

The Association of the Grooved Pegboard Test to Everyday Motor Skills



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Introduction

- The Grooved Pegboard Test (GPT) is used to assess speeded hand-eye coordination and fine finger dexterity.
- Although its relationship to brain damage is well established (Larrabee et al., 2008), its ecological validity in predicting fine motor skills used in daily functioning is not.
- The Developmental Coordination Disorder Questionnaire (DCDQ'07) is a parent-report screening measure of motor skills involved in daily functioning.
- The DCDQ'07 has a global summary score and 3 subscales: control during movement (CDM), fine motor skills (FMS), and general coordination (GC).
- The present study investigated the association between GPT and DCDQ'07 in children.
- Based on previous research with other motor measures, it was hypothesized that GPT would be significantly associated with the FMS subscale, but not other scores.

Participants & Methods

- GPT was administered to child participants ($N=40$; $M_{age}=11.8$ years; 63% male; 40% with ADHD).
- Parents completed the DCDQ'07.
- Data was collected as part of a larger study examining handwriting in childhood ADHD.
- Normed GPT time scores for Dominant (DOM) and non-dominant (ND) hands were used.

Results

- Contrary to the hypothesis, DOM and ND GPT performance showed no correlation with the FMS subscale.
- ND GPT performance was positively correlated with all other DCDQ'07 scores.
- DOM GPT performance was only correlated with the GC subscale.

Correlations Among DCDQ & GPT

DCDQ'07 Subscale	DOM GPT	ND GPT
CDM	$r = 0.26$ $p = 0.11$	$r = \mathbf{0.48}$ $p = 0.002$
FMS	$r = 0.06$ $p = 0.72$	$r = 0.13$ $p = 0.43$
GC	$r = \mathbf{0.32}$ $p = 0.048$	$r = \mathbf{0.41}$ $p = 0.008$
Global Summary	$r = 0.25$ $p = 0.13$	$r = \mathbf{0.40}$ $p = 0.01$

Discussion & Conclusions

- Although GPT scores were not associated with everyday fine motor skills, ND GPT did correlate with motor skills overall.
- As such, GPT seems to lack ecological validity as a measure of fine motor skills in children.
- Instead, GPT performance may provide an indication of general impairment in motor functioning, supporting the sensitivity of the GPT to brain dysfunction in general.

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