundell, Löfholm, & Humlesjö, 2006).

But many of such studies are mainly descriptive, meaning that they compare children formerly placed in care with the majority of the population. These studies cannot be used to draw conclusions on causal relationships between placements in out-of-home care and later outcomes. Selection bias, especially confounding by indication, is an overshadowing methodological issue characterizing the evaluation of out-of-home care placements. Confounding by indication is an epidemiological term describing selection bias when the selection criteria of the study population (e.g., children placed in out-of-home care) is based on conditions that, in and of themselves (e.g., the decision to place a child in out-of-home care),
indicate an important difference (i.e., the social and psychological circumstances on which the decision to place a child is based), which likely explains differences in later outcomes (see Rothman, 2002). Other studies use different quasi-experimental approaches, either by choosing a comparison group that, for various reasons, can considered as children at risk who were not placed in care, or by statistically simulating experimental conditions through matching. Nevertheless, even when using various quasi-experimental approaches, confounding by indication explains why causal inference cannot be drawn. The results might represent a reduction in selection bias but still constitute an ambiguous basis for the interpretation of causal relationships between exposures and outcomes. Cut to the core, the problem is that the compared groups are not comparable. Nevertheless, these findings are important because they clearly indicate that the aim of facilitating resilience measured by outcomes in the larger arenas of life is not reached.

**Opening the Black Box**

Longitudinal register-based studies have also started to compare outcomes of different service trajectories. Swedish register-based studies suggest a complex relationship among service trajectories and later outcomes. Children entering in-home or out-of-home care as teenagers and children in long unstable care situations are most likely to have acquired only a basic education by age 20-27, and those growing up in care are least likely (Vinnerljung, Öman, & Gunnarson, 2005). In terms of psychiatric hospitalizations at the age of 19, no statistical significant difference in risk exists among those receiving in-home care, short-term care, or intermediate care, when adjusted for various background variables, but there is a trend toward those who experience long-term care being the most likely to be hospitalized (Vinnerljung, Hjern, & Lindblad, 2006). Those who enter either in-home care, short-term care, or intermediate care as teenagers are most likely to become teenage parents, whereas those who grow up in care are least likely (Vinnerljung, Franzén, & Danielsson, 2007).
This research points to several things, but here only the two most important ones are outlined. First, age at entry, especially entering as a teenager, is associated with increased risk. This does not mean that outcomes will improve if children are simply placed in care earlier. It is more likely that age is a proxy for the types of problems leading to care (see Franzen et al., 2008). Second, service trajectories do not relate systematically to adult outcomes, but children who experience unstable placement trajectories do worse than other children placed in care at the same age. What can be concluded is that “the out-of-home care child” cannot be thought of as a homogenous entity. The “out-of-home care child” is a concept akin to a black box that has just been opened. Children are exposed differently to the child protection system, likely because they have different problems. For this reason, it is suggested that the study of child welfare practices needs more research projects that aim at very precise descriptions of the characteristics of children in child protection systems and of the different exposures experienced by different children with different characteristics. Studying transitions and trajectories within systems of care is one way to accomplish this goal. A more descriptive approach will, in time, result in a more detailed understanding of what hides within the black box of child welfare, an understanding on which research designs using more comparable groups can be based.

**The Need to Study how the Danish Child Protection System Provides Stability for Children at Risk**

**Child Welfare Policy**

Following the work of Maas and Engler (1959), research in the 1960s and 1970s started to suggest “the foster-care drift”—that children in out-of-home care were placed inappropriately, were experiencing multiple placements, and remained in care for unnecessary many years. Based on such observations, the child welfare discourse has since been dominated
by the idea of *permanency planning* (Fein & Maluccio, 1992). Permanency planning is an approach to case planning aimed at promoting stability and continuity for children subject to child protection services (Tilbury & Osmond, 2006). The underlying rationale is that, when a child’s caregivers cannot take care of the child, the best outcome is achieved by allocating resources to improve the parents’ resources and abilities to take care of the child, thereby either preventing the placement of the child in out-of-home care or allowing the child to return home after a short stay in out-of-home care. If it is not possible for the child to remain in the home, other permanent options are long-term care or adoption. Thus, permanency planning is about avoiding unnecessary breaks in the child's relationship with his or her caregivers and promoting stability and continuity during the child's development.

In the Danish context, permanency is referred to as stability or continuity. Concurrently with the international identification of the foster-care drift, the issue of continuity was raised in the "Graversen" report (1990), which concluded that casework to a larger degree needed to be focused on securing continuity in children’s development through a goal-oriented approach (Betænkning 1212, 1990). The report constituted the background for many of the initiatives taken in the area of child welfare as part of a larger welfare reform project conducted in Denmark in 1993.

Recently, there has been a historical development in the meaning of continuity for Danish child welfare. Kristensen, Kristiansen, & Jensen (2010) analyzed the commission reports that were the basis for legislative changes in 1993 and 2006, respectively. In the 1993 report, an understanding of continuity was grounded in object relation theory, which emphasizes the importance of the child’s growing up with his or her birth parents. This theory advocates for a practice aimed at securing continuity by working toward the reunification of the child with his or her family of origin after the child has been placed and thus continues the tradition of helping the family back on its feet. In the report from 2006, concerns about reunification’s constituting a
potential breach of continuity for the child were raised. The concern was based on the fact that children in long-term care can develop good relations with their foster care families, and the commission advocated for securing children’s continuity by letting them grow up in care while maintaining relationships with their biological parents. Thus, continuity in Danish child welfare has shifted from referring to the importance of securing the child’s relationship with his or her biological parents to referring to the importance of securing the child’s relationships with others significant in the child’s care environment. Continuity, therefore, does not have a stable meaning and, domestically as well as internationally, it has continually been discussed whether continuity and permanency should take the form of placement with biological parents or with new caregivers in some of the different out-of-home care solutions (Ebsen & Andersen, 2010; Parkinson, 2003). Hence, the basic idea supporting the establishment of stability for children at risk in the Danish child welfare context does not differ from ideas in other welfare systems, but there are nuances in what form this stability should take.

**Why Stability Is Important**

As outlined in the previous section, the main aim of child protection systems is to provide and ensure stability for children at risk. In this section, a deeper understanding of why stability is important is outlined.

**Psychological foundation.**

A broad theoretical point of departure for understanding the psychological importance of stability is found in the theory of the need to belong. Since the landmark paper of Baumeister and Leary (1995), the theory of the need to belong has been widely accepted and empirically validated as a fundamental universal theory of the human need for development (Gere & Macdonald, 2010). The theory itself is very basic. It states that “a need to form and maintain at least a minimum quantity of interpersonal relationships is innately prepared among human beings” (Baumeister & Leary, 1995, p. 499). Looking more in depth in regard to how this need is
fulfilled, the theory proposes that the need to belong has two main features. The first feature concerns the frequency and regularity of contact with those to whom one feels connected. People require frequent interactions with the same person—hence, a need to belong cannot be fulfilled by intimate or caring relations with individuals who only briefly or infrequently are a part of one’s life. The second feature concerns the quality and stability of these contacts. It is important that the relationship is perceived as though there is a social bond marked by stability, affective concern, and continuation, meaning an intention to have a lasting relationship. The field of child welfare is influenced by numerous psychological orientations and understandings such as attachment theory, systems theory, and theories of social inclusion and exclusion, just to name a few (Kristensen, in press). The strengths of the theory of the need to belong are that it can incorporate many of these orientations and understandings in its universal character and that it has established itself as a research orientation that in empirical work focuses on observable behavior, a focus that corresponds very well to the nature of register-based research.

**Causal pathways.**

Instability in relations can be regarded as processes of social exclusion. Within the field of social psychology, there has been growing interest in the consequences of social exclusion (Abrams, Hogg, & Marques, 2005). The expanding empirical body of studies suggests that social exclusion is self-reinforcing because it results in aggressive and self-harming behavior, loss in rational thinking, and loss of pro-social behavior—all important abilities in the process toward social inclusion (Twenge & Baumeister, 2005). Studies focusing more directly on foster care children have started to confirm such findings.

Children experiencing instability typically have backgrounds more associated with risk (S. H. Andersen, 2012). Thus, a child’s baseline attributes may impact both his or her capacity to achieve placement stability and subsequent well-being. Rubin, Reilly, Luan, and Localio (2007)
used propensity score matching on baseline risk variables to adjust for selection bias and thereby simulated experimental conditions in a study of 729 children in the U.S. foster care system and their placement histories. They categorized the placement histories into three groups according to the degree of stability and found that placement instability alone can predict behavioral problems in terms of CBCL (Child Behavior Checklist) after 18 months of care. Thus, instability itself leads to problematic behavior and potential social exclusion.

However, the causal pathways might be even more complex than that. Based on a large review, Jones et al. (2011) mapped correlations between different case and service characteristics and found that placement stability was both caused by and caused emotional and behavioral problems. Thus, the causal relationship between what causes instability and what instability causes is highly complex and difficult to unravel. It might be a vicious cycle, which is hard to stop when started.

**Consequences of instability.**

Several quantitative studies point to a correlation between instability and various negative long-term outcomes in terms of adult arrests, delinquency, and crime, lower educational achievements, and increased risk of mental health problems (DeGue & Spatz Widom, 2009; Fechter-Leggett & O’Brien, 2010; Pecora et al., 2006; Ryan, Hernandez, & Herz, 2007; Vinnerljung & Sallnäs, 2008; Vinnerljung et al., 2005). Herrenkohl, Herrenkohl, and Egolf (2003) found that even when controlling for socioeconomic status, type of maltreatment, and IQ, the number of transitions is significantly related to delinquency, alcohol abuse, drug use, and school dropouts. They argued that, even though the risk for deviance is higher for children at risk, the risk might be even higher for those experiencing instability while growing up. Instability also causes emotional distress. Perry (2006) studied 167 youngsters in foster care in a Midwestern state in the U.S. who were interviewed by telephone and explored the relationship between psychological distress (in terms of symptoms of depression and anxiety)
and network disruption. Variations in psychological distress are explained by the structure and the strength of the resulting network, and the study emphasizes that increasing levels and repeated instances of network disruptions are particularly problematic. Qualitative studies also indicate that children formerly placed in out-of-home care differ in their later well-being and adaption according to the degree of stability they experienced during care. Unrau, Seita, and Putney (2008) interviewed 22 adults between the ages of 18 and 65 years old, who had formerly lived in foster care in the U.S. They found that the experience of placement moves is remembered as a series of losses and that they have left emotional scars and led to problems trusting other people and building and maintaining strong relationships. Kools (1997; 1999) studied former child welfare clients who have experienced instability during their care career and found that such trajectories result in a feeling of diminished status and contribute to the devaluation of the adolescent’s self by others and that the clients actively resist engaging in close relationships with others. Thus, instable service trajectories result in feelings of rootlessness and a confused sense of belonging. Instability results in identities that lack the fundamental ability to integrate into society, which is precisely the ability that social services for children at risk aim to produce. For all these reasons, research on how the Danish child protection system provides stability for children at risk is of major importance.

**The use of registers to describe instability.**

In Denmark, research on stability is relatively sparse when it comes to register-based research. The National Appeals Board provides yearly reports detailing the prevalence of children in care, mean lengths of stays, and the number of entries, but these reports lack fundamentally methodologically important aspects such as the longitudinal organization of data combined with data and linkages to individual characteristics. In other child protection systems, more detailed approaches describing service transitions and trajectories in the lives of children at risk are being used. For example, the California Child Welfare Indicator Project uses a
methodological approach underlining the importance of following children longitudinally and prospectively in order to understand the child’s experience throughout care. As Webster et al. (2008) noted, a “snap-shot” (prevalence) approach to organizing data might bias what is observed, because such an approach tends to over-represent those who stay in care for a long time. Furthermore, any such point-in-time measures, due to their cross-sectional nature, leave out the option to draw causal inferences. Longitudinal and prospective use of the Danish data on children at risk has been employed in a very limited way to uncover the interface between children and risk and the child protection system. Recently, Signe Hald Andersen (2010) used sequence analysis to argue that the complexity is considerable for children who entered out-of-home care and were born between 1983 and 1987. The study clearly demonstrates that various degrees of stability exist in terms of multiple episodes of care. Still, the use of registers to describe how the Danish child protection system provides stability is largely uncultivated.

**Children’s Pathways Through Care**

In the previous section, two major research themes were outlined and suggested. First, research needs a descriptive focus on the kinds of exposures different children with different characteristics experience. Second, research needs to study how children are processed in terms of different degrees of stability. This section introduces Danish child welfare practices by describing some events central to the child’s pathway through care. The section also focuses on the complexity of the interface between children at risk and child protection systems, because this complexity is reduced in register-based research but should not be forgotten.

**Various Backgrounds and Characteristics Associated with Risk**

**Social backgrounds.**

Children at risk come from backgrounds characterized by difficulties in socially integrating into societies’ established systems. Several studies describe that children at risk
often can be characterized as having a series of social problems (Christoffersen, 2003; T. Egelund & Hestbæk, 2003; Jespersen & Sivertsen, 2005; Kristofersen & Clausen, 2008). Often, children at risk have problems fitting into social arenas such as school, the workplace, or the area in which they live, and their relationships with other children and professionals are characterized by conflicts (Jespersen & Sivertsen, 2005). Violence and substance abuse are commonly present, and the family background is often characterized by factors such as very young parents, long-term unemployment, poverty, crime, substance or alcohol abuse, psychiatric disorders, and internal conflicts (Christoffersen, 2003). The social backgrounds of children at risk represent marginalized backgrounds.

**Psychological characteristics.**

Furthermore, children at risk are, to a large degree, psychological deviant. In the Danish context, Egelund, Christensen, Jakobsen, Jensen, & Olsen (2009) used SDQ (The Strengths & Difficulties Questionnaire) to describe how children at risk scored poorly on all of the SDQ measures: emotional problems, behavioral problems, hyperactivity, bad peer relations, and prosocial behavior, as well as the overall score for psychological and social problems. Prevalence studies describing children in the child protection system also clearly show that at-risk children are more likely to have been diagnosed with a wide range of psychiatric disorders in terms of ICD10 (T. Egelund & Lausten, 2009).

One of the most common reasons for children to be removed from their homes is maltreatment (Christoffersen, 2003). As a psychological phenomenon, maltreatment describes many of the actions taking place in the relationship between parent and child that have a negative influence on the child’s development. Maltreatment has, in the Scandinavian context, been popularized through the works of Killén (1996). In an international context, the notion has been explored within the field of developmental psychopathology. According to Chicchetti and Valentino (2006), maltreatment takes either separately or in combination the following four
forms: 1) sexual abuse, 2) physical abuse, 3) neglect, and 4) emotional/psychological abuse. The causes and consequences of maltreatment have been studied within the framework of social ecological theory, which, in accordance with the social characteristics outlined above, posits that children at risk have backgrounds associated with social marginalization and social exclusion. Based on a comprehensive review of research related to maltreatment, Chicchetti and Valentino (2006) hypothesized that maltreatment can start a vicious developmental spiral, in which physiological factors (e.g., changes in the HPA-axis), psychological factors (e.g., a tendency toward atypical and unsecure attachment styles), and social factors (e.g., social information processing and moral development) in a complex interplay are related to maladaptive outcomes. Correspondingly, all the forms of maltreatment are related to both internal and external behavior (Carr, 1999). External behavior includes physical or linguistic aggressions, and internal behavior includes depression or social restraint.

Thus, children at risk are a diverse group without a clear diagnosis. They have different but sometimes overlapping problems. What they have in common is that they do not function in the other established systems in society. Exclusion might be the concept that describes this group best, and the development that child protection interventions intend to deflect seems extremely deeply rooted. Thereby, it is not surprising that children at risk do far worse on several outcomes than their contemporaries as adults, even though, as children, they were the target of social interventions.

**In-Home Based Care**

According to the “Consolidation Act on Social Services (Serviceloven)” (2013), all decisions about initiating an intervention targeting a child or a family should be done in accordance with the *principle of least restrictive intervention*, meaning that only what is necessary should be done. Also, decisions about children and their families are influenced by
regulatory requirements for monitoring and supervision of all children between 0 and 18 years old so that special needs can be discovered as early as possible.

There is a clear qualitative shift in the kinds of services used by child protection systems. This qualitative shift is seen when services include moving the child from his or her home environment and placing the child in another kind of care setting in order to protect the child’s development.

The range of different types of interventions that child protection systems have on hand is large. The scale of different preventive social services has grown along with the interest and focus on prevention. In Denmark, the child protection system can allocate resources to a broad spectrum of interventions spanning from help with homework or counseling to more comprehensive measures such as family therapy or specialized daycare or schools (Bengtson, Knudsen, & Nielsen, 2009).

**The Decision to Place a Child**

The actual decision to place a child is at present based on the so-called §50 investigation—an investigation of the child’s development and behavior; family, school, and health circumstances, leisure-time activities, and friendships. The investigation should include a description of the child’s resources in his or her social network. Furthermore, it should include relevant opinions and inquiries from professionals such as teachers, psychologists, and pediatricians. The perspective of the child and the parents should also be considered, but any intervention can be initiated without parental consent (“Consolodation Act on Social Services (Serviceloven),” 2013). Thus, the decision to place a child should heavily be based on the case characteristics.

But research on decision making clearly illustrates that decisions in child protection practices are not only influenced by the characteristics of the child or the family. Munro (2005)
used a systems theoretical approach to outline how the influences on the actual level of professional performance can be grouped into three layers.

First, social workers differ in terms of experience and “emotional wisdom.” Munro argued that child protection certainly makes psychological demands on workers and that the present increased focus on whether procedures have been followed correctly has overridden the need for supervision and attention to the emotional impact of case work. This might be the cause of the high degree of burnout experienced by frontline workers, and burnout in turn leads people to distance themselves from their work emotionally and cognitively, with predictable consequences for the children and their families.

Second, economic resources and constraints in terms of how easy it is to place a child and how easy psychological and psychosocial assessments can be undertaken, influence decision making. Munro focused on risk assessment tools and argued that they can both improve outcomes and be a hindrance to workers.

Third, the organizational context in which the child protection system works plays a large role in decision making. This is where the persistent dilemma about whether the focus should be on family support or child protection has made its home. This is also where the ongoing discussion of performance indicators and the debate they raise about whether it is the performance indicator or the child/family that matters the most can be found. Governmental and political forces have a major impact on decision making in child welfare.

Thus, although the consolidation act on social services underscores that case characteristics should form the basis of the decision to place a child, the law itself, organizational factors, and factors related to the actual social workers involved and the constraints and resources available influence the actual decision to place a child.
**Care Regimes**

In the Register for Support for Children and Adolescents, the categorization of out-of-home care into foster care, residential care, group care, boarding school, and own habitation is used. Since 2006, network care and kinship care have been added to the aforementioned categories. For the last 25 years, the use of the out-of-home care environment in Denmark has been dominated by foster care, which, in 2007, accounted for approximately 45% of the care environments for children (0-17 years old) on any given day of the year. Residential care accounted for about 25% and group care for slightly below 20%, leaving own habitation and boarding schools to account for the rest (Hestbæk, 2011). The use of boarding schools as out-of-home care for children at risk is unique to Denmark and is only done when the schools are publicly funded.

**Care Episodes**

*Social relations in care environments.*

Care environments are very diverse: Some include other children, and others do not. When a child is placed in care, new individuals are introduced into the child’s perceived social world. When other children are present, the establishment of relationships with other children becomes the main concern of the child. For instance, Stokholm’s (2006a, 2006b) anthropologic studies of children in residential care environments suggest that children’s own community can be characterized as a *community of meaning,* into which the new child socializes. In this socialization process, social positioning and hierarchy among the children is an indispensable part of the children’s lives. Acceptance from the other children and the feeling of belonging are of the highest priority for the child. The importance of the children’s community is two-sided because it is both a process of inclusion and also influences how the children behave through the constituted norms in the group. Care environments, as communities, can be sources of maladaptive behaviors such as drug use and antisocial behavior (T. Egelund et al., 2010). But,
care environments also influence how the children prioritize their relationships with professional social workers and hence with indirect resources that are important for the children’s own personal development. Thus, social workers are a part of the children’s perceived social world in institutional environments but are not necessarily the most important figures (Stokholm, 2006b). The relationship between social workers and children in care is characterized by an asymmetrical power relation that stems from the social workers’ authority. Therefore, pedagogical practice is also about regulating norms in the group of children, which, in turn, influence pedagogical practice to the degree to which the children want to or can be regulated.

**Pedagogical frameworks.**

Several theoretical frameworks for intervention practice exist, and several categorizations have been made (Kristensen, 2006). What is evident is that clear treatment philosophies and clear attempts by practitioners to achieve excellence affect the quality and outcome of interventions (Sinclair & Gibbs, 1998; Wampold, 2007). But how and to what degree such theoretical frameworks are translated into practice and how such micro-processes influence everyday life and are weaved into the complex social dynamics in an institution or a foster-care environment have been relatively neglected. Moses (2000) pointed out that the premise of studying intervention is that “basically all interactions in the milieu have therapeutic potentials that add up to a ‘corrective’ emotional experience” (p. 474). Thus, the very basics of social work, the understanding of how professionals actually produce change in the complex setting of a care environment, are still a major research task.

**Collaboration with parents.**

The perspective of the parents is also important because studies suggest that parental perspectives are crucial for the placement course. When a child is removed from the home, it is often a suffocating experience for the parents—an experience characterized by feelings of loss,
anger, guilt, and bereavement—but, sometimes, it is an experience characterized by hope (Buchbinder & Bareqet-Moshe, 2011). Establishing a working relationship with the child’s parents can have a positive effect. In a study using a two-year follow-up period, Vanderfaeillie, Holen, Vanschoonlandt, Robberechts, and Stroobants (2013) found that a decrease in problem behavior was related to the use of supportive parenting. The child’s perspective of the relationship is also important. Long-term studies suggest that a good relationship with the parents is associated with good outcomes. Andersson’s (2005) in-depth qualitative study of children formerly placed in foster care indicates that well-adjusted children at the age of 20-25 are characterized by lasting and significant relationships with at least one of the parental figures.

**Multiple Care Environments**

Children can experience multiple care environments when they enter out-of-home care. This phenomenon is often referred to as *placement instability* (Webster, Barth, & Needell, 2000) and is generally associated with negative outcomes. Based on a sample of British local authorities, Ward (2009) studied moves within the care system of 242 children placed in care for a minimum of 3.5 years. She found that, of a total of 700 moves, 35% were initiated by care families or institutions, most often because they requested disruption or relief. Forty-three percent were transitions to other care environments planned by local authorities, 11% were due to the fact that the placement was no longer available and hence also initiated by local authorities, and 11% were moves initiated by the children themselves. These findings illustrate that moves within the same care episode occur for different reasons and are often planned by local authorities—at least in the UK. In a Danish survey-based study of 225 teenagers, Egelund, Jakobsen, Hammen, Olsson, & Høst (2010) found that 44% experienced placement breakdowns during a four-year study period. They found that the presence of multiple children in the same care environment is the strongest predictor of placement breakdowns and that characteristics
of the child and his or her family cannot predict placement breakdowns. These findings indicate that the reasons for placement breakdowns develop during care and during case handling. The authors emphasize that stable placement patterns are not necessarily indicative of high-quality care episodes and that unstable placement patterns are not necessarily indicative of bad-quality ones; rather, quality depends on the specific case. Based on qualitative case studies, they pointed to a very important paradoxical trend maintaining that the reasons for a breakdown are similar to the reasons for placement. Hence, the care environments cannot accommodate the various problems that children at risk bring with them into care (T. Egelund et al., 2010). The two studies referred to in this section suggest different trends in placement breakdowns, but they both assert that it is seldom the child who initiates the breakdown.

**When Placements End**

When the reasons for the placement are no longer present in the family of origin, the normal practice is to return the child to his or her family. During the last decade, there has been an increased focus on letting the child remain in care if the child has been placed in care for long time and if severing the child’s relationship to his or her new caregivers will constitute a significant break in the child’s stability.

Adoption is used often in other welfare systems as a permanency outcome, but adoption is seldom used in Denmark, although it has been increasingly considered as a way to secure stability (Hestbæk, 2011). Older children leaving care often move back in with their parents, but, in the last decades, the opportunity to enroll in after-care programs that facilitate the transition to adult life has been made available. Sometimes, when a child is reunited with his or her parents, problems reoccur, and the whole process begins anew.
**Challenging Stability, the Need to Belong, and Their Relationship to Data**

In conclusion, the child's pathway through care is influenced by various sources and different instabilities in the pathway can influence feelings of belonging. One might simplify the pathway into several steps. First, child's background is crucial for understanding the individual child's history and how the child might respond to various types of interventions. Before the child is referred to social services, he or she can experience instability in terms of, for instance, parental divorce or a change in schools. Furthermore, poor quality of care, often in terms of maltreatment and neglect, will often signify challenges to the need to belong.

The second step is the social episode that involves a referral to the child protection services, which undertakes an investigation and, in accordance with the principle of least restrictive intervention, decides whether in-home based care or an out-of-home care placement is necessary. The most significant instability-creating event for which social services are responsible and which challenges belonging is the removal of a child from his or her home. But this can potentially be prevented by sufficient in-home based care. The third step concerns the episode of care, which entails socializing the child into new relationships and maintaining relationships with parents and possibly transferring the child to other care environments. Life in care can challenge the need to belong in many ways. Abrupt placement patterns containing multiple care environments, revolving social workers, dynamics in the children’s group, and challenges in being included in society when labeled as a “foster care child” are all examples of issues influencing belonging. The fourth step concerns the transition to independent living or the reunification with the family of origin. Reunification is considered a good outcome, but might be challenging the child’s need to belong has developed good relationships with its caregivers within the child protection system. The potential fifth step involves a re-referral to child protection services or a re-investigation based on follow-ups. The event of subsequent re-entry into out-of-home care is an example of decision making concerning children at risk that
actively causes an abrupt and instable service trajectory. Thus, the fifth step marks the point where the cycle starts all over again, beginning with the first step.

Thus, the need to belong can in many ways be challenged, but remarks should be done regarding reduction of the child’s pathway through care into five steps as it leaves out the causal complexity of child development in the context of child protection systems. Development is also influenced by individual characteristics, school and peer experiences, leisure-time activities and interests, the family context, socioeconomic resources, and the larger social environment (Bronfenbrenner, 1977).

Further, the challenges on the need to belong are not always observable in the registers. This is important to keep in mind when undertaking register-based research. The previous description of the child’s pathway though care highlights that it is influenced by several sources and that breaks in stability can happen in many ways. By undertaking register-based research, this complexity is reduced to very specific elements in the child’s pathway through care— the elements that can be observed in the already existing data which mainly reflects administrative decisions.

**Conclusion**

To sum up, the background section has demonstrated the need to study the different exposures of different children at risk in order to be able to compare similar groups and establish experimental conditions. The subsequent section emphasized the need for research on how the Danish child protection system provides stability for children at risk. Finally, as a way to introduce child practices in Denmark, the pathway through care was described, and it explained that the pathway is influenced by various sources and that instability can happen in many ways. Finally, it was outlined that what can be described of this relies on already existing data.
**Presentation of the Research Project**

The present research project strives to use register-based research to satisfy the needs outlined in the background section. The overall research question that this project addresses is, *how are children processed in the Danish child protection system from a register-based research perspective and with a special focus on stability?*

The attempt to answer this question has resulted in three articles offering three different but complementary perspectives on how children at risk are processed in the Danish child protection system. One focuses on the transition from in-home based care to out-of-home care; one focuses on re-unifications with families and re-entries into the system; and one focuses on the temporal stability of entries into care. The intention is to provide a description of the pathway through care and explore how different child and parental characteristics are associated with different trajectories. Furthermore, the project uses the longitudinal abilities of the Danish civil registration system to examine cohort effects and thereby whether the Danish child protection system is heading in a specific direction concerning probability for entry into care and who is placed in out-of-home care. Initially, the focus was on children targeted by the child protection system before the age of three. This age was chosen for three reasons. First, it was influenced by methodological issues in terms of a restricted data period, the desire to study long follow-up periods, and an acknowledgement of the importance of using strictly defined birth and entry cohorts. Second, children at different ages enter care for different reasons (Franzen et al., 2008). The reasons for children’s being referred to child protection system as infants more closely relate to parental resources compared to older children or adolescents, for whom the reasons more closely related to the children themselves. The data available in the Danish registers used in this project best describe vulnerable circumstances of parents. Third, stability for young children might have more serious implication given their rapid physical, physiological, and psychological growth (Frame, 2002). However, in one of the research papers
produced, other age groups were also taken into account. This resulted in several methodological limitations concerning precision (see the paper for a further discussion).

**Registration in Denmark.**

Registration in Denmark dates back to registrations of births and deaths in church books in the 17th century (Thygesen, 2011). The first national registration of Danish residents was established in 1924, when individual information for individuals in each Danish family was registered manually on index cards, and local municipality registration offices updated this information continually. This system was used until April 2, 1968, when it was replaced by the Danish Civil Registration System, which is still used today (Pedersen, 2011). The Danish Civil Registration System consists of three basic registers containing unique identifiers of all individuals (the population register, also called the CPR), all businesses (the business register, also called the CVR), and all real estate (the real estate register, also called the BBR). These three registers can all be linked, and other databases can be linked to them through the unique identifiers (CPR, CVR, and BBR). Furthermore, the CPR, CVR, and BBR are used in all registration systems when it seems useful to do so. Thus, the civil registration system in Denmark provides a very easy way to link multiple registration databases. Such a system can potentially be misused because it contains much sensitive information, which is why all projects must be clearly described and approved by the Danish Data Protection Agency in accordance with the proposed use of the data and its safekeeping. Also, the data is not available for free. Many key registers are maintained by Statistics Denmark, which operates through the need to know principle and hence will only sell the data needed to answer the research questions formulated.

**Register of Support for Children and Adolescents.**

The main register used in this project was the Register of Support for Children and Adolescents. This register was established in 1977 with the intention to deliver information
about the use of different social services targeting children at risk. It contains information on all placements since 1977 in terms of type of care, legislative powers, date of initiation, date of ending, and how the placement ended.

But the Register of Support for Children and Adolescents has several limitations. First, shifts in care environments are not registered properly. Registrations of moves between types of care (from residential care to foster care) are registered, but movements from one care environment to another are not, making the operationalization of placement stability during care problematic. Second, designations of the types of care have not been used consistently. Third, registration of preventive services is not complete, because registrations of family-oriented measures (such as family therapy) are not included. Such measures are only registered at the county level, meaning that no linkage between the child and the measure can be established. In studies linking preventive services with children, other registers must be used. The administrative register from the municipality of Aarhus was used in this research project for this purpose.

Other data sources.

In order to be able to describe characteristics of children at risk and their parents, other data sources were also used. The choices of other data sources was based on factor-oriented research related to developmental psychopathology on what circumstances predict the decision to place a child (Ejrnæs, Ejrnæs, & Frederiksen, 2010a; Franzen, Vinnerljung, & Hjern, 2008; Needell & Barth, 1998; Tittle, Harris, & Poertner, 2000), and what conditions in general indicate vulnerability and predict maltreatment (Chicchetti & Valentino, 2006), which are the main causes of child protection agencies’ concern and involvement (Christoffersen, 2003). But the choices were also limited to what information is contained in the registers.
The Population Register maintained by Statistics Denmark was used to identify child-parent relationships and obtain information on a broad range of topics such as gender, birthdays, immigration background, and family types. The Danish Psychiatric Register administered by the Institute of Psychiatric Demography was used to obtain information about psychiatric histories in terms of ICD-8 and ICD-10 (ICD-9 has never been used in Denmark). The Integrated Database for Longitudinal Labor Market Research was used to obtain information about employment.

**Study population.**

The population that was used in the research project consists of all children registered in the Register of Support for Children and Adolescents who were born after 1977. Furthermore, it consists of all children registered in the administrative register of social services in the municipality of Aarhus. A random fourth of the Danish population from the same birth cohorts was also used for comparison purposes. The study population further includes all the parents of these children. The study population was restricted in each of the three research papers for reasons explained in the papers.

**Operationalization of stability**

Stability in the sense of the need to belong refers to stable significant and long-lasting relationships with others, which are the foundations of belonging. As described earlier, such stability can be broken into several aspects on the pathway into and through care, but a description of stability is limited to what is contained in the data.

The kind of stability that the registers enable us to describe is stability in the service trajectory through care, in terms of mapping the time in care and the time out of care. Such time can be more or less stably distributed. The current research project used the following divisions:
1- Some children have contact with child protection services but are not placed in care. Thus, these children experience stability in their original care environment.

2- Some children are placed in out-of-home care and thereby experience instability. But, their time in care is short, after which they exit to independent living or reunification with family or other relatives without subsequent re-entry into care. Thus, these children experience a break in stability, but their care trajectory is relatively short, and, as a result, their break in stability is limited.

3- Some children are placed in out-of-home care, which in itself constitutes a break in stability, but, subsequently, they experience stability through long-term care.

4- Some children experience a stay in care and are exited, followed by a re-entry into care. Such children experience instability in their care environments.

This categorization of stability is, of course, a reduction of the varieties of different service trajectories and the various ways instability can take form, but it is nevertheless consistent with the idea of permanency planning described earlier.

**Presentation of the Empirical Studies**

The dissertation consists of three empirical articles. A short summary of each of the articles in the order they were written is provided in the following section.


When children are reunited with their families of origin and the reasons for placing them in out-of-home care no longer exist, it is usually considered a good outcome.
Unfortunately, some children are later returned to care. Such cases are an expression of instable service trajectories. The objective of the paper is to describe, in terms of rates, the transitions of reunification and re-entry of children placed in out-of-home care before their third birthday. Furthermore, the objective is to study whether individual and parental characteristics predict reunifications and re-entries.

The data for the study was obtained from the Register for Support and Adolescents and the CPR-linked information from other registers. The study population was defined as all children from entry cohorts between 1991 and 2001 who entered the Danish out-of-home care system before their third birthday (n = 3928). Graphs of cumulative incidences are used to describe the processes of reunification and re-entry. A Cox regression is used to estimate the covariates associated with reunification and re-entry.

The main findings are presented in the following bulleted list:

- Within a five-year period after entry into care, 39% of children are reunified with their families of origin. Within two years after reunification (when reunified within five years), 22% of children re-enter care.
- Predictors for still being in care after five years include having a low birth weight; having other siblings in care prior to entry into care; having one parent with a history of psychiatric illness prior to entry into care (in families with only one parent, compared to families with only one parent without a history of psychiatric illness); having two unemployed parents prior to entry into care (compared to having two employed parents); and having one unemployed parent (in families with only one parent, compared to having one employed parent).
- Predictors for reunification within five years include having an immigration background; and having one parent (in families with only one parent) without a history
of psychiatric illness, compared to families with two parents without a history of psychiatric illness (however, this finding is mainly driven by the fact that most families with two parents are families with complete unemployment).

- When using a re-entry follow-up period of six years after reunification (when children are reunified within first year in care), 23% re-enter within two years, but 37% re-enter within six years.

- Predictors for re-entry include having one or two parents with a history of psychiatric illness prior to first placement, compared with families with two parents without a history of psychiatric illness; having two unemployed parents, compared to two employed; and having one employed parent compared to two employed parents.

- Predictors for successful reunification include immigration background and having mothers who were teenagers when the children were born.


When children are placed in care, it fundamentally breaks the child's stable relations with his or her parents. Thus, placing a child in care is one of the most radical stability-breaking actions that a child protection system can decide to use. The background of the second paper is the essential interest in understanding how the Danish child protection system has developed in terms of placing children in out-of-home care. There is an essential interest in describing the probability of entering care and what circumstances are related to the decision to place a child in out-of-home care.

Previous studies of this topic have typically described the probability for entry into care within a specified period, during which it can be argued that the legislative frame is stable. This
understanding relies on the attempt to achieve precision in the description of risk factors for entry into care. This is, for methodological reasons, very sound. But such descriptions do not describe what might be more important—that there might be a development in the probability for entry into care and who is placed in care.

The data for the study was obtained by linking several registration systems. The study population was defined as all children entering care before their third birthday from the birth cohorts between 1981 and 2008 (n = 11,034). Furthermore, a control population consisting of a randomly assigned quarter of the Danish child population from the same birth cohorts was used (n = 515,773). Rates of entry and Cox regression models from 6 five-year periods from 1981 to 2008 were used to model covariates associated with entry into out-of-home care. The main findings are presented in the following bulleted list:

- In the period from 1990 to 2008, the probability for first-time entry into care before the third birthday has decreased from 1.82 hazards/1000 persons in the years 1990-1994 to 1.35 hazards/1000 persons in the years 2005-2008.

- Across the included five-year entry periods, consistent predictors for entry into care include low birth weight, having a mother with a history of psychiatric illness prior to the birth of the child, having a father with a history of psychiatric illness prior to birth of the child, having an unemployed mother prior to birth, having an unemployed father prior to birth, and having a teenage mother at the time of birth.

- Decreasing trends for entry into out-of-home care before the third birthday include having a mother with a history of psychiatric illness prior to birth.

- Increasing trends for entry into out-of-home care before the third birthday include having an unemployed mother prior to birth and having an unemployed father prior to birth.
Ubbesen, M. B., Petersen, L., & Kristensen, O. S. (under review). The Transition from in-home Services to out-of-home Care: A Danish Register-Based Study.

The premise of the third paper is that there is substantially little knowledge about the transition from in-home based care into out-of-home care. During the last decades, there has been an increased focus on developing and using in-home based services (Gilbert et al., 2011). The intention is to provide stability for the child by not removing him or her from the family. In Denmark, several researchers have used the summative statistics from Statistics Denmark to point out that there has been an increase in the use of preventive services (Ebsen & Andersen, 2010; Hestbæk, 2011), and, as the second paper of this thesis suggests, there has been a slight decrease in the likelihood of placing children (0-3 years) in care. This development is likely influenced by the use of in-home based services, but the transition and the dynamics between in-home based services and out-of-home care placements cannot be explored properly using the data provided by the Register of Support for Children and Adolescents, because the registration of preventive measures is incomplete. The third paper makes use of the administrative data collected by the social service system in the municipality of Aarhus—data that contains information about all types of measures. This dataset therefore has some obvious advantages when it comes to describing transitions from in-home based care to out-of-home placements.

More specifically, the study describes the transition from in home-based care to placements in out-of-home care within a two-year follow-up period. The study includes all children who entered the child protection system in Aarhus, Denmark, from 1993 to 2006 (n = 9,961). Graphs of cumulative incidences are used to describe transitions into out-of-home care within two years after the start of in home-based care. Cox regression models were used to estimate the impacts of child and parental characteristics. The main findings are presented in the following bulleted list:
- Probability for entry into out-of-home care within two years after in-home based care has been initiated differs significantly between 6.5% and 14.6%, depending on the age group.
- Children and youth with a history of psychiatric illness before the start of in-home services are more likely to enter out-of-home care.
- Characteristics of mothers in terms of single parenthood and a history of psychiatric illness prior to in-home based care predict entry into out-of-home care.
- Immigration background was found to be a protective factor for entering out-of-home care.

**Conclusions**

The objective of this research project is to contribute to the field that uses register-based research to explore processes in child protection systems. In the following section, the main findings will initially be presented. Afterward, limitations of the research project as well as directions for future research will be discussed. Finally, implications will be outlined.

**Main Findings on Child and Parental Characteristics and Stability**

*Low birth weight is a predictor for long-term care.*

Low birth weight is generally associated with increased vulnerability and can be used as a proxy for a lack of prenatal care (Kathryn et al., 2010). In all three studies, low birth weight is associated with out-of-home care. Low birth weight predicts transitions from in-home care to out-of-home care for children less than three years old. Furthermore, the temporal aspect of low birth weight indicates a trend (although not significantly) towards an increased likelihood of entry into out-of-home care. Thus, in the period 2000-2005, the hazard ratio was 2.77, whereas it was 3.57 in 2005-2008. Also, the findings from the reunification paper suggest that children with low birth weight have an increased risk for staying in care. Thus, children with low birth weight...
weight are more prone to enter out-of-home care and are more likely to stay in care than to be reunited with their parents. For those who are reunited, there is no significantly increased risk for re-entry.

*Children with immigration background are well represented in the child protection system and experience stability in their home environment.*

Immigration background was used as variable in two of the studies. A relatively large proportion of children in the child protection system have an immigration background (between 28.9% and 32.7% of those receiving in-home care, depending on age group). During in-home care, these children are less likely to enter out-of-home care. When they first enter out-of-home care, they are less likely to remain in care (if they entered before their third birthday), and they are also less likely to re-enter after re-unification. Thus, children with an immigration background are well represented in the child protection system, but the majority experience stability either in terms of not entering out-of-home care or in terms of relatively short stays in care followed by successful reunification.

*Integrating parents of children at risk on the labor market is a protective factor*

The period studied in the papers is characterized by a conjectural change during which unemployment is decreasing (Danmarks Statistik, 2010). These conjectural changes are also seen within children placed in out-of-home care, where unemployment is decreasing. Despite this conjecture a trend towards an increased hazard ratio between unemployed and employed parents is observed. Thus even though it is getting easier to get employed it increasingly works as a protective factor. This could reflect the strategy of preventing out-of-home care placements by integrating families on the labor market.
\textit{Child and maternal histories of psychiatric illness characterize children and families who cannot be reached by in-home based care.}

Although psychiatric diagnoses are becoming more common in the general population, having parents (especially mothers) with a history of psychiatric illness predicts entry into out-of-home care. Maternal psychiatric history predicts transitions from in-home care to out-of-home care when the child enters the system before the teenaged years and is thus a characteristic of those children and families who cannot be reached by in-home care. Correspondingly, the proportion of children entering out-of-home care directly is statistically significantly larger than that of those entering in-home care. The three studies in this research project mainly focus on children in contact with the child protection system prior to their third birthday, and children are seldom diagnosed that early in life. Only five (0.3\%) children entering in-home care in Aarhus before their third birthday had a psychiatric diagnosis. In the national study of reunification, 0.6 \% of those placed in care had a psychiatric diagnosis. Nevertheless, the study of the transition from in-home care to out-of-home care also incorporates other age groups, and the results clearly indicate that having a psychiatric diagnosis predicts entry into out-of-home care after an in-home care episode. Comparing the groups of children entering out-of-home care directly with those entering after an in-home care episode, those entering directly are statistically significantly more likely to have a history of psychiatric illness. These findings indicate that having a mental disorder predicts a pathway into out-of-home care. However, this study asks more questions than it answers regarding children with mental health problems in care, because it does not tell us anything about what happens to those children after they have entered care.

\textit{Children from families with parental psychiatric histories are more likely to experience instability when parents live together.}

Family types in terms of parents’ living alone and parents’ living as couples indicate different degrees of parental resources but also different degrees of conflict potential. Whereas
children from families with psychiatric histories are more likely to enter care, they are only more likely to stay in care when they live with a single parent. The combination of single parenthood and psychiatric parental vulnerability thus indicates a combined increased risk that leads to stability in the form of long-term care. But, parental psychiatric history combined with parents’ living together does not indicate an increased likelihood of long-term care. In contrast, when reunited with their parents, these children are much more likely to re-enter the system. Thus, children living with parents who are psychiatrically vulnerable are at risk of being placed in care and experience unsuccessful reunifications.

**Children with single parents are more likely to experience instability.**

Having parents who live as a couple is, compared with the general population, a protective factor for entry into care. When identified by the child protection system, single motherhood predicts entry into care for all age groups. Compared to well-functioning couples characterized by employment, single parenthood is associated with an increased risk of re-entry after reunification. Thus, children living with single parents are more likely to experience instability.

**Problems with young mothers fade away.**

Teenage parenthood (especially teenage motherhood) is, in the national study, associated with a risk for entry into care. This prediction is not seen in the study describing the transition from in-home care to out-of-home care. This indicates that problems with teenage parenthood are identified of the system. When entering out-of-home care, children of teenage fathers are more likely to experience stability through long-term care. When children are reunified, those with teenage mothers are more likely to experience stability by not entering care again. An explanation could be that teenage mothers outgrow their problems and are probably easier to help through in-home services in terms of parental education and material support.
Even though the administrative data contains only very limited information about the contexts in which children at risk are located and thereby provides minimal insight into the circumstances that characterize problems associated with different types of exposures to the child protection system, this section focusing on child and parental characteristics clearly illustrates that children at risk with different characteristics are processed differently. Therefore, register-based research is justified by its ability to describe how different children are processed differently and is clearly useful for the development of a more differentiated understanding of processes in the child protection system.

**Main Findings Across the Three Articles**

The findings on child and parental characteristics indicate that children at risk are processed differently, but, when taking a broader perspective, this research project also offers some main conclusions across the three articles. The major three conclusions are outlined as follows.

First, this research project suggests that there has been a decrease in the likelihood of entry into out-of-home care for small children during the last decades. Although the cause of this is unobserved, a hypothesis is that it is a result of the increased focus on preventive services and goal-oriented casework. Thus, the strategy is a focus on efficiency and prevention of entry into care. Nevertheless, this research project also suggests that there still is a group of children who cannot be reached by in-home based services, which explains why this trend is probably not going to continue.

Second, this research project suggests that the vast majority of children in the child protection system experience stability. The vast majority entering in-home care do not enter out-of-home care (thereby not necessarily preventing out-of-home care). For those who actually enter out-of-home care, stability is broken, but the vast majority of these children experience a
service trajectory that can be associated with stability either in terms of long-term care or in terms of a relatively short stay in care followed by successful reunification.

Third, although a large proportion experience stability, some still do not, and this research project suggests that some of these instable trajectories could be prevented. Mothers of children entering out-of-home care directly share some characteristics, in terms of mental health and family type, with children entering out-of-home care after an in-home care episode has been initiated. This suggests that there are some children on the borderline of placement who are entering care on a delay and who might benefit from earlier entry. Also, some re-entries into care can be predicted by variables describing mental health conditions in the family before the first placement. These findings indicate that children and families who are vulnerable in terms of mental health issues should be considered either for remaining in care or for receiving sufficient support during the reunification process in order to achieve stability.

**Strengths, limitations, and implications**

**Family structure.**

The three papers model the structure of the child’s family in different ways. The reunification paper takes interactions into account, but the main effect of family type in terms of whether the child lives with a single parent or a couple is not estimated. In the paper using the data from the municipality of Aarhus, another division of the social parents is used that estimates the main effect of living with a single parent or with a couple. The downside of this division is that it does not describe the potentially different effects of unemployment and psychiatric history on family structure. The paper about the temporal stability of entry and predictors for entry uses another division. This division is based on biological parents and not
social parents, who are used in the other two papers. Therefore, it does not describe as well as

the other papers the social context in terms of whether the child lives with a single parent or
with a couple. What it describes is, instead, the family status of the two biological parents, which

involves the biological mother living as a couple but not necessarily living with the biological

father.

**Entry and reunification.**

The paper about stability finds that the probability for entry into care is decreasing. The paper about reunification builds on the same data. Findings on reunification and re-entry are conditioned on a stable threshold of entry. It cannot be expected that yearly entries are completely stable and the decision to conduct the study on the specified entry and birth cohorts was made based on a graphical analysis of whether entry rates in general were increasing. No trend was observed. But, based on the findings from the second paper, the overall findings on rates of reunification and re-entry might be biased toward an overestimation of the likelihood of reunification and re-entry based on the rationale that fewer entries lead to a reduced probability of reunification (Webster et al., 2008). The finding regarding a decrease in entries is based on entries from 1990 to 2008, which is a larger entry period than the one used in the paper about reunification. Nevertheless, the paper about entries should also be interpreted with caution. It is found that the likelihood of entry into care is decreasing, but, looking at the actual change in likelihood, the decrease is relatively small, from 1.82 hazards/1000 persons for the years 1990-1994 to 1.35 hazards/1000 persons for the years 2005-2008. One might say that the probability for entry into care before the third birthday has decreased from very small to a little less than very small.
**Follow-up periods and critical periods.**

Defining a follow-up period is a practical matter, and, in all studies, it can be argued that longer follow-up periods would have captured more events. In the paper about transition from in-home care to out-of-home care, a two-year follow-up period was used, but, as described in the paper, the initial analysis showed that a longer follow-up period would likely have captured more events. In the paper about the temporal stability of entry into care, the follow-up period used was defined according to the age of the children of interest—hence, entry before the third birthday. As discussed in the paper, using a longer follow-up period based on the youngest cohorts does not reveal any stabilization of the probability of transition into care; thus, the two-year period used in the study probably does not capture all events of interest but only transitions within the first two years. Conversely, using a shorter follow-up period such as two years enables the taking of more cohorts into account. The paper about reunification and re-entry uses a five-year follow-up period of reunification. Within this period, the probability for reunification stabilizes, meaning that a five-year period is a good definition of a follow-up period because it captures events of interest, with the "critical" period of reentry defined as the first three years. But, regarding re-entry, the two-year follow-up period does not indicate any critical period. When using a longer follow-up period for those reuniting within the first year, the probability for re-entry does not stabilize.

**Central limitations pointing at implications and suggestions for future research.**

When doing register-based research, the data presents several limitations. Therefore, such limitations also point to suggestions for future collections of data and research projects. Four central limitations and suggestions are outlined as follows.

First, this project is limited in the degree to which stability is and can be operationalized. The section about children’s pathways through care reveals that instability can take many
forms, but it is mainly only instability that in the form of either entry or re-entry after reunification that can be operationalized using the Danish Register of Support for Children and Adolescents. The registration of moves between care environments is not complete because moves within same type of care regime are not registered and because designations of the types of care regimes have not been used consistently. As outlined, some of these moves might be planned and unproblematic, and others might not, but it is a major limitation that these forms of instability cannot be described using the Danish register. In the administrative data of other child protection systems, this information is collected (see Webster et al., 2000), and a suggestion for improving the Register of Support for Children and Adolescents would be to include such information in the future and apply the categorization of care regimes more consistently.

Second, the data used in this research project only gives a limited description of those in contact with the child protection system. As outlined in the previous sections, the reasons for placing children outside the home are very complex. Using registers across several registration systems, this study has tried to describe the contexts leading to placement, but this type of data only provides very limited access to what was actually going on before the child was placed in care. However, recently, registrations of reasons for placements in care have appeared. Therefore, it is suggested that future research should implement this data in the description of who is processed in which way in the Danish child protection system.

Third, this research project relies on the premise that stability is a good way to operationalize outcome measures of good practice in child protection systems. As outlined, there might be good reasons for this, but the subjective perspective of the child is still absent. Wellbeing as an outcome is difficult to define and implement in policy (Wulczyn, Barth, Yuan, Harden, & Landsverk, 2005), but a clear limitation of this project is still that no actual data on how children perceive their interface with the child protection system is included. This was not
the intention of the project, but wellbeing measures in future data registration should be considered.

Fourth, because the Register for Support of Children and Adolescents is incomplete with regard to the registration of preventive services, the administrative database of the municipality of Aarhus was used to describe transitions from in-home care to out-of-home care. However, the use of preventive services in Denmark varies across municipalities (Signe Hald Andersen, 2010b; Ejrnæs, Ejrnæs, & Frederiksen, 2010b), which explains why the findings regarding in-home care cannot be generalized on a national level. However, from 2010 onward, the use of family-oriented services (e.g., family therapy) has been registered in the Register for Support for Children and Adolescents; therefore, future research projects should shed light on the transition from in-home care to out-of-home care on the national level.

Thus, several data limitations point to future research suggestions. However, it should be noted that registration is resource-intensive. As Campbell (1991) stated in his reflections concerning the advancement toward an experimenting society: “As this portrait emerges in greater clarity, it will be our duty to continually ask ourselves if we really want to advocate this monster of measurement and experimentation” (p. 256).

**Implications for Further Research**

The present research project has implications for further research in child welfare. Besides the limitations of this study, which points to potential directions for further research, three suggestions are outlined as follows.

First, the present research project argues that children with different characteristics are processed differently. But, the present research project is also limited in the degree to which these differences are observed in the data. Further research focusing on more detailed
characteristics of children at risk and their families can better differentiate among the various ways that being a child at risk are associated with different trajectories.

Second, this research project indicates that, when children are processed differently, it is likely because they have different characteristics and problems. In order to advance the understanding of what works for whom, further research should compare different trajectories of children with similar characteristics.

Third, the paper about the temporal stability of predictors and entry into care indicates that a child protection system is not a stable entity. It is influenced by conjectural changes and changes in policy, which influence how children are processed in child protection systems. Such conditions should be taken into account when describing processes in child protection systems because they have implications for the degree to which research is comparable. Conversely, outlining these differences among different child protection systems is necessary in order to move the field forward. Further research should focus on outlining the different ways that data is registered and that child protection systems are organized in order to establish a more international research field, in which research on one child protection system can be more directly applied to another.

**Strengths.**

This project also has several strengths. Longitudinal research is often characterized by limitations caused either by retrospective designs or loss of cases during follow up. These cause problems with validity, but, by using the civil registration system, this project overcomes such limitations. Also, this project has taken advantage of the opportunities presented by Danish civil registration by using data registrations dating as far back as the beginning of the 1980s to conduct prospective-designed research describing developmental processes over a very long period and by using long follow-up periods. Furthermore, this research project has studied
developments on the population level in combination with relatively detailed information on the individual level, which is very seldom seen in child welfare research. By using population-based samples, common problems such as generalization and loss at follow up caused by moves between different regional child protection systems are avoided.

On the national level, this research project contributes in several ways. It is the first project to use the survival analytical toolbox to describe processes in the Danish child protection system, which is a methodological advancement. As such, it contributes descriptively to the understanding of the complex interface between the child protection system and children at risk. It is the first project that in detail describes transitions from in-home care to out-of-home care, to reunification, and to re-entry. Whereas it is known that children experience trajectories with different degrees of stability, this study hereby contributes by describing how the probability for different transitions on the pathway through care develops for children with different characteristics.

References


Empirical articles
Out of care and into care again: A Danish register-based study of children placed in out-of-home care before their third birthday

Mads Bonde Ubbesen a,⁎, Liselotte Petersen a, Preben Bo Mortensen a, Ole Steen Kristensen b

a National Center for Register Based Research, Aarhus University, Taasingegade 1, 8000 Aarhus C, Denmark
b Department of Psychology and Behavioural Sciences, Aarhus University, Bartholins Allé 16, 8000 Aarhus C, Denmark

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A B S T R A C T
Objective: When children are reunited with their families of origin and the reasons for placing them in out-of-home care no longer exist, it is usually considered a good outcome. Unfortunately, some children are later returned to care. The objective of this register-based study is to describe in terms of rates the processes of reunification and re-entry, involving children placed in out-of-home care before their third birthday. Furthermore, the objective is to study whether individual and parental characteristics predict reunifications and re-entries.

Method: Data were obtained by using personal identification numbers to link several registration systems. The study population was defined as all children from entry cohorts in 1991–2001 who entered the Danish out-of-home care system before their third birthday (n=3928). Graphs of cumulative incidences are used to describe the processes of reunification and re-entry. Cox regression is used to estimate the covariates associated with reunification and re-entry.

Results: 39% (n=1525) of all children who enter care for the first time reunify with their families within five years of care. 22% of these children re-enter care within two years. Results further point to complex patterns of risk factors. Single parenthood is associated with a lower rate of reunification when combined with unemployment or psychiatric diagnoses, but it is associated with a higher rate of reunification when parents are employed or when none of the parents have psychiatric histories. A psychiatric history is associated with re-entry only when the family structure consists of two parents. An immigration background is associated with a higher likelihood of reunification and with a lower likelihood of re-entry.

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1. Introduction

In recent decades, numerous studies on children in out-of-home care have emerged. A central theme in these studies is stability. Stability in the sense of stable and lasting relations during childhood development is a fundamental aspect of sound human development (Baumeister & Leary, 1995). The trajectories of children in out-of-home care systems are characterized by varying degrees of stability. Some children are placed in out-of-home care for a very short period of time followed by reunification with their parents. Other children are placed in out-of-home care for many years — maybe for their entire childhood. Still other children are subject to placement patterns that are influenced by discontinuity, e.g. repeated transfers within the system or entries into/ exits from the system. Such different types of contact with the system reflect how the degree of stability may vary, resulting in different long-term implications.

1.1. Stability and permanency

The importance of stability is widely recognized; nevertheless, child welfare practices differ. For many years permanency has been a guiding principle for many child welfare agencies (Fein & Maluccio, 1992). The concept of permanency is unclear in the sense that the definitions used differ slightly, e.g. permanency may refer to the process of making long-term care arrangements, ensuring lifetime relationships and a sense of belonging (Tilbury & Osmond, 2006). This perspective corresponds very well to the idea of stability in childhood. Thus, working toward permanency constitutes an attempt to secure the child’s stable relations with significant adults as it grows up, and permanency is then based on stability in childhood, no matter where this stability is established.

At other times permanency refers to guiding principles and performance standard measures concerning successful adoptions or reunifications between child and family (Barth, 1997). In this sense of permanency, family relations and the necessity of returning the child to its home are seen as very important aspects of the child’s need for stability. These two perspectives are not necessarily inconsistent with the importance of stability in childhood. However, some perspectives on
permanency mainly focus on achieving stability by reuniting the child and its family or on facilitating adoption. Other perspectives do not reject that stability can also be achieved by placing the child in long-term placement settings. These differences may reflect differences in practice, legislation, and tradition within child welfare systems. In some countries (e.g. the USA, the U.K., Canada, and, to a lesser degree, Australia, New Zealand), entering care is something that should be avoided, whereas in other countries (e.g. Denmark, France, Germany, Ireland, Italy, Norway, Spain, and Sweden) entering the system of care – by being placed out of home – is rather a necessary part of family support and of child’s mental health systems (Thoburn, 2007). As a result of the differences in practice, caution should be taken when comparing international results from studies on child welfare systems. Results should always be interpreted by taking into account the context they reflect.

1.2. Stability and outcome measures

The importance of stable and long-lasting relations and the ability of child protection systems to facilitate such stability in children’s lives makes studies on reunification and re-entry relevant. Often administrative data are used to take snapshots of children placed in a child protection system at a specific time. The snapshot is used to calculate frequencies of children in care, the mean length of stays, etc. The snapshot approach has well-defined weaknesses, in the sense that they tend to over-represent long-term placements and under-represent children with unstable placement patterns (Webster, Usher, Needell, & Wildfire, 2009). In short this approach does not describe stability and it does not describe children’s care trajectories. Organizing longitudinal data will enable one to control methodology weaknesses and to produce precise descriptions of the stages children experience in their care trajectory.

When a child is removed from its parents, it constitutes a break with the child’s stable relations, though the quality of these relations can be questioned, as a removal is necessary. One way to secure stability is to prevent out-of-home placements by intervening with different types of in-home services. The number of children who enter care and the probability hereof describe this event. Thus, entry rates are an important measure of the ability to secure stability, as they describe child protection systems’ ability to either prevent placements or to detect and protect the children who are in need of out-of-home care.

When a child has entered care, stability becomes important as a measure of the quality of the child’s relations with the significant others that constitute its social reality. In larger studies using administrative data, information about subjective entities such as forms of attachment and well-being mostly remains unobserved. In such studies stability can be understood as placement stability – e.g. the number of moves between care settings from the time of entering the out-of-home care system to the time of exit. Such moves may result in experiences of exclusion and rejection and might undermine future placement stability (Webster, Barth, & Needell, 2000).

The present study focuses on reunification and re-entry. When children reunify with their families of origin and the reasons for placing them in out-of-home care no longer exist, it is usually considered a good outcome. It enables the child to develop long-lasting and stable relationships with its parents. Unfortunately, some children are later returned to care. When a child is removed from its parents several times it seriously violates the child’s need for stability and sense of belonging. Therefore, any study of reunifications is incomplete if re-entries are not taken into account (Shaw, 2006). In this study stability is defined as no change in the child’s status as in-care or out-of-care. In methodological terms this is measured by long-term placement or reunification without subsequent re-entry.

2. Previous research

Previous research in child welfare varies with regard to focus and methodology. The following selective review is solely based on research using administrative data. Studying processes of stability in the out-of-home care system, several outcomes are relevant (Section 1.2). Many exit types are associated with stability, e.g. reunification is the exit type most frequently studied, whereas adoption, leaving guardianship, and relative custody are the most rarely studied outcomes (Akin, 2011). Several studies have focused on factors involved in children’s reunification with their families of origin (Courtney, 1994; Goerge, 1990). The knowledge gained by this research is, of course, of high value, but any analysis of permanency that uses reunification as outcome is incomplete, if it does not also take re-entry into account (Shaw, 2006). Re-entry can be understood as failed reunification, as it may indicate that the problem that caused the out-of-home placement had not been properly solved. Therefore, this review focuses on studies that include both reunification and re-entry.

2.1. Overall findings on re-entry and reunification

Overall rates on reunification and re-entry vary across studies, but re-entry into care is not a rare event. According to the Multistate Foster Care Data Archive which covers twelve states in the USA, 28% of the children who were reunited with their families in 1990 re-entered care within a 10 year period (Wulczyn, 2004). Based on Danish registers, about 40% of the children from the 1983–1987 birth cohorts who were placed in out-of-home care before their 18th birthday experience more than one placement (Andersen, 2010). A Swedish study shows that 25% of the children who were reunified before their 10th birthday in 1989–1998 re-entered within two years (Vinnerljunng, Öman, & Gunnarson, 2004). In the U.K. relatively few studies have been conducted on re-entry, but on the basis of existing studies it can be concluded that between 37 and 52% of the children who enter care also experience re-entries (Biehal, 2007). Such variations may be a consequence of differences in legislation and tradition (Section 1.1).

2.2. Variations in methodology

Studies on reunifications and re-entries are not easily compared, as they vary in methodology in the following seven ways. Firstly, it is in general difficult to describe the phenomena under study, as the research field is inconsistent with regard to the terminology in use. Terms such as “foster care”, “residential care”, “out-of-home care”, “group homes”, and “looked-after children” are all used to describe the process by which a child is moved away from and placed out of home. To make matters even more complicated, some of the terms used (e.g. foster care) do not always refer to the same kind of practice. Although this may reflect different practices, the field could benefit from a more consistently used research terminology of the phenomena under study (Kimberlin, Anthony, & Austin, 2009).

Secondly, the research field differs with regard to data use. Although focusing on administrative data, the data sources vary to some degree. Studies on re-entry are largely based on administrative databases maintained by authorities or private childcare agencies. Many, but not all, of these databases hold information on very specific elements of the contexts in which the placement histories take place; sometimes they are combined with case file reviews, detailed surveys filled out by caseworkers, or traditional testing tools like Child Behavioral Checklist (Barth, Wegensberg, Fisher, Fettrow, & Green, 2008). The advantage of complementing administrative data with other data sources is that this provides us with more detailed descriptions of the contexts of the actual placement histories. However, the samples studied tend to be more local and smaller, as more detailed descriptions of contexts are implemented, making it harder to generalize findings.

Thirdly, studies may vary with regard to the age of the children in the sample studied. Comparing studies without taking the studied age group into account is misleading, as children from different age groups do not have the same probability of being reunited with their families.
Infants and adolescents are less likely to be reunified than children from other age groups (Wulczyn, 2004). Moreover, age becomes a major issue if developmental perspectives and needs are taken into account, as children of different ages enter care for different reasons (Barth, Wildfire, & Green, 2006; Franzén, Vinnerljung, & Hjern, 2008). Furthermore, stability may have different effects on different age groups — hence, different importance. For instance, stability may be especially crucial for infants and toddlers, given their extreme vulnerability and the rapid pace of their physical, affective, and cognitive development (Frame, 2002). In the research reviewed, children of all ages were represented. Some studies focus on very large age spans, including children who were between 0 and 18 years of age when they were placed in care (Terling, 1999; Vinnerljung, Hjern, & Oman, 2004; Wulczyn, 2004; Yampolskaya, Armstrong, & Vargo, 2007), some use age spans with an upper limit between 12 and 16 years (Courtney, 1995; Courtney & Pilavin, 1997; Festinger, 1996; Jones, 1998; Jonson-Reid, 2003; Shaw, 2006; Wells & Guo, 1999), other studies focus on children older than five years of age (Barth et al., 2008; Farmer, Southerland, Mustillo, & Burns, 2009), and yet others have a special focus on infants and toddlers (Frame, 2002; Frame, Berrick, & Brodowski, 2000; MacMahon, 1997).

Fourthly, studies differ in their definitions of the study samples. All the studies reviewed either define the sample by specific entry cohorts (a time span during which the children enter the system of care) or specific exit cohorts (a time span during which the children exit care). Studies defining their sample using exit cohorts tend to focus solely on the process of re-entry, whereas those using entry cohorts focus on processes involved in reunification as well as on processes involved in re-entry. Furthermore, there is a methodology weakness in defining samples using exit cohorts, as it runs the risk of under-representing individuals who remain in care for a long period of time. Comparing studies based on entry cohorts with studies based on exit cohorts therefore becomes problematic.

The fifth way in which the studies reviewed differ is concerned with the follow-up periods used, as the follow-up time before reunification differs across the studies. Some studies allow a two-year follow-up period within which reunifications can occur (Frame et al., 2000; McDonald, Bryson, & Poertner, 2006; Wells & Guo, 1999; Yampolskaya et al., 2007), some studies allow less than two years (Jones, 1998; Shaw, 2006), some studies allow three (Barth et al., 2008; Farmer et al., 2009), one allows four years (Courtney & Pilavin, 1997), and another four and a half years (Frame, 2002). Follow-up periods from reunification until re-entry also differ. The longest follow-up period in the studies reviewed is ten years (Wulczyn, 2004). One study uses six years (Frame et al., 2000), another uses four and a half years (Jonson-Reid, 2003), two studies use a maximum of three and a half years (Courtney, 1995; Terling, 1999), two use three years (Barth et al., 2008; Farmer et al., 2009), three use two years (Courtney & Pilavin, 1997; Festinger, 1996; Vinnerljung, Hjern, & Oman, 2004), and four studies use one year or less than one year (Jones, 1998; Shaw, 2006; Wells & Guo, 1999; Yampolskaya et al., 2007). Comparing studies with different follow-up periods is problematic, as it will be a comparison of events that occur within incomparable time spans. It is important to ensure that follow-up periods capture the events of interest and that no events occur after the period defined.

The sixth way in which studies differ is with regard to statistical methodology. The most frequently used analysis strategies are logistic regression and Cox regression. Logistic regression models the odds of events to occur. Some studies rely on Student’s t-tests, while others also use chi-squared tests. Such tests are bivariate, whereas regression models are multivariate, meaning that they can take several background factors into account. The methodological advantages and disadvantages may be subject to discussion, but the type of data tends to dictate the methods used.

The seventh way in which studies differ is especially relevant when the objective is factors controlling reunification and re-entry. These factors are grouped into categories of independent variables, such as child characteristics (e.g., gender, age when placed out of home, ethnicity, and mental health), family characteristics (e.g., family structure, socioeconomic indicators, and mental health), and characteristics of placement pattern/history (e.g., reason for removal, type of placement, number and length of placements). In a review Kimberlin et al. (2009) distinguish between child, family, and child welfare service characteristics when describing which factors are investigated. 13 out of the 21 studies included in the review included variables describing child characteristics, 15 included variables describing family characteristics, and 16 included variables describing child welfare service characteristics. For most of the factors there seems to be a consensus on whether they work as risk or protective factors, but there is no consensus regarding the impact of the factors — some findings are not significant, others are (Akin, 2011).

Inconsistencies in such findings may be a result of differing sample characteristics, different time spans during which the sample is investigated, single agency focus, and lack of control. In all, there is variation in how studies concerning reunification and re-entry are conducted and, hence, to which degree these can be directly compared. Few population-based studies include detailed information on an individual level. One of the common problems in the research reviewed is the tendency to use selected groups. Many studies use local samples and, hence, it is difficult to generalize from the findings. Furthermore, such samples make it hard to keep control of censoring (i.e., moving from one county to another, moving out of the country, censoring by death or transition to other welfare systems, like hospitals, etc.). The very few studies that are actually population-based tend to lack information describing the circumstances associated with the processes leading to reunification and re-entry. There is also a lack of studies using entry cohorts, which enables one to control cohort effects and avoid over-representation of specific groups. Most studies describe probabilities for reunification and re-entry by using odds ratios or risk ratios. These methods are of high value, but many studies could benefit from accompanying such findings with graphs from the survival analytical toolbox, which gives an intuitive understanding of how the probabilities develop over time.

2.3. Aim of the study

The aim of this study is twofold. The first aim is to describe how the probability of reunification and re-entry develops for children placed in out-of-home care in Denmark during the specific time frame chosen. By focusing on Denmark the intention is also to contribute to the development of a standard for population-based studies on stability which makes it possible to compare studies across complete child welfare systems. The intention is also to conduct a study that will take common research problems into account by using and combining national registers, enabling, firstly, a population-based study and, secondly, a study with a prospective design that is based on entire entry cohorts. Furthermore, the intention is also to describe how these probabilities actually develop.

The second aim of the study is to investigate whether stability — in terms of reunification and re-entry — can be predicted on the basis of independent background factors, describing the circumstances leading up to the incident when the child is placed in out-of-home care.

3. Data and method

3.1. Sources of data

Since 1968 all persons living in Denmark have been assigned an individual identification number (CPR). CPR is used across several registration systems, which can be linked via CPR; hence, it becomes possible to make very reliable descriptions and analyses of the population. In the present study the CPR system is used to combine data from four different sources. The Register of Support for Children and
Adolescents, maintained by Statistics Denmark, contains information on all placements made in Denmark since 1977. The Population Register, also administered by Statistics Denmark, makes it possible to link child–parent relations, and it is used to identify biological and social parents as well as to obtain a broad range of information such as gender, year of birth, and family type. The Danish Psychiatric Central Register, administrated by the Institute of Psychiatric Demography, is used to obtain information about parents’ and children’s personal history of psychiatric disorders, defined in terms of ICD8 and ICD10 (ICD9 was never used in Denmark). The Integrated Database for Longitudinal Labor Market Research (IDA) is used to obtain information about parental employment.

3.2. Study population

This study focuses on children who enter care for the first time before their third birthday. This restriction is mainly necessary, as children from different age groups enter care for different reasons (Franzén et al., 2008). This study has chosen to use an age restriction which corresponds to the institutional structure in Denmark. In Denmark children are usually transferred from nursery to kindergarten at the age of three. Therefore, the study population is restricted to all children placed in out-of-home care in Denmark (defined by being included in the Register of Support for Children and Adolescents) before their third birthday.

The study population is further restricted to entry cohorts after 1990. This restriction is necessary as pre-analyses show that the likelihood of entering care and being reunited with one’s family was significantly higher before 1991 than after 1990.

Changes in the threshold of entering care are likely to have an impact on the threshold of leaving care (Usher, Wildfire, & Gibbs, 1999). Studying reunifications and re-entries, it will therefore be necessary to focus on a time frame in which the threshold of entries is stable. The threshold can be measured in yearly incidence rates of entries (sometimes called entry rates). Pre-analyses show that the time span from 1991 to 2001 has stable entry rates. The entry rate of the entry cohorts used in this study varies from 1.5 per thousand (in 1995) to 2 per thousand (in 1992). The study population is further restricted to entry cohorts before 2002, because it should be possible to be placed in out-of-home care at the age of three and still be able to maintain a follow-up period of seven years (see Section 3.4). To sum up, the study population consists of all individuals who enter care before their third birthday from entry cohorts in 1991–2001.

3.3. Variables

3.3.1. Outcome variables

Reunification from and re-entry into the out-of-home care system are the outcomes of interest in this study. Reunification is defined in accordance with the Register of Support for Children and Adolescents, which contains information about all out-of-home care entries and exits. The exit types are categorized as follows: adoption, death, transition to other welfare organization (hospital or probation), transition to other out-of-home care placement, transition caused by changes in legal grounds for removal, transition to independent living, and reunification with family. Placements ending with transitions are linked with the following placement, if any. This procedure ensures that all placements are analyzed from the day the child enters the system to the day it leaves the system. Due to the focus on reunification as outcome, we do not investigate the other ways of leaving care. Re-entry is defined as being placed out of home after reunification. Re-entries that take place within seven days were linked with the placement episode. Time is measured in days.

3.3.2. Independent variables

In order to investigate the potential effect of different factors on placement stability, independent variables describing characteristics of the child and its parents are obtained. The intention is to describe the context in which the child was situated just before the placement took place.

3.3.2.1. The child. Child characteristics are described by six variables defined in the following way: Gender is coded as a dichotomous variable describing male or female. Immigration status is coded as a dichotomous variable describing whether the child has an immigration background (immigrant or descendant of an immigrant) or not. Birth weight describes the weight of the child when it was born and is coded as a dichotomous variable according to the WHO standards indicating low birth weight (<2500 g) or normal birth weight. Psychiatric history describes whether the child was diagnosed before the day of entry and was coded dichotomously as yes or no. Having siblings in care prior to the placement was coded as either yes or no.

3.3.2.2. Characteristics of parents. In descriptions of the social context from which the child was removed, information about the social parents is used when available. The social parents are defined by Statistics Denmark every year on the first of January; thus, the definition of social parents may vary over time. The definition of social parents in the year of the placement is used. In cases where the child was placed out of home in its year of birth, no social parents can be defined; instead, the biological parents are used. In descriptions of the context, family type is categorized as either two parents or one.

The above categorization is further used in the study of psychiatric history and employment status in the family. Psychiatric history is coded on the basis of whether the social mother or the social father was diagnosed before the child entered care. In combination with the different family types this results in a variable with five levels: two parents with no psychiatric history, two parents of which one has a psychiatric history, two parents who both have a psychiatric history, one parent with no psychiatric history, and one parent with a psychiatric history.

The employment status of each parent is defined on the basis of IDA and coded dichotomously, describing whether the parent was employed/enrolled in education or unemployed/receiving a pension. The employment status describes the employment situation on the first of November in the year before the placement. In combination with the family types this results in a variable with five levels: two employed parents, two parents of which one is employed and the other unemployed, two parents who are unemployed, one employed parent, and one unemployed parent. Teenage parenthood is defined using the age of the parents on the day the child was born. The variables are coded for each parent, describing whether they were teenage parents (<20 years) or not.

3.4. Follow-up periods

A complete follow-up period of seven years was used in the present study. This was due to the observation window of the data (1991–2008). The study concerns reunification and re-entry, and the follow-up period should cover both processes. This leaves a practical issue in that a long follow-up period focusing on reunification will leave a short follow-up period focusing on re-entry. The follow-up period for reunification is set to five years, because at this time the probability of reunification is stable; i.e. if the child is still in care after five years, the probability of reunification is very low (see Section 4.3). This five-year follow-up period for reunification allows a follow-up period of two years in which re-entries can occur.

3.5. Data-analytic approach

The first data-analytic step was to describe the population of the study, which was done by calculating percentages and counting subjects according to how they were distributed in the variables used. In
order to examine the probability of reuniﬁcation and re-entry, respectively, cumulative incidences are calculated and presented in graphs. Cumulative incidences are best understood as a description of the probability that a speciﬁc event will occur, while at the same time taking into account that other types of outcomes may also occur. This is a crucial point at which the method of calculating cumulative incidences differs from other survival analytical strategies, such as Kaplan–Meier and Nelson–Aalen estimators. Furthermore, drawing graphs of cumulative incidences gives an intuitive understanding of how the probability develops over time. In order to investigate how the different factors will potentially inﬂuence the processes of reuniﬁcation and re-entry, Cox regression is used. Cox regression is well-suited for questions concerning rates of change. Cox regression models a variable called the hazard rate, which describes the speed at which certain events occur within speciﬁc time spans. In this study the events are reuniﬁcation and re-entry into care, and the time spans are the follow-up periods deﬁned in Section 3.4. Using Cox regression has certain advantages. Compared to logistic regression, which is often used in this research area, Cox regression makes use of censored cases and cases that end because of other outcomes; in this study those that include when children exit care for other reasons than reuniﬁcation: adoption, death, and transition to another welfare institution. The hazard rates can be associated with independent variables in statistical models, which make it possible to investigate child and parental characteristics in connection with reuniﬁcation and re-entry into care. The proportional hazard assumptions are tested on the basis of Schoenfeld’s residuals (Schoenfeld, 1982) and graphical analysis of Nelson–Aalen plots. Children of the same social mother comprised a cluster, and within-cluster dependence was made possible by using robust standard error estimates provided by the cluster option in Stata 10.

4. Results

4.1. Descriptive characteristics

This section presents the results of the study. The descriptive characteristics of the study population are described in Table 1; some of the characteristics are, however, not shown in the table because further differentiation will result in too small cells in the statistical models. 96% (n = 324) of children with an immigrant background are descendants of immigrants, not actual immigrants. 37% (n = 134) are associated with countries in Europe, including Greenland, 35% (n = 128) with countries in Asia, including the Middle East, and 19% (n = 68) are associated with countries in Africa. According to Egelund and Lausten (2009), 19.9% of children from the 1995 birth cohort who were placed in out-of-home care had a psychiatric diagnosis. In the present population less than one percent of the children have been diagnosed before they enter care, a very low estimate, which can be explained by their age at entry. The children who develop a psychiatric disorder have probably not been diagnosed yet, because of their very young age. Low birth weight has been shown to be a predictor of psychiatric diseases and vulnerability in general (Abel et al., 2010) and can thus be interpreted as a proxy for psychiatric vulnerability. In this population 18% of the children have a low birth weight. A psychiatric history among parents is a risk marker for entering out-of-home care (Franzén et al., 2008), and in the present population 35% (n = 1359) of the children come from households with a psychiatric history. Concerning disorders, 12% are associated with psychotic disorders and 27% of the disorders are substance abuse disorders. Unemployment and socioeconomic resources have an impact on the probability of being placed out of home (Andersen, 2010; Franzén et al., 2008). In the present study population 8% (n = 3417) of the children come from households with unemployment. If one or both parents receive a pension they are also considered outside the workforce. Nine percent (n = 346) of the unemployed parents receive a pension. On the basis of Swedish birth cohorts from 1992 to 1996, Eva Franzén found that 63.5% of the children who enter care at age 0–6 come from households with single mothers (Franzén et al., 2008). The population in this study correspondingly suggests that most single parents are mothers, not fathers, as 97.9% (n = 1957) of the children who come from single parent households come from households with single mothers. Franzén et al. (2008) deﬁne teenage mothers by their age when they give birth to their ﬁrst child. In this study teenage mothers are deﬁned by the mothers’ age at the time the child placed in care was born. Thus, in this population 12% (n = 460) of the children were born by teenage mothers and four percent (n = 156) were born when their fathers were teenagers (Franzén et al., 2008). The sample characteristics further reveal a small over-representation of boys.

4.2. Findings on reuniﬁcation

Fig. 1 describes the development of the probability of reuniﬁcation within a time span of ﬁve years, starting the day the child enters care. Within ﬁve years 38.8% (n = 1525) of the children were reunited with their families, 39.3% (n = 1547) were still placed in care, and 21.8% (n = 856) were left in care in other ways. The graph shows that the development of the probability of reuniﬁcation is not linear, but tends to stabilize in the last years. Using a follow-up period of seven years, 70% (n = 1073) of the reunions take place during the ﬁrst year. 70% (n = 1073) of the reunions take place during the ﬁrst year. The results from the Cox regression analysis on reuniﬁcation rates are presented in Table 2. Initial bivariate analyses of all variables and reuniﬁcation suggested that gender and teenage

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boy</td>
<td>2057</td>
<td>52.4%</td>
</tr>
<tr>
<td>Girl</td>
<td>1871</td>
<td>47.6%</td>
</tr>
<tr>
<td>Immigration background</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3565</td>
<td>90.8%</td>
</tr>
<tr>
<td>Yes</td>
<td>392</td>
<td>9.2%</td>
</tr>
<tr>
<td>Birth weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;2500 g</td>
<td>3210</td>
<td>81.7%</td>
</tr>
<tr>
<td>≤2500 g</td>
<td>718</td>
<td>18.3%</td>
</tr>
<tr>
<td>Child’s psychiatric history</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not have psychiatric history</td>
<td>3906</td>
<td>99.4%</td>
</tr>
<tr>
<td>Has psychiatric history</td>
<td>22</td>
<td>0.6%</td>
</tr>
<tr>
<td>Other siblings in care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3357</td>
<td>85.5%</td>
</tr>
<tr>
<td>Yes</td>
<td>571</td>
<td>14.5%</td>
</tr>
<tr>
<td>Family type and psychiatric history</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0/2*</td>
<td>1073</td>
<td>27.3%</td>
</tr>
<tr>
<td>1/2</td>
<td>519</td>
<td>13.2%</td>
</tr>
<tr>
<td>2/2</td>
<td>149</td>
<td>3.8%</td>
</tr>
<tr>
<td>0/1</td>
<td>1496</td>
<td>38.1%</td>
</tr>
<tr>
<td>1/1</td>
<td>691</td>
<td>17.6%</td>
</tr>
<tr>
<td>Family type and employment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0/2</td>
<td>210</td>
<td>5.4%</td>
</tr>
<tr>
<td>1/2</td>
<td>537</td>
<td>13.7%</td>
</tr>
<tr>
<td>2/2</td>
<td>994</td>
<td>25.3%</td>
</tr>
<tr>
<td>0/1</td>
<td>301</td>
<td>7.7%</td>
</tr>
<tr>
<td>1/1</td>
<td>1886</td>
<td>48.0%</td>
</tr>
<tr>
<td>Teenage mother</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3468</td>
<td>88.3%</td>
</tr>
<tr>
<td>Yes</td>
<td>460</td>
<td>11.7%</td>
</tr>
<tr>
<td>Teenage father</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3772</td>
<td>96.0%</td>
</tr>
<tr>
<td>Yes</td>
<td>156</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

Notes: when percentage does not add up to 100% it is due to missing values; * fractions refer to family type (i.e. “1/2” means one of two parents).
motherhood will not contribute to the model; therefore, they are excluded. The variables describing the child suggest that some factors are associated with a higher likelihood of reunification and that some are associated with a higher likelihood of staying in care. Having an immigration background is associated with an 84% statistically significant higher likelihood of reunification than having no immigration background. A low birth weight is associated with a 16% lower likelihood of reunification, and having other siblings in care is associated with a 20% slower speed of reunification. Having a psychiatric history is not statistically significantly associated with a slower reunification speed. The variables describing the parents also suggest that some factors are associated with a higher likelihood of reunification and some with a higher likelihood of staying in care. Psychiatric disorders among single parents are statistically significantly associated with a 15% slower speed of reunification compared with single parents with no psychiatric disorders. Two or one out of two is not associated with slower reunification. Comparing single parents without psychiatric disorders with couples without psychiatric disorders, the model suggests that

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percentage of subgroup (%)</th>
<th>RR for reunification (conf. intervals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immigration background</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>52% (175)</td>
<td>1.84 (1.57–2.16)**</td>
</tr>
<tr>
<td>Birth weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;2500 g</td>
<td>35% (254)</td>
<td>.84 (.73–.96)*</td>
</tr>
<tr>
<td>Child’s psychiatric history</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has psychiatric history</td>
<td>27% (6)</td>
<td>.59 (.26–1.32)</td>
</tr>
<tr>
<td>Other siblings in care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>32% (183)</td>
<td>.80 (.68–.93)**</td>
</tr>
<tr>
<td>Family type and psychiatric history (ref: 0/2***)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>35% (183)</td>
<td>.91 (.76–1.08)</td>
</tr>
<tr>
<td>2/2</td>
<td>40% (59)</td>
<td>1.05 (.80–1.38)</td>
</tr>
<tr>
<td>0/1</td>
<td>42% (624)</td>
<td>1.36 (1.04–1.76)*</td>
</tr>
<tr>
<td>1/1 (ref: 0/1)</td>
<td>38% (260)</td>
<td>.85 (.74–.99)*</td>
</tr>
<tr>
<td>Family type and employment status (ref: 0/2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>43% (233)</td>
<td>.95 (.75–1.22)</td>
</tr>
<tr>
<td>2/2</td>
<td>32% (316)</td>
<td>.67 (.53–.85)**</td>
</tr>
<tr>
<td>0/1</td>
<td>54% (162)</td>
<td>1.29 (.90–1.86)</td>
</tr>
<tr>
<td>1/1 (ref: 0/1)</td>
<td>38% (722)</td>
<td>.61 (.51–.72)*</td>
</tr>
<tr>
<td>Teenage father</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>24% (37)</td>
<td>.50 (.36–.70)**</td>
</tr>
</tbody>
</table>

Note: *p<0.05; **p<0.01; *** fractions refer to family type (i.e. “1/2” means one of two parents).

4.3. Findings on re-entry

Moreover, the follow-up period for reunification makes it possible to investigate rates of re-entry within two years. The development of the probability of re-entry into care is described in the graph in Fig. 2. Of the 1525 children who were reunited with their families within five years 22% (n=329) re-entered care within two years. The graph shows that the development of the probability of re-entry is linear in the first two years after reunification. It also shows that the probability does not stabilize within two years. In order to study when the probability of re-entry stabilizes, a design using a follow-up period of one year for reunification and a six-year follow-up period for re-entry was also used. In such a design 23% (n=251) re-enters care within two years, but within six years it is 37% (n=396). A graphical inspection of the development of the probability of re-entry in such a design shows that the probability of re-entry does not stabilize within six years. It was investigated whether the independent variables could explain who re-entered and who did not. Binary analyses of the variables and re-entry suggested that teenage fathers and gender do not contribute to the model; therefore, they are excluded. Results are presented in Table 3.

Immigration background is associated with a likelihood of staying out of care. Among the factors describing the child immigration background is the only statistically significant variable. Psychiatric contact is highly associated with re-entry among those living with two parents, as one parent, out of two, with a psychiatric history is associated with a 71% higher speed of re-entry than is the case with couples with no psychiatric history. Furthermore, having two parents with a psychiatric history is associated with 99% faster re-entry. Unemployed parents are also associated with a higher likelihood of re-entry. Two unemployed parents are statistically significant with regard to the speed of re-entry; that is, 144% faster than two employed parents. A single employed parent is associated with 213% faster re-entry than two employed parents.

Fig. 1. Development of probability (cumulative incidence) for reunification within five years after entering the Danish out-of-home care system from 1991 to 2001 before the third birthday (n=3928).

Fig. 2. Development of probability (cumulative incidence) for re-entry into the Danish out-of-home care system within two years after reunification — initially entering care for the first time from 1991 to 2001 before the third birthday, and experiencing reunification within the first five years of care (n=1525).
follow-up periods (see Section 2); this is open to discussion, however, other entry periods are used. Nevertheless, some studies use shorter to develop slowly afterwards. This could differ if other systems and capture this distinction, as the probability of reuni


gger follow-up period would have captured more re-entries, and that is a limitation of this study. Nevertheless, it also comprises an important finding and a guideline for future studies within the area, as a follow-up period of six years may not even suffice. Reunifications and re-entries (as a measure for failed reunification) are relevant as performance measures for out-of-home care systems. But using reunification and re-entry as performance measures or as a part hereof should be done carefully. Evaluation research and theory have pointed to the tendency of constitutive effects (Dahler-Larsen, 2006). Using reunification rates as a performance measure could potentially result in cases where children who should have stayed in care are reunited with their parents in order to keep reunification rates high. Using re-entry rates as a performance measure could potentially result in cases where children in need of being placed in out-of-home care are left with their families in order to keep re-entry rates low. Such cases would be very unfortunate and would give rise to unintended effects, which the present article does not intend to support.

5.1.2. Factors and estimates on predictors

This study includes several findings on rates and predictors for reunification and re-entry. Basically the results reveal that the mechanisms controlling reunification and re-entry are multiple and complex. Looking at the estimates that describe child characteristics, three findings are particularly interesting. First, low birth weight is associated with a statistically significant lower rate of reunification. In many instances low birth weight is an indicator of vulnerability. Other studies find that low birth weight is a general predictor of maltreatment and, hence, for being placed out of home (Putnam-Hornstein & Needell, 2011). This finding then supports the general hypothesis that there is a relation between vulnerability and children’s need for care.

Second, the variables indicating immigration status reveal a pattern of fast reunifications and a tendency not to re-enter care. Other studies using variables associated with immigration (e.g. race) do not provide a clear picture and suggest that ethnic minorities constitute a diverse group in which rates and odds ratios for reunification and re-entry differ according to race and type of ethnic minority (van Santen, 2010). However, a Swedish study shows a similar statistically significant result as the odds ratio for re-entry is 0.5 if the mother is foreign compared to Swedish (Vinnerljung, Hjern, & Öman, 2004). Several explanations can be put forward concerning the findings on immigration status in this study. Religious and cultural aspects may have an impact. First, the staff working in out-of-home care may not be trained in dealing with or be ready to handle cultural diversity: Danish child workers are rarely immigrants or descendants of immigrants. Furthermore, foster care families are often located in areas where immigrants are less represented (Zurita & Jastrup, 2002). Such circumstances reflect a clash of cultures that may contribute to a mechanism associated with reunification and no re-entry. Parents may have a motive for collaborating with the care system regarding reunification, as they may come from cultures in which it is shameful or taboo to have one’s child “removed” by the system.

Secondly, another explanation could be that the estimates cover diversity in the use of residential care. Some types of care have specialized in working with women seeking shelter for themselves and their children. One study revealed that 34% of the children placed in such centers in Denmark were children from ethnic minorities (Behrens, 2002). Perhaps the high reunification rates for this group reflect an actual practice designed for a population with specific and different needs in the Danish system of care.

The third interesting finding regarding child characteristics is that children who have siblings in care are less likely to be reunited than children who have no siblings in care. This finding contradicts the findings of other studies, according to which having younger siblings in care is associated with a higher likelihood of reunification (Frame, 2002). Considering the estimates describing the family, several findings are interesting. First, the psychiatric history only has a significant impact on the probability of reunification in combination with the one-parent family type. The combination of a single parent and a psychiatric diagnosis may

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percentage of subgroup being reunited (n)</th>
<th>RR for reunification (confidence intervals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immigration status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immigration background</td>
<td>10% (17)</td>
<td>.41 (.26–.70)**</td>
</tr>
<tr>
<td>Birth weight</td>
<td>24% (62)</td>
<td>1.12 (.84–1.49)</td>
</tr>
<tr>
<td>Child’s psychiatric history</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Has psychiatric history</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other siblings in care</td>
<td>Yes</td>
<td>.26% (48)</td>
</tr>
<tr>
<td>Family type and psychiatric history (ref: 0/2)</td>
<td></td>
<td>1.23 (.90–1.68)</td>
</tr>
<tr>
<td>1/2</td>
<td>24% (44)</td>
<td>1.71 (1.15–2.57)**</td>
</tr>
<tr>
<td>2/2</td>
<td>31% (18)</td>
<td>1.99 (1.15–3.44)*</td>
</tr>
<tr>
<td>0/1</td>
<td>22% (136)</td>
<td>.80 (.60–1.06)</td>
</tr>
<tr>
<td>1/1 (ref: 0/1)</td>
<td>29% (75)</td>
<td>1.25 (.94–1.67)</td>
</tr>
<tr>
<td>Family type and employment status (ref: 0/2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>17% (40)</td>
<td>1.93 (.94–4.00)</td>
</tr>
<tr>
<td>2/2</td>
<td>22% (69)</td>
<td>2.44 (1.21–4.31)*</td>
</tr>
<tr>
<td>0/1</td>
<td>19% (31)</td>
<td>3.13 (1.40–6.57)**</td>
</tr>
<tr>
<td>1/1 (ref: 0/1)</td>
<td>25% (180)</td>
<td>1.36 (.93–2.00)</td>
</tr>
<tr>
<td>Teenage mother</td>
<td>Yes</td>
<td>.15% (28)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.65 (.44–.96)*</td>
</tr>
</tbody>
</table>

Note: “p<0.05; “p<0.01; “” fractions refer to family type (i.e. “1/2” means one of two parents).

Being born of a teenage mother is associated with 35% slower re-entry speed. In the statistical test the global test accepted the proportional hazard assumption, but the individual variable describing immigration background violated it. However, graphical inspections of that variable show no reasons for the assumption to be violated; hence, the model was conducted anyway.

5. Discussion

5.1. Findings

5.1.1. Overall rates on reunification and re-entry

A focal concern of this article is to unravel the processes of moving into and out of the Danish system of care for children placed in out-of-home care for the first time before their third birthday. Focusing on ten entry cohorts from 1991 to 2001, the overall finding shows that 38.8% of the children are reunited with their families within five years after their first day in care. 21.6% of these re-enter care within two years after they have left care. Moreover, the overall findings indicate that the probability of reunification is not linear over time. A large proportion of reunifications take place within the first year in out-of-home care, but the probability of reunification does not stabilize until four or five years after entering care. This finding is important, as reunification is used as an outcome measure. It is important to distinguish between the children who may achieve stability in long-term care and the children who may achieve stability through successful reunification with their parents.

This study indicates that using a follow-up period of five years will capture this distinction, as the probability of reunification only tends to develop slowly afterwards. This could differ if other systems and other entry periods are used. Nevertheless, some studies use shorter follow-up periods (see Section 2); this is open to discussion, however, as it is unclear whether such studies actually capture the reunifications of interest. Fig. 1 illustrates how the probability of reunification stabilizes within five years of care, and Fig. 2 illustrates that a follow-up period of two years does not allow the probability of re-entry to stabilize, as the slope is relatively constant throughout the two year period. A longer follow-up period would have captured more re-entries, and that is a limitation of this study. Nevertheless, it also comprises an important
result in a lack of parental resources; hence, it is less likely that the child will be reunited with this parent. It is notable that having two parents of which at least one has a psychiatric diagnosis is not associated with a lesser likelihood of reunification. However, looking at re-entry rates only these family types are associated with higher likelihood. In families with two parents of which either one or both have a psychiatric diagnosis prior to the placement, this could indicate that the circumstances leading up to the placement in the first place (i.e. psychiatric symptoms resulting in a lack of parenting resources) were not properly solved before the child was reunited with its parents or that the circumstances (psychiatric disorders) re-developed after reunification. These findings are important as no previous studies have to the best of our knowledge been conducted on both reunification and re-entry, investigating the influence of parents' psychiatric histories.

Parents' employment statuses also reveal interesting results. First, because 73% of the children in the population come from homes where both parents are unemployed, a very large amount that probably describes some of the reasons why the children were placed in out-of-home care. The estimates show that this population is associated with a lower likelihood of reunification. Coming from a family with no employment is a risk marker for staying in care. The same trend is evident when considering re-entry, but only if both parents are unemployed will the estimate be statistically significant. The relation between unemployment, on the one hand, and reunification and re-entry, on the other, is not necessarily causal. It is more likely that this is a plausible description of the families' difficulties raising their children. Unemployment then is an indicator that something else is wrong.

The parents' age also has an impact on the processes of reunification and reentry. Having a teenage mother has no impact on reunification, but it works as a protective factor with regard to re-entry. A plausible explanation could be that the problems leading to the placement in the first place (i.e. lack of parenting resources due to a very young mother) decrease, as the mother grows older and becomes more mature. Fathers' age is associated with less likelihood of reunification. A plausible explanation is that teenage fathers may be very unstable, find other partners, commit crime, or engage in other types of activities, the result of which is that the child remains in care. Another interesting finding is the result of comparing singles and couples with no psychiatric histories. Single parents with no psychiatric histories are more likely to be reunited with their children than couples with no psychiatric histories; this can be explained by the type of problem leading to the placement. Children from households with single mothers are probably removed due to the mothers' social stress, something that may be easier to deal with than relational problems within the family, which may be the case if the household consists of both parents.

5.2. Lack of theory

The research conducted on children in out-of-home care is vast and varies across methodology and theametics. It is, however, notable that hardly any theories are used in the many studies that apply epidemiologic methods for describing developments and processes that occur in out-of-home care systems. Kazdin (2000, p. 338) states that a “theory refers to an explanatory statement that is intended to account for, explain, and understand relations among variables, how they operate and the processes involved. The theory encompasses but goes beyond the specific empirical relations among the variables and phenomenon of interest”. Theories with such abilities are missing in this research field. Explanations are often left to be the variables themselves, meaning that there is no theoretical explanation for relations between the variables and the underlying mechanisms they represent.

One hypothesis, which often underlies this research field as a rationale, is the relation between vulnerability and the tendency to be less likely to be reunited with the family of origin and more likely to re-enter care after reunification. This hypothesis has similarities with the theory which has been referred to as the theory of accumulated risk (Appleyard, Egeland, van Dulmen, & Sroufe, 2005; Flouri, 2008): a theory which relies on the assumption that vulnerability accumulates as a function of the number of risk factors present. In many ways this makes sense — the children most in need of care are also the ones placed in care. Nevertheless, the theory is very general and gives no guidelines for practice other than the ones we already have. Furthermore, the theory of cumulated risk is also very unspecific with regard to descriptions of how risk factors actually work. There is a need for theories which offer an explanation for how individual factors relate to each other and how they contribute to processes of stability and instability for children's trajectories in out-of-home care systems. Such theories will help unravel the complex processes that control developments in the out-of-home care systems. The intention of the present study is not to develop this kind of theory, but rather to suggest, via the findings of this study, some elements on which this kind of theory could be based.

First, like many other studies, the present study shows that research in out-of-home placements should focus on defining what an out-of-home placement actually is and on not reducing an out-of-home placement to merely one event or an accumulation of care events. When explored more closely, the trajectories in out-of-home care differ in many ways. The present study shows on a very simple level that some trajectories are very short compared to others, which are long-term. Others again consist of multiple movements into and out of the system. The term “out-of-home care placement” covers a wide range of diversity which should be taken into account.

Second, this study also demonstrates that an out-of-home placement should be regarded as a part of a larger childhood pattern. The contexts which in the first place caused the children to be placed in out-of-home care differ, as do the causes for re-entry. Many factors in reunification and re-entry contribute individually to the probability of being placed out of home or of being reunited. An out-of-home care placement is an element among many others which influence childhood.

Third, the present study shows that the effect of factors should be understood in the context in which they are present. Psychiatric diseases may not always be a risk factor, as this element depends on the type of family in which it occurs. This study has revealed that the role of mothers’ age is time dependent: another example of how the importance of variables may change according to the given circumstances.

5.3. Strengths and limitations

Register-based research has several strengths, but also several limitations, which need to be taken into account when considering the results of this study and to which degree they are useful. Quantitative research like the present study relies on the quality of the data, and the quality of the data used in this study has some limitations. The reasons for placing children out of home may be very complex. Using registers across several registration systems, this study has tried to describe the context leading to the placement, but this type of data only gives very limited access to what was actually going on before the child was placed in care. A lot of information is lost in the translation to register data, and, hence, a lot of important information is unobservable. For example, the category “out-of-home placement” used in this study covers a wide range of diversity. Foster care, group care, temporary care, secured settings, etc. are all generalized into one category. The data do not allow us to make reasonable differentiations between the different types of placements, a methodological weakness, as it runs the risk of concealing important processes and mechanisms with special relevance for specific types of placements.

Nevertheless, this study also has its strengths. It is the first population-based study on reunification and re-entry in Denmark and, to the best of our knowledge, also the first population-based study which incorporates relatively detailed data on an individual level and in a prospective design. This is how traditional problems like censoring and selection bias are handled, giving more precise estimates and,
hence, new input to the methodological standards within this research area.

6. Conclusion

The aim of the study was to describe rates of reunification and re-entry of children entering the Danish out-of-home care system before their third birthday. This was done using cumulated incidences and by calculating hazard ratios. 39% (n=1525) are reunited with their families within five years in care, 22% hereof (n=329) re-enter care within two years. The aim of the study was also to describe how these processes can be explained using variables that describe individual and parental characteristics. The results suggest that the processes involved in reunifications and re-entries into care are complex. The variables used can in many instances predict reunification and re-entry, even though the variable describes circumstances that precede the first placement.

References


Temporal stability of entries and predictors for entry into out-of-home care before the third birthday: A Danish population-based study of entries from 1981 to 2008

Mads Bonde Ubbesen a,⁎, Liselotte Petersen a, Preben Bo Mortensen a, Ole Steen Kristensen b

a National Centre for Register-based Research, Aarhus University, Fuglsangdæl 4, 8210 Aarhus V, Denmark
b Department of Psychology and Behavioral Sciences, Aarhus University, Bartholins Allé 9, 8000 Aarhus C, Denmark

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ABSTRACT

Objective: Placing a child in out-of-home care is one of the most radical measures a child protection system can decide to take. There is an essential interest in understanding the probability of entering care and what circumstances are related to the decision to place a child in out-of-home care. This study investigates the temporal stability of rates and predictors for entry into care.

Method: Data were obtained by linking several registration systems. The study population was defined as all children entering care before their third birthday from birth cohorts 1981–2008 (N = 11,034). Furthermore, a control population consisting of a randomly assigned quarter of the Danish child population from the same birth cohorts was used (N = 515,773). Rates of entry and Cox regression models from six periods from 1981 to 2008 were used to model covariates associated with entry into out-of-home care.

Results: The overall likelihood for entering care is found to be decreasing over time. Furthermore, results reveal two trends: relative rates of entry are significantly decreasing for children whose mother has a psychiatric history prior to the child’s birth; relative rates are significantly increasing for children whose mother or father was unemployed in the year prior to the child’s birth.

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1. Introduction

When a child is placed in out-of-home care, it is one of the most radical interventions the child protection system can decide to use because it challenges the child’s need for stable, long, and lasting relationships with significant people—which is widely recognized as a fundamental aspect of sound human development (Baumeister & Leary, 1995). However, a child is removed from his or her family and placed in out-of-home care generally because there is a concern for the child’s safety and because it is regarded as necessary in order to promote resilience in the child’s development. The challenge is both to provide future stability and to deal with the lack of stability caused by the removal and the quality of the relationship with the parents. Placing a child in out-of-home care is therefore regarded as a serious event that should be given extra attention.

During the last several decades, there has been a growing interest in, on the one hand, studying characteristics of children being placed in care and, on the other hand, monitoring the risk of being placed in care. This tendency is understandable, because knowing the likelihood of and the reasons children are placed in out-of-home care is crucial in order to know what to expect of future outcomes and how to design interventions. But existing research is split into studying yearly developments of either rates of entry or predictors for entry within a fixed period. The temporal stability of predictors for entry into care has not been given any attention. Studying temporal stability of predictors for entry into care is relevant because it concerns not only whether there is an increase or decrease in the likelihood of entering care but also who is more or less likely to enter care. Therefore, the aim of the present paper is to study the temporal stability of factors associated with the decision to place a child in out-of-home care by applying the available administrative data. Previous studies have found that infants and toddlers are placed in out-of-home care for reasons other than older children are (see Section 3.3); therefore, this study focuses on the likelihood of entering care before a child’s third birthday.

2. Background

2.1. Developmental tendencies in the Danish child protection system

The regulatory environment of the Danish child protection system has changed over the years. By pointing to legislative changes reflecting an increased tendency toward focusing on early intervention, the option of using pre-emptive measures (some containing punitive sanctions for parents), a focus on the rights of the child, and the responsibility of the parents, Hestbæk (2011) describes how the Danish child protection
system is characterized by a move away from a family welfare ideology and toward a child protection ideology, with a stronger element of compulsive measures and punitive devices and an increased demand on individual families. The practical impacts of these legislative tendencies are reflected in administrative data, as the use of preventive services, the proportion of placements without consent, and the proportion of children placed in kinship and network care all increased between 1990 and 2004 (Ebsen & Andersen, 2012). But whether and how these developmental tendencies are reflected in predictors for entry into care (i.e., data describing who actually enters care) has not been given any attention.

2.2. What predicts entry into out-of-home care?

The design of this study makes use of prior research on characteristics and predictors of entry into out-of-home care in order to investigate the temporal stability of predictors for entry into care. Twenty studies have been identified, and they clearly indicate that children in out-of-home care have backgrounds characterized by social exclusion.

The majority of studies focusing on risks of entry into care are concerned with factors related to the child or the child’s family. Among young children, neglect is the type of maltreatment that—compared to physical, sexual, and combined abuses—is found to be the most common reason for placing children in out-of-home care (Duncan, 1992; Khoo, Skoog, & Dalin, 2012; Widom, 1991; Zuravin & Depanfilis, 1997). Data from birth records, such as low birth weight, being born with abnormalities, and race/ethnicity, can also predict entries (Needell & Barth, 1998). U.S. studies have found that most children in care are African Americans, followed by white Americans and then Hispanic Americans (Ards, Myers, Malikis, Sugrue, & Zhou, 2003; Pérez, Neil, & Gesiriech, 2001). Scandinavian studies have also found that birth weight can predict entries, but unlike American studies, being a Scandinavian ethnic minority (those with mothers born outside of Europe) is a protective factor for entering out-of-home care (Ejrnæs, Ejrnæs, & Frederiksen, 2010; Franzen, Vinnerljung, & Hjern, 2008). Sex as a predictor is unclear, as some studies have found that male children are more likely to enter care than female children are (Ejrnæs et al., 2010), where other studies have found that there is no significant difference (Franzen et al., 2008).

Research has also been focusing on parental characteristics. Several studies have found that having parents with a psychiatric history is a predictive factor (Alice, Paula, Thieman, & Dail, 1997; Bhatti-Sinclair & Sutcliffe, 2012; Franzen et al., 2008; Khoo et al., 2012; Widom, 1991). Specifically, substance abuse is a strong parental risk factor (Besinger, Garland, Litrownik, & Landsverk, 1999; Griffith et al., 2009; Khoo et al., 2012; Sarkola, Kahila, Gissler, & Halmesmäki, 2007; Widom, 1991; Zuravin & Depanfilis, 1997). It is unclear whether parental financial problem is a predictor for entry into care. Some studies have found that it is not (Alice et al., 1997; Duncan, 1992), and others have found that it is (Dworsky, Courtney, & Zinn, 2007). But epidemiological studies generally point to indicators of low socioeconomic status, such as unemployment, receiving disability pension, and low educational level, as being predictors for entry, and they have also found that indicators of low parental resources or relational problems (e.g., single parenthood, broken families, emotional/medical problems, and teenage parenthood) can predict entry into out-of-home care (Bhatti-Sinclair & Sutcliffe, 2012; Ejrnæs et al., 2010; Franzen et al., 2008). This corresponds very well with more local studies that have found that parental readiness for change (Littell & Girvin, 2005) and style of parenting (either a lack of discipline or too-harsh discipline) is common among parents who have had their children placed in out-of-home care (Griffith et al., 2009).

Final estimates on predictors, as well as levels of significance, vary. But except for financial problems, sex, and ethnicity, there is a consensus that children entering out-of-home care have backgrounds that characterize them as a socially excluded and marginalized group.

One of the identified studies relates to whether there is a temporal stability of the predictors studied. Bhatti-Sinclair and Sutcliffe (2012) used U.S. data from entries in both 2005 and 2009 in order to investigate the temporal stability of predictors for entry into care, and they found a change in odds ratio, which was more than ±1.00 for nine out of 13 variables. In particular, child medical problems and parental medical problems differed between the two entry years.

2.3. Challenges in comparing existing research

Ultimately, the existing research covers many entry cohorts, but for methodological reasons, direct comparisons are very difficult. Hence, no inference can be made about the temporal stability of predictors for entry into care based on existing studies. In the studies reviewed, five primary overlapping variations in methodology have been identified.

First, studies vary in regard to what point on the pathway into care they compare children. Seven studies described characteristics of children already in the out-of-home care system—either comparing them with each other (e.g., different kinds of care) or simply describing them (Besinger et al., 1999; Cohen-schlanger, Fitzpatrick, Hulchanski, & Raphael, 1995; Delfabbro, Borgas, Rogers, Jeffrey, & Wilson, 2009; Griffith et al., 2009; Grogan-Kaylor, 2000; Khoo et al., 2012; Pérez et al., 2001). This design has a methodological weakness that makes it impossible to make any causal inference about risk of entry, as no prediction for being placed in care can be calculated; only characteristics of children already in care can be described. On the other hand, such studies can be used to demonstrate that the group of out-of-home care children is not homogeneous. Furthermore, such studies tend to include more detailed information, enabling more precise descriptions of the actual contexts leading to the out-of-home care placements.

Nine studies compared substantiated cases with non-substantiated cases or are based on a sample where everybody has been referred to the authorities (Alice et al., 1997; Ards et al., 2003; Bhatti-Sinclair & Sutcliffe, 2012; Duncan, 1992; Dworsky et al., 2007; Farmer, Mustillo, Burns, & Holden, 2008; Littell & Girvin, 2005; Sarkola et al., 2007; Widom, 1991; Zuravin & Depanfilis, 1997). This type of comparison has the advantage that they describe the exact decision making, as they are based on exactly what the system is confronted with. As such, they can describe the child’s risk of entry when first referred to the system, but they cannot describe the overall risk of being placed in out-of-home care.

Three studies compared children entering care with children not entering care (Ejrnæs et al., 2010; Franzen et al., 2008; Needell & Barth, 1998). Such studies are typically register-based or based on administrative data. They have the advantage that they can estimate children’s risks for entering care and hence study pathways toward becoming a child with the attention of the social service system. On the other hand, these studies often lack detailed information about the reasons for being placed in out-of-home care.

Second, studies vary in the sources of data they use. Six studies used case file reviews (Beslinger et al., 1999; Griffith et al., 2009; Khoo et al., 2012; Littell & Girvin, 2005; Widom, 1991; Zuravin & Depanfilis, 1997). Using case files has the advantage that very case-specific information can be analyzed. However, case file reviews also have important disadvantages. As with any other retrospective study, the investigator depends on the availability and accuracy of the case file. Further selection of cases is subject to selection bias, as the investigator often self-selects the cases—for instance, cases that come from a local child protection service organization. This makes it hard to generalize findings. Also, using case file reviews limits the scope of the study, as only children already having a case can be studied. This makes comparisons with children not represented in the child protection system impossible.
Five studies used surveys—either surveys used in intervention planning, such as standardized assessment tools, or surveys handed out to case workers (Cohen-schlanger et al., 1995; Farmer et al., 2008; Griffith et al., 2009; Littell & Girvin, 2005; Alice et al., 1997). As with studies using case file reviews, studies using surveys have the advantage that they can take very context-specific information about the case into account. But they can also put the focus on central actors such as the caseworker, and as with case file reviews, studies using surveys tend to be very local, making selection bias an issue and making it hard to generalize findings.

Eight studies used administrative data or combined administrative data with survey data (Bhatti-Sinclair & Sutcliffe, 2012; Delfabbro et al., 2009; Dworsky et al., 2007; Ejrnæs et al., 2010; Franzen et al., 2008; Grogan-Kaylor, 2000; Needell & Barth, 1998; Sarkola et al., 2007). Using administrative data has the advantage that it is possible to track trends on a societal level. On the other hand, important information regarding the context leading to the out-of-home placement is unobserved.

Third, studies vary in what statistical methodology they use and what variables the models include. Chi-square tests, t-tests, logistic regression, Cox regression, and percentage distributions were all used. Each method has advantages and disadvantages, but comparisons are hard when the models do not include the same variables and do not adjust for the same confounding variables.

Fourth, studies vary in the way the sample is defined. As mentioned above, studies using either case file reviews or surveys are more local, making it hard to generalize because of sample selection. But another way samples differ is according to the year of entry into the child protection system. Two studies used either very old samples from the '60s and '70s or did not specify the exactly entry cohorts they used at all (Duncan, 1992; Widom, 1991). One of the reviewed studies used entries in the '80s (Zuravin & Depanfilis, 1997), eight used data from the '90s (Ards et al., 2003; Besinger et al., 1999; Cohen-schlanger et al., 1995; Grogan-Kaylor, 2000; Littell & Girvin, 2005; Needell & Barth, 1998; Sarkola et al., 2007; Alice et al., 1997), and seven used data from the 2000s (Bhatti-Sinclair & Sutcliffe, 2012; Delfabbro et al., 2009; Dworsky et al., 2007; Ejrnæs et al., 2010; Griffith et al., 2009; Khoo et al., 2012; Pérez et al., 2001). One study used an entry period ranging over a decade, from 1992 to 2002 (Franzen et al., 2008). Almost all studies used a strictly defined entry cohort, but as they used different entry cohorts, it is difficult to compare them for causes of potential cohort effects.

Fifth, studies vary in regard to the country in which they were conducted. Fourteen of the studies reviewed were conducted on data from the U.S. Two were from Sweden, Denmark, Australia, Finland, and Canada were each represented by one study. Tilbury and Thoburn (2008) concluded that inter-country differences in overall rates of entry into child welfare systems vary in relation to: 1) social policy, social services, and attitudes toward the family; 2) beliefs about the efficacy of being in care; 3) the profile of children entering care; 4) differences in legislation and policy; and 5) which children are included in care statistics. In general, comparisons of studies from different child protection systems should therefore be done with caution.

To sum up, several methodological issues make it hard to compare studies that focus on characteristics and predictors for entry into out-of-home care. In total, they cover a broad range of entry years, but for methodological reasons they are very hard to compare. Other studies do, to a varying degree, focus on temporal aspects, such as changes or stability in incidence rates of entry into care or prevalence rates of being in care on a specific day during the year (Gilbert et al., 2012; Hestbaek, 2011; Wulczyn, Ernst, & Fisher, 2011; Wulczyn, Chen, & Hislop, 2007). But these studies have focused on national monitoring, international comparisons, or global perspectives on child protection systems and do not go into detail about whether predictors for entering care change. Those studies that implement differentiation on individual characteristics focus on age at entry and race/ethnicity.

2.4. Aim of the study

The aim of this study is to use administrative data to investigate the temporal stability of predictors for entry into the Danish out-of-home care system during the period of 1981–2008.

This aim is important for several reasons. First, knowledge about the children in out-of-home care and their backgrounds and reasons for being placed in care is crucial for understanding the type of problem that interventions should be designed to solve. Studying predictors for entry into out-of-home care will produce this type of knowledge. Second, characteristics of children entering care also describe what is actually perceived as a problem for out-of-home care. Temporal changes in predictors can reveal developments in the out-of-home care system that are more or less intended or appropriate. The question of whether there is a systematic development in characteristics of who enters care has not been given any attention, but this question is crucial for understanding the out-of-home care system as a changing entity that is influenced by political developments and developments in legislation.

3. Data and method

3.1. Sources of data

This study makes use of the comprehensive Danish civil registration system. Since 1968, all persons in Denmark have been assigned a unique identification number (CPR), which is used across several registration systems. The CPR can link these systems. Many of these registries are maintained and quality validated by Statistics Denmark, which ensures very reliable descriptions and analysis of the population. In this study, the CPR is used to combine data from four different sources: 1) the Register of Support for Children and Adolescents, which contains information on all placements made in Denmark since 1977; 2) the Population Register, which enables child–parent linkages and contains information on a broad range of information such as sex, date of birth, and family type; 3) the Danish Psychiatric Central Register, which holds information on personal psychiatric history in terms of ICD8 and ICD10 (ICD9 was never used in Denmark) and is maintained by the Institute of Psychiatric Demography; and 4) the Integrated Database for Longitudinal Labor Market Research (IDA), which provides information about parental employment status.

3.2. Data registration in "support for children and adolescents"

One of the advantages of register-based research is that it makes possible longitudinal studies tracing information and behavior several years back. In many instances, data might be collected before the researcher’s career even began. This is of great value but also leaves some special issues for this research method. In many other research areas, study designs incorporate data collection, which gives researchers an opportunity to collect the specific information needed to answer the research question. This is often not the case in register-based studies using data, which sometimes has been collected with other purposes or intentions. Furthermore, changes in data collection procedures or legislation might have a substantial impact on what is registered and to what degree data from different time periods is actually comparable. A substantial part of doing register-based research is studying the data collection procedures that might have an influence on the uniformity of the data.

3.2.1. History

The principal register used in this study is the Register for Support for Children and Adolescents. It was established in 1977, when major
welfare reform affecting the whole Danish social service system came into force. Before this reform, registrations in the social service targeting children at risk had been done as a part of the social service client statistics. The statistics were issued yearly but were criticized in a 1969 whitepaper for their poor usability. The statistics were uninformative, and it was difficult to make comparisons from one year to another (Socialreformkommissionen, 1969). The purpose of the new register was to deal with this usability issue: the reform made it possible to produce information at a governmental and administrative level about the extent to which social services were used (Socialstyrelsen, 1975).

3.2.2. Data registration
The data registration has been subject to many changes since it was established in 1977. From 1977 to 2005, registration was done manually on registration forms filled out by the social workers responsible for the cases. Each time a measure was started, a registration form had to be filled out. Registration forms give the opportunity to tick the type of placement, the statutory powers, the starting date, and, if the measure was ending, the ending date and a description of how the measure ended. Several changes have been instituted over the long period that the register has been kept. When the register was launched in 1977, the registration options describing the legislative powers consisted of four different options: out-of-home care placement with and without parental consent, temporary out-of-home care placement, and transition from another out-of-home care setting. Some minor changes to this variable occurred in the ’80s, but in 1990, a major whitepaper, which laid the foundation for another welfare reform in 1993, concluded that the diversity of child care practice was not reflected in the law (Betænkning 1212, 1990). Therefore, the validity of the actual practice the variables represent can, to some degree, be questioned. The same year, a fundamental change was made in the data registration. Since the data registration began, respite care was registered as a type of residential care, and in 1989, it was also possible to register it as a kind of foster care. In 1990, however, respite care began to be registered as a preventive measure instead of a type of out-of-home care. This dramatically affected the proportion of registered out-of-home care placements. Therefore, comparisons of entries into care before and after 1990 should be done with caution, because what was registered and perhaps thought of as an out-of-home care placement simply has changed.

3.3. Study population
This study includes all cases in which children in the Danish out-of-home care system entered before their third birthday. The reason for choosing this age group is that the risk of entry into out-of-home care during 1999 is also regarded as an out-of-home care placement when the placement is publically funded. As an example of population differences, the U.S. incidence rates of out-of-home care among children 5–17 years old (Andersen et al., 2010). These rates are not directly comparable with rates from other systems. In Denmark, being placed in a boarding school (typically used for teenagers) is also regarded as an out-of-home care placement when the placement is publically funded. As an example of population differences, the U.S. incidence rates of first entry during 2000–2005 were found to be 0.089% for infants less than 1 year old, 0.018% for children 6–12 years old, and around 0.025% for children 1–5 years old and 13–17 years old (Wulczyn et al., 2007).

Many studies have found substantial differences in the background characteristics of young children entering care compared to older children entering care. A Swedish study found that the older the group of children, the more often relationship problems with peers and adults were ticked as a reason for placement. Further, it found that the younger the age group, the more often neglect was given as a reason for placement (Khoo et al., 2012). This suggests that parental influence as a cause for removal decreases or becomes more indirect with age. This is also evident in epidemiological studies of Swedish and Danish out-of-home entry cohorts. The studies did not test for any significant differences among age groups, but by inspecting estimates and confidence intervals, one gets a clear picture that the relative risk for entry into out-of-home care decreases by age for children with parental backgrounds characterized by broken families, low employment status, low educational level, criminal history, and psychosocial risk markers (Ejrnæs et al., 2010; Franzen et al., 2008). The age at entering care can therefore reflect substantially different backgrounds and types of problems, which might be solved in different ways and might have different long-term implications.

Dividing the study population into age groups is a practical matter. Some studies used a division from 0 to 6 years old. In this study, a division from 0 to 2 years old was used. This division was used because children in Denmark normally transfer from nursery school to kindergarten at the age of three. Thus, the division follows the institutional organization of the Danish child welfare system. The study population was restricted to birth cohorts from 1980 onwards, as information from the Population Register and IDA is not available before 1980. Furthermore, the study population was restricted to birth cohorts before 2009. Besides all cases (N = 11,034) where children enter the Danish out-of-home care system before their third birthday, the study population also included a control population consisting of a randomly assigned quarter of all children born in Denmark from the same birth cohorts (N = 515,773). In order to describe risk factors for entering out-of-home care, all biological parents were also included in the study.

3.4. Independent variables
The independent variables used in this study were chosen based on the wish to examine the context around children at risk. A lot of information describing the context is not registered in the registers. Nevertheless, other studies, such as the ones previously described, illustrate that data from registers can be used to some degree to illustrate the circumstances related to the decision to place a child in out-of-home care. Inspired by these studies, this study also used a differentiation of child characteristics and parental characteristics in the examination of the development of risk factors. Besides sex and birth weight, all information was obtained for the year before the child was born.

3.4.1. Variables describing the child
Sex is coded as a dichotomous variable indicating male or female. Birth weight describes the weight of the child when it was born, and it is coded as a dichotomous variable according to the WHO standards indicating low (<2500 g) or normal birth weight. Birth order is coded with three levels describing whether the child was the mother’s first-born child, the second, or after the second. Birth order previously has not been investigated as a predictor for entrance into out-of-home care. The rationale is that a large child population might influence parental resources, leading to the increased vulnerability of the child.

3.4.2. Variables describing parental characteristics
The Population Register was used to identify biological parents, and the following information in the birth year was obtained for both mothers and fathers: Psychiatric history is coded as dichotomous and describes whether there were psychiatric events (hospitalization) prior to the birth of the child. Employment status is coded using IDA and is simplified by using a categorization of two levels describing each parent’s employment status on the last day of November in the year prior to the child’s birth. Receiving pension is regarded as
unemployment, and being a student is regarded as being employed. Family type for each of the parents is coded as dichotomous (i.e., either single or couple). Teenage parenthood is defined using the age of the parents on the day the child was born. The variables are coded for all parents describing whether they were teenage parents (<20 years).

3.5. Data analytic approach


In order to compare the likelihood of entry into care, Cox regression was used. Cox regression is well suited for questions concerning rates. Cox regression models the hazard rate, which basically can be understood as a speed at which a certain event occurs within a specific time frame. In this study, the event of interest is entry into the out-of-home care system. This variable can be compared with other from other time spans, allowing a description of the ratio of the speed of placements. This is called a hazard ratio (HR), and an HR below one means that the speed of entry and therefore also the likelihood of entry are less than that of the reference group. An HR above one means the opposite, and equal to one means there is no difference between the compared rates. Confidence intervals not including the number one were used to identify statistically significant findings. The crude rate for each period and the HR between the periods were used to examine the overall development of the likelihood to enter care before the age of three. The time frame in this study consists of the entire time every person at risk within the specific time periods defined contributes with until they enter care or move into another period. Thus, a person can contribute with risk time in two periods if born in one and still living or being placed in the following. This procedure was handled using the St split command in Stata.

The HR can be associated with independent variables in statistical models. This makes it possible to investigate the influence of child and parental characteristics on the likelihood to enter care. Six models were analyzed (one from each period). All variables were included in each model, which means that all estimates were adjusted for each other. Confidence intervals were used to describe whether the estimates are statistically significant.

Cox regressions were also used to test whether the development in probability can be thought of as a trend. This was only done from 1990 onward due to problems comparing data from the ‘80s with data from the ‘90s onward (Section 3.2.2). The test for a trend was done by calculating a beta using a continuous variable representing the different periods.

Cox regression models rely on the assumption that rates are proportional—that the speed is constant. This is called the proportional hazard assumption, and in this study, it was tested on the basis of Schoenfeld’s residuals (Schoenfeld, 1982) and graphical analysis log–log plots using the stph command in Stata.

A weight of four was used in the control population in order to take into account that the data comprises a quarter of the entire Danish population from the studied birth cohorts.

Children of the same mother formed a cluster, and within-cluster dependence was made possible by using robust standard error estimates provided by the cluster option in Stata.

In order to study how the probability for entry into care develops after birth in the different periods, graphs of cumulative incidences were used. Cumulative incidences are best understood as a description of the probability that a specific event will occur. Drawing graphs of cumulative incidences gives an intuitive understanding of how the probability develops over time.

4. Results

4.1. Descriptive statistics

Table 1 includes the descriptive statistics of those placed in out-of-home care within the study period, as well as a random quarter of children from the same birth cohorts. As expected, children placed in out-of-home care are characterized by an adverse background associated with risk.

There is a slight overrepresentation of male children compared to the Danish population as a whole within the same age group. It is also much more common to have a low birth weight and parents characterized by typical low-resource risk factors such as unemployment, psychiatric histories, living as single, and being a teenage parent. It is noteworthy that 71% of mothers to children entering care are unemployed. Furthermore, the descriptive statistics suggest that children placed in out-of-home care have mothers that tend to have more children than the mothers of children not placed in care have.

4.2. Relative risk for entry into out-of-home care

Table 2 describes the hazard ratios (HR) of entry into out-of-home care. Compared to the period from 1981 to 1984, the period from 1985 to 1989 shows a statistically significant higher likelihood of placing children in out-of-home care. The HR for each period and the HR between the periods were used to examine the overall development of the likelihood of entering care before the age of three. The time frame in this study consists of the entire time every person at risk within the specific time periods defined contributes with until they enter care or move into another period. Thus, a person can contribute with risk time in two periods if born in one and still living or being placed in the following. This procedure was handled using the St split command in Stata.

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Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Placed in out-of-home care (N = 11,034)</th>
<th>Quarter of the Danish child population (N = 515,773)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>5171 (46.9%)</td>
<td>253,351 (49.1%)</td>
</tr>
<tr>
<td>Male</td>
<td>5863 (53.1%)</td>
<td>262,422 (50.9%)</td>
</tr>
<tr>
<td>Low birth weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>9018 (83.0%)</td>
<td>423,931 (95.0%)</td>
</tr>
<tr>
<td>Low</td>
<td>1723 (16.0%)</td>
<td>22,192 (4.0%)</td>
</tr>
<tr>
<td>Birth order</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>4949 (44.9%)</td>
<td>218,780 (45.2%)</td>
</tr>
<tr>
<td>Second</td>
<td>3232 (29.3%)</td>
<td>177,051 (36.6%)</td>
</tr>
<tr>
<td>&gt;Second</td>
<td>2842 (25.8%)</td>
<td>88,563 (18.3%)</td>
</tr>
<tr>
<td>Maternal psychiatric history prior to birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>8044 (73.2%)</td>
<td>464,180 (96.7%)</td>
</tr>
<tr>
<td>Yes</td>
<td>2944 (26.8%)</td>
<td>15,784 (3.3%)</td>
</tr>
<tr>
<td>Paternal psychiatric history prior to birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>7792 (82.4%)</td>
<td>454,748 (97.4%)</td>
</tr>
<tr>
<td>Yes</td>
<td>1664 (17.6%)</td>
<td>12,091 (2.6%)</td>
</tr>
<tr>
<td>Maternal employment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>2950 (28.0%)</td>
<td>322,948 (77.4%)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>7235 (71.0%)</td>
<td>94,455 (22.6%)</td>
</tr>
<tr>
<td>Paternal employment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>4381 (50.3%)</td>
<td>364,628 (88.7%)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>4338 (49.8%)</td>
<td>46,541 (11.3%)</td>
</tr>
<tr>
<td>Maternal family type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>5116 (50.2%)</td>
<td>54,457 (13.1%)</td>
</tr>
<tr>
<td>Couple</td>
<td>5069 (49.8%)</td>
<td>362,946 (86.9%)</td>
</tr>
<tr>
<td>Paternal family type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>3541 (40.6%)</td>
<td>45,968 (11.2%)</td>
</tr>
<tr>
<td>Couple</td>
<td>5178 (59.4%)</td>
<td>365,201 (88.8%)</td>
</tr>
<tr>
<td>Teenage mother</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>9238 (83.7%)</td>
<td>502,029 (97.3%)</td>
</tr>
<tr>
<td>Yes</td>
<td>1796 (16.3%)</td>
<td>13,744 (2.7%)</td>
</tr>
<tr>
<td>Teenage father</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>10,577 (95.9%)</td>
<td>512,707 (99.4%)</td>
</tr>
<tr>
<td>Yes</td>
<td>457 (4.1%)</td>
<td>3066 (0.6%)</td>
</tr>
</tbody>
</table>
placement in out-of-home care. The time periods after the '80s are hard to compare with those during the '80s due to differences in data registration (Section 3.2.2). Table 2 therefore indicates that after 1990, the risk of being placed in out-of-home care gradually becomes smaller. In the analysis, all periods were used as the reference base, and in all instances comparisons with other cohorts were statistically significant, meaning that the development toward a lower likelihood of being placed in out-of-home care before the third birthday is statistically significant. This corresponds very well to the graphs of cumulative incidences presented in Fig. 1. The graph further indicates that the differences start developing in the last part of the child's first year, and that the probability for entry into care for infants is higher in the latest calendar periods.

4.3. Changes in predictors

Table 3 describes the hazard ratios (HR) of the risk factors within all six periods.

Except for the period from 1985 to 1989, where male children are more likely to enter out-of-home care, this study generally does not find any differences between male and female children according to the probability of entering care.

Low birth weight is in all periods associated with a statistically significant increased likelihood of entry into out-of-home care. Notably, there also is an increased likelihood of entering care given low birth weight during the last time period.

Being the second-born child in the '80s is associated with a statistically significant increased likelihood of being placed in out-of-home care. In the time periods afterwards, this association is not seen. Being born after the mother's second child between 1980 and 1999 is associated with an increased likelihood of being placed in out-of-home care, but from 2000 onward there is no statistical evidence that the association exists. However, the proportional hazard assumption was violated with this variable (Section 4.4).

Having a mother with a psychiatric history is in all periods associated with an increased likelihood of entry into out-of-home care. From 1990 onward, the association decreased. The test for a trend supports this, which means that there is statistical evidence for the decreasing importance of having a mother with a psychiatric history in regard to entering care. Having a father with a psychiatric history is in all periods associated with an increased risk of being placed in out-of-home care. It is noteworthy that the impact of paternal history is smaller than the impact of maternal history.

Having an unemployed mother is in all periods associated with an increased risk of entry into the out-of-home care system. Furthermore, there is statistical evidence for the increased impact of the mother's unemployment on the risk of entry into out-of-home care. Having an unemployed father is also associated with an increased risk in all periods, but compared to maternal unemployment, there is no statistical evidence for an increase in this association. It is noteworthy that the impact of paternal unemployment is less important than that of maternal unemployment.

Table 2

<table>
<thead>
<tr>
<th>Period</th>
<th>Number of first-time placements (N = 11,034)</th>
<th>Rate (hazard per 1000 person years)</th>
<th>HR (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981–1984</td>
<td>1858</td>
<td>2.37</td>
<td>1.25 (1.16–1.34)</td>
</tr>
<tr>
<td>1985–1989</td>
<td>2694</td>
<td>2.55</td>
<td>1.40 (1.32–1.49)</td>
</tr>
<tr>
<td>1990–1994</td>
<td>2056</td>
<td>1.82</td>
<td>1 (reference)</td>
</tr>
<tr>
<td>1995–1999</td>
<td>1801</td>
<td>1.65</td>
<td>.91 (.85–.98)</td>
</tr>
<tr>
<td>2000–2004</td>
<td>1527</td>
<td>1.44</td>
<td>.79 (.74–.86)</td>
</tr>
<tr>
<td>2005–2008</td>
<td>1098</td>
<td>1.35</td>
<td>.74 (.69–.80)</td>
</tr>
</tbody>
</table>

Having a mother with a couple family type is in all periods (except the last) statistically significant as a protective factor when compared to mothers with a single family type. Having a father with a couple family type is associated with a decrease in the likelihood of being placed in care in three of the six periods. It is noteworthy that there is no statistically significant evidence for having a mother living in a couple as a protective factor during the period of 2006–2008.

Having a teenage mother is in all periods associated with an increased likelihood of entry into out-of-home care. Having a teenage father is in all periods associated with an increased risk of entry into out-of-home care, although the level of significance in the periods from 1995 to 2008 is borderline.

4.4. Proportional hazards

An assumption when using Cox regression is that the hazard rates that are compared within the follow-up periods are proportional. If the variable is time dependent (e.g., the speed alters for a specific sub-population within a variable), the hazard rate is biased. Statistical tests showed some non-proportionality among several variables, which challenges the proportional hazard assumption. However, graphical analysis of all variables (except birth order) showing statistical non-proportionality showed no crossing hazard rates within the follow-up periods, meaning there is no reason not to be able to make inferences from the estimates. Birth order, however, violates the proportional hazard assumption in graphical analysis, as stratified rates overlap and cross each other, meaning that it is difficult to make inferences about the findings.

5. Discussion

5.1. Variation in rates of entry

The overall finding of this study suggests that the likelihood of entering care before the third birthday is decreasing. It can be discussed how this finding should be interpreted.

In the last couple of decades, there has been a big focus on early interventions (Gilbert, Parton, & Skiveness, 2011). This creates expectations about an increased focus on detecting children at risk early in their lives, which in turn creates an expectation of an increased likelihood of entering care. The cumulative incidences indicate an increased use of out-of-home care placements early in children's life which indicates that problems are detected earlier, but on the overall level this study shows that an increased likelihood of entry into care is not the case. An explanation could be that out-of-home care is not
the type of early intervention used, but that the focus has led to an increased use of preventive in-home services, which either has delayed or prevented children from entering care. The fact that in-home measures have increased during the last several decades (Ebsen & Andersen, 2010) supports this hypothesis. The implication of the finding is that it challenges the so-called 1% rule. Other studies have suggested that the prevalence of children placed in out-of-home care has been stable around 1% during the last several decades (Hestbak, 2011). The 1% rule is interpreted as follows: the population within the out-of-home care system can be regarded as consistent and the characteristics of the children processed by the system are stable. The results of the present study suggest that the likelihood of entering care is not stable. However, a direct comparison should be done with caution. The 1% rule is based on yearly prevalence for being in care, which is not the same as likelihood of entering care. But entries and prevalence are related, as a child has to enter care in order to count in the numerator when calculating the prevalence. Furthermore, the 1% rule is based on estimates using children ages 0 to 18. This is a different age group, and an interpretation or a further research question would be whether the likelihood of entering care has decreased because children are more likely to enter later in their lives. This interpretation implies that the likelihood of entering care at an older age has increased.

5.2. Temporal stability of predictors for entry into out-of-home care

In general, this study suggests the same pattern of risk factors as other studies have suggested (see Section 2.2). Having a background characterized by socially excluded parents, broken families, and vulnerability in terms of low birth weight is associated with an increased risk of entry into out-of-home care. Furthermore, the findings also suggest that characteristics of the mother are more important than the corresponding characteristics of the father, which previously also has been found (Ejrnaes et al., 2010). Thus regarding the aim of describing types of problems leading to entry into care this study replicates findings from other studies, that children entering care have backgrounds characterized with a lack of resources and deviance compared to the general population. Social exclusion might be the best term describing the overarching problem. But it is important that many of the investigated predictors lack temporal stability.

Low birth weight (even though the HR increased during the last period) and teenage parenthood are the only predictors that act relatively constant when leaving out birth order (due to the problems with proportional hazards). To some degree, maternal family type can also be regarded as a stable temporal predictor, but a family type indicating a parental partnership loses status as a protector for entry into out-of-home care in the last period, which could be a

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model Test for trend 1990–2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (ref: female)</td>
<td>1.16 (1.03–1.32)</td>
</tr>
<tr>
<td>Low birth weight (ref: no)</td>
<td>2.33** (1.94–2.81)</td>
</tr>
<tr>
<td>Birth order (ref: first)</td>
<td>2nd</td>
</tr>
<tr>
<td>Mother has psychiatric history</td>
<td>Yes</td>
</tr>
<tr>
<td>Father has psychiatric history</td>
<td>Yes</td>
</tr>
<tr>
<td>Mother is unemployed</td>
<td>Yes</td>
</tr>
<tr>
<td>Father is unemployed</td>
<td>Yes</td>
</tr>
<tr>
<td>Mother's family type (ref: single) Couple</td>
<td>30** (.23–.40)</td>
</tr>
<tr>
<td>Father's family type (ref: single) Couple</td>
<td>1.03 (.78–1.36)</td>
</tr>
<tr>
<td>Teenage mother</td>
<td>Yes</td>
</tr>
<tr>
<td>Teenage father</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* P > 0.05. ** P > 0.001.
sign of a new tendency. According to Statistics Denmark (2011), the prevalence of families with only one parent has been stable during the last three decades. The number of children living with only one parent has been increasing, but this increase is caused by a tendency toward an increase in the number of children in families with only one parent (Statistics Denmark, 2011). The statistical models in this study adjust for the within-family dependence. Two possible explanations can account for this tendency. Either problems (material or lack of resources) with single parents leading to placements in out-of-home care have decreased, or relational problems among couples leading to placements in out-of-home care have increased—or a combination of both. Looking at the rates per 1000 person years, both are decreasing. This corresponds well to the overall tendency. During the last several decades, an increased number of in-home services have been used in the Danish child protection system. It might be easier to solve problems characterized by single parenthood, such as fundamental material resources or time to be with the children, than it is to solve relational conflicts among parents—hence, an increase in in-home services might explain why growing up in a family with two parents is no longer a protective factor.

Like other studies (Section 2.2), this study also finds psychiatric histories among the parents to be associated with an increased likelihood of entering out-of-home care. But the test for a trend suggests a statistically significant decreasing trend in maternal psychiatric history as a predictor for an out-of-home placement. This means that the maternal psychiatric history as a predictor for being placed in out-of-home care is unstable. Inspecting the data, it is found that the total periodic risk time for the group of children whose mother has a psychiatric history is increasing periodically—hence, the trend in maternal psychiatric history as a predictor can be explained by a tendency where psychiatric diagnoses have become more common among mothers in the general population. This is important, as it excludes an interpretation where there is a decrease in decisions about placing a child in out-of-home care based on maternal mental health. This trend might be influenced by changes in data registration, as the transition from ICD8 to ICD10 in 1994 led to an increased number of psychiatric incidences to be registered as ambulant incidences not included before 1994 (Mortensen & Mors, 2006). The chance of having a psychiatric history therefore increases the further forward in time, as information about psychiatric history is picked up. But the finding corresponds to findings indicating that the number of patients in the Danish psychiatric systems has increased about 40% in the period from 2000 to 2008 (Madsen, Hvenegaard, & Fredslund, 2011). The reason for this is a topic of discussion, as in the psychiatric system experience, it has become more normal to seek help for mental health problems in the general population and there is an increased focus on treating non-psychotic diseases, which causes an increase in the number of persons in contact with the psychiatric system (Madsen et al., 2011). A plausible interpretation of the findings in this study therefore is that the mothers of those entering the out-of-home care system because of maternal psychiatric illness have become a more select group among mothers having a psychiatric diagnosis. Another interpretation can be found in the fact that since the 70s, the Danish psychiatric system (like many others) has turned toward deinstitutionalization and the integration of mentally disordered into the community as a treatment philosophy (Munk-Jørgensen, 1999). It might be easier to avoid placements when treatment takes place as an in-home intervention.

Other studies have found that unemployment, receiving disability pension, or other ways of being excluded from the labor market are strong predictors for entering care and that being employed is generally a protective factor, as it is associated with a sufficient level of parental resources (Section 2.2). This study replicates this finding, but it also newly finds that employment is increasingly associated with decisions leading to keeping the child out of out-of-home care. The test for a trend suggests a statistically significant decreasing trend in maternal employment status as a predictor for an out-of-home placement. The period studied characterized by a conjunctural change during which unemployment is decreasing (Danmarks Statistik, 2010). These conjectural changes are also seen within children placed in out-of-home care, where unemployment is decreasing. Despite this conjecture a trend towards an increased hazard ratio between unemployed and employed parents is observed. This means that the maternal employment status as a predictor for being placed in out-of-home care is unstable. The difference in the speed of out-of-home placements for children with unemployed mothers in the different periods varies from a minimum of 5.23 placements per 1000 person years (1995–1999) to a maximum of 6.04 placements per 1000 person years (1990–1994). Among employed mothers, the speed of out-of-home care placements decreases from 0.76 placements per 1000 person years (1990–1994) to 0.028 placements per 1000 person years (2006–2009). This means that the changes in the group of employed mothers are driving the trend. Maternal employment is increasingly associated with no entry into care, rather than unemployment is increasingly associated with an increased risk of entry into care. Thus even though it is getting easier to get employed it is increasingly associated with no entry into care. One of the aims of this study was to identify changes in what is perceived as problems related to entry into care. The finding on employment could reflect a strategy of preventing out-of-home care placements by integrating families on the labor market. This might be a trend toward what has been called a “liberal communitarian” policy mix, as it can be interpreted as an orientation emphasizing that “citizens are required to develop personal resources and material property to cope with all eventualities. The best way of overcoming ‘social exclusion’ is seen as encouraging/requiring that everyone actively engage with labor market” (Gilbert et al., 2011, p. 244).

5.3. Further research

Previous studies have focused on identifying risks of and protective factors for being placed in out-of-home care and for being a child at risk for maltreatment (Section 2.2). The finding of this study suggests that such factors cannot necessarily be thought of as stable, as they change systematically. Nor can the out-of-home care system be regarded as a stable protective entity, as the rates of entry are changing. The administrative data used reflects decisions that by their nature express what is perceived to be circumstances calling for out-of-home care placements. Several factors might cause these instabilities: Studies have found that decision making is influenced not only by characteristics of the actual case but also by worker attributes and worker behavior (personal distress, burnout, educational level, and caseload), organizational factors (policy of substantiation system, burden of proof required, type of funding, screening rates, degree of supervisors experience, workload, resources and constraints, and intensity and character of investigations), and community factors (population size, suicide rates, percentage of families below the poverty line, infant mortality rate, percentage of county funds spent on public welfare, availability of services, availability of support, and environmental stressors) (Munro, 2005; Wells, Lyons, Doueck, Brown, & Thomas, 2004). The causal mechanisms and the interplay between different factors influencing decision making in the child protection system are highly complex. But research on decision making in child welfare clearly illustrates that factors other than those related to case characteristics influence the risk of being placed in out-of-home care.

Furthermore, this study also points to other issues that need to be explored further. This study does not consider older age groups, which leaves age-related questions concerning instability unanswered. Also, this study only concerns the Danish out-of-home care system. Similar studies in other out-of-home care systems are needed in order to study the degree to which similar patterns are seen in...
other cultures and social service systems. A meta-analysis of the studies reviewed in Section 2.3 could shed light in this issue.

5.4. Implications for practice

It is widely recognized that stability, in the sense of stable and lasting relationships with significant people, is the foundation for a child’s sense of belonging and therefore fundamental for sound childhood development (Baumeister & Leary, 1995). Stability, sometimes framed as permanency or continuity, has for many years been a guiding principle in child welfare practice to promote resilience (Fein & Maluccio, 1992).

Children’s pathways into and within child protection systems can be more or less complicated. Sometimes children enter care multiple times; sometimes children experience multiple moves between different out-of-home care settings within the child protection system; sometimes children are successfully reunited with their family of origin without re-entry; and sometimes children’s entrance into out-of-home care can be prevented entirely by using successful in-home interventions (Webster, Usher, Needell, & Wildfire, 2008). As such, different stability measures are relevant at all points in the child’s journey into and through care (Ubbesen, Petersen, Mortensen, & Kristensen, 2012). Entry is an important stability measure, as it describes either the ability to prevent out-of-home care placements (and hence prevent damaging the child’s relationship with his or her parents) or the ability to detect those children in need of being placed in out-of-home care (and hence promote resilience by removing those children when the quality of the child’s relationship with his or her parents can be questioned for some reason). Further changes in entry rates are important for understanding children’s pathways in and through out-of-home care, as changes in the threshold for entry are crucial to expected rates of reunification and re-entry into care (Tilbury & Thoburn, 2008; Webster et al., 2008).

Decreasing rates of entry into the out-of-home care system have some practical implications. First, an increasing rate reflects that the threshold for entering care is increasing (Webster et al., 2008). This study finds a decreasing rate for entering care, meaning that those entering care are becoming a more select group with the most problematic circumstances. It can be questioned how well this study reflects a change in such circumstances, as a lot of information about the circumstances leading to out-of-home care placements are unobserved (Section 5.5), but the study nevertheless finds two important trends reflecting that those entering care increasingly can be characterized as a select group. This study has not investigated whether this trend can be associated with changes in social educational and pedagogical needs in social work in out-of-home care, but if it continues, it might have practical implications for the requirements and character of social work in out-of-home care. Furthermore, it has implications for the expected rates of reunification. If the threshold for entering care is getting higher, it can be expected that those entering care are less likely to return to their families, as the problems leading to out-of-home care placements are getting bigger—hence, this study suggests lower rates of reunification in the future for those entering care before their third birthday.

Second, some of the findings in the changes in characteristics for entering care have practical implications. In this study, employment was found to be an increasingly protective factor. This tendency could reflect that having a job, being able to support oneself, and perhaps finding fulfillment in life might be very important for helping families with low resources. If so, a practical implication of this study would be to give this issue some extra attention in the further development of measures in the child protection system.

5.5. Strengths and limitations

Register-based research has several limitations that must be taken into account when considering the results of this study. Some limitations concern weaknesses in methodology and three weaknesses in particular shall be presented here.

The first weakness concerns unobserved information and the quality of the data. This study makes use of information from several registration systems in order to describe circumstances associated with the decision to place a child in out-of-home care. The intention is to get as close as possible to the context leading to placement. It can be questioned how well the quality of the data actually describes the important aspects of these circumstances, as a lot of important information is unobserved. Major unobserved entities include the quality of the relationship between the parents, the parents’ relationship with the child, and characteristics of the child’s mental and physical well-being. The second weakness is related to the first, as it concerns the unobserved mechanism leading to the event where it is decided that the child should be placed in out-of-home care. It would be a pitfall to conclude that the factors found to be associated with entry into the out-of-home care system are directly causally connected to the tendency of being placed in out-of-home care. The actual mechanism leading to the event where it is decided to place the child in out-of-home care is unobserved in this study; hence, directly causal conclusions cannot be stated. Third, a lot of information is lost in translation when working with register data. In this study, this problem is exemplified with the data registration process and the limitations associated therewith. Out-of-home care settings are very different in nature, as they are designed for different types of children. In this study, foster care, residential care, and secure settings are all grouped into one category. This is a reduction of the very different and complex contexts that actually create an out-of-home care setting. Different types of children are placed in different kinds of out-of-home care settings, and this diversity is lost in translation.

Nevertheless, this study also has some strengths. It is the first population-based study that examines the temporal stability over decades of predictors for entry into out-of-home care. It incorporates relatively detailed information on an individual level in a prospective design examining developmental tendencies beginning in the ’80s. In that sense, it provides important new input into the methodological standards for describing developmental tendencies in out-of-home care systems.

6. Conclusion

Administrative data or data from registers, even though the observable information is limited, can be useful for understanding demographic developments and for framing future research questions. Children entering care before their third birthday differ substantially from other children at the same age; more importantly, these differences have changed systematically over the last several decades. These findings have important implications for future research focusing on understanding why and which children are placed in out-of-home care.

References


The transition from in-home services to out-of-home care: A Danish register-based study

Mads Bonde Ubbesen a,⁎, Liselotte Petersen a, Ole Steen Kristensen b

a National Center for Register Based Research, Aarhus University, Fuglsangsallé 4, 8210 Aarhus V, Denmark
b Department of Psychology and Behavioral Sciences, Aarhus University, Bartholins Allé 9, 8000 Aarhus C, Denmark

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A B S T R A C T
Objective: This register-based study describes the transition from in-home-based care to placements in out-of-home care. It also describes whether children who enter care directly differ from children who enter care after episodes of in-home-based care.

Method: The study includes all children who entered the child protection system of a larger regional social service system in Denmark from 1993 to 2006 (N = 9961). Graphs of cumulative incidences were used to describe transitions into out-of-home care within two years after in-home-based care started. Cox regression models are used to estimate the impacts of child and parental characteristics. In addition, Chi2 tests are used to identify differences between children who enter care directly and children who receive in-home-based care.

Results: Results indicate that the majority of children do not enter out-of-home care but that risks differ among age groups. Covariates did not predict transitions into out-of-home care for those who entered in-home care after becoming teenagers. Especially for those who entered in-home care before entering their teens, the psychiatric histories of the mothers and the children predicted the transitions into out-of-home care. Immigration background was a protective factor for those who entered in-home care as pre-scholars. Depending on the age group, low birth weight, children's fathers' and mothers' psychiatric histories, and single parentship were all characteristics more likely to be associated with children who entered care directly. Children who entered care directly differed from children who entered care within two years after an in-home-based service had been initiated on covariates that described psychiatric history.

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1. Introduction

During the past several decades, interest has been growing in understanding and describing the processes that children actually experience within child protection systems. Children in the out-of-home-care system experience different kinds of trajectories. Some are placed for very short periods, while others are placed for longer periods—maybe their entire childhoods—and others, again, move in and out of the system several times (S. H. Andersen et al., 2010). Such different trajectories might have different long-term implications, as it breaks the child’s stable and long-lasting relationships with significant others in different degrees, which widely are recognized as fundamental for sound human development (Baumeister & Leary, 1995; Herrenkohl, Herrenkohl, & Egolf, 2003). A leading guideline for child protection systems is correspondingly to secure permanency and continuity for children involved in child protection services. It is for this reason an important task to understand the main factors leading to permanency (Akin, 2011). Describing transitions is fundamental in describing trajectories through care and in the understanding of the experiences to which children in child protection systems are exposed. Understanding the exposure is, in turn, the basic starting point of evaluation (Sridharan & Nakaima, 2011). A central transition of a child’s trajectory in child protection systems is the entry into out-of-home care, which people for many years have sought to prevent, instead promoting in-home-based care services. This study seeks to describe the dynamics of this transition.

2. Background

2.1. Preventive services

During the past several decades, a central international trend in child protection systems has been an increased focus on preventive services with the intention of preventing children from entering out-of-home care (Gilbert, Parton, & Skiveness, 2011; Gilbert et al., 2012). In home-based services cover a large range of different kinds of interventions. According to Jordan, Alvarado, Braley, and Williams (2001), home-based care services, in-home services, family-centered services, and intensive family services are all examples of names used to describe
family preservation programs—programs that are comparable to preventive measures in Denmark (see below). According to Bagdasaryan (2005), such programs gained support during the 1970s and 1980s after research showed that many children in out-of-home care were placed inappropriately, were experiencing multiple placements, and remained in care for many unnecessary years. These tendencies, which were termed the “foster care drift,” led to acts that addressed concern regarding the tendency to place children in out-of-home care in cases where this could have been prevented by providing the family with sufficient in-home-based care. In Denmark, the Graversen report (Betænkning 1212, 1212, 1990) formed the basis of the child care section of a larger welfare reform in 1993. Before 1993, only a limited kind of in-home-based service was formulated in the law, but after 1993, the picture became much more differentiated, containing different types of preventive services. The scale of different preventive social services has grown along with the interest and focus on prevention. Today the Danish child protection system allocates resources to a broad spectrum of interventions spanning from help with homework or counseling over more comprehensive measures such as family therapy, specialized daycare or schools to different types of out-of-home care placements (Bengtson, Knudsen, & Nielsen, 2009). Since the beginning of the 90’s summative statements of activated in home-based services on a national level have been increasing (Ebsen & Andersen, 2010), which practically shows that Denmark is no exception regarding the global tendency toward an increased use of preventive services. Child protection in Denmark is characterized with a high rate of children being placed in out-of-home care compared to other countries (Gilbert, 2012; Gilbert et al., 2012). This might be driven by the special use of boarding schools in Denmark as an out-of-home care measure, but it still reflects a low threshold for service provision which influences rates of transitions from in-home care to out-of-home care.

2.2. Research on family preservation programs

Overall, research on the transition from in-home-based care into out-of-home care has mainly been focused on identifying potential preventive effects of family preservation programs in regard to preventing out-of-home care placements, but within the past decade, a new focus on understanding the dynamics in the transition from in-home care to out-of-home care has emerged.

In Denmark, some of the first descriptive studies of preventive services based on interviews of social workers concluded that preventive services in general work in three different ways: 1) motivating the family temporarily, which only postpones an eventually out-of-home care placement, 2) making it possible to survey the child, which makes it possible to act quickly in case an emergency situation arises where the child needs to be placed in out-of-home care, and 3) creating stability around the child, which leads to constructive development. The overall picture from interviews with case workers was that intervening is highly complex due to the severity of the problems that children and their families face and that a reverse of their dysfunctional development only occurs in exceptional cases. Hence, prevention of out-of-home care was seldom the outcome (Jørgensen, Garnst, & Bolsen, 1989). The fact that the effect of preventive services for preventing out-of-home care placements is sparse has also been reported in more experimentally oriented studies. Lindsey, Martin, and Doh (2002) did a systematic review of family preservation studies conducted from 1970 to 2000. They conclude that only four of 36 studies used randomized experimental designs. Of these four studies, two find a small significant change in the likelihood to enter out-of-home care, and the other two find no significant change in this likelihood.

Since 2000, 10 other identified studies that are relevant to the transition from in-home care to out-of-home care have been conducted. They use different designs, have different purposes, and use different types of data.

Two of the identified studies show an interest in identifying the effects of specific treatment programs by comparing different types of in-home-based care. Swenson, Schaeffer, Henggeler, Falkowski, and Mayhew (2010) compared Multisystemic Therapy for Child Abuse and Neglect (MST-CAN) with Enhanced Outpatient Treatment (EOT) by using a sample of 86 youths. MST-CAN is used for young people with challenging behavior and as a short-term measure for young people who have an identified home to move back to or on to. They find that at 16 months post baseline analysis, MST-CAN was significantly more effective in preventing out-of-home care placements than EOT was. Hansen, Skov, and Sørensen (2012) study family therapy and homebuilding based on a randomization of 43 families, and they compare their effectiveness after six months in terms of the Strengths and Difficulties Questionnaire (SDQ) and the Eyberg Child Behavior Inventory (ECBI). They find that both intervention types have a positive effect on a child’s well-being but that no differences in outcomes exist according to the type of in-home care. The authors, however, also conclude that the lack of differences might be a result of a very small study population. However, even though information about out-of-home placements is collected, whether differences exist in the effectiveness of preventing it is not reported.

The search for evidence of effectiveness research has also started to focus more deeply on understanding case characteristics and their influences on predicting out-of-home care placements. Barth et al. (2007) use closed-case files (N = 862) from a large provider of behavioral health services for troubled children and find that 18% of the children were placed in care after one year. By inspecting differences in Cox–Snell Pseudo $R^2$ on logistic regression models containing data from risk assessment tools and demographic variables, the study also finds that demographic variables explain more variance than risk assessment tools do when analyzing probabilities for entry into out-of-home care. Littell (2001) uses entries from 1990 in Illinois and uses caseworker-collected data to find that compliance with program expectations significantly reduces the likelihood of out-of-home care placements. Of all 2194 cases, the study finds that within one year, 12.6% were placed in care.

It is also stressed that it is the dynamic interplay between case characteristics and services that needs to be the objective in relation to outcomes. Littell and Schuerman (2002) use case characteristics and service characteristics of 1911 families who entered the Family First program in Illinois from 1990 to March 1991 in order to study the probability for entry into out-of-home care. Overall, 27% were placed one year after program termination. Adjusting for subgroups that represent cocaine abuse, inadequate housing, mental health problems, and child care skill deficits, the authors conclude that the duration of in-home service, intensity of contact with workers, and number of concrete services did not alter the likelihood of out-of-home care placements. Ryan and Schuerman (2004) use a contact log, interviews, and administrative data of 157 families from New Jersey, Kentucky, and Tennessee to study whether families with economical problems benefit from the homebuilder program in terms of increased family function and decreased likelihood of subsequent entry into out-of-home care. Following children when the program is closed, they find that 7% were placed in out-of-home care, that the age of the child increased this probability, and that extra cash assistance, clothing supplies, and additional concrete services decreased this probability. Kirk and Griffith (2008) use a sample of 30,060 families in North Carolina who received family preservation service for the first time from July 1994 through December 2003. The study has a special focus on racial differences and finds that after one year, 27.2% of non-White children were placed, compared with 23.1% White children.

Two studies stress that out-of-home care needs to be evaluated on other outcomes, as preventing out-of-home care is not always the goal of initiating a preventive intervention. Bagdasaryan (2005) uses
Christoffersen (2002) studied 900 cases where the children received in-home care, and 8% were closed due to goal accomplishment, and 8% were closed due to loss of significance as interaction terms were included. A total of 80% of the included cases were closed due to goal accomplishment, and 8% were closed due to transition to out-of-home care. In a Danish context, Christoffersen (2002) studied 900 cases where the children received an in-home service for the first time in 1998 and were followed through the end of 2001. The study does not have a specific focus on the transition to out-of-home care, but it finds that within four years, 23% of the children entered out-of-home care.

Summing up, no substantive documentation regarding the likelihood of transition from in-home care to out-of-home care exists. Studies vary in their findings from 7% to 27% transitions, but the general picture is that the vast majority of children from families who receive in-home services do not enter out-of-home care at later points in time. In general, research since 2000 is characterized by two trends. First, some studies are still concerned about identifying the effects of treatment programs. Secondly, research has begun to put a focus on understanding the dynamics in the transition from in-home care to out-of-home care. The differences in the findings, however, might be a consequence of the differences in the services that systems provide and the following four differences in methodology, which, in turn, make it hard to compare the studies.

First, the majority of the studies reviewed utilize case file reviews and surveys handed out to case workers. This has the advantage that relatively detailed information regarding the actual case can be collected, but it also has the disadvantage of relying on the availability and the subjective judgments of the case worker. It also relies on the availability of case files, which, in many studies, is a problem. For example, Littell and Schuerman (2002) started with 6522 families but ended up analyzing only 1911.

Secondly, a characteristic of the studies reviewed is the different ways of following up on the cases. The majority of the studies reviewed follow the children until the service program is terminated. This has the obvious disadvantage that the follow-up time varies from child to child, thus making it difficult to describe the development of the probability for children to enter out-of-home care after in-home service has been initiated. Kirk and Griffith’s (2008) study is the only study that uses a survival analytical framework to describe the transition from in-home care to out-of-home care. Rather than simply counting placements made or not made, the outcome is organized as time to placement. Using a survival analytical framework in this way enables a very precise description of how the probability for the transition to out-of-home care actually develops.

Third, the studies reviewed are also split in terms of whether they focus on first-time entries into child protection systems or not. Analyzing children who already have been in contact with child protection systems in terms of either having been the target of previous in-home service or already having been placed in out-of-home care is likely to increase the likelihood of further out-of-home care placements (Alice, Paula, Thieman, & Dail, 1997).

Fourth, age in the majority of the studies reviewed is handled by implementing age at entry into the statistical model as either a continuous variable or as a dichotomous variable that describes whether the child is under 2 years old or not. For statistical reasons, no argument exists against such a procedure, but because preventive services in child protection systems typically are organized for target specific age groups (Lausten, Malholt, Hansen, & Jensen, 2010) and because problems leading to out-of-home care placements are age-related (Franzen, Vinnerljung, & Hjern, 2008), the relevance of handling age in these ways becomes very vague. Estimates essentially do not reflect what is seen when actual preventive services are activated.

2.3. Aim of study

As it has also been stated elsewhere (Lindsey et al., 2002), it is likely that no risk for out-of-home placement exists for a large proportion of children and families who receive in-home care services. If the imminent risk of being placed were the cause of a referral and an initiation of an in-home-based service, it would be expected that the vast majority of children referred be placed in out-of-home care. However, as stated previously, the general picture from the studies reviewed is that the majority of at-risk children do not enter care.

This could be interpreted as preventive services’ being extremely useful in the prevention of out-of-home care placements, but because clear evidence from randomized controlled studies that preventive services actually prevents out-of-home care placements is lacking, such an interpretation still lacks support. Instead, it can be hypothesized that the increased use of preventive services targets a population that at baseline is different in terms of risk compared with children who are at risk for entering out-of-home care. Hence, the increased use of preventive services might reflect the fact that new needs among at-risk children have emerged.

If the majority of children who enter in-home care at baseline are not at risk for being placed in out-of-home care, entry into out-of-home care becomes a less important outcome measure when evaluating in-home-based care. Still, the literature clearly indicates that a proportion of children enter out-of-home care after experiencing episodes of in-home care. This leads to the conclusion that the question regarding the effectiveness of preventive services needs to be reframed. Instead of focusing on effect, a need exists to open up the black box and to understand the dynamics in the transition from in-home services to out-of-home care. As stated earlier, some of the first descriptive studies on the functionality of preventive services points to the surveillance of at-risk children as one of the main functionalities of preventive services. This leads to the question: “Who is at risk, and when?”

Answering such a question will be useful in evaluation purposes in (1) the differentiation of children who enter in-home care into children who are at imminent risk and children for which evaluation righty can be focused on using transitions to out-of-home care as an outcome measure and (2) children for which evaluation should use other outcome measures (e.g., child well-being, family functioning, etc.).

Answering such a “when” question will also put a focus on whether any critical periods for transitions from in-home care to out-of-home care are present. The general picture of the status of the existing research literature is that time between entry into in-home care and potential entry into out-of-home care is only described in one study (Kirk & Griffith, 2008). Operationalizing time is as an outcome in terms of risk of entry into out-of-home care reveals the existence of any critical periods of transitions or whether the likelihood of transition reaches a plateau at some point. Hence, operationalizing time is very basic in the understanding of the dynamics between the two systems. However, research using this methodology is lacking.

Regarding the “who” part of the question, a general description of the dynamics of the transition from in-home care to out-of-home care that also needs to be addressed, given the status of the literature, is the question of age at entry. Children at different developmental stages are confronted with different types of problems, which, in turn, might have different types of long-term implications (Frame, 2002; Franzen et al., 2008). Furthermore, and as previously mentioned, the specific developed in home-based services typically target specific age groups. Descriptions of how the likelihood of transition, given age at entry, develops will therefore contribute to the understanding of the dynamics between in-home-based services and the out-of-home care system.

Besides age, several other characteristics related to children and their parents might describe who exactly is at risk. The majority of
the literature use case file reviews to describe characteristics of children who move from in-home care to out-of-home care, and only two studies use information from administrative databases to describe predictive characteristics of children and their parents regarding entry into out-of-home care. Using administrative databases to describe and to monitor processes in child protection systems is not a new idea, and linking information from different administrative databases to understand processes in child protection systems has shown remarkable results (Wulczyn, Barth, Yuan, Harden, & Landsverk, 2005). Denmark features a long tradition of registering dating back to the 17th century, when births were registered in church books. During the past few decades, register-based studies using the comprehensive Danish civil registration system have gained international recognition, and several studies have explored processes in the out-of-home care system, but the transition from in-home services to out-of-home care and the dynamic interplay herein remains unexplored.

Based on the literature's current status, the present study's aim is to link administrative data on in-home care services and out-of-home care placements with other registers that hold information on children and their parents and to use these data for three purposes.

First, the aim is to describe whether children who enter out-of-home care directly can be regarded as different from (a) children who enter in-home care and (b) children who enter out-of-home care following episodes of in-home care. The hypothesis is that children who enter out-of-home care at baseline are different in terms of risk regarding why they should be more characterized with variables associated with risk for maltreatment than should children who are solely in contact with in-home services.

Secondly, the aim is to describe the development of the probability for transitions to out-of-home care after the first preventive service has been initiated. The intention is solely to be descriptive in terms of exploring whether any critical periods exist or whether the likelihood stabilizes at some point.

Thirdly, the aim is also to describe the dynamics between in-home initiated services and out-of-home care entries based on the hazard rates of entries, given different child and parental characteristics associated with risk for maltreatment. If hazard rates cannot be described to develop proportionally, this means that a specific subgroup of children might experience critical periods for transitions from in-home care to out-of-home care, which needs to be further explored.

3. Data and method

3.1. Sources of data

Since 1968, each person who lives in Denmark has been assigned an individual identification number (CPR). CPR is used across several registration systems that can be linked; hence, making very reliable descriptions and analyses of the population becomes possible. In the present study, the CPR system is used to combine data from four different sources. The administrative register from the social services in the county of Aarhus, Denmark, contains information about all measures conducted since 1993. The Population Register, which Statistics Denmark administers, allows one to link child–parent relations, and it is used to identify biological and social parents as well as to obtain a broad range of information, such as sex, year of birth, immigration history, and the parents’ family type (i.e. whether they live alone or together with someone). The Danish Psychiatric Central Register, which the Institute of Psychiatric Demography administers, is used to obtain information about parents’ and children’s personal histories in terms of psychiatric disorders, defined in terms of ICD8 and ICD10 (ICD9 was never used in Denmark). The Integrated Database for Longitudinal Labor Market Research (IDA) is used to obtain information about parental employment.

3.2. Study population

The population used in this study is defined by all children who entered child protection services for the first time in their lives in the county of Aarhus during the period of 1993–2006 (N = 8232). This period is chosen because data before 1993 were unavailable. Further, it was chosen because a major reform of the institutional structure in Denmark in 2006 changed the administrative area of the county and because the legal grounds for social services were changed in this year. In the fiscal year of 2006, the same registration system in the county was used, but the study period is limited to entries before 2007.

When analyzing processes of transition within child protection systems, tone must be aware that threshold of entries into in-home care is likely to have an impact on the threshold of entering out-of-home care (Webster, Usher, Needell, & Wildfire, 2008). In another study, it a decrease was found in the likelihood of entry into out-of-home care in Denmark before the third birthday from 1990–2008 (Ubbesen, Petersen, Mortensen, & Kristensen, 2013). Also, studies suggest that the use of in-home-based services has increased from 1993 and onward (Ebsen & Andersen, 2010). Conflicting with this, we found no reason to believe that the use of in-home services in the county of Aarhus in the entry years used in this study is characterized by instability. The only outlier is a small overrepresentation of measures beginning in 1993. However, to eliminate cohort effects, regression models are adjusted for entry years.

Children at different ages enter the child protection system for different reasons (Franzen et al., 2008), and therefore, the children were categorized into age groups according to the age at entry into the child protection system. Dividing into age groups is a practical matter, but the division used in this study is based on the division used in other studies and also follows the institutional structure in Denmark, where children usually are transferred from nursery to kindergarten at the age of 3 and start school at the age of 7. Furthermore, the literature describes teenagers in the child protection system as different from other children, which is why the last division consists of children from 13 to 17 years of age at first entry.

3.3. Organizing data

The data used in this study were collected for administrative purposes and not for scientific purposes. Therefore, a reorganization of data was necessary. In this process, three important steps were taken.

The first step concerns identifying and labeling out-of-home care measures, labeling in-home care measures, and deleting measures that cannot be regarded as either of those. The legal grounds for the measures were used to categorize them. Out-of-home placements were used when the actual legal grounds concerned removing a child either with or without consent from the child’s family of origin (e.g., residential care, foster care, family foster care, or placements in secure settings). Respite care can be thought of as both a preventive measure and as an out-of-home care measure, but in this study, it is categorized as a preventive measure because it is often used on transient problems. In Denmark, a tradition of using boarding schools as a type of out-of-home care placement exists. Boarding schools are both used with legal grounds that indicate an out-of-home care placement and with legal grounds that indicate economic support that can prevent an out-of-home care placement. However, for reasons concerning international comparisons, this study does not regard placements at boarding schools as out-of-home care placements, but rather, it excludes them from the analysis, as they are regarded as something qualitatively different. Economic support for disability paraphernalia and for the dissemination of internships is also regarded as something qualitatively different. In-home care services were categorized based on legal grounds that indicate measures
where professionals intervene or support the child or his or her family (family therapy, pedagogical support, advisers, consultants, support for organized leisure activities, and respite care).

Secondly, data were organized longitudinally for each individual. This involved a procedure where overlapping measures were bridged according to their categories as in-home care or out-of-home care and were flattened according to the first day of contact with the in-home system and out-of-home care system.

Thirdly, procedures that enhance the validity of first-time entries into the out-of-home care and in-home care systems were used. The data from the county of Aarhus do not hold routinely collected data from before 1993. Therefore, it is unobserved whether a placement was initiated before this time, which, of course, causes a problem concerning the validity of whether it actually is the first placement that forms the basis for the analysis. To ensure that the basis of the analysis was the first entry, the register was linked to the National Register of Support for Children and Adolescents. Each child who had records associated with an out-of-home care placement before 1993 in this national register was excluded from the analysis. To ensure that first-time in-home-based service was the basis of the analysis, records were deleted if the child according to the National Register of Support for Children and Adolescents had a preventive service before 1993. The national register does not hold information about family-oriented service, such as family therapy. In the process of cleaning the data, a large proportion of family-oriented services were found to have started January 1, 1993, and January 1, 1994. This was interpreted as if though these cases were initially started before this study’s entry period and were therefore deleted. To further ensure precision, analysis of whether a stratification of entry years before 1997 (minimizing the likelihood of entries form older-birth cohorts) results in different probabilities for entry into out-of-home care was performed. This was not the case.

Starting with 9961 children, the exclusion of cases with missing values left 8444 cases. Of these 1196 entered out-of-home care directly, and 7431 entered in-home care.

3.4. Outcome and follow-up period

Being placed in out-of-home care after an episode of in-home care is the focus of this study. Being placed in out-of-home care was defined using legislative indicators of the measures (see Section 3.3). A complete follow-up period of two years was used in this study. Thus being placed in out-of-home care within two years following an initiation of in-home service is the outcome of this study. In order to account for censoring, child death was set as a competing risk. Also, aging out of the child protection system (i.e., turning 18 without being placed in out-of-home care) was set as a competing risk.

3.5. Independent variables

In order to investigate the potential effect of different case characteristics on the likelihood of transition to out-of-home care, independent variables that describe characteristics of the child and the parents were obtained. The intention is to describe the context in which the child was situated just before the first contact with the child protection system. The variables used were chosen based on previous epidemiological research that described predictive factors associated with being placed in out-of-home care. Psychiatric history, low birth weight, parental psychiatric, single parent ship, unemployment, and young parents are all indicators that have been found to be associated with risk of being placed in out-of-home care (Ejrnæs, Ejrnæs, & Frederiksen, 2010; Franzen et al., 2008; Needell & Barth, 1998; Ubbesen et al., 2013). Inmigration background has been found to be a protective factor for entry into out-of-home care in a Scandinavian context (Ubbesen, Petersen, Mortensen, & Kristensen, 2012; Vinnerljung, Hjern, Weitoff, Fransen, & Estrada, 2007), which is why this also was included as a variable.

3.5.1. The child

Child characteristics are described by five variables defined in the following ways: Sex describes male or female. Immigration background is coded as a dichotomous variable that describes whether the child has an immigration background (immigrant or descendant of an immigrant) or not. Birth weight describes the weight of the child when he or she was born and is coded as a dichotomous variable according to the World Health Organization (WHO) standards that indicate low birth weight (<2500 g) or normal birth weight. Psychiatric history describes whether the child was diagnosed before the day of entry and was coded dichotomously as yes or no. Having siblings in care is coded dichotomously according to whether the social mother has other children in care before the in-home intervention starts.

3.5.2. Characteristics of parents

Available information about the social parents was used to describe the social context in which the child protection system intervenes. Statistics Denmark defines social parents every year on January 1; thus, the definition of social parents may vary over time. The definition of social parents in the year of the placement is used. In cases where measures were initiated in the child’s year of birth, no social parents can be defined; instead, the biological parents are used. Psychiatric history is coded dichotomously for both father and mother on the basis of whether the social mother or the social father was diagnosed before the first contact with the child protection system. The employment status of each parent is defined on the basis of IDA and is coded categorically, describing whether the parent was employed/enrolled in education or unemployed/receiving a pension. The employment status describes the employment situation on November 1 in the year before the first contact with the child protection system. Teenage parenthood is defined using the age of the parents on the day the child was born. The variables are coded for each parent, describing whether they were teenage parents (<20 years) or not.

3.6. Data analytical approach

The first data-analytic step was to describe the population of the study, which was done by calculating percentages and counting subjects according to how they were distributed in the variables used and in accordance to whether they were placed directly in out-of-home care or experienced entry into in-home-care episodes. Descriptive distributions of children who entered care within two years after an in-home-based intervention was initiated (i.e., a sub-population of those who entered in-home care) was also calculated. In order to study whether those who enter out-of-home care directly were significantly different from those who entered in-home care, chi-squared tests were used to identify statistically significant different distributions of all of the independent variables. This procedure was also followed in order to study whether children who enter out-of-home care directly are different from children who enter out-of-home care following in-home-care episodes.

In order to investigate how the probability for entry into out-of-home care develops after entry into in-home care, cumulative incidences are calculated and presented in graphs. Cumulative incidences are best understood as a description of the probability that a specific event will occur while at the same time taking into account that other types of outcomes may also occur. In this study, these other events are child death and aging out of the child protection system. Taking censoring into account is a crucial point at which cumulative incidences differ from other survival analytical plot methods, such as Kaplan–Meir and Nelson Aalen estimators (Andersen, Geskus, De Witte, & Putter, 2012). In relation to the cumulative incidences, rates of entry are also calculated, and rates of different age groups are compared using hazard ratios and confidence intervals estimated via Cox regression. Cox regression is well-suited for questions concerning rates of change. Cox regression models a variable called
Table 1

<table>
<thead>
<tr>
<th>Age at first contact</th>
<th>Percentage directly in IHC after first contact (N = 241)</th>
<th>Percentage directly in OHC after first contact (N = 133)</th>
<th>Percentage after IHC directly in OHC (N = 193)</th>
<th>Percentage in IHC (N = 630)</th>
<th>Percentage in OHC (N = 259)</th>
<th>Percentage before IHC directly in OHC (N = 2119)</th>
<th>Percentage in IHC (N = 313)</th>
<th>Percentage in OHC (N = 313)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>69 (15)</td>
<td>13 (2)</td>
<td>56 (13)</td>
<td>17 (7)</td>
<td>12 (5)</td>
<td>151 (51)</td>
<td>20 (6)</td>
<td>20 (6)</td>
</tr>
<tr>
<td>3-6</td>
<td>23 (5)</td>
<td>12 (3)</td>
<td>11 (3)</td>
<td>7 (3)</td>
<td>5 (2)</td>
<td>78 (26)</td>
<td>13 (4)</td>
<td>13 (4)</td>
</tr>
<tr>
<td>7-12</td>
<td>9 (2)</td>
<td>11 (3)</td>
<td>2 (1)</td>
<td>14 (5)</td>
<td>16 (6)</td>
<td>31 (10)</td>
<td>22 (7)</td>
<td>22 (7)</td>
</tr>
<tr>
<td>13-17</td>
<td>13 (3)</td>
<td>17 (5)</td>
<td>4 (1)</td>
<td>17 (6)</td>
<td>20 (8)</td>
<td>48 (16)</td>
<td>22 (7)</td>
<td>22 (7)</td>
</tr>
</tbody>
</table>

Boys 54.8 (N = 124) 53 (N = 165) 54.4 (N = 105) 53.2 (N = 1128) 53.7 (N = 139) 48.6 (N = 67) 56.0 (N = 1352) 59.9 (N = 155) 67.5 (N = 112) 53.2 (N = 830) 51.2 (N = 326) 51.8 (N = 118)

Low birth weight 8.8 (N = 203) 12.8 (N = 40) * 13.5 (N = 26) 5.6 (N = 124) 10.8 (N = 28) * 8.7 (N = 12) 4.3 (N = 104) 5.4 (N = 14) 6.6 (N = 11) 3.3 (N = 51) 4.1 (N = 26) 2.2 (N = 5)

Psychiatric history 0.2 (N = 5) 7.0 (N = 22) ** 1.0 (N = 2) * 4.9 (N = 95) 18.5 (N = 48) ** 8.0 (N = 11) * 6.9 (N = 167) 30.1 (N = 78) ** 16.9 (N = 28) * 10.6 (N = 165) 32.0 (N = 202) ** 14.0 (N = 32)

Single mothers 38.4 (N = 889) 55.0 (N = 172) ** 60.6 (N = 117) 46.1 (N = 976) 55.6 (N = 144) * 63.8 (N = 88) 51.6 (N = 1245) 56.8 (N = 147) 66.9 (N = 111) 48.4 (N = 756) 47.0 (N = 296) 59.2 (N = 135)

Teenage mothers 6.5 (N = 151) 8.3 (N = 26) 7.3 (N = 14) 7.4 (N = 157) 6.2 (N = 16) 7.3 (N = 10) 9.4 (N = 226) 7.7 (N = 20) 9.6 (N = 16) 12.9 (N = 201) 14.0 (N = 88) 11.8 (N = 27)

Teenage fathers 2.3 (N = 52) 2.9 (N = 9) 2.6 (N = 5) 1.8 (N = 38) 0.8 (N = 2) 4.4 (N = 6) * 2.7 (N = 66) 3.5 (N = 9) 3.0 (N = 5) 4.9 (N = 76) 6.8 (N = 43) 6.1 (N = 14)

Significant differences between children who entered in-home care and children who entered out-of-home care: *: p < 0.05 **: p < 0.01 ***: p < 0.001

4. Results

4.1. Descriptive characteristics and differences between children who enter out-of-home care directly compared with children in in-home care

Stratified by age group and type of first contact, Table 1 presents descriptive characteristics of children during their first contact with child protection services. A total of 1461 children enter out-of-home care directly without any episodes of in-home intervention, and 8406 receive in-home intervention. The difference in the distribution among children who enter out-of-home care directly and children who enter in-home care was tested statistically using chi-squared tests for each variable. The distribution of children with regard to variables typically associated with risk is higher for those children who enter directly into out-of-home care.

Thus, the prevalence of children with low birth weight, prior history of psychiatry, maternal history of psychiatry, paternal history of psychiatry, and single parents is higher than the prevalence among children entering in-home care. However, it is not all variables associated with risk that reveal a statistically significant difference. No significant difference was found in the distribution between sex and for teenage parents. Furthermore, the prevalence of unemployed parents is in general not significantly different, although unemployed mothers are underrepresented among children entering care directly. Also, the prevalence of children with an immigration background was in all age groups statistically significantly higher for those children who entered in-home care. Also, the findings are not consistent for all age groups. The difference in the distribution for low birth weight and single mothers is only significant for children less than 6 years old.

4.2. Differences between children who enter care directly and children who enter care after an in-home episode

The difference in the distribution among children who enter out-of-home care directly and children who enter out-of-home care after episodes of in-home care was tested statistically using chi-squared tests for each variable. Children who enter care directly are more likely to have had psychiatric histories prior to their contact with the child protection system than are children who enter out-of-home care after in-home-care episodes. For the same age groups, children who enter care directly are more likely to have fathers with psychiatric histories prior to their contact with the child protection system.

Children entering care directly are more likely to have single mothers when entering after they have turned seven years old.
Further, children who enter care directly are less likely to have unemployed mothers when entering before 3 years old than are children who enter in-home care followed by out-of-home care from the same age group.

4.3. Incidence rates

Fig. 1 presents cumulative incidences of transitions from in-home care to out-of-home care within a two-year follow-up period stratified by age group of entry into in-home care. Fourteen children were censored due to death, and 422 children were censored because they aged out of the child protection system. The groups of children who enter in-home care after they have turned 13 are most likely to enter care followed by children who enter in-home care before their third birthdays. Estimates of hazard rates and ratios are presented in Table 2. All age groups were used as a reference, one at a time. Confidence intervals suggest that the rate is significantly different when comparing the youngest age group with the others, except those entering between after their seventh birthday but before their teens. The oldest age group is statistically significant more likely to enter out-of-home care than all the other groups. However, when comparing children who entered care when 3–6 years old with children who entered when 7–12 years old, no statistically significant difference is found.

4.4. Predictor for transition from in-home care to out-of-home care

Table 3 presents mutually adjusted hazard ratios within independent variables by age group of entry into in-home care. Being a boy was found to be a statistically significant predictor for entry into out-of-home care for children who enter in-home care for the first time when they are 7–12 years old. In the other age groups, no statistically significant differences were found. Low birth weight was found to be a statistically significant predictor of entry into out-of-home care only for the youngest age group. Having an immigration background (i.e., being either an immigrant or a second-generation immigrant) is found to be a statistically significant protective factor for entering out-of-home care for all age groups except for those who enter in-home care for the first time after they have become teenagers. Children who receive psychiatric diagnoses before their in-home episodes are statistically significantly more likely to enter out-of-home care in all age groups. However, due to a lack of power, this should be interpreted with some caution in the age group of children 0–2 years. Having other siblings in care is associated with a statistically significantly increased likelihood of entry into out-of-home care only for the group of children who enter in-home care before their third birthdays.

Having a mother with a psychiatric diagnosis before experiencing the in-home episode is found to be a predictor of entry into care for children who enter in-home care before their teens. Having a mother who lives alone is found to be a predictor of entry into out-of-home care for all age groups. Unemployment among parents was only found to be a predictor of entry into out-of-home care for the age group 0–2 when fathers are unemployed.

In the statistical test, the variables that describe whether the child had other siblings in care prior to the in-home-care episode for the age group 0–2 years old along with the variable that describes single motherhood in the age group of 3–6 years old were found to violate the proportional hazard assumption. However, graphical inspections of “log–log plots” show no reasons for the assumption to be violated.

5. Discussion

The results of this study suggest that depending on the age group, between 6.5% and 14.6% of children who enter in-home care experience a transition to out-of-home care within two years. This result is hard to compare with that of other studies because follow-up periods are seldom defined properly (see Section 2.2). However, the results confirm the general tendency found in other studies that the majority of children who enter in-home care do not enter out-of-home care afterward. As discussed earlier, this does not mean that out-of-home care placements have been avoided. No causal inference can be made based on this study regarding preventing placements in out-of-home care and the intention with this study is basically to describe the transition from preventive services to out-of-home care.

5.1. Differences between children

The findings in this study reveal that children who enter care directly are more likely to be linked with characteristics associated with risk of placements in out-of-home care than are children who enter in-home care. This was also expected and confirms that the decision to place a child in out-of-home care is based on circumstances associated with higher risk than is the decision to initiate an in-home-care service. The study also finds that children, who enter care directly, to some degree, differ from children who enter care after episodes of in-home care. It is notable that the differences are reflected with variables that describe whether the child had a psychiatric history prior to his or her contact with the child protection system. In cases of diagnostics, it might be easier to decide what is needed in order to help the child, as the problem has been described very clearly, and knowledge about what is needed exists. In this way, the findings can also be interpreted correspondingly with the notion that in-home services are a way to survey at-risk children and to investigate whether a placement is needed.

With respect to predictors of entry into out-of-home care, this study has findings that are similar to those of other studies. Factors associated with parental vulnerability, such as psychiatric history
and having other siblings in care, as well as low birth weight are associated with risk of entry into out-of-home care, especially for children who enter in-home care before their third birthdays. This corresponds well to a study by Ubbesen et al. (2012), which is a population-based study that focuses on predictors for entry into out-of-home care. However, unlike that study, the present study does not find any statistical significance for teenage parenthood to be predictors of entry into out-of-home care. An explanation for this could be that the present study focuses on children who are already in contact with the child protection system, which is why ratios are calculated based on all children who are at risk and not on children from the general population.

Along with other studies (Ubbesen et al., 2012; Vinnerljung et al., 2013) this study also finds that immigration status is a protective factor of entry into out-of-home care. This might be unexpected because immigration status in other Danish studies has been associated with more problematic developmental pathways in terms of education and employment (Dahl & Jakobsen, 2005; Deding & Olsson, 2009). The proportion of children receiving in-home care is relatively large (28.9%–32.7% depending on age group) and an explanation could be that it reflects a different practice where children with immigration background who have contact with the child protection system are characterized by problems related to cultural differences and that these issues are easier to solve and thus do not initially call for out-of-home care placement.

5.2. Age

The findings clearly suggest that the probability for transitions from in-home care to out-of-home care within a two-year follow-up period differs among age groups. Those who receive in-home services before their third birthdays are significantly more likely to enter out-of-home care than are those who enter in-home care before they start in school. Although the difference is significant, it is still relatively small. The oldest age group is the most likely to enter out-of-home care and is more than twice as likely to enter care than are those children who enter an in-home-based service between 3 years and 12 years of age.

These differences might stem from different types of problems. As Table 3 suggests child psychiatric history and single mothers are the only variables among the teenagers that predict entry into out-of-home care. This means that the variables used in this study only in limited degree describe the reasons for being placed. This is different for the other age groups, where variables predict entry into care, to a larger degree. Especially for the youngest age group, several variables predict transitions to out-of-home care. Parental psychiatric history, paternal unemployment, and having other siblings in care are all associated with an increased risk of entry into care. Common for these variables is that they describe parental vulnerability in terms of psychiatric deviance and the lack of parental resources. The variable that indicates whether the child has a psychiatric diagnosis is also found to be significant, but when looking more closely at the cells, making an inference becomes difficult due to a lack of power—two children of five possible children are placed in out-of-home care.

Nevertheless, the findings suggest that problems differ among the age groups, as parental problems predict transition to out-of-home care for the younger age groups and not for the teenagers. The reasons for the teenagers to enter out-of-home care is unobserved, but other studies suggest that adolescents’ entering the child protection system is also characterized by increased involvement in crime, substance abuse, and social conflicts (Jespersen & Sivertsen, 2005), which are problems that are not included in the data used in this study. The implication of age being related to different reasons for transition from in-home care is that when studying the dynamics of child protection systems, age differentiation needs to be taken into account. Further, the differences in likelihoods for transition into out-of-home care might reflect that the types of problems that lead adolescents to enter the child protection system are harder to solve than are the parental problems that characterize the youngest age group.

Table 3

<table>
<thead>
<tr>
<th>Age when entering in-home care</th>
<th>0–2 years</th>
<th>3–6 years</th>
<th>7–12 years</th>
<th>13–17 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (ref: girls)</td>
<td>0.95(1.07)</td>
<td>0.85(1.11)</td>
<td>1.01(0.94)</td>
<td>0.95(1.12)</td>
</tr>
<tr>
<td>Child with psychiatric history</td>
<td>11.3(9.43)</td>
<td>1.8(1.18)</td>
<td>1.5(0.93)</td>
<td>1.4(0.87)</td>
</tr>
<tr>
<td>Immigrant background</td>
<td>2.1(2.5)</td>
<td>1.4(2.6)</td>
<td>1.6(3.3)</td>
<td>1.6(2.9)</td>
</tr>
<tr>
<td>Low birth weight</td>
<td>1.8(2.2)</td>
<td>2.1(2.6)</td>
<td>1.5(2.9)</td>
<td>1.5(2.9)</td>
</tr>
<tr>
<td>Siblings in care</td>
<td>1.95(2.9)</td>
<td>2.65(3.2)</td>
<td>1.55(3.0)</td>
<td>1.55(3.0)</td>
</tr>
<tr>
<td>Maternal psychiatric history</td>
<td>1.2(3.5)</td>
<td>1.3(3.7)</td>
<td>1.1(3.3)</td>
<td>1.1(3.3)</td>
</tr>
<tr>
<td>Paternal psychiatric history</td>
<td>1.16(2.4)</td>
<td>1.2(2.7)</td>
<td>1.2(2.9)</td>
<td>1.2(2.9)</td>
</tr>
<tr>
<td>Single mother</td>
<td>1.54(2.7)</td>
<td>1.19(2.1)</td>
<td>1.19(2.1)</td>
<td>1.19(2.1)</td>
</tr>
<tr>
<td>Teen father</td>
<td>2.1(2.6)</td>
<td>1.7(2.7)</td>
<td>1.7(2.7)</td>
<td>1.7(2.7)</td>
</tr>
<tr>
<td>Unemployed mother</td>
<td>0.95(1.0)</td>
<td>0.9(1.0)</td>
<td>0.9(1.0)</td>
<td>0.9(1.0)</td>
</tr>
<tr>
<td>Unemployed father</td>
<td>0.95(1.0)</td>
<td>0.9(1.0)</td>
<td>0.9(1.0)</td>
<td>0.9(1.0)</td>
</tr>
</tbody>
</table>

* P < 0.05. ** P < 0.001.

5.3. Critical periods

One of the aims of this study was to investigate whether any critical periods for transition from in-home care to out-of-home care exist. The graphs that show how the probability develops reveal that experiencing a transition within the first year versus afterward is more likely for the oldest and the youngest age groups but that the development of the probability does not reach a plateau afterward. Another graph was also calculated based on an organization of the data where all children were followed, as long as the data could tell whether they were placed or not. This means that those who entered in-home care in 1993 were followed for a longer period than were those who entered later on—a procedure that has weaknesses, according to cohort issues. Nevertheless, this showed that the probability for transition into out-of-home care did not stabilize. This means that it is hard to argue that a critical period for transition to out-of-home care after initiation of an in-home care episode is present. The Cox regression models show that children who are characterized by risk enter out-of-home care more quickly. However, as the proportional hazard assumption could be accepted in all significant situations, no argument exists that critical periods for entry into out-of-home care are present for specific subgroups.
5.4. Strengths and limitations

5.4.1. Limitations

Several sources of unobserved information might influence this study's findings. Even though register-based data have many advantages, some issues need to be taken into consideration when making an inference from this study.

We have no information about out-of-home care in other counties. For the children who move out of the county, this leaves a source of error in terms of the lost opportunity to follow up. The children who move into the county also leave a potential source of error, as these children might have been involved with child protection services in other counties.

Secondly, as noted, a small overrepresentation of cases began in 1993. These cases were probably initiated before 1993, and hence, some risk time might be left out in the analysis even though a comparative graphical analysis that divided the entire entry period in two did not reveal any difference in probability for transition to out-of-home care.

Third, this study is based on a relatively small number of children, as it is based on only one county. This left out the opportunity of a more differentiated age grouping separating neonates from toddlers. Variations in child welfare for these groups might therefore be masked.

Fourth, this study also relies on the quality of the registers describing covariates. The register describing psychiatric history has some limitations. In the period 1968–1994 the registry hold information on ICD-8 diagnoses. ICD-10 was implemented in Denmark in 1994 and from 1995 the registry also holds information on outpatient contacts. Psychiatric diagnoses in preschool children may have been underreported prior to 1994 and the included cases in the beginning of the observation period may not represent the total number of cases in the population.

Fifth, by solely describing the time between first day of in-home care and first day of out-of-home care much complexity of the service trajectory is not taken into account. Multiple episodes of multiple types of in-home care with different lengths might all be parameters that influence the likelihood for entry into out-of-home care.

Sixth, grouping all preventive services together is a procedure, which puts the preventive purpose of the measures under one heading. This reduction masks that not all preventive services aims at preventing out-of-home care placements. For instance, children who receive special help for homework might not be at risk for being placed in out-of-home care. Hence, preventive services might be a misleading terminology as it is not clear what is sought prevented.

This, however, is the only Danish study that uses information about all types of in-home-based interventions.

5.4.2. Strengths

Even though this study has several limitations, it also has some clear strengths. It is the first study to analyze the dynamics in the transition between in-home-based care and out-of-home care in Denmark. In doing this, it contributes to unraveling pathways to care. Further, it contributes to the research area because it sets a new methodological standard, as it organizes time as an outcome combined with relatively detailed information on an individual level. Further, it contributes by using the Danish Civil Registration System to link data from different administrative systems, which eliminates typical sources of imprecision and bias that stem from a methodology based on the analysis of case file reviews and case worker interviews.

6. Conclusion

The overall conclusion of this paper is that the majority of children who enter in-home care do not enter out-of-home care within two years and that children who enter out-of-home care differ from children who do not enter out-of-home care. More detailed, the aim of the study was to describe the transition from in-home to out-of-home care. This was done using cumulated incidences and by calculating hazard ratios associated with explanatory variables. Within a two-year follow-up period, age groups differed significantly regarding probability of entry into out-of-home care: 8.3% of children who entered in-home care before their third birthdays were placed in out-of-home care; 6.5%–6.9% of children who entered in-home care after their third birthdays and before their teens were placed in out-of-home care; and 14.6% of children who entered in-home care after they became teenagers were placed in out-of-home care. For those who entered in-home care after they became teenagers, the variables used to describe characteristics did only limited predict transitions to out-of-home care. Especially for those who entered in-home care, the psychiatric histories among mothers and children as well as single parenthood predict transitions to out-of-home care. For the youngest age group—those who enter in-home care before their third birthdays—low birth weight, having siblings in care and maternal psychiatric history and unemployment also predict transitions to out-of-home care. Being an immigrant or a descendant of an immigrant was a protective factor for those who entered in-home care before their teens.

The study’s aim was also to describe whether children who enter care directly differ in terms of the risk associated with children who enter in-home care and children who enter out-of-home care after episodes of in-home care. Children who enter out-of-home care directly differ from children who enter in-home care based on several characteristics associated with risk. Depending on the age group, low birth weight, children’s fathers’ and mothers’ psychiatric histories prior to the children’s contact with the child protection system, and single parenthood were all characteristics more likely to be associated with children who enter care directly. In terms of being more prone to psychiatric contact children who entered care directly differed from children who entered care within two years after in-home-based service had been initiated.

References


