

## **Cross-Cultural Assessment and Measurement Issues**

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### **Abstract**

*This paper describes issues related to cross-cultural measurement, and the assessment of Aboriginal people. We discuss clinical implications as well as suggestions for completing assessments with different cultural groups. The issues described can be generalized to the measurement and assessment of Aboriginal people across the entire mental measurement spectrum. Much of the discussion however, will be focussed on the measurement of cognitive ability, and reviewing an established literature on the shortcomings of cognitive ability assessment amongst culturally diverse groups. Special care should be taken during the assessment procedure and when interpreting Aboriginal people's scores. Culture can have significant impact on the performance of a minority group on an instrument designed and standardized within the majority culture.*

Developing psychological measures that produce dependable results is a significant concern in psychological testing. Psychological measures are standardized, norm-referenced tests. In the present article, the terms: measurement instrument, measure, instrument, and test, will refer to standardized, norm-referenced tests. Behavioural researchers should be most interested in obtaining scores that are accurate, reliable reflections and best estimates of an individual's true level of functioning on any construct (Eason, 1991). To be both reliable and valid, measures must provide reproducible responses, that accurately measure what they purport to measure (Oosterheld & Haber, 1997). Researchers have ensured the reliability and validity of measures within the dominant culture and have developed many instruments that work very well for the assessment of many constructs. Often, however, measurement instruments are utilized with cultural groups for which proper normative or psychometric research has not been conducted.

### **What is Culture?**

Depending upon which cultural group an individual belongs, their experience may be quite different from that of someone living within reasonable proximity, but nested within a different cultural group. Marsella and Yamada (2000) define culture as:

*[shared learned meanings and behaviours that are transmitted from within a] social activity context for purposes of promoting individual/societal adjustment, growth, and development. Culture has both external (i.e., artefacts, roles, activity contexts, institutions) and internal (i.e. values, beliefs, attitudes, activity contexts, patterns of consciousness, personality styles, epistemology) representations. The shared meanings and behaviours are subject to continuous change and modification in response to changing internal and external circumstances (p. 12).*

As the definition suggests, culture influences many aspects of an individual's life; thus measurement of various psychological constructs is also likely to be influenced by cultural characteristics.

### **Canada's Aboriginal Diversity**

Approximately 1 million people (976,305 individuals to be exact) reported they were North American Indian, Metis, or Inuit in the 2001 Canadian Census (Census of Canada, 2001). The provinces of Ontario, British Columbia, and Manitoba have the highest populations of Aboriginal people in Canada (listed in descending concentration). The highest concentration of Aboriginal people is in the north and on the prairies (Census of Canada, 2001). Canada has approximately 2,284 reservations and 596 bands (Frideres, 1993). However, as reported in the Census, approximately 70% of the Aboriginal population does not reside on reservations and nearly one-half of Aboriginal people live in urban areas (Census of Canada, 2001). There is a large cultural diversity among the Canadian Aboriginal population as there are 11 different languages with more than 58 dialects (Frideres, 1993).

### **Reliability and Validity of Measurement Instruments**

Problems can arise when measurement instruments that have been developed by a dominant group are applied to groups for which they were not originally intended. This can include use with different age groups, a different gender, and different cultural groups. For example, it is easy to

imagine that a test designed to measure the cognitive ability in adults would not be readily usable with children. The instrument would need to be adapted to account for cognitive development and ability that varies across age. Moreover procedural issues like test format and reading or writing ability would need to be adapted. Proper psychometric analyses would be needed to ensure that the instrument was reliable and valid for use with children as well. When extending the use of a measurement instrument to a new population, care must be taken to ensure that results are interpreted with the utmost concern for cross-cultural effects.

Reliability refers to the degree in which an instrument measures consistently across occasions, across alternate forms of the same instrument, or within itself. Reliability is important because if an instrument is to accurately estimate an individual's level of functioning on a consistent construct, such as intelligence, it must be reliable. For example, let us suppose an individual was administered a test of cognitive ability on two occasions, by two independent assessors. On the first occasion, this individual received an IQ score that placed her/him in the average range. On the second occasion however, he or she received an IQ score that placed them in the borderline range. This could signify a very real problem or cognitive decline over time. However, if the difference in scores simply reflects an unreliable measurement instrument, then its clinical utility would be suspect. Each clinician would come to very different conclusions about the individual's cognitive ability.

A measurement instrument can be reliable (that is, it can provide consistent scores across time, or examiner), but fail to be valid. Validity refers to the degree in which an instrument is measuring the construct it purports to measure. There are a number of reasons why results may not be valid. The examinee may have difficulties understanding the language of the measure, or the measure may not capture the model it was developed on. For example, consider the Drinking Motives Questionnaire Revised (DMQ-R), a measure based on Cooper's (1994) model of drinking motives, which was developed and normed on children within the majority culture; it consists of four factors (social, enhancement, conformity, and coping motives for drinking). If this test is reliable and valid across cultures one would expect to find this four-factor model emerging in all cultural groups. The failure to find the same factor structure would suggest that the measure was not valid across cultures. We recently found exactly this outcome when exploring Cooper's (1994) model of drinking motives within a group of Mi'kmaq adolescents (Mushquash, Stewart, McGrath, & Comeau, 2005). Rather than the expected four factor model emerging, a three factor solution better fit the data with social and enhancement motives loading on the same factor.

The reason for this discrepancy could be due to the language of the measure. If this were the case, by consulting with community members who were skilled in both languages, the test items could be adapted and re-administered to determine if language was indeed the reason why the hypothesized model did not emerge. However, if upon re-administration the same three factor solution emerged, it might be because the constructs being measured do not exist in the same way within this culture. There may be inherent differences in the way that mainstream and Aboriginal cultures experience or manifest the constructs involved in drinking motives. Although the measure may be reliable, in this case, it is not valid. Reliability does not ensure validity, but validity cannot occur without reliability. That is, a measure may produce consistent scores across time or testing occasion, but this does not necessarily mean that it is capturing what it was intended to measure.

### **Cognitive Ability and Culture**

Several definitions of intelligence exist. Each includes environmental adaptation as an important facet of intelligence. An early definition of intelligence comes from Freeman who defined intelligence as "...adjustment or adaptation of the individual to his [or her] total environment, or to the limited aspects of it" (1955, pp. 149, 150; as cited in Sattler, 2001, p. 136). Wechsler defined intelligence as "the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his [or her] environment" (1958, p. 7; as cited in Sattler, 2001, p.136). More recently, Sternberg defined intelligence as "... mental activity involved in purposive adaptation to, shaping of, and selection of real-world environments relevant to one's life" (1986, p. 33; as cited in Sattler, 2001, p. 136). A commonality among these definitions is the nature of the nested relationship of individuals within their environment. How a person acts within their environment is directly related to the cultural knowledge that has developed to deal with that environment. The way in which intelligence would manifest in a test-taking situation is thus, inherently culturally-bound.

Every aspect of intelligence testing is impacted by culture (Sattler, 1992):

1. Test content
2. Test materials
3. Phrasing
4. Test directions and conditions
5. Scoring
6. Test administrator
7. Test behaviour

Thus, no test can be completely culture free or unbiased (Plank, 2001). This raises concern about the value and appropriateness of applying conventional assessment tools to individuals with different cultural backgrounds (Tseng, 2001). Despite the fact that culturally diverse individuals have different cultural backgrounds, critical decisions and treatment formulations are based upon clinical assessment instruments that have been devised for the general population (Butcher et al., 1998).

Invalid results or lower test scores have been found for Aboriginal children's performance on the Wechsler Intelligence Scale for Children (WISC). Generally, the research findings suggest that Aboriginal children score lower than non-Aboriginal children on the WISC Full Scale and Verbal Scale (Beiser & Gotowiec, 2000; Dolan, 1999; McShane, 1980). In contrast, these same children score similarly to their dominant culture counterparts on the WISC Performance Scale, as there is often a substantial score difference between the Verbal and Performance scales for Aboriginal children (Beiser & Gotowiec, 2000; McCullough, Walker, & Diessner, 1985; McShane, 1980; McShane & Plas, 1982; Morton, Allen, & Williams, 1994; Suzuki & Valencia, 1997; Whorton & Morgan, 1990).

Discrepancies in test performance on the Verbal and Performance scores have been attributed to social factors (Neisser et al., 1996), English proficiency (Beiser & Gotowiec, 2000), environmental factors (Neisser et al., 1996), socio-economic status (Beiser & Gotowiec, 2000; Neisser et al., 1996; Suzuki & Valencia, 1997), acculturation (Flanagan & Ortiz, 2001; Sattler, 2001), cultural factors (Beiser & Gotowiec, 2000; Neisser et al., 1996), and test content bias (Suzuki & Valencia, 1997).

Test content may compromise Aboriginal children's test performance as the test content may have high cultural loading, in which a given test requires specific knowledge or experience with mainstream culture and does not measure the entire range of cultural content possessed by the individual. The subscales that contribute to the Verbal scale have a high degree of cultural loading and a high degree of linguistic demand. These two factors could account for the poor performance on the Verbal scale for Aboriginal children (Flanagan & Ortiz, 2001).

Intelligence is entrenched in, and defined by, the culture it is intended to measure (Sattler, 1992). Consequently individuals from different cultures are unfairly penalized, as they may not experience the same culture as the dominant society (McShane & Plas, 1982). Tests of intelligence and

cognitive ability are "likely to measure a lower range of ability in diverse individuals because they apparently fail to sample cultural content that is part of the cognitive repertoire and processes available to the bicultural individual" (Flanagan, McGrew, & Ortiz, 2000, p. 299). Thus, individuals from different cultures are inaccurately assessed and their intelligence scores are generally suppressed, leading to inaccurate diagnostic decisions (Flanagan et al., 2000).

### **Clinical Challenges**

When utilizing standardized measures, clinicians conform to assumptions that the client is similar to the standardized population; this assumption is violated when assessing a client from another culture (Flanagan & Ortiz, 2001). In recognizing that experience is inherently bound in culture, Kleinman (1996) described the process of diagnosis as an interpretation of an interpretation. Christensen (2001) stated:

*The first level of interpretation is the process by which an individual translates his/her experience into culturally based categories, words, images, and feelings. The second level of interpretation is the process by which a clinician then translates a client's translation of his/her internal experience into the language of psychiatry (p. 52).*

Care must be taken to capture the meaning across the levels of translation, without losing any of the information during the interpretation. This diagnosis however, must be developed from the interpretation of a compilation of a number of sources of data. The assessment (which may ultimately result in a diagnosis) can be considered in terms of "four pillars", norm-referenced tests, interviews, observations, and informal assessment (Sattler, 2001), which make up the available "data-set" by which diagnoses are based.

### **Guidelines for a Culturally Sensitive Assessment**

Mental health service providers are often challenged with conducting clinical assessments with culturally diverse clients (Tseng, 2001, 2003). Empirical findings suggest that it is a challenge to assess Aboriginal clients in an unbiased manner, as culture plays a significant role in the assessment process. However, there are several guidelines that may aid the clinician in conducting a culturally sensitive assessment with Aboriginal clients.

Before beginning the assessment process with culturally diverse clients, clinicians should conduct a self-assessment of their own biases and prejudices (Paniagua, 1994). It is the clinicians' role to learn as much as possible about the culture and to recognize and acknowledge any stereotypes they may have about the client's ethnic group. Moreover, it is important for clinicians to acknowledge that not all culturally diverse groups subscribe to traditional customs (Sattler, 2001).

Also before initiating the assessment process, clinicians should determine the client's preferred language (Sattler, 2001). If clinicians do not speak the client's first language, then a referral to a clinician who speaks the client's first language should be made. If this option is not feasible, then an interpreter will be required (Hays, 2001).

During the initial meetings with the client, clinicians should establish rapport, respect, and a therapeutic relationship (Hays, 2001; Paniagua, 1994). Rapport and communication problems may exist when clinicians are of a different cultural group from the client. This may hinder the assessment process as difficulties in rapport and communication may impede the client's ability to respond to test items (Brescia & Fortune, 1989). In addition, culturally diverse individuals may not be familiar with test-taking skills and they may exhibit deficits in motivation, test practice, and reading and may have limited exposure to the values and experiences of the dominant culture (Brescia & Fortune, 1989; Flanagan & Ortiz, 2001). Consequently, it is important to establish cooperation, motivation, and interest in the assessment process from the client (Sattler, 2001). It is essential for clinicians working with Aboriginal clients to acknowledge possible barriers of distrust that may be apparent in Aboriginal communities (Beiser & Gotowiec, 2000). This distrust may be attributed to negative experiences with boarding/residential schools and the school curricula or the perception that the assessment is an attempt at assimilation without respect for the local culture (Brant, 1990).

For clinicians to effectively serve Aboriginal clients, clinicians must understand the contemporary and historical issues that are relevant to Aboriginal people (Barwick, Schmidt, & Hodges, 2004; Dillard & Manson, 2000; Paniagua, 1994). For instance, a number of Aboriginal people are likely to be impacted by social and economic factors such as limited educational opportunities, unemployment, poverty, difficulties accessing health care, substandard housing, poor sanitation and water quality (Royal Commission on First Nation People, 1995). Historically, First Nation people have had many political hardships, as the policies developed by the

Canadian government were attempts to suppress and eradicate culture among First Nation people and were intended to serve the political and economic interests of the dominant society (Titley, 1986) (for an overview of historical events and the impact on mental health see Kirmayer, Brass, & Tait, 2000). Attending to socio-environmental problems on the reservations, in addition to addressing the relationship between the Aboriginal communities and larger societies, will improve the validity of intelligence testing within this group (Beiser & Gotowiec, 2000).

A multi-method assessment approach is best practice regardless of which cultural group one is assessing. When working with culturally diverse clients, this multi-method approach serves to strengthen the validity of the assessment. A combination of interviews, observations, standardized measures, and informal assessment procedures provide a comprehensive assessment. When conducting an assessment it is important to gather clinical information from the child, parents, extended family members, and community members (Dillard & Manson, 2000; Hays, 2001; Sattler, 2001). Family and community members can provide invaluable information about the client's emotional, physical, social, and spiritual presentation (Dillard & Manson, 2000). More information can also be attained from consulting with health care providers (e.g. physicians), other professionals (e.g. teachers), and traditional healers from within the cultural group (Hays, 1994; Paniagua, 1994). Consulting with professionals who are familiar with the culture of the client provides invaluable information as to the clinical presentation within a cultural context (Dillard & Manson, 2000).

When assessing children, behavioural observations of the child both at home and school can provide a wealth of information (Dillard & Manson, 2000; Hays, 2001; Sattler, 2001). Observations of clients within their natural environments increase the reliability of assessment and strengthen rapport with the client (Hays, 2001). Observing the child at home or school allows the clinician to observe how the child performs on tasks that require attention, memory, planning, and decision-making; social interactions; and behavioural changes throughout the day (Sattler, 2001). These observations may address behaviours or performances that may not be assessed in a standardized tool. For instance, Dillard and Manson (2000) note that an Aboriginal child may exhibit poor performance on teacher observations, academic performance, and intellectual tests, but may demonstrate intricate beadwork designs during a home observation. Consequently, the severity of the deficits may be "related to cultural issues such as activity preferences and language rather than innate ability" (p. 240).



As noted, culturally diverse clients are typically assessed with traditional assessment measures (Pollack & Shore, 1980). Assessments are often plagued with complexity and ambiguity and involve special considerations to ensure an accurate assessment of culturally diverse clients (Butcher et al., 1998). When utilizing standardized measures, clinicians conform to assumptions that the client is similar to the standardized population; this assumption is violated when assessing a client from another culture (Flanagan & Ortiz, 2001). The misuse of standardized tests among culturally diverse clients can cause significant damage and can lead to misdiagnoses, over-diagnoses and under-diagnoses (Hays, 2001; Paniagua, 1994). However, "given that norms [for the Aboriginal population] are typically nonexistent and that such culturally appropriate instruments are also lacking, clinicians using standardized measures should approach results with caution" (Dillard and Manson, 2000, p. 239). Hays (2001) suggests that in order to decrease the bias in standardized tests, new norms for cultural groups would need to be generated. However, re-standardization is unlikely, due to the labour intensive nature of this endeavour.

Although there is controversy regarding the appropriateness of utilizing standardized measures with culturally diverse groups, it is important to recognize the utility of these instruments (Sattler, 2001). Paniagua (1994) indicates that eliminating these measures from clinical practice would be a "bad tactic." Rather, clinicians should incorporate cross-cultural skills when interpreting results. Furthermore, conventional assessment instruments can be utilized with culturally diverse children as long as the "standardized tests are administered and interpreted appropriately, taking into account the examinee's cultural and linguistic background and using only tests or portions of test that are valid" (Sattler, 2001; p. 675).

When selecting the appropriate measure to assess intelligence in culturally diverse clients, it is important to ensure a balance between empirical research findings and the consequences related to cultural and linguistic factors (Flanagan & Ortiz, 2001; Sattler, 1992). Also, the clinician should carefully consider the intelligence scale generated by different tests and to consider the cultural and linguistic dimensions of each measure. Measures of intelligence with the lowest cultural loadings and lowest linguistic demands should be selected over tests that are classified higher in these areas (Flanagan & Ortiz, 2001). Measures of intelligence that have been noted to minimize bias include Culture Fair Intelligence Test, Kaufman Assessment Battery for Children, Leiter International Performance Scale, and Progressive Matrices (Paniagua, 1994).

## Summary

Clinicians need to be cautious when interpreting standardized test scores of intelligence from culturally diverse clients. The clinician should acknowledge cultural factors in the assessment process and the influence these factors have on the assessment of cognitive ability. It is important to acknowledge that the guidelines for test interpretation among the dominant culture may not be pertinent to culturally diverse clients (Sattler, 1992). It is paramount that clinicians acknowledge how culture may influence the results of standardized tests (Hays, 2001). Not understanding the role that culture plays could lead to inaccurate results and analysis (Butcher et al., 1998). Moreover, conclusive decisions should never be based on the results one test. Rather, a sampling of cognitive abilities will provide an adequate picture of strengths and weaknesses (Sattler, 1992).

When using tests that have not been normed on the population in which they are being applied, assumptions about their utility are made. A clinician's interpretation may be confounded due to poor test validity within the culture. Given the complexity of the relationships described, it is not hard to imagine the potentially questionable clinical utility of measurement instruments developed for use with the majority culture, when applied to Aboriginal people. Obtaining scores that are accurate, reliable reflections and estimates of an individual's true level of functioning (on some construct) should be the goal of psychological measurement and assessment. Often, little attention is actually given to this point. Instead, reliance is put on the measurement instrument and assumptions made, which may inadvertently allow the instrument to define the construct it is measuring.

Measurement instruments should be examined thoroughly using the best psychometric methodologies available for the given purpose, to ensure reliability and validity, but most importantly, to ensure clinical utility. The results from any assessment should be interpreted with careful consideration of the effects culture may have, to ensure that the best possible assessment is completed for the client. This will assist in planning and developing appropriate plans of care, and ultimately be of most value to the client. Ideally, the data obtained from psychological assessments should be interpreted by someone who is familiar with the culture to ensure that a meaningful and appropriate interpretation is achieved (Tseng, 2001).

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