

# Patterns in Parents' Broad Early Math Support

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## Introduction

- Parents' early math input (i.e., patterning, numeracy and spatial) is often related to their child's early math skills (e.g. Jirout & Newscombe, 2015; Rittle-Johnson et al., 2015).
- While parents provide their pre-kindergarteners with input on different math domains, they primarily provide input about numeracy (Zippert & Rittle-Johnson, 2018).
- Additionally, parents' math input is often related to their child-specific math beliefs (e.g. Sonnenschein et al., 2012; Zippert & Rittle-Johnson, 2018) and beliefs about themselves (del Río et al., 2017).
- Little work has examined the stability of parents' early math input and beliefs over time.

## Questions

- How does parents' math input at the start of their child's pre-kindergarten (pre-K) year compare to their math input at the end of their child's kindergarten year?
- Are parents' math beliefs stable over the preschool years?
- How do parents' math-related beliefs relate to their math input at the start of their child's pre-K year versus at the end of their Kindergarten year?

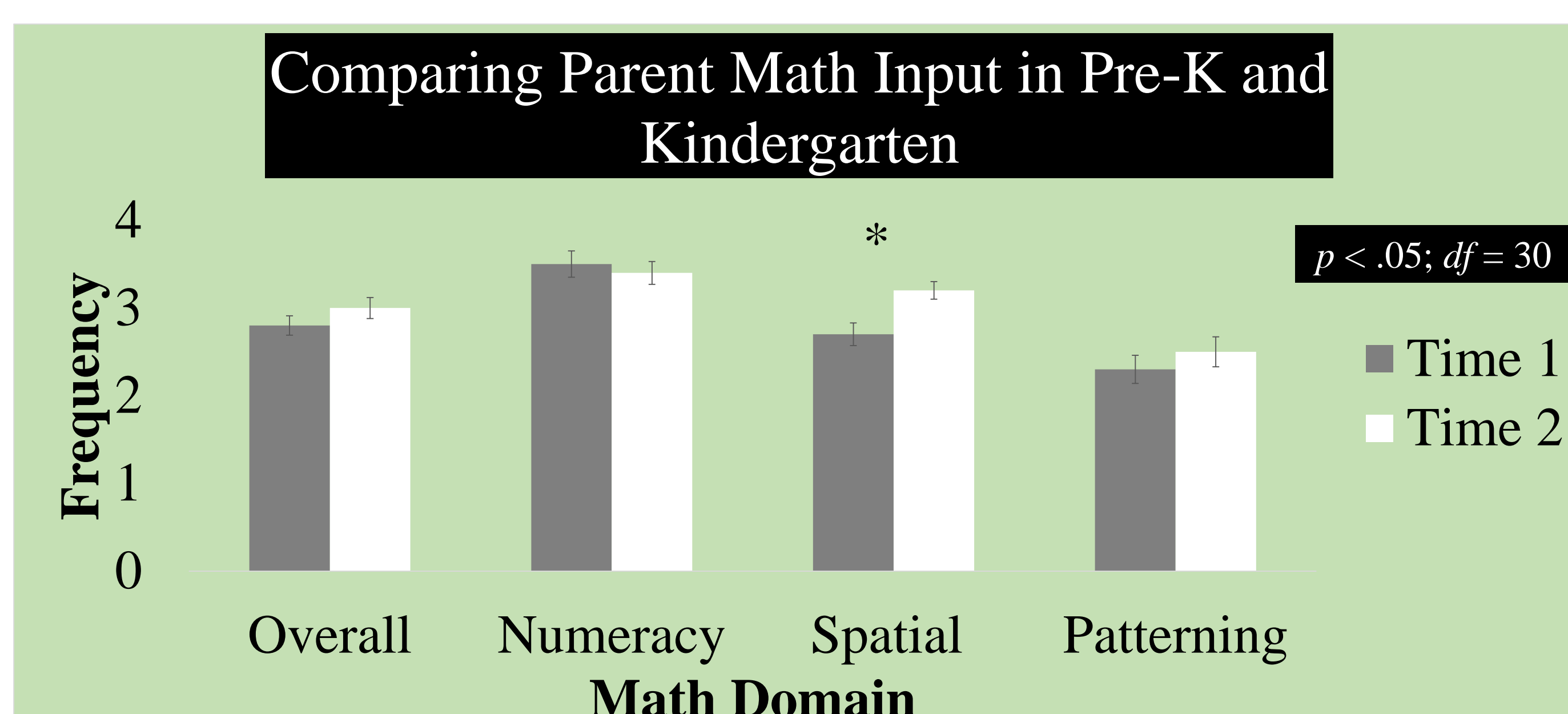
## Participants

- Thirty-one parents (93% mothers) of pre-kindergarteners were recruited from 6 pre-kindergartens in a Southeastern U.S. city.
- Most of the parents identified as White (61%) and reported having at least an Associate's degrees (all mothers and 50% of fathers).
- Most children ( $M = 4.69$  years,  $SD = .29$ ) were identified as boys (52%) and as White (61%), and did not receive financial assistance for pre-K attendance (55%) or Special Education services (87%).

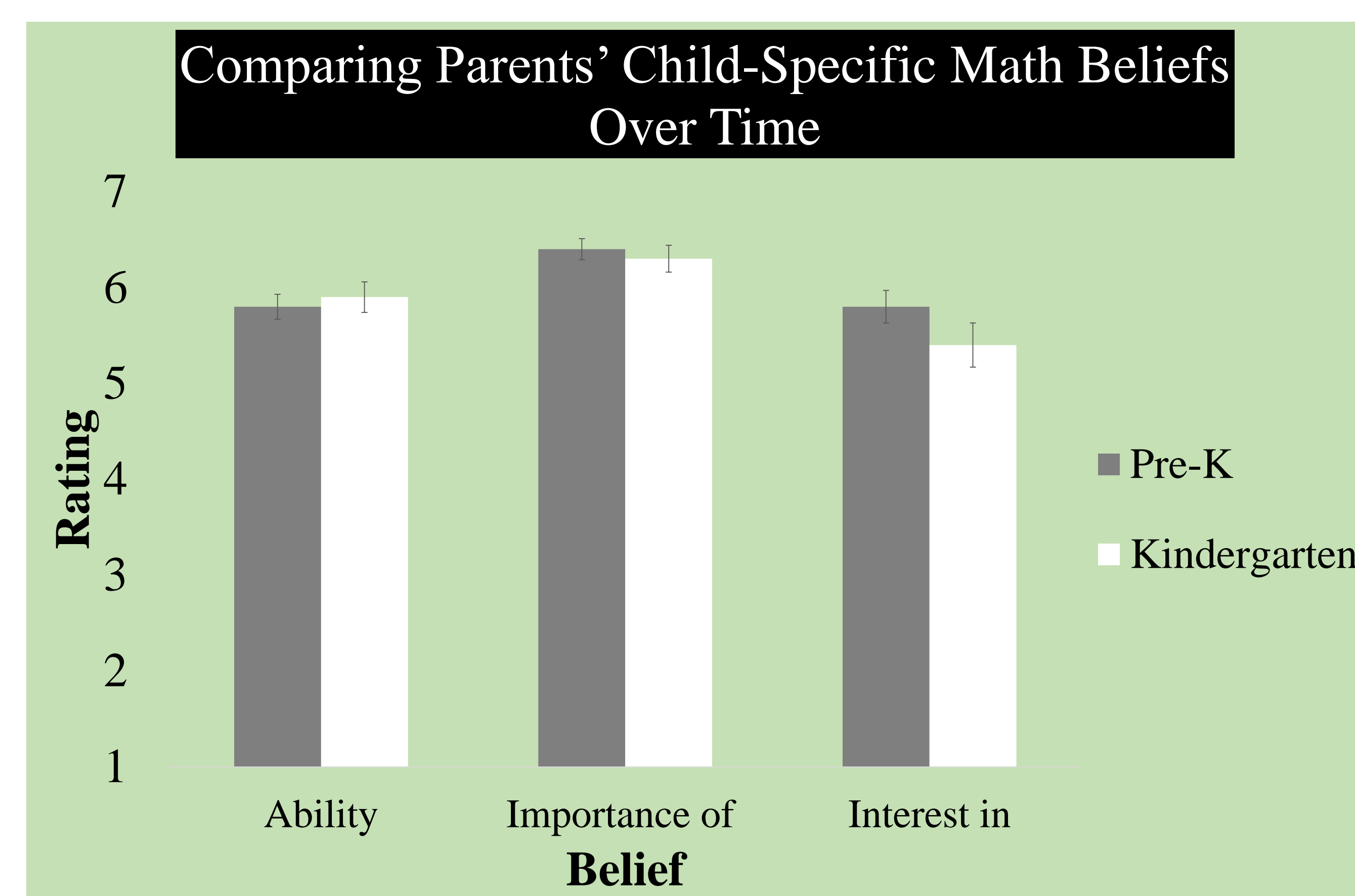
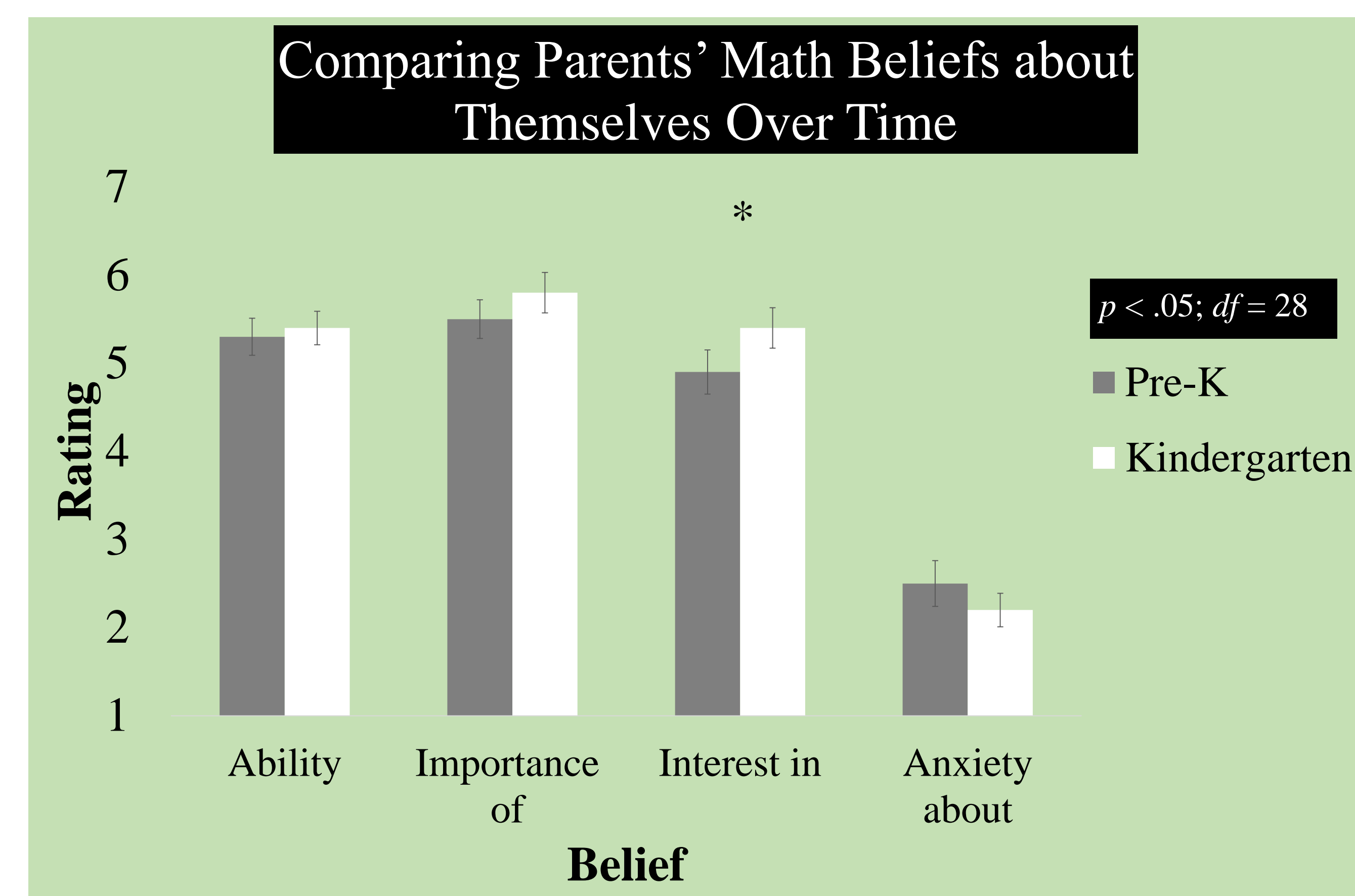
## Method

- Parents completed surveys about their math input and beliefs at the start of their child's pre-K year (reported in Zippert & Rittle-Johnson, 2018) and end of their Kindergarten year.
- Parents rated the frequency of their math input on 6-point scales (0 = never, 1= once a month or less, 2= 2- to 3-times a month, 3= 1- to 2-times a week, 4= 3- to 4-times a week, 5 = daily).
- They reported their math-related beliefs about themselves and their child on 7-point scales.

## Results



## Results



## Correlations Among Parents' Math Input and their Math-Related Beliefs about Themselves at Two Time Points

Parent Math Beliefs <sup>a</sup>	Math Input			
	Overall	Number	Spatial	Pattern
<b>Pre-K</b>				
Ability <sup>b</sup>	.09	-.05	.14	.14
Importance of <sup>c</sup>	.30	.31	.08	.08
Interest in <sup>d</sup>	.13	.05	.13	.13
Anxiety about <sup>e</sup>	.08	.06	.05	.05
<b>Kindergarten</b>				
Ability	.24	.15	.19	.26
Importance of	.39*	.27	.22	.51*
Interest in	.30	.20	.29	.29
Anxiety about	.12	.15	.08	.09

Notes. \*  $p < .05$ .  $df = 30$   
<sup>a</sup>Average of parents' beliefs about math and spatial tasks. <sup>b</sup>This was a composite of parents' beliefs that they were good at math at the time of the survey and that they were good at math while in school on a scale from 1 (not good) - 7 (very good) <sup>c</sup>1 (not at all important) - 7 (very important) <sup>d</sup>1 (not at all) - 7 (very much) <sup>e</sup>1 (not at anxious) - 7 (very anxious)

## Results

### Correlations Among Parents' Math Input and their Child-Specific Math Beliefs at Two Time Points

Parent Math Beliefs <sup>a</sup>	M(SD)	Math Input			
		Overall	Number	Spatial	Pattern
<b>Pre-K</b>					
Ability <sup>b</sup>	5.79(.75)	.47*	.52*	.19	.39*
Importance of <sup>c</sup>	6.39(.63)	.05	.15	.09	-.06
Interest in <sup>d</sup>	5.83(.91)	.60*	.47*	.44*	.56*
<b>Kindergarten</b>					
Ability	5.92(.88)	.31	.26	.19	.34
Importance of	6.33(.77)	.44*	.38*	.31	.44*
Interest in	5.38(1.22)	.30	.20	.29	.29

Notes. \*  $p < .05$ .  $df = 30$

<sup>a</sup>Average of parents' beliefs about number, spatial, and patterning tasks. <sup>b</sup>This was a composite of parents' belief that their children are currently and innately good at math and that they will be good at math in the future on a scale from 1 (not good) - 7 (very good) <sup>c</sup>1 (not at all important) - 7 (very important) <sup>d</sup>1 (not at all) - 7 (very much)

## Discussion

- Findings suggest that parents' math input in the pre-Kindergarten year is especially important given that their input changes very little over the pre-Kindergarten and Kindergarten years.
- Further research should explore how to promote more frequent early math support (especially about patterning) among parents of pre-kindergarteners.
- The relations between parents' math beliefs and their math input suggest that their child-specific beliefs might be better predictors of their math input at home than their beliefs about themselves.
- Furthermore, parents' belief about the importance of math for their children seems to be more important during kindergarten than during pre-K, given its significant relationship to parents' overall, number, and pattern support during kindergarten.

## References

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