Research in Counseling: Are we enabling the bias that we advocate against?

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Presentation Objectives

• Discuss the differences between Test Bias and Test Fairness

• Discuss assessment bias from a Multicultural perspective

• Discuss Construct Irrelevant Variance and Construct Invariance
  • Definition
  • Prevalence in the counseling literature

• Discuss future implications for assessment and construct definition

• Discuss future implications for Multicultural literature and assessment development
Bias in Assessment

• Controversial issue of debate among many researchers
  • Writings and research on assessment bias boomed in the late 1960’s to early 1970’s
• Socio-historical change in the United States
  • Civil change in academic and occupational settings
  • Ethnic integration of institutions (e.g. academic environments)
• Instruments developed to assess various constructs (e.g. intelligence and academic achievement/ability)
  • Normed using predominately Caucasian samples of middle to higher socio-economic status.
    • Leads to advocation for diverse sample use and fair treatment in assessment development and score interpretation
Bias in Assessment

• Example: Sedlacek & Kim (1995)
  • “Using measures normed on White populations to assess non-White people”
  • A goal in assessment is to develop an instrument that is cross-culturally valid
  • If there are cross-cultural differences in cultural and racial experiences, it is unlikely that one instrument will work equally well for all
    • This speaks to Test Fairness and potential cultural biases in assessment
  • Does bias in assessment equate to unfairness?
Bias in Assessment

• Test Bias vs. Test Fairness
  • Test Bias- Occurs when groups or subgroups experience differences in scores or score interpretations on an instrument
    • Various types of bias in assessment
    • Current presentation is covering multicultural bias in assessment
    • Test bias is a component of test fairness
  • Test Fairness- Refers to the way in which group or subgroup differences in scores are interpreted and used to make decisions about the group
    • Example of Test bias vs. Test fairness
      • Ethnic comparisons and the achievement gap
        • Have achievement tests been reliably and validly shown to be accurate measures of achievement?-”Yes”
        • Is the variable ethnicity considered an important element in defining the construct achievement- “No”

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Bias in Assessment

• Construct-Irrelevant Variance
  • Occurs when there are differences in test scores based on factors that are unrelated to the construct being measured.
  • Construct-irrelevant variance exists when the "test contains excess reliable variance that is irrelevant to the interpreted construct" (Messick, 1989, p.34).
    • Two types of construct-irrelevant variance:
      • Construct-irrelevant difficulty: "aspects of the task that are extraneous to the focal construct make the test irrelevantly more difficult for some individuals or groups" (Messick, 1989, p. 34).
      • Construct-irrelevant easiness: "extraneous clues in item or test formats permit some individuals to respond correctly in ways irrelevant to the construct being assessed" (Messick, 1989, p. 34).
Bias in Assessment

  • Examined the relationship between inattention and achievement between Caucasian and African American students
  • One hypothesize was that attention problems may be a factor in the achievement gap between African American and Caucasian students.
  • The authors reported that being African American was a significant positive predictor of inattention.

• The constructs were achievement and attention
  • There were reported ethnic differences in achievement and attention
  • Reporting that ethnicity is a potential variable of influence to achievement and attention is a potentially prejudicial statement
    • Ethnicity is an irrelevant factor to attention and achievement as ethnic group membership is not part of the definition of either construct
Bias in Assessment

• Construct-Irrelevant Variance
  • Presence of factors unrelated to the construct being measured which facilitates differences in test scores
      • Factors included: The use of first graders as a sample (age)

    • The majority of the sample were students of lower socio-economic status

    • Teachers were asked to rate students inattentive behaviors using the Conners’ Teacher Ratings Scale
      • Teacher’s scores may be influenced by various systemic issues

    • Teachers were asked to rate students academic achievement based on their assessment of performance over the year (subjective reports)
      • Each factor a potential influence to differences in test scores between the groups

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Bias in Assessment

  - The teacher’s scoring may have been influenced by factors including but not limited to:
  - Racial or ethnic group biases
  - Without the use of concrete evidence of academic achievement in courses
    - Based on perceptions of inattentiveness, these children may have been scored lower in the area of achievement
    - May lead to incorrect inferences about a specific ethnic group (e.g. in this case regarding inattention and its relationship to achievement)
  - Diminishes the validity of the scores on the assessment and may potentially impact the decisions made about a particular group
Bias in Assessment

• How can test bias be minimized?
  • Assessment Development
    • Clearly define the construct
    • Item construction
      • Use language that can be generalized across diverse groups
      • Ensure that items are related to the construct being measured
      • Develop a large number of items so that item analysis does not significantly reduce the number of valid items
      • Testing for invariance
Bias in Assessment: Testing for Invariance

- Invariance is a fancy word for equivalence.
- Dimitrov (2010) advocated for factor invariance testing to ensure that a construct being measured has the same theoretical structure for each group.

- How is this done?
  - Use EFA to identify across two different samples to ensure that the same factor pattern exists for each group.
  - Test CFA models to establish whether known factor structures fit for different groups.
Bias in Assessment

- **Study Design**
  - Ensure the instrument utilized for the research assesses the intended construct
  - Researchers should be aware of the norming of the assessments chosen (e.g. ethnic diversity, or, socio-economic status)
  - Ensure that the sample is representative of the larger population and results can be generalizable

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Minimizing Cultural Bias in Assessment

• Be aware of the use of ethnicity as an independent variable
  • Essentially, this may imply that changes in the dependent variable are the result of ethnic group membership
  • Works against advocation efforts of diverse populations and may support discriminatory beliefs about multicultural groups

• When choosing an assessment
  • Be aware of the normed group as it may not have included a diverse sample
    • Results may not be able to be generalized to minority groups
  • Be aware of the cultural limitations of the assessment
    • Test administration, scoring, and interpretation
  • When utilizing assessments with diverse populations
    • Operate from a multicultural perspective
    • Consider assessment results in addition to other information before making recommendations for client treatment

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