Out-of-Home Care and the Educational Achievement, Attendance, and Suspensions of Maltreated Children: A Propensity-Matched Study

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Objective To estimate the influence of out-of-home care on reading scores, attendance, and suspensions by comparing a matched sample of maltreated children who entered out-of-home care and maltreated children who remained at home.

Study design Linked administrative data for all children born in Western Australia between 1990 and 2010 was used, focusing on those with substantiated maltreatment before year 9 achievement tests (n = 3297). Propensity score modelling was used to address differences in preexisting risk factors (child, family, neighborhood characteristics, maltreatment history, and reading scores) and compare outcomes for children placed in out-of-home care and those remaining in in-home care.

Results Both groups of maltreated children had poor educational outcomes. After accounting for group differences in risk characteristics, there was no difference in year 9 reading achievement for the out-of-home care and in-home care groups. There was no difference in suspensions for the groups. The only significant difference was children in out-of-home care had fewer school absences than children in in-home care.

Conclusions Out-of-home care was not found to be a significant factor in the adverse educational outcomes of these children; however, there is a clear need for further educational support to address poor outcomes for children involved with child protection services. *(J Pediatr 2018;■■:■■-■■).*

Out-of-home care is a common intervention for maltreated children when it is deemed unsafe to stay at home; however, there is heated debate about the impact of out-of-home care on children's development. Regarding education, some researchers argue that out-of-home care has a detrimental effect on children's development,[1] although others suggest adverse outcomes result from children's preexisting risk factors.[2] At the heart of this controversy is a lack of sufficient research to accurately assess the effects of out-of-home care. Although research has regularly found poor educational outcomes for maltreated children, and those placed in out-of-home care, methodologic difficulties mean the effects of maltreatment and out-of-home care are "almost always confounded."[3] Children placed in out-of-home care typically have a constellation of risk factors that make them a particularly vulnerable subset of maltreated children, including their maltreatment history as well as child, family, and neighborhood characteristics.[4] A systematic review found a high risk of selection bias, because very few studies compared outcomes for maltreated children placed in out-of-home care and those remaining in in-home care and accounted for these other risk factors.[5]

Although the adverse educational outcomes for children in out-of-home care are well-established,[3,6-10] studies that addressed preexisting risk factors have suggested more positive outcomes associated with out-of-home care.[11-16] Thirty years ago, a seminal study of 220 children found better attendance and no difference in passing grades for children in out-of-home care compared with children in in-home care after controlling for race, sex, and maternal education.[16] More recently, advances in software, data linkage, and statistical methods have created the capacity to study larger cohorts and address a greater range of potential confounding variables. Several important gaps remain, however. First, research comparing achievement for children in in-home care and out-of-home care has often focused on entries to care close to the time of the outcome measurement. Because worse outcomes were found at this time, there is a need for research including children who have been in care for longer durations.[11] In deciding to place a child in out-of-home care, it is important to know the likely outcomes, not only while they are in care, or for the subgroup of children who stay in care, but also the ongoing outcomes for the whole group. There is a need to examine other educational outcomes, such as attendance, where results have been mixed and often relied on self-report data[12] or rare

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WA	Western Australia
WALNA	Western Australian Literacy and Numeracy Assessment

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events such as truancy court petitions.[13] We are not aware of any similar studies comparing school suspensions for children in in-home care and out-of-home care.

The primary aim of the study was to estimate the impact of out-of-home care on year 9 reading outcomes by comparing a matched sample of maltreated children who entered out-of-home care and maltreated children in in-home care. Secondary aims were to compare attendance and suspensions outcomes. This study builds on previous research by using a population of children who have entered care across a longer duration (≤14 years of follow-up), uses standardized achievement tests, and routinely collected attendance and suspension data. Propensity score matching on a broad range of covariates (preexisting risk factors and reading achievement before entering out-of-home care) was used to maximize comparability between groups.

Methods

The dataset was part of a cohort study of all children born in Western Australia (WA) between 1990 and 2010. It included linked administrative data from the WA Departments of Education, Child Protection and Family Support, Health, and the Disability Services Commission. Education datasets included standardized reading achievement tests (National Assessment Program Literacy and Numeracy [NAPLAN] 2008-2013 and Western Australian Literacy and Numeracy Assessment [WALNA] 1999-2007) from all WA schools and records of suspensions and attendance from all government schools in WA from 2008 to 2012.

Data were linked by the WA Department of Health Data Linkage Branch using probabilistic matching, following established protocols for privacy and linkage quality.[17] This study focused on children who sat year 3 and year 9 standardized reading tests (at approximately 8 and 14 years of age, respectively). Children sat year 9 tests from 2005 to 2013. The cohort from which the study samples were derived included 152 002 children, and 3297 of these (the full year 9 sample) had substantiated maltreatment before their year 9 tests.

Before matching, additional restrictions were placed on the sample to decrease selection bias (creating the unmatched comparison sample). Children must have had their first maltreatment substantiation and any first entries to out-of-home care after the year 3 reading test and before the year 9 test. These criteria were to ensure year 3 reading tests provided a baseline measure of achievement before entering out-of-home care, and to increase comparability in the timing of first substantiated maltreatment allegations. Approximately 39% of maltreated children met the criteria. This unmatched comparison sample consisted of 1128 children (260 ever entered out-of-home care and 868 in-home care only). The final propensity matched sample (the baseline matched sample) consisted of 430 children. Ensuring the groups are assessed on a baseline measure of reading before entering out-of-home care is an important aspect of the design to maximize internal validity, but reduces generalizability to children who enter care earlier. To address generalizability, we conducted a second propensity matching within the full year 9 sample (resulting in the large matched sample).

Measures

Child characteristics included sex, Aboriginality, age in months at the time of year 9 tests and first substantiated maltreatment, preterm birth (<37 weeks of gestation), low birthweight for gestational age (lowest 10%), intellectual disability, and/or developmental anomalies based on records in the Intellectual Disabilities Exploring Answers database and Western Australian Register of Developmental Anomalies, and a binary indicator for children older than typical for year 3 (likely to have been retained). Children's year 3 reading achievement consisted of WALNA or NAPLAN reading tests scores, converted to z-scores to facilitate comparability across tests. More detail on the covariates is provided elsewhere.[1]

Child Protection and Family Support records from each child's birth to 2013 were used to ascertain age at first substantiation, maltreatment type in first substantiation (neglect, and physical, sexual, and emotional abuse), presence of any maltreatment allegation before year 3, and types of maltreatment allegation before year 3 (binary indicator yes/no for each type), all measured before first care entry. The number of allegations and substantiations up to year 9 were included as covariates but not used for matching.

Parent characteristics included maternal and paternal age and marital status at the child's birth. The Mental Health Information System and Hospital Morbidity Data system include public and private in-patient admissions and public outpatient admissions, and were used to identify maternal and paternal mental health contacts, substance-related contacts and assault-related injury inflicted on either parent. Only contacts before year 3 tests were included in the propensity matching, to increase comparability at baseline; however, contacts to year 9 were included in the sensitivity analyses. Most children in out-of-home care in WA are reunified at least once and, thus, have some ongoing exposure to parent risk factors.

The Socio Economic Indices for Area is a neighborhood-level measure of relative social disadvantage based on residence at the child's birth.[18] WA covers a large land area, including remote areas with limited access to services. The Australian Bureau of Statistics' Accessibility/Remoteness Index of Australia indicates the accessibility of the family's area of residence at the time of the child's birth.[19]

Outcome Variables. Year 9 reading scores were from the WALNA and NAPLAN tests. For comparability between the tests, scores were separately standardized for each test level for each calendar year.

Data on attendance and suspensions was available for a subgroup of 1416 children who sat year 9 tests in 2008-2012 and attended government schools (including 213 children in the baseline matched sample). Attendance data from semester 1 of year 9 indicated whether a student had high levels of absence (absent for ≥20% of days enrolled). Suspensions were coded as yes or no for any recorded suspension during year 9 of school.

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