

## Assessing Self-Regulation and Executive Function in Preschool-Aged Population

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## Disclosures

- None of the authors had any financial relationships relevant to the content of this presentation.

## Introduction

- Children's self-regulation and executive function skills (EF; including attentional flexibility, working memory, and inhibitory control) are strong indicators of academic success (McClelland et al., 2014).
- EF skills have been collected as a measure of school preparedness because of their positive correlation with academic achievement (Nesbitt, Farran, & Fuhs, 2015).
- Self-regulation has also been positively correlated with children's school readiness.

## Introduction

- EF and self-regulation processes in addition, support children's overall emotional and social health (Flook, Goldberg, Pinger, & Davidson, 2015).
- These processes begin to become especially important among the preschool-aged population for the specific reason that these processes emerge during this time span of development.
- It has been suggested that development of EF in the preschool years may reflect a more qualitative change in cognitive function, whereas later developments reflect quantitative refinements and enhancements of these abilities" (Howard, Okely, & Ellis, 2015).

## Introduction

- In contrast, children with weak self-regulation and EF processes struggle with building and maintaining positive relationships, paying attention, and following directions—all of which impact success in school and other natural environmental settings (Nesbitt et al., 2015).
- Identifying the importance of self-regulation and EF provides insight on the importance of appropriate assessment procedures for these processes.

## Introduction

- Few studies have addressed the validity and reliability of assessment tools used to measure very young children's EF and self-regulation skills.
- The present study examined if the Head-Toes-Knees-Shoulders task (HTKS) is associated with self-regulation and traditional EF measures of attentional flexibility, working memory, and inhibitory control.

## Purpose

- The purpose of this study was to determine if the head-toes-knees-shoulders task could be used to assess self-regulation and executive function in preschool-aged children.

## Methods

- The sample of data collected was obtained from 2 participants of the South Georgia region, and both participants were 2 years of age and female .
- All factors of executive function and self-regulation were measured throughout current study by comparing the children's EF and self-regulation skills using the HTKS task to the skills of prekindergarten and kindergarten children used in the McClelland et al. (2014) study.
- Behavioral observations were also noted for supportive data in the current study.

## Results

### Head-Toes-Knees-Shoulders Task

Participants	Practice Trial 1	Practice Trial 2 (Reversed)	Reversed Trial
Participant 1	5 out of 5	0 out of 5	2 out of 20
Participant 2	5 out of 5	0 out of 5	0 out of 20

## Methods

- The first practice session included 6 trials of the participant touching their head and toes when asked.
- The second practice session included 4 trials of the participant touching their toes when asked to touch their head, and touching their head when asked to touch their toes.
- After practice trials were completed a script of 20 tasks were administered for scoring. The script included 10 trials where the child would be told to touch their head, but instead should touch their toes, and 10 trials where the child would be told to touch their toes but instead should touch their head.

## Discussion

- Participant 1 scored higher on HTKS task than participant 2.
- This observation could infer that participant 1 had higher levels of cognitive flexibility, working memory, inhibitory control, and self-regulatory processes than participant 2.
- Although many researchers support the theory that strong EF and self-regulation skills predict higher academic success, if adjustments were made to the task to better accommodate participant 2, then perhaps this participant could have performed better on the task.

## Limitations

- The number of participants used in the study was not a sufficient sample of the 2-year-old population.
- Although, results were parallel to the findings of other studies, it was still necessary to have a larger sample of participants for a better representation of the population. Also, due to the small amount of participants, the study was not diverse.
- The study only included a small representation of the African-American population. The current study in addition to other limitations only included children from one region.

## Recommendations

- Based upon the limitations within the study, it is necessary to use a more diverse population for future research.
- An increase in the amount of diversity will allow future researchers to more effectively address the affects of demographics on assessment procedures of self-regulation and EF processes in young children.

## Conclusion

- The study examined the validity and reliability of the HTKS task for assessment of EF and self-regulation processes in preschool-aged children.
- The study revealed that the HTKS task could possibly be used to assess self-regulation and executive function processes in the preschool-aged population.
- Although, academic achievement can possibly be correlated with high EF and self-regulation processes, it was taken into consideration that making changes in the assessment procedures could better accommodate participants in study, which could lead to higher scores during assessment procedures.

## References

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