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### ADMINISTRATIVE INFORMATION

**Support** - No financial support.

**Review Stage at time of this submission** - Preliminary searches.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202610017

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 5 January 2026 and was last updated on 5 January 2026.

### INTRODUCTION

**Review question / Objective** To quantify and compare the strength of associations between five categories of factors (peer-related, academic/school, emotion understanding & regulation, behavioral inhibition, and emotion regulation/control) and social-emotional development in preschool children aged 3-6 years.

**Condition being studied** Social-emotional development (SED) of preschool children, encompassing competencies such as emotion regulation, empathy, peer interaction and related behavioural outcomes. Influencing factors of social-emotional development in preschool-aged children.

### METHODS

**Participant or population** Typically-developing children 3–6 years old, sampled worldwide from preschool or kindergarten settings.

**Intervention** Any non-experimental intrinsic or contextual factor reported in the literature as potentially influencing SED – e.g., peer interaction quality, classroom climate, academic engagement, temperament dimensions, emotion understanding, behavioural inhibition.

**Comparator** Not applicable.

**Study designs to be included** Quantitative or mixed-methods empirical studies (longitudinal, cross-sectional and intervention) with  $\geq 30$  participants, published in English between 2005–2025.

**Eligibility criteria** Include: 3-6 y samples; at least one direct SED outcome; sufficient statistics for effect-size calculation; peer-reviewed English articles. Exclude: non-SED focus, wrong age group, purely theoretical papers, grey literature, or full text unavailable.

**Information sources** PubMed, Web of Science, Scopus, ScienceDirect, and Google Scholar.

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**Main outcome(s)** Validated measures of preschool SED, synthesised in five domains: peer-related SED, emotion regulation/control, behavioural inhibition & anxiety, emotion understanding/regulation, and academic & school-related outcomes.

**Quality assessment / Risk of bias analysis** Newcastle-Ottawa Scale (child-development adaptation); studies scoring < 6/9 excluded. Dual independent coding, consensus resolution of disagreements.

**Strategy of data synthesis** Random-effects meta-analysis using inverse-variance weighting; heterogeneity assessed with Q and  $I^2$ ; publication bias evaluated by funnel plot and Egger's test. funnel plots and Egger's regression test.

**Subgroup analysis** Effect sizes will be analysed separately for each of the five outcome domains; additional subgroups (if  $\geq 3$  studies per stratum) by study design, informant (parent vs. teacher), and geographic region to explore sources of heterogeneity (guided by Q/ $I^2$  statistics).

**Sensitivity analysis** (1) Leave-one-out re-analysis; (2) fixed-effects vs. random-effects models; (3) exclusion of studies with high risk of bias; (4) trim-and-fill adjustment for publication bias. These steps follow the procedures used for heterogeneity and funnel-plot diagnostics in the preliminary synthesis. Effect sizes will be analysed separately for each of the five outcome domains; additional subgroups (if  $\geq 3$  studies per stratum) by study design, informant (parent vs. teacher), and geographic region to explore sources of heterogeneity (guided by Q/ $I^2$  statistics).

**Country(ies) involved** China; Singapore; United States.

**Keywords** social-emotional development; preschool; peer interaction; emotion regulation; behavioural inhibition; academic outcomes.

**Contributions of each author**

Author 1 - Juan Gu.

Author 2 - Suziyani Mohamed.

Author 3 - Kamariah Abu Bakar.