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**Review of an Assessment Instrument**

**Beery VMI**

Beery VMI was created by Beery-Buktenica Development Test of Visual Motor-Integration. Beery VMI is a visual-motor integration test. Its purpose is to assess visual perception and motor coordination. The intended audience for this test is birth-eighteen years of age. The cost of the test is approximately two hundred fifty dollars.

There are two forms of this test: full and short forms. Full form consists of thirty problems and short form consists of fifteen problems. Administration time varies because testing can be concluded when the student makes three consecutive errors. Ten minutes is sufficient; however, if time and energy permit you can allow the student to try all forms. The age requirement for the short form is two-seven years of age and the full form is two-eighteen years of age.

The tester’s requirements include a qualification level assigned by Pearson Assessments. To locate these, refer to Pearson Assessments catalog of assessment tools for k-12 for additional information about qualification levels. For Beery VMI, the tester must be at or above level C. Testers must provide credentials indicating they have a bachelor’s degree in psychology, education, human relations or human resources, business, or a closely related field. For research, screening and other purposes the Beery VMI and its supplemental tests can be administered and scored by almost any adult who is familiar with the test materials and who has had supervised and practice with an experienced examiner. When examining the test results, the examiner will need an educational background and experience as a specialist in psychology, learning disabilities, or similar professions.

The norm characteristics were based on age, ethnicity, residence, region, and parent education. Representativeness was based on the US Census Representing Society. All ethnicities should be represented. The Beery VMI was normed in the US five times during a period of forty years on a total of more than 11,000 children with virtually no changes in the mean raw score for ages three through eighteen for the twenty four original forms between the first norming in 1964 and the fifth norming in 2003. Although somewhat different scoring systems have been used in the past, the results between various educations have correlated almost perfectly. The fifth norming group, conducted in the winter of 2002-2003 sampled 2,512 children who were obtained from the four major sections of the US. It is unlikely that another norming will be conducted for at least ten years.

To ensure reliability, the test results must measure with a high degree of consistency if they are to be valid and therefore useful. The reliability of a test requires that there be adequate consistency in one, the content of its items, two, the performance of the individuals administering the test, and three, scoring performed by different examiners. Beery VMI requires that there be adequate consistency in the content of its items, individual’s performance on the test when it is re-administered, and scoring performed by different examiners. Overall, reliability should be at least .70 for tests used for research purposes, .80 or higher for screening test such as the Beery VMI, and .90 or more for tests that serve as a basis for important decisions about an individual student. Beery VMI results have remained very consistent for many years. Earlier studies are considered applicable to the present edition and some study types with well-established results were not repeated for the fifth edition.

To ensure validity the test must be reliable or consistent in its measurement. A solid test must demonstrate content, concurrent, construct, and predictive validity and should control bias. There are four types of validity. Content validity is the degree to which the content of a test provides a representative sample of the behaviors the test is designed to assess. Content validity is established through procedures used in selecting items or tasks for a test. Thus, the content validity of the Beery VMI and its supplemental tests can be assessed to a great extent by evaluating the item construction and selection procedures of the norm group. Concurrent validity is evaluated by comparing the results of a test to those of other tests designed to measure similar constructs. Therefore, as part of the fourth edition morning study, the Beery VMI was correlated and administered in a counterbalanced order to 122 students from regular public school classrooms, kindergarten through fifth grade. The results gathered for the Beery VMI compared to those of other geometric form-copying tests show that correlations are only moderately high between the Beery VMI and the newer, less well-developed tests.

Construct validity is demonstrated by identifying several constructs thought to underlie test performance, then generating hypotheses based on these constructs, and finally, verifying the hypotheses by empirical data or logic. The constructs looked at the Beery VMI for chorological age, part-whole intercorrelations, part-whole hierarchy, intelligence, academic achievement, item and person separation, and disabling conditions. Chronological age is designed to measure changes in eye-hand coordination as children grow older; to be used as developmental scales. This was confirmed by the 2003 norming data. The correlations for the total norming sample between chronological age and the Beery VMI, Visual Perceptions, and Motor Coordination tests were .89, .84, and .84, respectively, all of which were significant beyond the .01 level of confidence. Part-whole intercorrelations are the abilities measured by the Beery VMI and its supplemental tests are related to one another because each supplemental test measures a part of what the Beery VMI measures. Thus, it is hypothesized that results from the tests will correlate at least moderately well with one another. This was confirmed during the fifth edition norming population dates; all correlations are significant beyond the .05 level of confidence. Part-whole hierarchy is each of the Beery VMI supplemental tests because it measures a part, but not the entirety, of the Beery VMI measures. This, it is hypothesized that there will be evidence that the Beery VMI is more demanding than either of the supplemental tests alone. On average, both the fourth and the fifth edition total norming populations, children made more correct responses on the Visual Perception and the Motor Coordination tests than on the Beery VMI. Thus, although, children have less time to complete the supplemental tests than to complete the Beery VMI they completed more items successfully on the supplemental tests.

The abilities of intelligence measured by Beery VMI and its supplemental tests are related to nonverbal aspects of intelligence. Thus, it is hypothesized that results from the test will correlate moderately well with nonverbal intelligence test results and less well with verbal intelligence test results. Although the Beery VMI correlates with intelligence, it correlates even more with chronological age, and it appears to be a more sensitive index than intelligence for some physiological/neuropsychological problems in child development. The abilities measured by the Beery VMI and its supplemental tests are related to academic achievement. Thus it is hypothesized that results from the tests will correlate moderately well with academic achievement test results. This hypothesis was not fully confirmed. A lower percentage was found between the Beery VMI and other tests that are related to academic achievement. The items of the Beery VMI and its supplemental tests measure similar respective traits and are effective in measuring persons. Thus, the Rasch-Wright item and person separation indices will be high. This hypothesis was confirmed. The abilities measured by the Beery VMI are sensitive to certain disabling conditions. Thus, it is hypothesized that Beery VMI results will be lower among populations with those conditions. Some of these conditions include traumatic brain injury (TBI), intellectually disabled, and partially sighted. No differences were found between children with delayed language and those with normal language development.

Predictive validity helps predict reading difficulties at school entry between letter identification and reading readiness, both of which rely heavily on visual and visual-motor skills. Generally, researchers have found the Beery VMI to be a valuable predictor, partially when used in combination with other measures. Comparison of a battery of pre-kindergarten test scores with the same children’s achievement at the end of kindergarten and at the end of first grade indicated that the Beery VMI, in combination with a test of auditory-vocal association, best predicted achievement. The Beery VMI was particularly able to identify high-risk boys in kindergarten who subsequently had reading difficulty.

The types of scores include raw, standard, scaled, and percentiles. Students receive one point for each imitated or copied item up to three consecutive failures. This is the raw score. The raw score is then converted into the standard score. There are three types of raw score to standard score conventions Beery VMI Raw, Visual Perception Raw, and Motor Coordination Raw.

Beery VMI more specifically helps to identify, through early screening, significant difficulties that some children have integrating, or coordinating, their visual-perceptual and motor (finger and hand movement) abilities. Through early identification, it is hoped that further difficulties can be prevented or remediated by appropriate educational, medial, or interventions. The results help to identify the need to bring services of various kinds to a child who appears to be at risk, which is another one of its important purposes. The Beery VMI may also be useful in serving the purpose of evaluating the effectiveness of whatever educational, psychological, and/or medical services are provided. Additional, it can serve a variety of purposes in educational, neuropsychological, and other forms of basic research.

According to the review found from the Mental Measures Yearbook, the authors only ‘met part of their goal’. The authors of Beery VMI provide useful and practical information, suggestions, and activities for facilitating the visual-motor development of children under the age of six. The authors state that the materials have sufficient validity but there is no other technical information provided. The authors conclude that future studies will be needed to determine the impact of these interventions on children’s visual-motor development.

In the extension of Beery VMI to include two year olds, it is not clear whether this version adequately measures visual-motor intergradations because much of the reliability and validity data were based on studies using earlier versions of the Beery VMI. More information on how the three newest items were generated is sufficient. The authors did not provide a solid rationale for why it was necessary to extend the standardization to two year olds. The results from a child of two years of age must be cautiously interpreted.

The Beery VMI 5th Edition is a useful tool for assessing visual-motor development in preschool and school-age children and assists in determining specific materials to enhance development. The supplemental subtests provide the most valid and economical visual-motor screening battery available for preschool to eighteen.

I do not feel the Berry VMI test is developmentally appropriate for younger children such as two, three and four year olds as their fine motor skills are still developing. Therefore they cannot perform the tasks to the desired levels required to gain a valid test result.

**References**

Beery, K. E., & Beery, N. A. (2004). *Beery-buktenica development of visual-motor integration*

(5th ed.). Minneapolis, MN: NCS Pearson Inc.