

What is the relationship between being in care and the educational outcomes of children?

An international systematic review

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Executive Summary

The education of children in care has long been a concern for policy-makers, practitioners, foster carers, teachers and young people themselves. Government data and research have demonstrated an achievement gap between children in care and their peers that has sustained over many years. Furthermore, international research demonstrates that low educational attainment of children in care is an issue in many countries (Dill, Flynn, Hollingshead, & Fernandes, 2012).

Research spanning several decades and three continents has also documented poor health, employment and general well-being outcomes of care experienced adults (Blome, 1997; Buehler, Orme, Post, & Patterson, 2000; Dill et al., 2012; Harris, Jackson, O'Brien, & Pecora, 2009; Jackson, 2013; Social Exclusion Unit, 2003). Those who have been in care are more likely than the general population to be unemployed, have mental health problems, spend time in prison or psychiatric institutions or experience homelessness at some point in their lives (Centre for Social Justice, 2015; Jackson & McParlin, 2006). Greater educational success has been linked to better long-term outcomes in the general population, so raising attainment is an important strategy to interrupt these negative life trajectories (Gorard, Beng, & Davies, 2012). This review aims to contribute to this literature by reviewing the evidence on the relationship between being in foster or kinship care¹ and educational outcomes.

The review was undertaken in order to examine existing research evidence that addresses the following three questions:

- Is there an association between being in care and educational outcomes?
- What is the nature of the association between being in care and educational outcomes?
- Is there any evidence to suggest that this association is causal²?

Electronic databases and websites were used to identify 28 studies including two reviews/meta-analyses from the UK, US, Canada and Australia. Comparisons across countries are subject to limitations of different cultures and services. Studies identified for the review were published after 1990 and were all in English. All but two studies (Barber & Delfabbro, 2005; Conger & Rebeck, 2001) employed comparison groups or compared children in care to the general population. Study samples ranged from 107 to over 222,000 young people.

¹ This review only concerns children in family foster or formal kinship care (see methodology). Foster care is defined as a placement in which children live in a family other than their own. In formal kinship care, children live with a relative in a formal arrangement organised by a local authority.

² See glossary in Appendix 2 for definitions and further details.



Key Findings

Findings from the studies in the review are unequivocal: as a group, children in care lag behind their peers on a number of measures of educational attainment, including grades, literacy and numeracy test scores, attendance and exclusions.

However, the strength of the relationship between being in care and educational outcomes is reduced when other individual characteristics such as gender, ethnicity and special educational needs, known to be linked to attainment, are taken into consideration. Some studies attempted to isolate the effect of care from these individual characteristics of the child which pre-date entry into care (e.g. maltreatment). These found that the attainment gap between children in care and their peers is further diminished once these factors are accounted for. However, several studies found that the gap persists.

The studies reviewed suggest that the relationship between being in care and low educational outcomes is partly explained by pre-care experiences, such as maltreatment and neglect. The difficulties faced by these young people may pre-date entry into care but even if reduced, in some studies these persisted once in care.

Taken together, these findings highlight the difficulties children face prior to entry into care, the persistence of them once in care and the effect on their educational outcomes.

Overall, the review found that there is a correlation¹ between being in care and educational outcomes, but that this relationship is mediated by a number of individual, family and environmental risk factors. Although the evidence is mixed, there was little support for the claim that being in foster or kinship care per se is detrimental to the educational outcomes of children in care.

¹ See glossary in Appendix 2 for definitions and further details

Recommendations for policy and practice

The finding that care does not appear to be damaging, on average, to children's education should focus efforts on proactive strategies to provide services that enable children to thrive (see for example interventions in Forsman & Vinnerljung, 2012; Liabo, Gray, & Mulcahy, 2012). Qualitative research has also documented a number of examples of children in care who have been successful and go on to university, for example (Martin & Jackson, 2002).

While the review found little evidence that being in care is detrimental to educational outcomes, it highlights that children do not appear to benefit academically from being in care. Indeed, only two studies found that children in care were performing better than their peers, after a number of disadvantages had been taken into account (Berger et al., 2015; McClung & Gayle, 2010.). This should be a concern for researchers, practitioners and policy-makers. Krebs and Pitcoff (2004, p. 365) remind us that "[t]he foster care system must be fully accountable for what happens to [young people] in its custody" and it is important to hold the care system accountable for providing young people with opportunities to succeed.

Recommendations for further research

The methodological issues that arose in this review are extensive and complex. A glossary is provided in Appendix 2 and includes definitions and further details.

Future studies aiming to estimate the impact of being in care on educational outcomes should use, as far as possible, more homogenous samples, adequate control groups and methodologies which allow some causal inferences to be made. Research should also provide in as much detail as possible the different experiences and characteristics of children and young people within its samples, so that judgements can be made about other potential contributors to educational outcomes. Studies using longitudinal data with baseline assessments on entry to care and long term follow up are also needed. This is important to ensure outcomes are not a reflection of the disruption caused by entering care only.

Many studies suffered from a lack of data on important pre-care experiences, including in education. Many pre-care experiences, for example maltreatment, are important predictors of educational outcomes so they must be taken into consideration when trying to isolate the effects of care. This finding is equally important for practice, both in terms of generating data for research and understanding risk factors for low educational performance.



Main Report

Background to review

The education of children in care has long been a concern for policy-makers, practitioners, foster carers, teachers and young people themselves. Indeed, for many years, government data and research have demonstrated an achievement gap between children in care and their peers. In England in 2014, data from the Department for Education (DfE, 2014b) showed that at Key Stage 1 (age 7), 71% of children in care achieved the expected level in reading; in writing the figure was 61% and in maths, 72%. This compares with 90%, 86% and 92% of all children¹ in those subjects respectively. At Key Stage 2, the gap widens: 48% of children in care reached the expected academic level in English and mathematics compared to 79% of all children. The attainment gap continues to increase as children get older, so that 7% of care experienced people attend university², compared to just over 50% of young people in the general population (DfE, 2012, 2014a). International research demonstrates that low educational attainment of children in care is a problem which cuts across borders and time (Dill et al., 2012; Pecora, 2012).

Research spanning several decades and continents has also documented poor outcomes in terms of health, employment and general well-being of care experienced adults (Blome, 1997; Buehler et al., 2000; Dill et al., 2012; Harris et al., 2009; Jackson, 2013; Social Exclusion Unit, 2003). Those who have spent some time in care are more likely than their peers in the general population to be unemployed, have mental health problems, spend time in prison or psychiatric institutions or experience homelessness at some point in their lives (Centre for Social Justice, 2015; Jackson & McParlin, 2006). Greater educational success has been linked to better long-term outcomes in the general population, so raising attainment is an important strategy to interrupt these negative life trajectories (Gorard et al., 2012).

This review aims to contribute to the field by assessing the relationship between being in foster or kinship care and educational outcomes. In particular, it reviews existing research to determine whether there is any evidence of causality between being in care and educational outcomes.

Who are children in care?

Children in care are young people, generally under the age of 18³, for whom the state acquires some parental responsibility. In the majority of cases, children are removed from the care of their parents, provided with alternative accommodation and support by state agencies, charities or private organisations contracted by the state (Thoburn, 2010). Different countries and regions use different terminologies to describe the status of these children, including, for example, out-of-home care (USA, Canada and Australia) and Children Looked After (England); the term 'children in care' is a broad umbrella term which is adopted for the purpose of this review and acknowledges differences in legal status. In high-income countries⁴, children are taken into care because they have been neglected, maltreated, orphaned or because their parents are absent (Fernandez & Barth, 2010). Some children, in particular adolescents, come into care because they have behavioural difficulties that their parents cannot cope with (Sinclair, 2006; Whittaker, 2006).

Estimating the size of the population of children in care is complex as it is constantly in flux, definitions of 'in care' status vary and statistics are collected in different ways across countries (Thoburn, 2010). There were nearly 69,000 children in care in England as of March 2014 (DfE, 2014b), just over 400,000 in the USA as of September 2013 (U.S. Department of Health and Human Services Administration for Children and Families, 2015), 67,000 in Canada as of 2007 (Mulcahy & Trocme, 2010) and 40,000 in Australia as of 2012 (Australian Government: Australian Institute of Family Studies, 2014).

What do we know about the relationship between being in care and educational outcomes?

Research has documented an important gap between the educational outcomes of children in care and their peers (Berridge, 2007; Goddard, 2000). In response, a number of interventions have been developed in recent years to support the educational attainment of children in care (Forsman & Vinnerljung, 2012; Liabo et al., 2012; Tordön, Vinnerljung, & Axelsson, 2014; Vinnerljung, Tideman, Sallnäs, & Forsman, 2014).

Beyond this however, there continues to be a debate about the reasons for this attainment gap, and whether the care system, its components or characteristics play a role.

Berridge (2007) argues that risk factors predating entry into care are closely linked to educational failure so that blaming the care system may be disingenuous. But, Jackson (2007, p. 4) rejects this and states "I strongly disagree with his conclusion [Berridge, 2007] that the answer is to be found in the characteristics of the families from which children in care are drawn and not in the shortcomings of the care system". Similarly, Connelly and Chakrabarti (2008, p. 355) express concern about "the devastating impact of being in care on young children's attainment in reading, writing and mathematics". However, Forrester et al.'s (2009) findings from a systematic review on the impact of the care system on children's outcomes suggested that being in care, overall, was not detrimental to the well-being of children, but the conclusions were limited by the quality of the studies available.

¹ This figure includes children in care.

² This figure is for former children in care age 21 or younger, who were enrolled in higher education in 2014. It does not include those who attend university in later life.

³ This figure may be lower (e.g. 16) in some jurisdictions.

⁴ This World Bank definition is used here <http://data.worldbank.org/about/country-classifications>. The review focuses on high-income countries because social services operate in broadly similar ways.

Aims and scope

While the debate about whether the care system is detrimental to the education of children continues, it is not clear what the scope of the research evidence is to support this claim.

This review builds on prior research by focusing on one outcome only – education – while broadening its reach to include international publications, in order to contribute to this debate.



This is an international systematic review which examines the relationship between being in foster or kinship care and educational outcomes.

The objectives of this review are threefold. First of all, it aims to examine whether there is a relationship between being in foster or kinship care and educational outcomes. Secondly, it seeks to determine the nature of this relationship in order to better understand it. Thirdly the review explores whether there is any evidence to suggest that being in foster or kinship care, per se, is to blame for poor educational outcomes; that is, whether the relationship is causal.

For the purpose of this review, only the educational outcomes of school age children who were in care at the time of the study were examined and only samples with a majority of children in foster or kinship care were considered. Children in residential care tend to have more behavioural difficulties and distinctive educational needs and warrant a separate review to examine the review questions for children in residential care (Knorth, Harder, Zandberg, & Kendrick, 2008; Sinclair, 2010; Whittaker, 2006). This review does not focus on the contribution of the components or elements of the foster care experience. For example, it does not analyse the relationship between placement instability or foster carer characteristics and educational outcomes. A forthcoming review describes the correlates of educational outcomes for children in care in greater detail, see O'Higgins, Sebba, Gardner & Luke (forthcoming).

Methodology

This review synthesises the findings from the international literature on the link between being in care and educational outcomes.

In order to be included, studies had to examine the relationship between being in foster or kinship care and educational outcomes. Participants were school age children between 5 and 19 years old, in family foster or formal kinship care at the time of the study. Only quantitative studies were included, any research design was acceptable for the purpose of this review. Quantitative research aims to provide population level averages; in this context the objective was to identify whether being in care is detrimental to educational outcomes of children in care on average. Qualitative literature has much to offer as it describes the experiences of young people who are or grew up in care in depth. It may offer different insights into factors underlying low attainment. However, it was outside the scope of this review as it focused on the comparison of quantifiable outcomes. Educational outcomes were defined as any quantifiable measure of educational performance, including grades, test scores, cognitive test results, attendance, grade retention and exclusions. Searches were performed in English only, but where articles in French or Spanish (languages spoken by the first author) were identified, these were screened for inclusion. Searches were limited to studies published since 1990.

The search strategy included academic databases, websites and handsearches. Nine academic databases and 18 websites were searched for studies between 1990 and March 2014; these included ERIC, British Education Index, Australian Education Index, International Bibliography of Social Sciences, Scopus, Medline, PsycINFO, Social Services Abstracts, Sociological Abstracts, Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre), Database of Education Research, Campbell and Cochrane Libraries, Social Care Online (part of the Social Care Institute for Excellence), Google and Google Scholar, the National Foundation for Educational Research (NFER), The Centre for Excellence and Outcomes in Children and Young People's Services (C4EO), Current Education & Children's Services Research UK

Status of the studies

Key Findings

(CERUK Plus), The Fostering Network, British Association of Adoption and Fostering (BAAF), NCB (National Children's Bureau), National Society for the Protection of Children against Cruelty (NSPCC), Joanna Briggs Institute, What Works Clearinghouse, Department for Education, Chapin Hall and The Office of Planning, Research and Evaluation in Administration for Children and Families (USA). The search used international terminology to create search strings describing 'foster care' and 'education':

"foster care" OR "foster home" OR "foster family" OR "foster parent" OR "foster carer" OR "substitute family" OR "family foster home" OR "kinship care" OR "child in care" OR "children in care" OR "out-of-home care" OR "out of home care" OR "looked after" OR "looked-after"

Educat* or school* or class* or college* or teach* or learn* or train* or diploma* or certificate* or tutor* or achiev* or perform* or academic or attainment.

Reference lists and one journal (Children and Youth Services Review) were hand searched. Finally, a number of international experts were contacted for advice. Studies were critically appraised according to their ability to answer the review question. The strength and limitations of each study are woven into summaries of findings and definitions of technical terms can be found in Appendix 2.

The search identified over 7000 titles, which were all screened by the first author. The second author screened 10% of these. Full texts were obtained for 311 articles and of these 28 papers were retained for inclusion in the review.

We acknowledge the possibility that further reports not identified by our search strategy exist internationally.

The review incorporated 28 studies including two reviews (one of which involved meta-analysis). The studies were undertaken in the following countries and different contextual systems should be acknowledged which may limit transferability of some of the findings.

USA	16
Australia	4
Canada	4
UK	3
Multi-country	1

Sample sizes ranged from 107 to 22,049 (this figure includes children in care and control groups) and all but one were evenly split by gender. Ethnicity was reported in the majority of studies. However, it was not reported whether particular ethnic groups were over or under-represented. Some studies focused on a small age range (e.g. 2 years) whereas others selected used a broader range span from 5 to 18.

Most studies that included children with special educational needs (SEN) did not provide prevalence rates, and where they did, few described whether the needs were physical, learning disabilities or emotional and behavioural problems. Similarly, studies provided little detail of maltreatment type and frequency where there was any information about maltreatment history at all. Such descriptions are important because characteristics, like SEN, or experiences, like maltreatment, are likely to have an impact on educational performance and should thus be taken into consideration in analyses.

Only half of the included studies reported on placement type, whether the setting was rural or urban, the socio-economic status of children (or of their birth families or carers), only three reported on birth parents and none reported whether children were accommodated and supported by state or non-state providers of care.

Further details of included studies can be found in Appendix 1.

How do children in care fare in school compared to their peers?

Echoing the findings from previous research (Berridge, 2012; Goddard, 2000), this review found several studies that provide strong evidence to document the gap between the educational outcomes of children in care and their peers in the general population.

Trout et al. (2008) conducted a systematic review on the academic status of children in care in the USA. The majority of the 28 studies included in that review found that a third or more of the children in care performed in the "low to average" or "low" range. None of the studies found children or young people who performed well. The review also found frequent school changes, high numbers of students repeating a grade, multiple absences and high exclusion¹ rates among children in care. Scherr (2007) undertook a meta-analysis and found that children in care were disproportionately represented in special education, had high rates of grade retention² and experienced exclusion at higher rates than their peers. The conclusions from these reviews are unequivocal: as a group, children in care lag behind their peers on a number of measures of educational attainment, including grades, literacy and numeracy test scores, attendance and exclusions. Studies included in these two reviews are not described again below.

A number of other papers, not included in the reviews above, were identified for this paper. The Australian Institute of Health and Welfare (2007, 2011), Flynn and Biro (1998), Iglehart (1995), Mitic and Rimer (2002), Rees (2013), Townsend (2012) and Turpel-Lafond (2007) found a similar attainment gap between children in care and their peers.

¹ The term exclusion is used to describe all exclusions, suspensions and expulsions from school.

² In a number of countries children who do not reach the expected standard at the end of a school year sometimes repeat the year, this is known as 'grade retention'. This is not practised in England as it is regarded as important for children to be schooled alongside similarly aged peers as far as possible.

For example, in the Australian studies (AIHW, 2007, 2011; Townsend, 2012), children in care in every territory had lower mean scores in literacy and numeracy than children tested in the general population. Rees (2013) found that children in care in England had lower average cognitive, reading and literacy test scores than children in the general population. The picture was similar in Canada (e.g. Mitic & Rimer, 2002) and the USA (Iglehart, 1995).

The findings of these studies are unambiguous: there is an achievement gap between children in care and their peers across a number of contexts. It is these stark findings that may lead us to assume that there is a causal relationship between being in care and poor educational outcomes (i.e. that the majority of children in care have low attainment, therefore low attainment must be caused by the care system). However, the above studies only indicate that a relationship exists, they do not provide any evidence that there is a cause to effect association between being in care and poor outcomes. In these studies, no other factors are taken into consideration, so the association between being in care and educational outcomes may be confounded by other variables.

Taking other factors into consideration in explaining educational outcomes of children in care

Past research about children in care or children in the general population has found that many individual, family, school, community and policy factors play a role in predicting academic performance (for example Sylva et al., 2014; O'Higgins, Sebba, Gardner & Luke forthcoming). These factors should be accounted for in an effort to isolate the effect of being in care on educational success.

Six studies included in this review compared the educational outcomes of children in care and children in the general population. The studies controlled for risk factors or used samples matched on a number of factors, which were hypothesised to play a role in predicting outcomes.

In Farruggia, Greenberger, Chen and Heckhausen (2006) and Sawyer and Dubowitz (1994) study populations were drawn from the same school and matched on age, gender and ethnicity. Both found that children in care had lower outcomes.

Burley and Halpern (2001) controlled for gender, ethnicity, educational aspirations, special educational needs, four variables relating to difficulties at school and four family factors and found that being in care was associated with a seven point decrease in percentile ranking in test scores in grade 3 (age 8 to 10). The findings were similar at grade 6 and 9. This means that being in care was associated with lower educational outcomes even after the above factors had been taken into consideration.

In Geenen and Powers (2006), four groups of children were compared: (1) children in care with special educational needs, (2) children in care who did not have special educational needs, (3) children with special educational needs who were not in care and (4) children in the general population. Children in care with special educational needs performed worse than other groups. Children in care who did not have special educational needs had similar outcomes to young people with special needs who were not in care.

In Pears, Fisher, Bruce, Kim and Yoerger (2010) and Pears, Kim, Fisher and Yoerger (2013) children in care were matched on socio-economic status to a community sample of non-maltreated children who lived with their parents. The two studies controlled for age, cognitive ability and three school factors; both found that children in care performed worse than those living with their parents.

Findings from the above studies suggest that being in care remains a risk, even after other factors are taken into consideration. However, the strength of the relationship between being in care and educational outcomes appears to be reduced when other factors, in particular individual characteristics such as gender, ethnicity and special educational needs, are included in analyses.

In the six above studies, children in care were compared to young people in the general population, therefore it was not possible to control for risk factors of particular relevance to children in care and their academic performance. Past research has highlighted that most children in care experience many disadvantages before they enter care, including persistent poverty, maltreatment, and multiple birth risks. Children in care are also more likely to come from high-risk families, where teen and single parenting, substance misuse, poor mental health, low levels of education and unemployment are common (Bebbington & Miles, 1989; Bhatti-Sinclair & Sutcliffe, 2012; Crozier & Barth, 2005; Franzen, Vinnerljung, & Hjern, 2008; Simkiss, Stallard, & Thorogood, 2012). Research on children in the general population has also shown that these experiences are all risk factors for poor educational outcomes (e.g. Goodman & Gregg, 2010; Sylva et al., 2014). So, in order to investigate the effect of being in foster or kinship care, studies must account for risk factors relevant to children in care, rather than just general risk factors. The relationship between being in care and educational outcomes may otherwise be confounded by important variables that are not measured.

Accounting for factors specifically relevant to children in care

Five studies attempted to overcome the limitations identified above by accounting for some of the factors relevant to children in care. This was done by controlling for variables or by comparing children in foster or kinship care to children who were similarly disadvantaged.

McClung and Gayle (2010) compared the educational outcomes of children in care and children who lived with their families and received support from social services in the community in two local authorities. Findings indicated that children in care had better educational outcomes than the control group.

Kortenkamp and Ehrle (2002) used a large national and representative sample of children to compare the psychosocial outcomes, including school exclusions, of children in care, children living at home but deemed at high risk and children in the general population. Findings indicate that children in care and children in the high-risk sample had similarly high exclusion rates, and that these were higher than rates for children in the general population.

Weiss and Fantuzzo (2001) found that being in care was associated with poorer educational outcomes and attendance (but not grade retention) even after a number of birth risks, poverty and maltreatment were taken into consideration. The study went further to examine whether these factors affected children in care and children who had no experience of care equally and found no significant interaction suggesting that there was no difference. However, because the sample sizes of children in care who had also experienced the relevant risk factors were very small, the authors suggest this may not be a robust finding.

In Smithgall, Gladden, Howard, Goerge and Courtney (2004) almost half the sample of children in care performed in the bottom quartile on reading scores. Their results were similar to children who were in a permanent care arrangement and better than disadvantaged children who had been maltreated but who were not in care. The study also found that the attainment gap widened for older children. However, when age, demographic and school factors were taken into account, achievement differences between groups halved. The authors suggest that weaker academic performance is thus partially attributable to experiences of maltreatment, racial inequalities and poverty as well as students in care attending lower-achieving schools. However, being in care was still associated with lower outcomes in these analyses.

In Fantuzzo and Pearlman (2007), children who were in care were more likely to be suspended and perform poorly across a number of numeracy and literacy outcomes after controlling for gender, ethnicity, poverty and the presence of birth family risks. However, being in care was not a risk factor for low performance across three other educational outcomes, attendance or grade retention. The study also found that maltreatment partly mediated the relationship between being in care and four literacy and numeracy outcomes and exclusions. This means that the relationship between being in care and educational outcomes was not as strong when maltreatment was taken into consideration. For some outcomes, the relationship between being in care and educational outcomes disappeared when maltreatment was taken into consideration.

The implications of these findings are important for this review as they suggest that the relationship between being in care and low educational outcomes is partly explained by other important factors. These factors include pre-care experiences, such as poverty and maltreatment, suggesting that educational difficulties may predate entry into care. However, because this study is cross-sectional, it cannot rule out alternative explanations, including that being in care mediates the relationship between maltreatment and educational outcomes. This would imply that being in care exacerbates the educational difficulties faced by maltreated children.

These studies suggest that being in care remains a risk factor for poor educational outcomes, even after a number of factors are taken into consideration. However, the strength of the relationship between being in care and educational outcomes appears to decrease as other factors are taken into consideration. In McClung and Gayle (2010), children in care appeared to perform better than children who remained at home after other factors were taken into account.

There may be other factors which were not considered in the studies above which may weaken this relationship even further. For example, parental level of education may have an important role in explaining the outcomes of children in care. Moreover, there are limitations in comparing children in care to a group of children who remain with their families, no matter how similar they may be in other respects. All the above studies were cross-sectional, in that they looked at the outcomes of children at a specific point in time, so it is not known how children in care were performing when they entered care or how they progressed over time and alternative explanations of the above findings cannot be ruled out.

Examining educational performance over time

In 1978, Fanshel and Shinn found that the effects of foster care were mostly positive across a range of outcomes six months after children were taken into care and that these were sustained over time (Fanshel & Shinn, 1978). Studies which look at educational outcomes over time, offer another strategy to examine the relationship between being in care and educational outcomes. Forrester has argued that in order to assess the impact of being in care on psychosocial outcomes, one has to examine their progress over time (Forrester et al., 2009; Forrester, 2008). Such analyses illustrate children's education trajectories and may highlight whether they make expected progress while they are in care or not.

Barber & Delfabbro (2005), Conger and Rebeck (2001) and Heath, Colton and Aldgate (1994) examined the educational outcomes of children in care over time.

Barber and Delfabbro (2005) followed children for two years, but data on educational outcomes (in this case, attendance and exclusions) were only available at the four month follow up; these indicated that the mean exclusion rate per quarter had reduced and attendance had improved during the first four months of placement. This study did not include a control group however, so it is not possible to determine whether this is linked to placement in care or expected child development and behaviour. Moreover, four months is a short follow up period which may reflect the child's response to pre-care experiences or the disruption rather than any effect of the placement itself (Waldfogel, 2000).

In Conger and Rebeck (2001), the test scores and attendance of children in foster and kinship care in one US state were examined in the semester before a placement and the semester after placement. Findings indicate that attendance rates overall increased after children entered care, but that the rate remained lower than average rates for children in the general population. When figures were broken down by placement type, these showed that there was a statistically significant decrease in attendance for children in residential care; rates increased for children in foster or kinship care but this was not statistically significant once demographic factors were controlled. It should be noted that the study explicitly states that it did not seek to measure the effect of being in care.

Heath et al. (1994) was the only longitudinal study to include a control group of similar children (58 children living with parents and receiving support in the community). Educational outcomes of 49 children who were in long-term foster care were examined at three time points. The first assessment was not conducted on entry into care but at the beginning of the study, for many young people this was several years after entry into care. Therefore, it is not known how children were faring when they entered care. The findings here indicate that children made progress relative to their peers, but they did not catch up, so that an attainment gap between children in care and at-risk children in the community remained. Sample sizes were small in this study, so the results should be interpreted with caution; for example small but real effects may not be identified and random effects may be exaggerated.

The findings from the studies are useful for this review though limited. Indeed, they demonstrate how outcomes can change, both after children enter care, and over time, suggesting that children can make progress. However, the lack of adequate control groups and longer-term follow up make it impossible to determine whether this is an effect of being in foster care, other interventions or simply a reflection of expected progress.

Other methodologies exploring causality

So far the review has discussed studies which compare the educational outcomes of children in care to children in the general population, studies which control for individual characteristics of children, studies which account for care-relevant factors and finally studies with longitudinal designs. While these are incrementally relevant to the review's primary research question – namely, whether care is detrimental to the educational outcomes of children – a number of studies have adopted yet more complex and sophisticated designs, with the specific and explicit aim of estimating the impact of being in care on outcomes. Four such studies were identified for this review.

Font and Maguire-Jack (2013) compared the educational outcomes of four samples of children between two time points: (1) children who had experienced maltreatment but lived at home, (2) maltreated children who lived at home at the first time point (T1), but were in care at the second time point (T2), (3) maltreated children who were in care at T1 and at home at T2, (4) children who were in care at both time points. The outcomes were measured at T2. The study supplemented regression analyses with propensity score matching³. Both methods found similar results: that children in care at both time points had similar academic outcomes at T2 to children who returned home from care and those who had not been in care at either time point. Children who were taken into care between the two time points had better cognitive and emotional engagement in school at T2. There were no differences between any groups on child reported academic performance. Authors suggest that higher engagement might be stimulated as a result of entering care but that this is not sustained over time, as demonstrated by the fact that children in care at both time points had lower levels of engagement at T2 than children who entered between T1 and T2.

Berger, Bruch, Johnson, James and Rubin (2009) used cross-sectional and longitudinal analyses, increasing in methodological rigour in order to reduce selection bias. Selection bias refers to systematic differences between comparison groups which may affect the outcome measured. Children in care were compared to children who had had contact with children's services and a wide range of control variables relating to the child, her/his birth family, environmental risk and pre-care circumstances were employed. Each method yielded similar results, namely that the academic performance of children in care was no different to children who were not in care.

Berger, Cancian, Han, Noyes and Rios-Salas (2015) used a large representative and national sample of children to examine the impact of being in care on maths and reading scores in grades 3 through 8. Using regression, the analysis found that children in care performed worse than young people in the general population receiving some welfare assistance. This relationship was slightly diminished when previous attainment was controlled for and disappeared when a full set of controls such as child characteristics, pre-care achievement, attendance and grade retention, pre-care socio-economic status and other family risk factors were included. Moreover, the reading scores of children in care at the time of the test did not differ from those of young people who returned home before the test was administered and were slightly better than those of young people placed in care after the test. For maths, scores of children in care were no different to those of children in the general population or young people placed in care later, but slightly higher than young people who are returned home from care before the test is administered. Further analyses found that children had poor academic performance immediately after they entered care or when they were in a short-term placement only.

The final paper identified for this review used an instrumental variables approach to estimate the impact of being placed in care on the likelihood of graduating from high school for 16 to 18 year old boys in British Columbia (Warburton, Warburton, Sweetman, & Hertzman, 2014). The Instrumental Variables⁴ approach is a complex statistical technique, borrowed from economics, its aim is to reduce selection bias further. Findings from this study indicated that being placed in care delays or reduces the likelihood of high school graduation compared to young people not placed in care.

Summary of findings

There were 28 studies included in this paper. To assess the effect of care on educational outcomes, the review identified studies that attempted to reduce selection bias to a minimum. In so doing, these studies attempt to isolate a) the effect of care from individual characteristics of the child (e.g. SEN) and b) disadvantage which pre-dates entry into care. It is not possible, in a narrative review, to directly compare the findings of the studies because the samples, contexts and methods are different.

The studies included in this review demonstrate that there is an attainment gap between children in care and their peers but that the relationship between being in care and educational outcomes is reduced when other factors are taken into consideration. Overall, evidence as to whether children in care perform as well educationally as other children who have been in contact with social services is mixed. Some studies find that when relevant risk factors were taken into account, academic performance of children in care was not different to other children (Font and Maguire-Jack, 2013 and Berger et al., 2009). Others found that the gap persisted regardless. For example, Berger et al. (2015) and McClung and Gayle (2010) found that children in care performed better than their peers who remained at home but Warburton et al. (2014), who used robust methods to reduce selection bias, found that children in care performed worse. Taken together, these findings highlight the difficulties children face prior to entering care and the effect of these experiences on their outcomes.

Overall, the review found that there is a correlation between being in foster or kinship care and educational outcomes, but that this relationship is partly explained by a number of individual, family and environmental risk factors. While one study found that young people in foster care were less likely to graduate than their peers not in care (Warburton et al., 2014), a number of robust studies found that children in care had similar educational outcomes to their peers when these factors were taken into consideration. There is little tangible evidence that the care system is the cause of poor educational outcomes but few, if any, of the studies were sufficient in size and methodology to make robust causal inferences.

³ See glossary in Appendix 2 for definitions and further details

⁴ See glossary in Appendix 2 for definitions and further details

What do the findings of this review mean?

This review stems from a broader concern to identify some of the reasons for the poor educational outcomes of children in care. It has attempted to contribute to research by exploring the effect that being in foster or kinship care has on educational outcomes.

Findings showing that the academic performance of children in foster or kinship care doesn't appear to be substantially different from children who aren't in care, suggest that it is unlikely that the foster care system contributes to poor outcomes. Only Warburton et al. (2014) found that children in care performed worse than their peers who stayed with their families. The authors conclude that the care system is unable to respond to the needs of these young people. This suggests that simply entering care may not be sufficient to mitigate years of maltreatment or other experiences impinging on educational progress. More time, or more intensive services and support may be required. Research has also documented many of the difficulties faced by children while they are in care, including for example placement instability (for example Ward, 2009), which may preclude them from getting on in their education.

The review also emphasises the important role that pre-care experiences play in predicting educational outcomes. This is no surprise as much research has documented the important effects of poverty (for example Feinstein, 2003), maltreatment (for example Leiter & Johnsen, 1994) and other risk factors (Sylva et al., 2014) on academic performance. By including information about the pre-care experiences of children in care, the studies also highlight important aspects of the social problems that the care system needs to address. This is important for practitioners and policy-makers shaping services for children.

This review finds limited evidence that being in foster care is to blame for the poor educational outcomes of children.

This conclusion is in line with the findings of others, including historical research from Wolkind and Rutter (1973) who argued that more attention should be paid to understanding the processes underlying early childhood and family experiences and their relationship to later well being outcomes.

In (2006), in response to a statement by the English Government on the outcomes of children in care, Stein wrote that "[t]he simplistic view of care as failing 60,000 young people should be confined to the dustbin."

This statement is supported by the findings of this review.

Limitations of the current evidence base

Estimating the impact of being in care on educational outcomes is not a simple task. Findings are greatly influenced by the study sample and control groups, the data available and methodology.

Many included studies suffered from a lack of data on important pre-care experiences, including in education. As previously stated, pre-care experiences are important predictors of educational outcomes so they must be taken into consideration when trying to isolate the effects of care. This finding is equally important for practice, both in terms of generating data for research and understanding risk factors for low educational performance.

The concept of 'care' is unlikely to be used consistently across studies. It is not a homogenous experience. Care episodes vary in length and purpose and range in their objectives from assessment and respite placements to the provision of 'permanence'. Many children return home after some time (Thoburn, 2010; Wilson, 2006) and some children are also adopted from care. The aims and objectives of placements may change over time, are not always explicit and vary according to the needs of individual children as well as context. Some children leave and enter care a number of times or experience multiple placements without leaving care (Thoburn, 2010). Children also enter care at different ages and for varying reasons and may also receive a number of targeted interventions (e.g. tutoring), which may influence outcomes. In the included studies, 'foster care' was rarely defined with any precision, for example with reference to legislation. Here, foster and kinship care were defined broadly, but future research and reviews offering more precise definitions may yield different findings than the present review.

Children's care histories are complex and the purpose of being in care varies by individual so that estimating an overall average effect has important limitations. Warburton et al. (2014) is the only study to use a relatively homogenous sample. Indeed, as well as age, age at entry and gender, reason for entry is also likely to be similar across this sample. Moreover, the types of support and services provided to the young men in this study are also likely to be more homogenous than across a sample with a bigger age range. It is feasible that had other studies used a similar strategy or conducted subgroup analysis, they may have found similar results.

Secondly, the review only looks at educational outcomes, unlike Forrester et al. (2009) for example which included other well-being outcomes; it does not preclude other research from identifying negative (or positive) consequences of being in care in other important psychosocial domains. Indeed, Forrester et al. (2009) found that being in care may benefit children. Findings from a number of other studies have suggested damaging effects of care in terms of behavioural problems (Berger et al., 2009), delinquency, emergency healthcare episodes and later poverty outcomes (Doyle, 2013; Warburton et al., 2014).



Conclusions

This review used systematic review principles to explore the effect of the care system on educational outcomes. It asked whether there was a relationship between being in care and educational outcomes, what the nature of the relationship was and whether there was any evidence of causality. The review found that there was a strong association between the two variables, but by taking account of individual characteristics such as gender, special educational needs and ethnicity, the strength of this relationship was diminished. Furthermore, the evidence appears to suggest that when risk factors relevant to young people in care are taken into consideration and methodologies that aim to eliminate selection bias are adopted, being in care does not appear to be harmful to children's academic performance. The exception to this was for young men entering care at 16 in Canada: they were less likely to graduate than their peers. The review also highlights the difficult experiences children face before they are taken into care and how these affect outcomes. The findings suggest that the poor outcomes of children in care are likely to be a result of a complex combination of individual characteristics and pre-care and potentially in-care experiences, such as placement instability, which are not explored here.

This review is relevant to those concerned with the effects of the care system and its response to the needs of children it provides for. It does not advocate that more or fewer children should be in care. The finding that being in care does not appear to be damaging to children's education should not be used to argue that more children should go into care but rather that more needs to be done to help those in care to succeed in the short and long-term after they become independent.

Recommendations for policy and practice

The finding that care does not appear to be damaging, on average, to children's education should focus efforts on proactive strategies to provide services that enable children to thrive, see for example interventions in Liabo et al. (2012) and Forsman and Vinnerljung (2012). Qualitative research has also documented a number of examples of children in care who have been successful and go on to university, for example (Martin & Jackson, 2002).

While the review finds little evidence that being in care is detrimental to educational outcomes, it highlights that children do not appear to benefit academically from being in care, for example by mitigating the effects of pre-care experiences. Indeed, only one study found that children in care were performing better than their peers, after a number of disadvantages had been taken into account (McClung & Gayle, 2010). This should be a concern for researchers, practitioners and policy-makers. Krebs and Pitcoff (2004, p. 365) remind us that "[t]he foster care system must be fully accountable for what happens to [young people] in its custody" and it is important to hold the care system accountable for providing young people with opportunities to succeed.

Recommendations for further research

Estimating the impact of being in care on educational outcomes is not a simple task. Findings are greatly influenced by the study sample and control groups, the data available and methodology.

Future studies aiming to estimate the impact of being in care on educational outcomes should use, as far as possible, more homogenous samples, adequate control groups and methodologies which allow some causal inferences to be made. Research should also provide in as much detail as possible the different experiences and characteristics of children and young people within its samples, so that judgements can be made about other potential contributors to educational outcomes. Studies using longitudinal data with baseline assessments on entry to care and long term follow up are also needed. This is important to ensure outcomes are not a reflection of the disruption caused by entering care.

Many studies suffered from a lack of data on important pre-care experiences, including in education. Many pre-care experiences, for example maltreatment, are important predictors of educational outcomes so they must be taken into consideration when trying to isolate the effects of care. This finding is equally important for practice, both in terms of generating data for research and understanding risk factors for low educational performance.



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Appendix 1:

Table of included studies

Study	Participants	Methodology	Data source	Results
Australian Institute of Health and Welfare (2007), Australia	895 children in care, age 8 to 12, compared test scores of children in general population	T-test, ANOVA	Administrative database	Children in care had lower mean scores in literacy and numeracy.
Australian Institute of Health and Welfare (2011), Australia	4673 children in care, age 8 to 12, compared test scores of children in general population	T-test, ANOVA	Administrative database	Children in care had lower mean scores in literacy and numeracy.
Barber & Delfabbro (2005), Australia	236 children entering care, age 4 to 17, no comparison group	T-test	Social worker survey and case file reviews	Mean attendance rate per quarter improved at four months follow up.
Berger, Bruch, Johnson, James & Rubin (2009), USA	2453 children in care, age 4 to 17, comparison group children in contact with children's services	Linear regression, residualised change, simple change, difference in difference and fixed effects model.	Administrative database	No significant differences in test scores between children in care and comparison group with any method.
Berger, Cancian, Han, Noyes & Rios-Salas (2015), USA	222 049 total: children in care, age 4 to 17, comparison group children in contact with social services	Linear regression	Administrative database	No significant differences in test scores between children in care and comparison group.
Burley & Halpern (2001), USA	4,559 children in care, age 8 to 14, compared to test scores of children in general population	Linear regression	Administrative database	Children in care score 16 to 20 percentile points below peers. When covariates are included, this reduces to 7 to 8 percentile points.
Conger & Rebeck (2001), USA	16 183 children in care, age 8 to 13, no comparison group	Linear regression	Administrative database	Attendance decreases after placement for children in residential care, no change for children in foster or kinship care.
Heath, Colton & Aldgate (1994), England	49 children in care, age 8 to 14, comparison group 58 children in contact with children's services	T-test, ANOVA	Test scores and interviews with children, teachers and social workers	Children's test scores improve over time, but gap with peers remains.
Fantuzzo & Perlman (2007), USA	355 children in care, age 7-8, comparison group 11 480 children in the same local authority, including maltreated children not in care	Logistic regression and mediation analysis	Administrative database	Children in care had lower test scores on literacy language, reading, science tests and suspension. There was no difference on vocabulary, maths and reading comprehension, attendance or grade retention between children in care and their peers. Maltreatment partly mediates relationship between being in care and literacy and language test scores and is complete mediator for reading and science.
Farruggia, Greenberger, Chen, & Heckhausen (2006), USA	163 children in care age, age 17, matched to comparison group on age, gender and ethnicity	T-test	Survey & interview with children	Children in care had lower grades than comparison group.

Study	Participants	Methodology	Data source	Results
Flynn & Biro (1998), Canada	43 children in care, age 1 to 19, comparison group 1600 children from same school	Simple change	Survey	41% of children in care repeated a grade compared to 9% of comparison group.
Font & McGuire (2013), USA	682 children in care, age 6 to 17, comparison group 448 children in contact with children's services	Regression and Propensity Score Matching	Administrative database	Performance of children was not different from children at home at either or both time points.
Geenen & Powers (2006), USA	158 children in care, age 13 to 21, matched to comparison group on disability and randomly sampled comparison group	T-test, ANOVA	Survey of teachers	Children in care with special educational needs (SEN) had lower credits earned towards graduation and grade point average (GPA) than children in care without SEN, children not in care with SEN and general population. Children in care without SEN and children not in care with SEN had similar credits earned towards graduation and GPA. Children with SEN in care and not in care had similarly low grade retention rates compared to children in care without SEN and general population. Children in care without SEN and children in general population had similar maths and reading scores, which were higher than children in care with SEN and children not in care with SEN.
Iglehart (1995), USA	111 children in care, age 16, compared to test scores of children in general population	Chi-square test	Social worker survey and case file reviews	66% of children in kinship care were at grade level, 60.6% of children in foster care were at grade level and 89.9% of comparison group at grade level.
Kortenkamp & Ehrle (2002), USA	819 children in care, age 6 to 18, comparison group 12 744 children in families at-risk	T-test, ANOVA	Administrative database	Children in care and children at risk had similar suspension rates; rates were higher than children in general population.
McClung & Gayle (2010), Scotland	1407 children in care in care, age 15 and over, comparison group children in contact with social services.	Linear regression	Administrative database	Children in care have lower test scores than children in general population but better scores than comparison group of children in contact with social services.
Mitic & Rimer (2002), Canada	3523 children in care, age 5 to 18, compared to test scores of children in general population	Simple change	Administrative database	More children in care perform below expectations in reading, writing and numeracy compared to children in the general population.
Pears, Fisher, Bruce, Kim & Yoerger (2010), USA	85 children in care, age 3 to 6, comparison group 56 children in families with low SES	Path analysis	School records and interviews with teacher and carers	Children in care had lower academic competence than comparison group.
Pears, Kim, Fisher & Yoerger (2013), USA	93 children in care, age 5&6, comparison group 54 children in families with low SES	Structural Equation Modelling	Surveys of teachers and carers and test scores	Children in care had lower academic competence than comparison group.

Appendix 1:

Table of included studies cont....

Study	Participants	Methodology	Data source	Results
Rees (2013), England	193 children in care, age 5 to 18, compared to test scores of children in general population	T-test	Interviews and surveys of children, carer & teachers. Case file reviews	Children in care had lower average cognitive, reading and literacy scores than children in the general population.
Sawyer & Dubowitz (1994), USA	372 children in care, age 5 to 19, comparison group children in same school	T-test	Test scores	Children in kinship care had worse reading and maths scores than children in the general population.
Scherr (2009), International	25 692 children in care	Systematic review and meta-analysis		Children in care had higher rates of grade retention.
Smithgall, Gladden, Howard, Goerge & Courtney (2004), USA	4467 children in care, age 6 to 18, comparison groups maltreated children in families, children in permanent placements, children in same schools	Multi-level modelling	Administrative database	Children in care more likely to perform in bottom quartile on reading. Gap with peers increases with age but reduces when demographic and school factors are controlled for.
Townsend (2012), Australia	1995 children in care, age 5 to 18, compared to test scores of children in general population	T-test	Administrative database	Children in care have lower mean test scores in reading, writing, language and numeracy than general population.
Trout, Hagman, Casey, Reid & Epstein (2009), USA	13 401 students from 29 studies	Narrative systematic review		Children in care perform below peers in the general population.
Turpel-Lafond (2007), Canada	32 186 children in care, age 5 to 18, compared to test scores of children in general population	Simple change	Administrative database	21% of children in care graduate compared to 78% of the general population. On Foundational Skills Assessment (Canadian test), children in care perform worse than children in the general population and gap increases with age.
Warburton, Warburton, Sweetman & Hertzman (2014), Canada	2260 boys in care, age 16&17, compared to boys in contact with children's services	Instrumental variables	Administrative database	Children in care are less likely to graduate than their peers.
Weiss & Fantuzzo (2001), USA	500 children in care, age 7&8, comparison group children in same school, including maltreated children not in care	Logistic regression and moderation analysis	Administrative database	Children in care have worse academic performance and attendance but not grade retention rates than their peers.

Appendix 2:

Glossary of Key Terms

This review of studies that provide quantitative data on the relationship between being in care and educational outcomes highlighted a number of methodological issues. Definitions and examples are provided in this Appendix for those wanting to engage in the more technical aspects of the research. Not every method for all included studies is detailed here, rather only those which are named in the main text of the review. For full details of the methods employed in included studies, readers should refer to the original study.

Correlation

A correlation describes the degree of the relationship (strength or weakness) between two variables. For example, we might investigate the correlation between attendance at school and grades. If there were no relationship, attendance and grades would not be linked so that if attendance was low, grades could be high or low. A strong relationship (correlation) would mean that the higher the attendance the better the grades. Correlations can be spurious, however. For example, we might find a strong relationship between attendance and grades, but then discover that children with low attendance are in fact mostly children with severe health problems requiring regular hospital treatment. In this case the health problems are more likely to be the reason for low grades than low attendance. In this case, it is said that the health problems confound the relationship between being in care and educational outcomes.

Causality

Causality implies a causal relationship between two variables; that is that the occurrence of one causes change in another. Saying that a health problem is the reason for low grades implies a causal relationship between the two. It means that in the presence of the health problem, low grades are the most likely outcome. Demonstrating causality is extremely difficult, and the most reliable method of testing it with data, is the randomised trial (Pearl, 2009). So, in order to determine whether there is a causal relationship between being in care and poor educational outcomes, children would need to be randomly allocated to enter care or a community alternative,

which is clearly not feasible or ethical. For this reason, it is unlikely that causality can ever be determined with certainty. Other methods attempt to emulate randomisation to approach causality but these results, and causal claims, should always be interpreted with caution.

Instrumental Variables

The Instrumental Variables approach is a complex statistical technique borrowed from the field of economics. Researchers in social work, social policy and sociology have used this method to examine the effects of social interventions on a number of outcomes (Dobbie & Fryer, 2009; Doyle, 2013; Foster, 2010; Jaffee, Strait, & Odgers, 2012; Warburton et al., 2014). The technique attempts to account for some of the variance in outcomes that is explained by unobserved factors, by identifying 'instrumental' variables which are related to the predictor (in our case, care status) but not directly related to the outcome (in our case, educational attainment). In Warburton et al. (2014), two instrumental variables were identified. One of these was the caseworker administrative discretion in assessing the needs of young men and deciding whether they should be placed in care or not. The method, as it pertains to estimating the effect of being in care on different outcomes, is described in detail in Warburton et al. (2014) and Doyle (2013).

Longitudinal analyses

Longitudinal analyses examine change over time. In contrast, cross-sectional studies explore data at one time point only. Longitudinal analyses are useful to examine the relationship between being in care and educational outcomes because they can illustrate whether children in care make progress over time and whether this is at the same rate as their peers.

Heath et al. (1994) for example, test children at three different time points to explore how they progress over time (or not). Longitudinal analyses don't necessarily require comparison groups, but by including a comparison group Heath et al. (1994) is able to account for maturation (natural or expected progress). Moreover, the study used a comparison group that was similar to the study sample of children in care which reduces the risk of bias arising from baseline differences between participants (called

'selection bias'). Conger and Rebeck (2001) collect data before children entered care and at the same time for all participants, this further reduced bias in subsequent analyses.

Meta-analysis

A meta-analysis builds on the findings of a systematic review to provide a quantitative and statistical summary of the findings from included studies. To undertake a meta-analysis, included studies should be similar enough (for example, similar population and intervention) that a numerical summary may have meaning. Studies are brought together using effect sizes for each study and often weighted according to their sample size.

Propensity Score Matching

Propensity score models were designed to mirror RCTs by matching groups of individuals on a range of characteristics that predated their exposure to a given risk factor or 'treatment' (in our case, being in care). The technique involves identifying the 'typical' characteristics of individuals within each group, and exploring whether these differences might explain educational variation, rather than the care status, per se. In Font and McGuire (2013), children in foster care are matched to children who are similar in terms of demographic characteristics, maltreatment history and school engagement, to estimate the effect of foster care placement on performance.

Regression

Regression is a statistical tool for estimating relationships between variables and an outcome. Specifically, multiple linear regression estimates the correlation between one variable and an outcome while controlling (accounting for the variation) for other variables. For example Berger et al. (2015) used regression analysis to explore the relationship between being in care and educational attainment. They control for a number of variables including for example gender, ethnicity, free school meals and grade retention. Findings indicate the relationship between being in care and educational attainment above and beyond the relationship between the control variables and educational attainment. In logistic regression, the outcomes are binary, for example success or failure.

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