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Advancing Black Girls in STEM: Implications from Advanced Placement Participation and Achievement

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ABSTRACT

The purpose of this study was to examine Black girls' performance on advanced placement (AP) exams. Science, Technology, Engineering, and Mathematics (STEM) careers are lucrative, and there are opportunities to participate through both short-term and 4-year college degree paths. However, poor K-12 (i.e. U.S. primary through secondary school) preparation, limited course availability, and low rigor have been shown to be strong mediators of post-secondary STEM participation. Therefore, understanding how Black girls perform on various STEM AP exams provides a foundation for testing the impact of variables already identified as mediators of success. Ninth through 12th graders' AP exam scores were used from a cross-sectional sample consisting of 32,675 cases across 7 science and 3 mathematics disciplines. Cases were compared across disciplines to examine differences in participation and performance trends for Black girls on AP STEM examinations. Data were contextualized using descriptive statistics and confidence intervals of odds ratios. The results of this study suggest that Black girls participate in non-traditional STEM courses more frequently with varying levels of performance outcomes. Implications and recommendations related to this phenomenon are presented to inform research and instructional praxis.

KEYWORDS

STEM, Black girls, Achievement, Advanced Placement