POSTER: FUNDAMENTAL MOTOR SKILLS AND COGNITIVE FUNCTION AMONG PRESCHOOLERS: DOES WEIGHT STATUS MATTER?

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Objective: The purposes of this study were 1) to examine the correlation between fundamental motor skills (FMS; locomotor and ball skills) and cognitive function (reaction time [RT] and movement time [MT]); and 2) to investigate the effect of weight status (normal weight vs. overweight/obese) on the relationship between FMS and cognitive function in preschoolers. Methods: A cross-sectional research design was used. Seventy-four children (girl = 38, boy = 36; M age = 4.0 2± .73) were recruited from two child care centers. Children were categorized by normal weight (n = 58, BMI percentile < 85%) and overweight/obese (n = 16, BMI percentile ≥85%). Children's FMS was assessed using the Test of Gross Motor Development – 3 rd edition (TGMD-3; Ulrich, 2019). Cognitive function was measured in both simple and choice capacities such as Simple RT [SRT], Choice RT [CRT], Simple MT [SMT], and Choice MT [CMT]. Descriptive analysis, Pearson correlations and multivariate analysis of covariance (MANCOVA) were conducted. Results: On average, children demonstrated low locomotor (M=7.87 2.77) and ball skills (M=8.04 2.54) compared to the U.S. national data (locomotor M = 9.97; ball skills M = 8.58). Two FMS were significantly associated (r = .30, p p= .05). There were no significant correlations between FMS competence and cognitive function. Children with normal weight performed significantly better on ball skills (∆M = 0.81, 2 = .01; p p= .05) than overweight/obese children, but not on locomotor skills (∆M = 0.38, 2 = .00 p p= .05). Overweight/obese children performed worse compared to normal weight peers on all cognitive
tests [CMT (∆M = 486.77 2 = .28, p p= .05), CRT (∆M = 428.23, 2 = .49, p p= .05), SMT (∆M = 151.15, 2 = .24, p p= .05 and SRT (∆M = 355.72, 2 = .27, p p= .05)]. Implications: During early childhood, maintaining a healthy weight status is critical for motor and cognitive development. Parents and education professionals may provide more opportunities to enhance motor development to further advance preschoolers' healthy weight status and school readiness.