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A Protocol for a Meta-Analysis of Prosocial Behavior Differences Between Left-Behind and Non-Left-Behind Children in China

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ADMINISTRATIVE INFORMATION

Support - No financial support.**Review Stage at time of this submission** - Data extraction.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY2025110029

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 11 November 2025 and was last updated on 11 November 2025.

INTRODUCTION

Review question / Objective 1) What is the quantitative difference in prosocial behavior between left-behind children and non-left-behind children in China? 2) Is the difference moderated by the demographic and methodological factors?

Rationale The prosocial behavior of children and adolescents is crucial for their positive development, especially for those in disadvantaged environments, and left-behind children in China are a group of concern. However, current empirical studies on the prosocial behavior of left-behind children in China are inconsistent. For example, some studies have found that the prosocial behavior of left-behind children and adolescents is significantly lower than that of non-left-behind children and adolescents (Fan et al., 2010; Gao et al., 2019; Wang et al., 2018; Zhou et al., 2022), while other studies have found no differences in prosocial behavior among children and adolescents in different left-behind status

(Lan, 2023). To enhance the prosocial behavior of left-behind children, it is essential to first understand their current status. Accordingly, this study aims to investigate the differences in prosocial behavior between left-behind and non-left-behind children in China, and to explore the demographic and methodological factors that may affect these differences.

Condition being studied The condition being studied is the difference in prosocial behavior between left-behind and non-left-behind children in China.

METHODS

Search strategy Four databases, including English databases Scopus and Web of Science (WOS), as well as the Chinese databases China National Knowledge Infrastructure (CNKI) and VIP Database (VIP) will be searched from their inception to the date of the search. Electronic databases will be searched using keywords such as "left-behind children," "prosocial behavior," and "China," along

with their synonyms. Search terms used in previous meta-analyses related to “left-behind children” and “prosocial behavior” will also be considered. The search will be limited to the title, abstract, keywords, or topic of articles and theses/dissertations. The English search terms are as follows: (left-behind OR lbc OR lbacs OR lbac OR stay-at-home OR left-alone OR “parent* absen*” OR migrat* OR migrant* OR emigrat* OR immigrat* OR transient*) AND (prosocial* OR prosocial OR altruis* OR help* OR shar* OR giving OR assist* OR caring OR kindness OR genero* OR benevolent* OR donat* OR charit* OR volunt* OR cooperat*) AND (child* OR adolescen* OR student* OR “young people” OR pupils OR teenager* OR teen* OR youth* OR youngster* OR juvenile* OR preteen*) AND (China OR Chinese). The Chinese search terms are as follows: 亲社会行为 + 助人为 + 利他行为 + 捐助行为 + 志愿服务 + 帮助 + 分享 + 给与 + 安慰 + 合作 + 友善 AND 留守儿童 + 留守青少年 + 留守学生 + 留守初中生 + 留守高中生 + 留守中学生 + 留守小学生 + 留守中小學生 + 留守中职生 + 留守高职生 + 父母外出 + 留守状态 + 留守经历.

Participant or population The population of this review is left-behind children and non-left-behind children in China aged between 7 to 18 years. Parents of left-behind children are internal migrants within China, not international migrants.

Intervention No intervention is involved. The comparison focuses on naturally occurring groups (left-behind vs non-left-behind children).

Comparator The comparator group consists of non-left-behind children who live with both parents and have never experienced parental migration.

Study designs to be included Cross-sectional studies and longitudinal studies (using baseline data only) will be included. For interventional studies, only pre-intervention data will be utilized.

Eligibility criteria The inclusion criteria will be as follows: 1) Quantitative empirical studies published in English or Chinese; 2) Studies using physically healthy left-behind children (LBC) and non-left-behind children (NLBC) as participants; 3) Parents of left-behind children are internal migrants within China, not international migrants; 4) The age range of left-behind children or adolescents is 7–18 years.; 5) Studies with sampling locations limited to mainland China (excluding Hong Kong, Macao, and Taiwan); 6) Prosocial behavior is defined as voluntary behavior or tendency intended to benefit others, manifested in helping, sharing, comforting,

cooperating, and other friendly, positive social behaviors. 7) The assessment of prosocial behavior must have been based on self-report scales with sound psychometric properties; 8) Studies that report sufficient data to calculate the effect size of the difference in prosocial behavior between left-behind and non-left-behind children (e.g., the effective sample sizes for LBC and NLBC, the mean and standard deviation of prosocial behavior scores for LBC and NLBC).

The exclusion criteria will include: 1) Studies investigating behaviors that do not fall under the definition of prosocial behavior; 2) Conference papers and non-empirical studies, such as reviews, book chapters, animal studies, editorials, case reports, commentaries, and other works that did not present empirical results using specific methods; 3) Studies in which prosocial behavior is not assessed using a standardized self-report scale or the instrument lacked sound psychometric properties; 4) Studies lacking sufficient data to calculate effect sizes, or with obviously erroneous data for effect size computation; 5) Studies for which necessary data could not be obtained through online databases, library access, or email correspondence with the authors.

Information sources The sources of information will primarily comprise three categories: 1) electronic databases (as detailed in the Search Strategy section), 2) reference lists of articles undergoing full-text screening, that is, the reference lists of articles undergoing full-text screening will be screened to identify relevant literature that may not have been retrieved through the database search; and 3) correspondence with authors to obtain critical missing data.

Main outcome(s) 1. The direction and magnitude of differences in prosocial behavior between left-behind children and non-left-behind children in China will be assessed using Hedges' *g* as the effect size.
2. We will examine whether demographic factors and methodological factors are moderators of these differences.

Quality assessment / Risk of bias analysis To assess the reliability of the meta-analysis findings, the risk of bias in the included studies will be evaluated. Two reviewers will independently assess the methodological quality of the included studies using the Critical Appraisal Tools for Use in JBI Systematic Reviews—Checklist for Analytical Cross-Sectional Studies (Peters et al., 2015). Any disagreements will be resolved through discussion, and if consensus cannot be reached, a third

reviewer will make the final decision. The JBI Critical Appraisal Checklist consists of eight items, evaluating risk of bias and overall study quality based on sample inclusion, study participants, exposure measurement, condition measurement, identification of confounding factors, handling of confounders, outcome measurement, and statistical analysis. Each item can be rated as Yes, No, Unclear, or Not Applicable. Finally, studies will be classified according to their total score: 0–3 points indicate high risk of bias, 4–6 points indicate moderate risk of bias, and 7–8 points indicate low risk of bias (Peters et al., 2015).

Besides, to reduce publication bias, this meta-analysis will include master's and doctoral theses. The funnel plot method, Egger's linear regression test, and Rosenthal's fail-safe N will be used to analyze whether publication bias exists and to determine the extent of any bias (Ren & Lai, 2023).

Strategy of data synthesis For the differences in prosocial behavior between left-behind children and non-left-behind children, we will use Hedges' g as the effect size for assessment. If heterogeneity is low (suggested by $p > 0.1$ in the Q test or $I^2 < 50\%$), a fixed-effects model will be employed to pool the effect sizes. If heterogeneity is substantial (indicated by $p < 0.1$ in the Q test or $I^2 > 50\%$), a random-effects model will be used for pooling, and subgroup analysis or meta-regression will be conducted to explore the sources of heterogeneity. For outcomes with insufficient studies or those unsuitable for quantitative synthesis, a qualitative description will be provided.

Subgroup analysis To explore the sources of heterogeneity, we will employ subgroup analysis to investigate the impact of categorical variables (e.g., sample location, sample grade level, scales, etc.) and meta-regression to examine the influence of continuous variables (e.g., year of publication, sample size, etc.).

Sensitivity analysis To determine whether the results of the current meta-analysis are stable and robust, sensitivity analyses are necessary after combining the effect sizes. Sensitivity analyses will be performed by removing each study at one time and recalculating the combined estimate based on the remaining studies. This process helps to assess whether the overall findings are influenced by any single study, thereby ensuring the reliability of the meta-analysis results (Ren & Lai, 2023).

Language restriction Yes, only English and Chinese language will be included.

Country(ies) involved China.

Other relevant information The systematic review has reached the data extraction stage. Literature search and screening have been completed. Although the registration is retrospective, the protocol and inclusion criteria were pre-defined and have not been modified during the review process. The registration aims to ensure transparency, reproducibility, and compliance with INPLASY and PRISMA guidelines.

Keywords Prosocial behavior; left-behind children; China.

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