Brief Report

WISC-III[uk]: Comparison of Indian and UK norms

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ABSTRACT

The aim of the current study was to compare the Wechsler Intelligence Scale for Children - Third Edition, UK adaptation (WISC-III[uk]) scores of Indian primary school children when Indian and UK norms are used. The sample consisted of 300 primary school children, within the age range of 6 years to 10 years and 11 months. The children were assessed using Children's Behaviour Questionnaire (CBQ), NIMHANS Index for Specific Learning Disabilities and WISC-III[uk]. The children scored 16, 21 and 20 points lower on Verbal, Performance and Full Scale scales, respectively when UK norms were used. The findings emphasize the need to establish national/ regional norms for assessing intelligence of children in India.
Key Words: Intelligence testing, WISC-III, norms

INTRODUCTION

Intelligence testing in children has wide educational and clinical applications. Converging evidence from various disciplines that human intelligence is context specific, in addition to evidence of the strong influences of culture on cognitive development provide the empirical basis for the thesis that intelligence is a culturally dependent construct.[1] An individual's performance on any task is influenced not only by demands of the task itself but also by the history and characteristics the individual brings into the task and by factors built into the setting in which the testing is carried out.[2] Research comparing Intelligence Quotient (IQ) scores of the American standardisation sample when applied to children from Canadian standardization sample showed a significant increase in scores in the latter group.[3] When applied to Navajo children, there was a significant drop in scores.[4]

Despite the widespread use of the Wechsler Intelligence Scale for Children - Third Edition (WISC-III) in intelligence testing in children, issues have often been raised regarding item and test score bias. The drawbacks of using norm-referenced tests in different cultures, particularly when the construct being measured is tied to specific cultural experiences, have been discussed.[5] Due to these concerns, standardization studies of the WISC-III have been carried out in several countries including the United Kingdom, Canada, France, Netherlands, Germany, Austria, Switzerland, Sweden, Lithuania, Slovenia, Greece, Japan, South Korea and Taiwan.[5] Differences in performance on such tests have been attributed to various cultural factors such as familiarity with the test stimuli; use of culturally-appropriate stimuli; inputs and training at home, etc.[6] Thus, it is accepted that different countries require different normative data as a basis for comparison.

It is important to know the differences in test performance when children are tested using norms developed outside a country, to those developed in that country. The current study compares the WISC-III[uk] profile of Indian primary school children when Indian and UK norms were used. The study was a part of a larger project that examined the WISC-III[uk] profile of Indian primary school children and developed the Indian adaptation and norms for WISC-III[uk] for use in India.[7]

METHODS

The sample consisted of 300 children, comprising of 30 boys and 30 girls for each of the 5 age groups ranging from 6 years to 10 years and 11 months (1st - 5th standard). The selected children were fluent in English, from state-syllabus English medium schools and those whose parents and teachers had given written informed consent for the study. Children who scored above the cut-off point on the Children's Behaviour Questionnaire, assessed as having Specific Learning Disability (SLD) and/ or having any significant physical disabilities/ chronic physical illnesses were excluded. A total of 485 children with average level of intellectual functioning were initially screened. Of these, twenty-one children were excluded because their parents did not consent to the study. Twelve children scored above the cut-off point on CBQ and 152 children were assessed to have SLD and were thus excluded from the study.

The Children's Behaviour Questionnaire (CBQ) is a screening tool used to distinguish between children with and without behavioural and emotional disorders.[8] It has satisfactory test-retest reliability (0.89) over a three-month period, discriminative value and sensitivity (0.83).[8] The scale has been used in several epidemiological and clinical studies in India for screening children with significant academic and behavioural problems.[7,9] The NIMHANS Index for Specific Learning Disabilities (SLD)[10] is used for confirming the clinical diagnosis of SLD as well as for ruling out SLD for the purpose of selection of normal groups.[7,11] This tool has a test-retest reliability of 0.53 and criterion validity ranging between 0.75 and 0.61.

WISC-III[uk] is an individually administered battery of 13 subtests designed to measure the intellectual ability of children aged 6 years to 16 years 11 months.[12] The WISC-III consists of five verbal subtests, five performance subtests, two supplementary subtests and one optional subtest. The WISC-III[uk] has high split-half reliability across different age groups for the Full Scale, Verbal and Performance IQ, viz., 0.96, 0.95 and 0.91, respectively. The test-retest reliabilities for the Full Scale, Verbal and Performance IQ were 0.94, 0.94 and 0.87 respectively. The WISC-III[uk] also has adequate concurrent and predictive validity across age groups for children with and without disabilities.[12] Moderate to strong correlations are reported with tests of school achievement and school grades.[13] The Indian adaptation of the WISC-III[uk] was developed by Hirisave and Panicker in 2005.[7] This tool has a test-retest reliability ranging between 0.55 to 0.90 and split-half reliability ranging from 0.75 to 0.95. Criterion validity varies between 0.25 and 0.41. Discriminant validity has also been established.[7]

Paired t-test was used to compare the IQ scores between UK and Indian norms.

RESULTS

Scores obtained by using Indian as well as UK norms followed a normal distribution, and there was a significant drop in scores when UK norms were used. When the WISC-III[uk] scores for the Indian and UK norms were compared (Table 1), significantly lower scores were obtained for Verbal IQ (16 points), Performance IQ (21 points) and Full Scale IQ (20 points), respectively when UK norms were used.

Table I: WISC-III[uk] IQ (UK norms) vs. WISC-III[uk] IQ (Indian norms) (N=300)

Scale		IQ Range	Mean IQ	SD	Paired t-test
Verbal IQ	India	59-150	100.00	15.00	30.20**
	UK	13-127	84.91	12.76	
Performance IQ	India	72-153	99.99	14.99	48.70**
	UK	54-121	78.65	11.54	
Full Scale IQ	India	63-159	100.00	15.00	43.62**
	UK	59-128	80.09	10.78	

** $p < 0.01$

DISCUSSION

The findings of the present study show that there is a significant disparity in results when norms other than those adapted for Indian culture are used to measure IQ in Indian children. Similar findings have been reported in other countries.[3,4] The American Psychological Association states that test publishers should encourage the development of local norms by test users when the published norms are insufficient. Local norms are appropriate for many testing purposes.[14, 15]

The difference in test performance between various populations does not necessarily indicate the superiority of one population over the other.[4,5] These findings should be viewed in the context of culture and previous experience, which influence test performance in different countries. For example, individual differences on the Vocabulary subtest are a result of the learning environment, interests and innate differences in learning ability.[5] In the current study, the lower scores obtained on the Vocabulary subtest can be attributed to the fact that English was the child's second language, and that there are disparities in classroom density, method of classroom teaching, differences in the educational systems, and the type and extent of stimulation received at home and school.

An incidental, yet highly relevant finding in the present study was the high prevalence (31%) of SLD in the screened sample. It indicates the need for early identification of SLD in India for helping such children and preventing later academic and emotional difficulties.

In conclusion, Indian children tend to score much lower when UK norms are used. If these norms are applied directly, then many children, who are average in intellectual functioning, will be wrongly assessed as having below average intellectual abilities. The findings emphasize the need to establish national/regional norms for assessing children in India.

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