

Project Title: Looked-after children: impact of the Adoption Support Fund and mental wellbeing in British adoptive families

Lead organisation	King's College London
Principal Investigator	Liming Li
Protocol Author(s)	Liming Li, Mauricio Avendano, Craig Morgan
Study Design	Difference-in-differences

Executive Summary

This project aims to evaluate the impact of the Adoptive Support Fund (ASF) on the mental health of adopted children from adoptive families in the UK. The ASF is a key policy rolled out across all 152 local authorities in England in 2015, with the aim of increasing access to therapeutic post-adoption support for adoptive families, which had a large uptake since inception. This project will employ the exogenous variation in the timing of exposure to ASF among the adoptive families in a difference-in-differences design to examine how the adopted children benefited from ASF fared in terms of critical health outcomes compared to their peers not exposed to ASF.

Table of contents

Background and Problem Statement	3
Aims and Objectives	4
Method and Analysis	4
Ethics	5
Risks	6
Registration	6
Data protection	6
Personnel	6
Timeline	7

Background and Problem Statement

Early life is crucial for human development, and the prevalence of mental disorders threatens subsequent life chances and health.¹ This is particularly the case for children in social care: In England, up to 80,080 children were looked after by 2020, which nearly doubled the figure in mid-1990s and was equivalent to 67 children in care per 10,000 children aged under 18 years.² Half of these children suffered from mental disorders, the prevalence of which persisted in the past decade.³ Evidence shows that looked-after children fare worse than their general population peers across a range of domains, including education,^{4,5} employment,⁶ risky behaviours,⁷ delinquency,⁸ social support,⁹ physical and mental health,¹⁰⁻¹² which extend beyond young adulthood.^{6,7,9,12}

One way to promote mental wellbeing of looked-after children is through adoption that offers stability and quality parenting. However, the effects of this approach is found to be mixed.^{13,14} In light of this, increasing supportive state policies have been put in place to support adoptive families. Yet, there is limited understanding on the impact of specific UK policies in transforming the life chance and health outcomes of adopted children. State supportive policies may affect adoptive families in several ways. Adoption assistance subsidies that offset costs of adoption incentivise prospective parents for adoption.¹⁵ Funding in pre-adoption training informs prospective parents of supportive services and methods to meet child developmental needs and build parent-child relationships.¹⁶ Post-adoption programmes such as counselling, support groups, respite care and parent training may improve parenting competence, parent-child attachment, and family supportive networks.¹⁷⁻¹⁹

This project aims to evaluate a key policy rolled out across all 152 local authorities in England in 2015, known as the Adoptive Support Fund (ASF), on the mental health of adopted children. The ASF aims to increase access to therapeutic post-adoption support for adoptive families. The uptake of ASF was large since its inception, with 31,000 families and 41,000 children having obtained access to ASF by August 2018, amounting to a cost of £88m.²⁰ While a few studies examined the impact of the programme, drawn from qualitative or descriptive evidence,²⁰⁻²⁴ it remains unclear how the adopted children benefited from ASF fared in terms of critical health outcomes when comparing to their peers not exposed to ASF.

ASF may affect the mental wellbeing of adopted children and their families via several mechanisms. ASF facilitates the treatment of mental disorders among adopted children through access to mental health and social services. Second, as a large-scale state fund supporting mainstream services, ASF may reduce anxiety, stress, sense of incompetence experienced by adoptive parents in post-adoption period.¹⁴ Targeted services such as therapeutic parenting training may empower parents to improve quality of parenting, thus benefitting the mental wellbeing of the children. In addition, families supported by ASF may also redistribute financial

resources to purchase other educational, medical, recreational and childcare services that promote children's mental wellbeing.²⁵

Aims and Objectives

This project examines whether the ASF has a causal impact on the mental wellbeing of children in adoptive families, using longitudinal data and a quasi-experimental design. It aims to quantify the impact of the ASF policy intervention targeted to adoptive families and inform policymaking in addressing the mental health needs of adoptive children in England.

Method and Analysis

Data sources

We will get a sample of adopted children by pooling three datasets available from the UK Data Service platform - Longitudinal Survey of Adoptive Parents (LSAP), Millennium Cohort Study (MCS) and UK Household Longitudinal Study (UKHLS). The LSAP baseline survey was conducted in 2015 among adoptive families applying to ASF, with 792 families being interviewed. Among them, 481 families took part in the follow-up survey seven months later, by which time 91.06 percent had obtained ASF. We use LSAP (2015-2017) to construct a treatment group of adopted children of ages 3 to 16 whose families had approved access to the ASF. We then use the UKHLS (2009-2019) and MCS (2008-2018) to construct a control group of children who were also of ages 3 to 16 and were from adoptive families yet without approved access to the ASF. All three datasets have valid measures on child's mental health, parenting and family functioning, which will enable the investigation of the level of need and change over time.

Outcome measures

Our main measurement of child's mental health is the Strengths and Difficulties Questionnaires (SDQ). The SDQ is a behavioural screening questionnaire designed to measure psychological adjustment in children aged 3 to 16,^{26 27} validated and widely used in research.^{28 29} The questionnaire comprises 25 items, which covers five domains of behaviour, including emotional symptoms, peer problems, hyperactivity, conduct problems, and pro-social behaviour. A total difficulties score is calculated from the addition of the scores for the first four domains, excluding pro-social behaviour which is considered conceptually different.²⁶ For our analysis outcomes we use the standardised SDQ total scores, SDQ sub-scores, a dichotomous SDQ score using a cutoff score of 17, above which is considered abnormal or problematic.²⁶ And we will run separate models using each of these outcomes.

Missing data

We will handle missing data by examining the extent to which the missing at random (MAR) assumption is met, and when not met, by using multiple imputation and inverse probability weighting (IPW) to examine the impact of missing data. We will start with a complete-case analysis, whereby respondents without complete information on the main outcomes are excluded from the analysis. For other variables included in the analysis, we will model missingness and attrition as a function of observed covariates to examine whether they are selective. Based on these models, we will use inverse probability weights (IPW) that aim to control for selective participation/attrition based on observables. We will carry out multiple imputation where data are not missing at random.³⁰

Regression specification

We will employ potentially exogenous variation in the timing of exposure to ASF among the adoptive families in a difference-in-differences (DiD) design. We will compare changes in mental health outcomes before and after the implementation of ASF for adoptive families exposed to ASF (treatment group), to similar changes for adoptive families unexposed to ASF (control group) drawn from UKHLS and MCS. Our DiD model specification is as follows:

$$mental\ health_{it} = \beta_0 + \beta_1 time_t + \beta_2 treatment_i + \beta_3 time * treatment_{it} + \beta_4 X_{it} + \pi_{it}$$

Where mental health refers to SDQ scores for child *i* at time *t*; time is a binary variable taking value 1 for the post-policy period and 0 otherwise; treatment takes value 1 if the adoptive families obtained ASF and 0 otherwise; time*treatment corresponds to the differences in change between children in the treatment and control groups; the coefficient of the interaction term β_3 is the double difference computed at the mean value of the outcome, which captures the change in the difference of mental health between the treated and control groups as a result of the ASF policy intervention. X is a vector of characteristics of the child (age, gender, ethnicity, number of siblings) and the family (parental age, gender, ethnicity, education, relationship status, mental health), and π is an error term.

Study Design	Quasi-experimental design
Database	Longitudinal Survey of Adoptive Parents (LSAP) UK Household Longitudinal Study (UKHLS) Millennium Cohort Study (MCS)
Population	Adopted children of ages 3 to 16 years
Outcome Measures	Strengths and Difficulties Questionnaires (SDQ) scores
Analytical strategy	Difference-in-Differences (DiD)

Test of assumptions

To generate unbiased estimates using the DiD design, the parallel trend assumption needs to be met.³⁰ However, in LSAP only one wave of pre-ASF data is available for the treatment group, which constrains the direct test of the parallel trend assumption by comparing changes of outcomes across time for the treatment and control groups prior to the policy. To ensure that our DiD design is valid, we will adopt three approaches that address our data limitations. First, we will consider matching pre-policy characteristics for the treatment and control groups before conducting the DiD analysis. We will use propensity score matching based on a range of child and family characteristics (e.g., child's age, gender, parental education) so that the control group offers a good counterfactual of what the changes in mental health outcomes would have been in the treatment group, in the absence of the policy. Second, we will implement placebo tests by assigning the treatment status to a subsample of children randomly selected from our initial control group, and we then compare changes of mental health for this pseudo treatment group to changes of mental health for the rest of children from the initial control group. The coefficient of the interaction between this pseudo treatment variable and time will indicate whether selection bias accounts for the observed effect of treatment (if any) in the primary analysis. Third, we will carry out analysis using the synthetic cohort approach. We will construct a synthetic cohort as the weighted average of the control group that provides affinity to the treatment group. We will choose weights so that the synthetic cohort best produces the values of predictors of child's mental health in the treatment group before the ASF policy intervention.³¹ Our predictors include a set of child and family characteristics, and they will be averaged over the 2008-2015 (pre-policy) period. We will estimate the effect of the ASF policy intervention as the difference in mental health levels between the treatment group and its synthetic cohort in the years after the ASF was implemented. We will assess the robustness of the results by including additional mental health predictors among the variables used to construct the synthetic cohort to assess whether the main results will remain unaffected.

Ethics

All three quantitative datasets used for this evaluation are secondary datasets requestable through the UK Data Service platform. The analysis will be based on anonymised information that requires no special licence therefore ethics approval is not required for this study. In addition to the quantitative data analysis, we will also host two workshops to engage stakeholders, including adoptive families and staff working with adoptive families, for the consultation of the research design and discussion of preliminary findings, respectively. We will obtain consent from the participants for their attendance of and contribution to workshops, and the events will be facilitated through the platform of ESRC Centre for Society and Mental Health, in line with the research ethics guidance in King's College London. For this, no formal ethics approval is required.

Risks

This evaluation may encounter three main risks including potential delay in obtaining access to datasets, technical issues in data analysis such as sample size and missing data, and safeguarding information. To mitigate the first risk, we have made timely applications to request relevant datasets from the UK Data Service platform and have obtained all three datasets required for the analysis. To mitigate the second risk, we will employ information from the datasets to identify a sample of reasonable size to avoid compromising the statistical power of the analysis. We will also retain variables with as much complete information as possible, and in the cases where a variable with high missingness level yet is essential for the study, we will impute missing values using multiple imputation methods. To mitigate the third risk, we will follow the data use agreement with the UK Data Service platform for the requested data, and any new information generated from this project will be handled following the specific data protection guidance from King's College London.

Registration

This project was registered with the Open Science Framework (OSF) on 16/11/2021. Registration link: <https://osf.io/fpxqe>.

Data protection

Data requested from the UK Data Service Platform will be accessible to the research team members only. New data generated during this project will be anonymised and securely handled in compliance with the General Data Protection Regulation (GDPR) and King's College London guidelines.

WWCSC will not be a data controller or processor for any data in relation to this project.

Personnel

The evaluation team members include Liming Li (principal investigator, King's College London), Mauricio Avendano (co-investigator, King's College London), and Craig Morgan (co-investigator, King's College London).

Timeline

September – October 2021	Project planning Obtaining access to all three required datasets from UK Data Service
November – December 2021	Literature review First stakeholder engagement workshop (consultation on research design) Preliminary data analysis

	Submission of project quarterly report
January – March 2022	Further data analysis Second stakeholder engagement workshop (consultation on findings) Submission of project quarterly report
April – May 2022	Completion of data analysis Submission of project quarterly report
June – August 2022	Research outputs dissemination (i.e., journal paper submissions, conference presentations, policy briefing) Submission of final project report

References

1. Sonuga-Barke EJ, Kennedy M, Kumsta R, et al. Child-to-adult neurodevelopmental and mental health trajectories after early life deprivation: the young adult follow-up of the longitudinal English and Romanian Adoptees study. *The Lancet* 2017;389(10078):1539-48.
2. Department for Education. Statistical Release: Children looked after in England including adoption: 2019 to 2020.
<https://explore-education-statistics.service.gov.uk/find-statistics/children-looked-after-in-england-including-adoptions/2020>
3. Cocker C, Minnis H, Sweeting H. Potential value of the current mental health monitoring of children in state care in England. *BJPsych open* 2018;4(6):486-91.
4. Teyhan A, Boyd A, Wijedasa D, et al. Early life adversity, contact with children's social care services and educational outcomes at age 16 years: UK birth cohort study with linkage to national administrative records. *BMJ open* 2019;9(10):e030213.
5. Sebba J, Berridge D, Luke N, et al. The educational progress of looked after children in England: Linking care and educational data: University of Oxford Department of Education/University of Bristol 2015.
6. Viner RM, Taylor B. Adult health and social outcomes of children who have been in public care: population-based study. *Pediatrics* 2005;115(4):894-99.
7. Botchway SK, Quigley MA, Gray R. Pregnancy-associated outcomes in women who spent some of their childhood looked after by local authorities: findings from the UK Millennium Cohort Study. *BMJ open* 2014;4(12):e005468.
8. Schofield G, Biggart L, Ward E, et al. Looked after children and offending: An exploration of risk, resilience and the role of social cognition. *Children and youth services review* 2015;51:125-33.
9. Collishaw S, Maughan B, Pickles A. Infant adoption: Psychosocial outcomes in adulthood. *Social psychiatry and psychiatric epidemiology* 1998;33(2):57-65.
10. Ford T, Vostanis P, Meltzer H, et al. Psychiatric disorder among British children looked after by local authorities: comparison with children living in private households. *The British Journal of Psychiatry* 2007;190(4):319-25.
11. Memarzia J, St Clair MC, Owens M, et al. Adolescents leaving mental health or social care services: predictors of mental health and psychosocial outcomes one year later. *BMC health services research* 2015;15(1):185.
12. Rushton A, Grant M, Feast J, et al. The British Chinese Adoption Study: Orphanage care, adoption and mid-life outcomes. *Journal of Child Psychology and Psychiatry* 2013;54(11):1215-22.

13. Brodzinsky DM. Long-term outcomes in adoption. *The future of children* 1993;153-66.
14. Brodzinsky DM, Pinderhughes E. Parenting and child development in adoptive families. *Handbook of parenting* 2005;1:279-311.
15. Argys L, Duncan B. Economic incentives and foster child adoption. *Demography* 2013;50(3):933-54.
16. Nash JJ, Flynn RJ. Foster and adoptive parent training: A process and outcome investigation of the preservice PRIDE program. *Children and Youth Services Review* 2016;67:142-51.
17. Fawley-King K, Trask EV, Ferrand J, et al. Caregiver strain among biological, foster, and adoptive caregivers caring for youth receiving outpatient care in a public mental health system. *Children and Youth Services Review* 2020;111:104874.
18. Brehm ME. The effects of federal adoption incentive awards for older children on adoptions from US foster care. *Journal of Policy Analysis and Management* 2018;37(2):301-30.
19. Luckock B. Adoption support and the negotiation of ambivalence in family policy and children's services. *Journal of Law and Society* 2008;35(1):3-27.
20. Gieve M, Hahne AS, King S. The evaluation of the adoption support fund: long-term follow-up: July 2019.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/907276/ASF_wave_3_evaluation_report.pdf
21. King S, Gieve M, Iacopini G, et al. The evaluation of the adoption support fund: Department for Education London 2017.
22. King S, Gieve M, Iacopini G, et al. Are the early benefits of the Adoption Support Fund (therapeutic support for adoptive families) sustainable? *Journal of Public Mental Health* 2019
23. The Institute of Public Care. Evaluation of the Adoption Support Fund: local authority and provider experiences. *Commissioned by Department for Education* 2020
24. Burch K, Backinsell A, Coombes L, et al. Evaluation of the Adoption Support Fund: baseline survey of families. 2021
25. Noonan K, Burns R, Violato M. Family income, maternal psychological distress and child socio-emotional behaviour: Longitudinal findings from the UK Millennium Cohort Study. *SSM-population health* 2018;4:280-90.
26. Goodman R. The Strengths and Difficulties Questionnaire: a research note. *Journal of child psychology and psychiatry* 1997;38(5):581-86.
27. Goodman R. Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry* 2001;40(11):1337-45.
28. Stone LL, Otten R, Engels RC, et al. Psychometric properties of the parent and teacher versions of the strengths and difficulties questionnaire for 4-to 12-year-olds: a review. *Clinical child and family psychology review* 2010;13(3):254-74.
29. Croft S, Stride C, Maughan B, et al. Validity of the strengths and difficulties questionnaire in preschool-aged children. *Pediatrics* 2015;135(5):e1210-e19.
30. Sterne JA, White IR, Carlin JB, et al. Multiple imputation for missing data in epidemiological and clinical research: potential and pitfalls. *Bmj* 2009;338
31. Abadie A, Diamond A, Hainmueller J. Synthetic control methods for comparative case studies: Estimating the effect of California's tobacco control program. *Journal of the American statistical Association* 2010;105(490):493-505.