

Perceived Growth Mindsets Relate to Initial but not Improvements in Math and Literacy Skills

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INTRODUCTION

- Growth mindsets (GM) are beliefs that abilities can develop with effort, instruction & good strategies¹
- GM linked to ↑ concurrent and future academic achievement in language competencies & math^{2,3}
- GM interventions buffered against negative stereotype effects for women in math⁴
- Parents are key figures in shaping children's GM^{5,6} & moderate their child's future academic achievement⁷



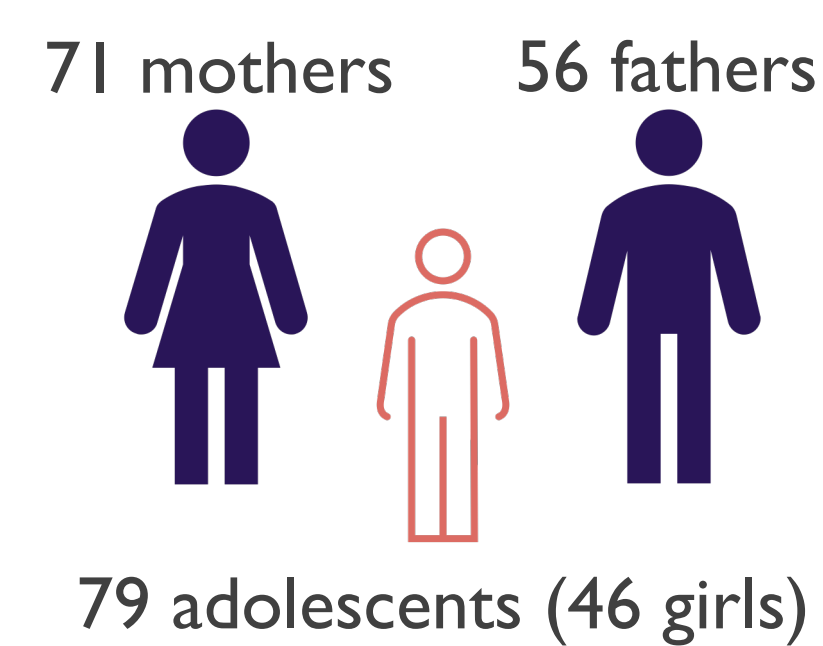
STUDY GOALS

1. Investigate parents' perceptions of their adolescents' GM in relation to their progress in math & literacy skills over 3 years.
2. Examine gender differences in parents' perceptions of their adolescents' mindsets

METHODS

Participants

- Neurotypical adolescents
- Parents of the adolescents



Measures

- Adolescents' growth mindsets assessed by both parents in Grade 6 ($M_{age} = 11.65, SD = 0.31$) using 3 items from the *Young Children's Academic Intrinsic Motivation Inventory*
- Math & literacy skills assessed using WIAT-II in Grade 6, 7 ($M_{age} = 12.98, SD = 0.28$), & 8 ($M_{age} = 14.07, SD = 0.44$)

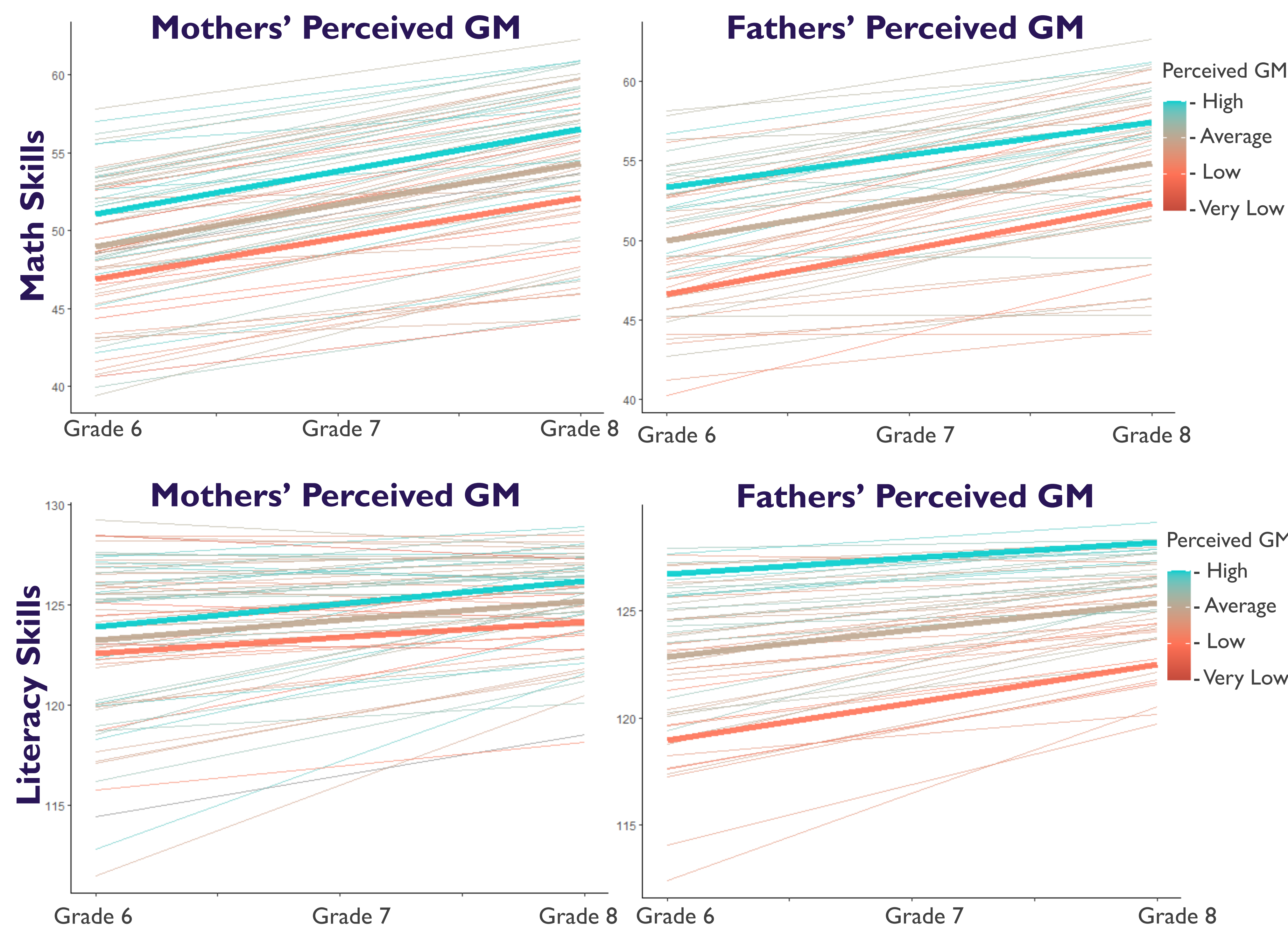
RESULTS

Mothers' and fathers' GM were correlated, $r = .49, p < .001$, with mothers perceiving girls as having higher GM than boys, $p = .014$.

Mean(SD)	Mothers' Perceived GM		Fathers' Perceived GM	
	Boys	Girls	Boys	Girls
	2.98(0.66)	3.31(0.59)	3.13(0.41)	3.12(0.56)

Academic Trajectories

- Perceived GM by mothers and fathers predicted adolescents' grade 6 math skills, however GM were not associated with the rate of improvements
- Perceived GM by fathers, but not mothers, significantly predicted adolescents' grade 6 literacy skills, yet were not associated with the rate of improvements
- Similar results were found when gender was added as a predictor, but gender was not associated with the intercept or slope of any model



DISCUSSION

Growth Mindset & Academic Skills

- Highlights importance of parents' perceptions of their adolescents' GM
- Perceived GM by mothers and fathers predicted adolescents' grade 6 math skill
- Perceived GM by fathers predicted adolescents' grade 6 literacy skills
- Similar rate of improvement on academic skills across participants
- Initial GM benefits thus is stable over time

Gender Differences

- Girls perceived as having more growth mindsets than boys by their mothers
- Gender was not associated to initial or improvements in math and literacy skills
- Could suggest that parents perceive GM may have little influence on improvements in math and literacy skills
- Need to explore other mechanisms that lead to gender differences in academic pursuits (e.g., brilliance beliefs)⁸



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