



An Investigation of the Validity of the Motor-Free Short Form of the WISC-V



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Introduction

In the current COVID19 circumstances many psychologists are examining the possibilities of using videoconferencing platforms as a means of carrying out assessments, often referred to as tele-assessments.

The Wechsler Intelligence Scale for Children (WISC-V) is one of the most widely used tests for assessing cognitive ability and it consists of ten primary subtests which are used to calculate five Indexes assessing five cognitive domains: the Verbal Comprehension index (VCI); the Visual-Spatial index (VSI), the Fluid Reasoning Index (FRI), the Working Memory Index (WMI), and the Processing Speed Index (PSI). Seven subtests can be combined to form the Full Scale Intelligence Quotient (FSIQ) which is considered to be the best overall assessment of intelligence. The problem in using the WISC-V in a tele-assessment is that three of the subtests require writing in a supplied booklet or manipulation of objects (blocks) and this includes two subtests that are used in the FSIQ score. While there are some additional subtests that can be used as substitutions in the FSIQ score, only one substitution is allowed. This means that the FSIQ score cannot be calculated.

The ability to calculate the FSIQ score is important since this is the score most commonly used to estimate overall intellectual ability and is used to determine eligibility for placement in special schools or classes. It is therefore necessary to consider alternative scores that can be used to estimate overall ability, but that can be used in a teleassessment context. Piovesana, Harrison, and Ducat (2019) developed a motor-free short form of the WISC-V in order to allow clinicians to estimate the overall intellectual ability of children with motor impairments. The Motor Free Short Form uses five of the primary subtests along with one supplementary test of working memory (Letter-Number Sequencing). These can be combined to form a Verbal Comprehension Index (VCI-SF), a Perceptual Reasoning Index (PRI-SF), a Working Memory Index (WMI-SF), and a Motor Free Intelligence Quotient (MFIQ). The authors report reliabilities for all the Index scores which are all above .92 and are comparable to the reliabilities reported for the WISC-V.

While these results look very promising for the utility of the Motor Free WISC-V for teleassessment, there have been no reports of its use with children without motor impairments.

Objective

This study examined the utility of the Motor Free Short Form of the WISC-V with children who had been referred for assessment, but who reported no motor difficulties.

Method

Éirim maintains a database of scores for all persons who are referred. Identifying information is removed and only test scores, age and gender are retained. The database was searched for children who had completed the 10 primary subtests of the WISC-V and also the Letter-Number Sequencing subtest. With these subtest scores it was possible to calculate all the indexes of the WISC-V (VCI, VSI, FRI, WMI, PSI and FSIQ) and the index scores of the Motor-Free Short Form (VCI-SF, PRI-SF, WMI-SF, and MFIQ). Thirty-two children were identified and the index scores from the two versions of the WISC-V were compared.

Results

The means of the two scores were almost identical (FSIQ=91.22; MFIQ=91,19) but the FSIQ scores had a slightly wider range, ranging from 74-117 while the MFIQ ranged from 76-114.

Global Measure	Correlation with FSIQ
General Ability Index (GAI)	.96
Non-verbal Index (NVI)	.93
FSIQ test-retest (corrected)	.92
Motor Free IQ	.92

The correlation between the two Full Scale scores (FSIQ and MFIQ) was .92 which is comparable to other alternative measures of general ability derived from the WISC-V or the test-retest correlation of the FSIQ (Wechsler, 2014).

There was a similar number of scores where the MFIQ was larger (n=12) as when the FSIQ was larger (n=18). When the absolute difference was calculated, irrespective of which score was larger, the modal difference between the scores was 2 points.

In the vast majority of cases (31) the MFIQ score was within the 90% confidence interval of the FSIQ. The one case where the MFIQ score was outside the 90% confidence interval of the FSIQ was and the principal reason for the difference was an exceptionally low score on the processing speed subtest included in the Full Scale score.

Discussion

The Motor Free adaptation of the WISC V (Piovesana et al., 2019) was examined as a potential substitute for the WISC V Full Scale score when the WISC V was used in a teleassessment. The Motor Free adaptation produce three index scores and an overall ability score, the MFIQ. The Full Scale IQ and the MFIQ are similar, as we might expect, since 4 WISC V subtests are common to both. The correlation of .92 between the WISC-V Full Scale score and the WMIQ is comparable to that of other alternative scores reported in the WISC V manual. Where there are major differences in the scores, it is likely that the Coding subtest in the WISC V is significantly different to the other subtest scores. The motor free alternative does not include any measure of processing speed and if this is required then alternative measures which can be orally administered should be used.

Summary

- ✓ WISC-V is unsuitable for teleassessments
- ✓ A motor-free version is available
- ✓ The overall score is similar on both
- ✓ The Motor Free IQ may substitute

References

- Piovesana, A. M., Harrison, J. L., & Ducat, J. J. (2019). The development of a motor-free short-form of the Wechsler Intelligence Scale for Children-Fifth Edition. *Assessment, 26*(8), 1564-1572. doi: 10.1177/1073191117748741
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