Gender disparities in child development in the east Asia-Pacific region: a cross-sectional, population-based, multicountry observational study

Ann Weber, Gary L Darmstadt, Nirmala Rao

Summary

Background  Gender differences in child development have been extensively studied in high-income countries, but little is known about gender differences in child development in low-income and middle-income countries. Our objective was to assess gender disparities in child development that might arise from differential investment in child health, nutrition, and education in six countries across the east Asia-Pacific region.

Methods  In this cross-sectional, population-based study we quantified the magnitude of gender differences in child development using the East Asia-Pacific Early Child Development Scales (EAP-ECDS) in six countries (Cambodia, China, Mongolia, Papua New Guinea, Timor-Leste, and Vanuatu). We used stratified random sampling (according to age, residence [urban vs rural], and sex) in all countries to recruit eligible children aged 3–5 years from non-ethnic minority populations with no identified or suspected special educational needs for whom EAP-ECDS scores for five or more of seven domains and urban-rural residence information were available. Gender differences in development associated with four national indicators of gender equality (sex ratio at birth, Gender Development Index, Gender Inequality Index, and Gender Parity Index for primary school enrolment) were also examined. We used generalised estimating equation regression to study moderation of differences by family socioeconomic status and wealth, and structural equation models with maximum likelihood to test mediation through health, nutrition, and education.

Findings  Between June 1, 2013, and Dec 13, 2013, 7582 eligible children were included from Cambodia (n=1189), China (n=1618), Mongolia (n=1230), Papua New Guinea (n=1639), Timor-Leste (n=1176), and Vanuatu (n=730). Girls had significantly higher development scores than boys in Cambodia (difference in composite score: β=1·87 points, 95% CI 0·29 to 3·45; p=0·0747), China (2·66 points, 1·20 to 4·13; p=0·0004), Vanuatu (3·10 points, 1·65 to 4·55; p=0·0001), and Mongolia (3·94 points, 2·67 to 5·21; p<0·0001), but not Papua New Guinea (–0·43 points, –1·19 to 0·33; p=0·272) or Timor-Leste (0·09 points, –0·96 to 1·14; p=0·861). Differences in favour of girls were the largest for language skills in Mongolia (5·30 points, 95% CI 4·45 to 6·15); differences in language skills were smallest in the two poorest countries, Timor-Leste (–0·07 points, –1·03 to 0·88) and Papua New Guinea (0·05 points, –1·02 to 1·12). Greater differences in composite scores for girls compared with boys—in favour of girls—were associated with higher national Gender Development Index values (R²=0·790). In Mongolia, smaller gender differences in development were associated with increased household wealth (6·07 points [95% CI 3·22 to 8·92] in the lowest wealth quartile vs 2·27 points [1·38 to 3·15] in the highest wealth quartile), whereas in Timor-Leste, girls only outperformed boys when living in households with higher socioeconomic status (2·87 points [0·27 to 5·47] in the highest wealth quartile and 3·74 points [2·17 to 5·31] in the highest quartile of parental socioeconomic status). Mediating pathways explained up to 37% (in Vanuatu) of the association between gender and development, controlling for family socioeconomic status.

Interpretation  Girls aged 3–5 years generally outperformed boys on tests of development, and increasing levels of gender equality across six countries in the east Asia-Pacific region were associated with improved performance of young girls relative to boys. Greater opportunities for economic development are anticipated to result from improvements in gender equality and in the development of girls. Further study is warranted to understand family-level processes and societal norms that lead to gender differences in child development in the early years.

Funding  UNICEF, the Asia-Pacific Regional Network for Early Childhood, and the Open Society Foundations.

Introduction  Little is known about gender differences in child development in low-income and middle-income countries, where gender inequalities in health and education might result in disparities in early development and subsequent school achievement. Historically, studies in the USA showed that girls outperformed boys in language and reading, whereas boys performed better than girls in mathematics and spatial ability. However, these gaps are closing, with girls reaching parity with boys in mathematics and problem solving, and girls’ advantage in verbal skills reduced to very low levels.

In this study, we used a new holistic measure of child development validated for use in the east Asia-Pacific region.
Evidence before this study
Internationally validated direct assessments of child development have yet to be established for use among children aged 3–5 years in low-income and middle-income settings. Between Nov 8, 2016, and May 5, 2017, we searched Google Scholar and PubMed for references from studies on gender differences in child development in the USA and Europe, and for studies on child learning outcomes in published papers or non-governmental reports from the countries included in our study, as well as middle-income and low-income countries more broadly, with no language or date restrictions. The search terms we used included: “gender differences”, “gender inequality”, “gender disparities”, “child development”, “low and middle income”, “international”, “global”, “ preschool”, “achievement”, “early math”, and “ early literacy”. No previous evidence was found for direct assessments of gender disparities in child development for children aged 3–5 years in the east Asia-Pacific region.

Added value of this study
Children were assessed using the East Asia-Pacific Early Child Development Scales—a new holistic child development measure developed and validated for the region—that covers seven domains including early literacy, cognition, and motor skills. These developmental data were supplemented with family demographic and child health information and country contextual data, including measures of gender equality. To the best of our knowledge, the current study is the first to show that young girls’ performance on a holistic test of development was higher than that of boys in countries with evidence of greater gender equality based on national indices, but differences within countries varied by family socioeconomic status. Up to 37% of the gender gaps reported could be explained by mediating pathways through child education and health and nutrition.

Implications of all the available evidence
In our study of children aged 3–5 years in the east Asia-Pacific region, considerable gender disparities in development, which favour girls, exist in the east Asia-Pacific countries with the highest gender equality and, generally, in households with higher socioeconomic status. These findings are similar to historical differences reported in the USA, which have since disappeared or been reduced to low levels. US-based data on the remaining gender differences and evidence from this study about children living in the east Asia-Pacific region, suggest that further research is warranted on the family-level processes and possible gendered social norms that lead to gender differences in the development of young children worldwide.
دریافت فوری متن کامل مقاله

امکان دانلود نسخه تمام متن مقالات انگلیسی
امکان دانلود نسخه ترجمه شده مقالات
پذیرش سفارش ترجمه تخصصی
امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
امکان دانلود رایگان ۲ صفحه اول هر مقاله
امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
دانلود فوری مقاله پس از پرداخت آنلاین
پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات