MOVING TOWARD A CULTURALLY INVARIANT MEASURE OF ETHNIC IDENTITY

Among Diverse Adolescents: Refining the MEIM

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Abstract. Background, purpose. The present study examined the factorial invariance of a revised version of the Multigroup Ethnic Identity Measure (MEIM) across diverse ethnic groups.

Material and Methods. White and non-White ethnically diverse high school adolescents (N = 1979) from the Midwestern USA completed the MEIM and a self-esteem measure.
Results, conclusions. The results showed that this version of the MEIM did not measure ethnic identity similarly across ethnic groups. An exploratory factor analysis (EFA) yielded a nine-item, two-factor solution. Further multiple-group analyses with the EFA-generated model showed a tenable fit across both groups. Differences in ethnic identity related to ethnic group and gender were found. Additionally, ethnic identity was related positively to self-esteem. The new nine-item scale generated in this study, referred to as the MEIM-S, may provide school psychologists with an instrument that can be used to measure ethnic identity successfully with ethnically diverse populations.

Keywords: ethnic identity, measurement, Multigroup Ethnic Identity Measure.

There can be little argument that today’s classrooms reflect the increasing diversity of our nation. As we enter the new century, nearly half of all schoolchildren in the United States under the age of 18 are nonwhite (KewalRamani, Gilbertson, Fox, & Provasnik, 2007). As noted by Rogers (1998) “enrollments at elementary school systems from the country’s 25 largest cities suggest that all have minority student majorities” (p. 265). A similar trend in the increase of ethnically/racially diverse public school educators is also evident. In 1981, for example, 8.5% of regular and special educators were nonwhite; by the 2007-2008 academic year, this number grew to 16.9% (Coopersmith, 2009). Clearly, the racial/ethnic composition of children and educators in the U.S. is changing.

Given that diversity is a reality in education today, one of the primary challenges facing schools is the need to improve educational outcomes for an increasingly racially- and ethnically- diverse population of students. Indeed, Sandoval, Gutkin, and Naumann (1997) reported that schools are in a crisis state regarding the education of minority students residing in the United States. Low scholastic aptitude test scores, grade point averages, attendance statistics, and high dropout rates reflect this phenomenon (KewalRamani et al., 2007; Warikoo & Carter, 2009).

School psychologists are in an optimal position to help facilitate the success of all students, including racial/ethnic minority children and youth. Despite a call for sound psychological services responsive to the needs of all students, research pertinent to issues of diversity has been limited. While the need for school psychologists to be culturally competent has been emphasized, “there has been almost no discussion of diversity issues in school psychology research” (Henning-Stout
A more recent examination of the diversity literature in school psychology journals indicated that a mere 10.6% of the articles have diversity as a focus, despite the emphasis placed on this issue by the National Association of School Psychologists (NASP) (Miranda & Gutter, 2002). As Frisby and Reynolds (2005) pointed out, only ten of the 229 collective chapters in the Handbook of School Psychology (Reynolds, & Gutkin, 1999), Best Practices in School Psychology IV (Thomas & Grimes, 2002), and Children’s Needs II (Bear, Minke, & Thomas, 1997) were devoted to multicultural issues.

One area of inquiry with significant potential value for school psychologists is work pertaining to ethnic identity. Ethnic identity has been found to correlate positively and significantly with both academic achievement and self-esteem across diverse ethnic minority groups (e.g., Grossman, Wirt, & Davids, 1985; Lorenzo-Hernandez & Ouellette, 1998; Okagaki, Frensch, & Dodson, 1996; Paul & Fisher, 1980; Phinney, 1992; Roberts et al., 1999; Smith, Levine, Smith, Dumas, & Prinz, 2009; Smith, Walker, Fields, Brookins, & Seay, 1999). As ethnic minorities increase, the issue of ethnic identity is likely to become more salient for both members of ethnically diverse groups and European American group members.

Although ethnic identity has important psychological implications for individuals, there has been little consensus on exactly what ethnic identity is or how it should be measured (Phinney, 1990). Much of the research done in this area has been conducted in the fields of sociology and anthropology, not education and school psychology. Often, writers from those fields have focused on theoretical issues rather than on problems of definition and measurement. A better understanding of ethnic identity requires both a clear, consistent conceptualization of the construct and a reliable measure of that construct.

**Definition of Ethnic Identity**

Ethnic identity is a complex, multidimensional construct that is thought of as an “enduring fundamental aspect of the self” (Phinney, 1996, p. 922). It includes a sense of membership in an ethnic group and the attitudes and feelings associated with that membership (Bernal & Knight, 1993; Keefe, 1992; Phinney, 1990; Tajfel, 1981). Some researchers have emphasized feelings of belonging and commitment, the sense
of shared values and attitudes, positive attitudes towards one’s group, familiarity with the history and culture of one’s ethnic group, and involvement in cultural practices (Phinney, 1990; Phinney & Ong, 2007).

Much of the research to date suggests that ethnic identity is a process: individuals progress from an early point in which one’s identity is taken for granted, through a period of exploration into the meaning and implications of one’s group membership, to an achieved ethnic identity that reflects a secure and confident sense of oneself as a member of a group. An achieved ethnic identity, however, is not static; individuals are likely to reexamine their ethnicity throughout their lives (Phinney, 2006) and thus may re-experience earlier developmental levels (Kinket & Verkuyten, 1997; Parham, 1989).

**Measurement of Ethnic Identity**

To date, many models or measures of ethnic identity development have been group-specific (e.g., Felix-Ortiz, Newcomb, & Myers, 1994; Jackson, 1975; Parham & Helms, 1981; Ruiz, 1990; Suinn, Ahuna, & Khoo, 1992). Because of the differences in how these instruments measure the concept of ethnic identity, as well as possible differences among various ethnic and racial groups, results from such studies cannot be compared and contrasted directly. Also, few studies have looked in detail at ethnic identity among European Americans, often assuming that ethnicity is a subject about which most have not given much thought and about which they are not very clear. Indeed, according to some researchers (e.g., Alba, 1990; Waters, 1990) many White individuals may not think of themselves as “ethnic.” For example, Andrews and Lochner (1989) conducted interviews among many White adolescents who assumed that the term “ethnic group” referred only to minority group members and not to themselves. Thus, researchers (e.g., Atkinson, Morten, & Sue, 1993) have cautioned about generalizing research results across ethnic and racial groups, particularly in regard to European Americans.

Phinney (1992), however, hypothesized that it is possible to assess ethnic identity development accurately based on the notion that identification as a member of a particular ethnic or racial group, participation in cultural traditions, and a sense of belonging are central to the development of an achieved ethnic identity for everyone. Thus, according to
Phinney, ethnic identity is a general phenomenon that is relevant across all groups. To that end, Phinney (1992) developed the Multigroup Ethnic Identity Measure (MEIM) as a means of measuring identity development in White and non-White ethnic groups.

Designed to measure ethnic identity within and between ethnic groups, the MEIM consists of 20 items. Fourteen items were developed to assess the core components of ethnic identity: Ethnic Affirmation and Belonging (5 items), Ethnic Identity Achievement (7 items), and Ethnic Behaviors (2 items). The remaining 6 items were developed to assess the responses that members of one group have toward groups other than their own (Other Group Orientation). This construct is considered to be independent from ethnic identity.

Subsequent research with diverse groups has been conducted with the MEIM, wherein it has been used in its original form (e.g., Phinney & Alipuria, 1990) as well as altered in length (e.g., Lorenzo-Hernandez & Ouellette, 1998) and/or reworded (e.g., Reese, Vera, & Paikoff, 1998). More recently, researchers have examined the use of the MEIM in samples from cultural contexts outside of the United States including Australia (Dandy, Durkin, McEvoy, Barber, & Houghton, 2008), China (Lee, Falbo, Doh, & Park, 2001), Lebanon (Kazarian & Boyadjian, 2008) and Zimbabwe (Worrell, Conyers, Mpofu, & Vandiver, 2006).

Since its publication, the MEIM (Phinney, 1992) has been the subject of numerous empirical investigations examining its structure and psychometric properties (e.g., Lee et al., 2001; Phinney & Devich-Navarro, 1997; Ponterotto, Gretchen, Utsey, Stracuzzi, & Saya, 2003; Worrell, 2000). One of the foremost studies was conducted by Roberts et al. (1999) wherein the structure and construct validity of the MEIM was examined among 5,423 young adolescents (12-14 years) from various ethnic groups in the southwestern United States. Their confirmatory factor analyses (CFA) of data for European American, African American, and Mexican American ethnic groups yielded a 12-item, two-factor structure that corresponded to two components of ethnic identity. The first factor (7 items) consisted of commitment and a sense of belonging to an ethnic group, together with pride and positive feelings about the group. The authors referred to this factor as Affirmation, Belonging, and Commitment. The second factor, Exploration (5 items), involved the process through which individuals explore, learn about, and become involved in their ethnic group.
According to Roberts et al., these two factors are distinct but correlated. Additionally, the authors reported that similar patterns in magnitude of factor loadings were found across groups, suggesting that the revised MEIM could be used as a global composite index of ethnic identity among adolescents of all ethnic groups.

Additional studies have been conducted utilizing the 12-item version of the MEIM (e.g., Cavazos-Rehg & DeLucia-Waack, 2009; Kazarian & Boyadjian, 2008; Phinney & Baldeomar, 2006, as cited in Phinney & Ong, 2007; Swartz, Zamboanga, & Jarvis, 2007; Yancey, Aneshensel, & Driscoll, 2004). In general, these examinations have proven inconclusive. The studies have produced mixed evidence regarding the structure of the ethnic identity measure, in part due to changes made to the items (e.g., wording) and response options. Questions were also raised due to differences in statistical methodological approaches used to analyze the revised MEIM.

A careful scrutiny of the Roberts et al. (1999) study revealed that statistical manipulations were conducted in order to obtain a factor structure that fit across differing ethnic groups. In general, the results of their CFA indicated that the residuals were high (i.e., more than 5% of the residuals were statistically significant) and revealed that the model Roberts et al. obtained in their exploratory factor analysis (unconstrained model) did not explain adequately the observed variance. The authors freed the path between one of the items (#3) and its respective factor, which would statistically improve the fit in all groups. Results of those analyses indicated that the fit of the unconstrained model improved significantly, but the residuals for the European American group remained high. Thus, to improve the fit, residuals among items were allowed to covary for this group. In total, five error covariances for the European American group were added to the unconstrained model in order to obtain an adequate fit. According to Kline (1998), however, it is sensible to do so only if the unconstrained model is viable for each sample. If not, then the indicators may not measure the same factors in each group. In Roberts et al.’s study, the unconstrained model was not viable for each group. Basically, this resulted in a different model for the European American than for the other two groups. Additionally, the five error covariances that were introduced for this group were neither hypothesized nor explained by the authors.
Roberts et al. (1999) also revealed that their multiple-group analyses were unsuccessful in confirming the equivalence of the factor loadings of their model across groups. Indeed, when trying to fit a less restrictive model, which consisted of freeing all paths found to be different significantly from the European American group, the authors obtained an untenable solution. They reported that “the equality of factor loading was rejected” (p. 312), indicating that the assumption of invariance across ethnic groups was not tenable.

The Use of the MEIM with Whites

The construct of ethnic identity, and its measurement, is based on the assumption that ethnicity has salience for the individuals involved. This issue is yet to be resolved, however, among most Americans of European background. While Phinney (1992) and Roberts et al. (1999) have posited that the MEIM can be used with both White and non-White ethnic groups, it is noteworthy that the extant literature reveals that the MEIM has been used mostly with ethnically diverse samples. For example, of 14 studies published in 1998-2000, only five included White participants. Additionally, during the same time period, several dissertation studies (n = 18) included the MEIM as a major research tool; however, only a few of these studies referenced the use of the MEIM instrument with White individuals. Before the MEIM should be accepted as an effective instrument that measures ethnic identity similarly across multiple groups, it merits more specific analysis of its use with both White and non-White ethnic groups.

Purpose of the Study

While there is wide agreement that ethnic identity contributes to psychological well-being and functioning for ethnic group members (e.g., Grossman et al., 1985; Lorenzo-Hernandez & Ouellette, 1998; Martinez & Dukes, 1991; Paul & Fisher, 1980; Phinney, 1990; Phinney, Chavira, & Williamson, 1992; Roberts et al., 1999; Smith, Walker, Fields, Brookins, & Seay, 1999; Verkuyten & Lay, 1998), ethnic identity may not be experienced in the same way for European American and other ethnically diverse groups. The primary purpose of the present study, therefore, was
to determine whether the construct of ethnic identity, as measured by the MEIM-R, is similar among adolescents who identify as members of White or non-White ethnic groups. Similar dichotomous groups have been employed in previous studies (e.g., Gloria & Hird, 1999). A secondary purpose of the study was to examine the relationship of ethnic identity to various demographic and psychological variables, including age, gender, grade, academic achievement, and self-esteem.

**METHOD**

**Participants**

Participants were 1979 students (grades 10-12) from two of the four public high schools in a medium-sized city in the midwest USA. Due to the school district’s open enrollment policy, students at both schools were drawn from throughout the city. Thus, the two schools were similar in size (in each school, student enrollment equaled approximately 2000 students) and ethnic background of students (predominantly White). Through a random selection of intact classes, 1018 students in school A were asked to participate in the study; actual participants equaled 891 students. One hundred twenty-seven students declined to participate or returned unusable packets. This represented an 87 percent usable return rate. In school B, all students present in school on the day of the study (1773) were invited to participate. Surveys were completed by 1088 students; incomplete or nonusable surveys totaled 685, equaling a 61 percent usable return rate. The overall usable return rate for the study equaled 71 percent.

The sample consisted of participants from several ethnic groups, including American Indian (.1 %), Black or African American (4.5 %), Asian or Asian American (6.8 %), Latino (3.1 %), White or European American (72.2 %), mixed (7.3 %), and other (5.3 %). Some of the participants (.7 %) did not report ethnicity and therefore were not included in subsequent analyses. Ages ranged from 14 to 21 years, with an average age of 15.9 years. Females made up 52.3 percent of the sample. As for grade levels, 36 percent were sophomores, 33 percent were juniors, and 31 percent were seniors. Finally, self-reported cumulative grade point
averages were provided. The response choices and the percentage of participants in each category included:

- A = 4.0 (14.4 %), B+ = 3.5 to 3.99 (34.8 %), B = 3.0 to 3.49 (25.1 %), C+ = 2.5 to 2.99 (10.8 %),
- C = 2.0 to 2.49 (.4 %), D+ = 1.5 to 1.99 (.7 %), D = 1.0 to 1.49 (.5 %), and F = below 1 (.5 %).

**Instruments**

**Multigroup Ethnic Identity Measure.** The MEIM (Phinney, 1992) is designed to be used with diverse samples of adolescents and young adults and assesses the extent to which people identify with their own ethnic group. The MEIM has a reported internal consistency reliability of .81 with high school students and .90 with college students (Phinney, 1992). The measure consists of 20 items (see Table 1), 14 of which are designed to assess three components of ethnic identity: affirmation and belonging; ethnic identity achievement; and ethnic behaviors. The remaining six MEIM items assess orientation toward other ethnic groups. Responses are rated on a four-point scale ranging from 1 = strongly disagree through 4 = strongly agree. Negatively-worded items are reverse-coded.

A revised version of the MEIM (MEIM-R) was proposed by Roberts et al. (1999). The authors deleted those items designed to assess orientation toward other ethnic groups, and administered the remaining 14 items. Based on the results of their exploratory factor analysis, the authors reported a two-factor solution comprised of twelve items (see Table 1). These factors were named Affirmation-Belonging-Commitment and Exploration. The first factor included five items from the original affirmation/belonging subscale and two items referring to ethnic identity achievement. Factor 2 was made up of three items from the original ethnic identity achievement subscale and two items from the original ethnic behaviors subscale. Among a high school population consisting of students from White and non-White ethnic groups, overall reliability for the 12-item measure and the two factors were .85, .84, and .70, respectively.

For the purposes of this study, the items included on the MEIM-R were used for analysis. Scores were computed for each factor and the overall scale by summing across appropriate items and dividing by the number of these items. Higher scores indicated a more achieved identity.
<table>
<thead>
<tr>
<th>Item</th>
<th>Phinney (1992)</th>
<th>Roberts et al. (2001)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. I am happy to be a member of the group I belong to.</td>
<td>Affirm-Belong</td>
<td>Affirm-Belong-Commit</td>
</tr>
<tr>
<td>11. I have a strong sense of belonging to my own ethnic group.</td>
<td>Affirm-Belong</td>
<td>Affirm-Belong-Commit</td>
</tr>
<tr>
<td>14. I have a lot of pride in my ethnic group and its accomplishments.</td>
<td>Affirm-Belong</td>
<td>Affirm-Belong-Commit</td>
</tr>
<tr>
<td>18. I feel a strong attachment toward my ethnic group.</td>
<td>Affirm-Belong</td>
<td>Affirm-Belong-Commit</td>
</tr>
<tr>
<td>20. I feel good about my cultural or ethnic background.</td>
<td>Affirm-Belong</td>
<td>Affirm-Belong-Commit</td>
</tr>
<tr>
<td>1. I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs.</td>
<td>EI Achievement Exploration</td>
<td></td>
</tr>
<tr>
<td>3. I have a clear sense of my ethnic background and what it means to me.</td>
<td>EI Achievement Affirm-Belong-Commit</td>
<td></td>
</tr>
<tr>
<td>5. I think a lot about how my life will be affected by my ethnic group membership.</td>
<td>EI Achievement Exploration</td>
<td></td>
</tr>
<tr>
<td>8. I am not very clear about the role of my ethnicity in my life.</td>
<td>EI Achievement</td>
<td>-----</td>
</tr>
<tr>
<td>10. I really have not spent much time trying to learn about the culture and history of my ethnic group.</td>
<td>EI Achievement</td>
<td>-----</td>
</tr>
<tr>
<td>12. I understand pretty well what my ethnic group membership means to me, in terms of how to relate to my own group or other groups.</td>
<td>EI Achievement Affirm-Belong-Commit</td>
<td></td>
</tr>
<tr>
<td>13. In order to learn more about my ethnic background, I have often talked to other people about my ethnic background.</td>
<td>EI Achievement Exploration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Eth Behaviors</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>2.</td>
<td>I am active in organizations or social groups that include mostly members of my own ethnic group.</td>
<td>Eth Behaviors</td>
</tr>
<tr>
<td>16.</td>
<td>I participate in cultural practices of my own group, such as special food, music, or customs.</td>
<td>Eth Behaviors</td>
</tr>
<tr>
<td>4.</td>
<td>I like meeting and getting to know people from ethnic groups other than my own.</td>
<td>OGO</td>
</tr>
<tr>
<td>7.</td>
<td>I sometimes feel it would be better if different ethnic groups didn’t try to mix together.</td>
<td>OGO</td>
</tr>
<tr>
<td>9.</td>
<td>I often spend time with people from ethnic groups other than my own.</td>
<td>OGO</td>
</tr>
<tr>
<td>15.</td>
<td>I don’t try to become friends with people from other ethnic groups.</td>
<td>OGO</td>
</tr>
<tr>
<td>17.</td>
<td>I am involved in activities with people from other ethnic groups.</td>
<td>OGO</td>
</tr>
<tr>
<td>19.</td>
<td>I enjoy being around people from ethnic groups other than my own.</td>
<td>OGO</td>
</tr>
</tbody>
</table>

**Note.** Affirm-Belong = Affirmation & Belonging; Affirm-Belong-Commit = Affirmation, Belonging, & Commitment; EI Achievement = Ethnic Identity Achievement; Eth Behaviors = Ethnic Behaviors; OGO = Other Group Orientation

**Ethnic Identity Self-Esteem Scale (EISES).** Participants’ self-esteem was measured using a 16-item scale based on the Collective Self-Esteem Scale (CSES) (Luhtanen & Crocker, 1992). The CSES, which was designed to measure social group membership, has a reported internal consistency reliability of .85 with college students (Luhtanen & Crocker, 1992). In the present study, scale items were revised to refer specifically to one’s ethnic group membership (e.g., “I feel good about the ethnic group I belong to”), self- and perceived other-evaluations of one’s ethnic group (e.g., “I am a worthy member of the ethnic group I belong to” and “In
general, other people respect the ethnic group I belong to,” respecti-
vely), and the importance of one’s ethnic group membership to one’s
self-concept (e.g., “The ethnic group I belong to is an important reflec-
tion of who I am”). This type of modification has been used successfully
by others (Crocker, Luhtanen, Blaine, & Broadnax, 1994; Ethier & Deaux,
1994; Verkuyten & Lay, 1998). For each item, students’ responses ranged
from 1 (strongly disagree) to 5 (strongly agree). Higher scores reflected
greater levels of ethnic self-esteem.

**Demographic information.** All participants provided additional
demographic information such as age, gender, grade in school, and self-
reported cumulative grade point average.

**Procedures**

The data were collected in intact classes, monitored by classroom tea-
chers. In both schools, the instruments were presented in the same order
to all students: the MEIM, the EISES, and the demographic information
sheet. Classroom teachers were given a set of directions to follow, which
included handing out the survey materials, reading a set of directions to
the students, and collecting the finished materials. Participants were ins-
tructed to complete the items in the order in which they were presented
without going back to previous pages. Completion of the questionnaires
required approximately fifteen minutes of classroom time.

**Confirmatory Factor Analyses**

The primary purpose of this study was to explore whether ethnic
identity as measured by the MEIM-R was the same across White and
non-White ethnically diverse groups. To examine this, confirmatory fac-
tor analyses (CFA), including multiple-group analyses (Kline, 1998), were
conducted. The CFAs were performed with LISREL 8.30 (Jöreskog & Sör-
bom, 2000) using maximum likelihood (ML) estimation. ML estimation
has been shown to be robust when data are not multivariate normal
(Hoyle & Panter, 1995).

The CFA and multiple-group analyses were evaluated using stan-
dard goodness-of-fit indices (see Hoyle & Panter, 1995; Hu & Bentler,
1999; Kline, 1998). The most common of these is the chi-square test.
When statistically significant, this indicates a poor model fit. Because the chi-square test is confounded by sample size, other fit indices are also considered to assess model fit. Indices used in this study included the relative fit index (RFI), the non-normed fit index (NNFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). Values of .9 and above for the RFI, NNFI, and CFI are generally considered indicative of a good fit. For the RMSEA, values of .05 or below indicate a close fit.

One application of multiple-groups analyses is to provide a statistical test of whether the same factor structures and values hold for more than one group or whether separate models are needed for different groups (McWhirter, Hackett, & Bandalos, 1998). The multiple-group analyses used in this study involved systematically relaxing values simultaneously across the White and non-White groups being compared. This was accomplished in four steps. First, the two groups were required to have all estimation parameter values (factor loadings, error variances, and correlations between the latent constructs) constrained (i.e., held the same). If this first step failed to confirm the proposed model, a second step was conducted in which factor loadings were allowed to vary among the two groups while the error variances and correlations were held constant. If this step also failed to confirm, a third step was conducted wherein the error variances were also allowed to vary. Pending the failure of the model to confirm, a fourth and final step was conducted in which all estimation parameter values were unconstrained; thus, the two groups were required to have models with the same factor structure only. The computation of chi-square difference tests between adjacent steps were conducted to determine the degree to which the freeing of constraints at each step resulted in significant improvement of fit for the model.

**RESULTS**

**Confirmation of the Roberts Model**

Results of the multiple-group CFA for the factor analytical results reported by Roberts et al. (1999) (hereafter referred to as the Roberts model) are summarized in Table 2. The initial test of the model, wherein everything was held invariant, revealed that the current data did not fit
very well. The chi square value was statistically significant, indicating a poor model fit. The remaining goodness-of-fit indices were below the minimum cutoff of .90. As indicated in Table 2, each subsequent step of the multiple-group analysis resulted in a statistically significant improvement in the fit of the model. However, a review of the goodness-of-fit indices at all four steps supported the conclusion that the Roberts model was not invariant across the White and non-White participants in this study. CFAs were also run to test the adequacy of the Roberts model with each group separately. As shown in Table 3, all goodness-of-fit indices failed to satisfy the standard cutoff criteria. This showed a less-than-adequate fit to the Roberts model for each of the two participant groups.

### Table 2. Results of Multiple-Group Comparisons with Roberts Model

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>CFI</th>
<th>RFI</th>
<th>NNFI</th>
<th>$\chi^2$ diff</th>
<th>df diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everything invariant</td>
<td>1025.32</td>
<td>131</td>
<td>.86</td>
<td>.84</td>
<td>.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor loadings free</td>
<td>973.61</td>
<td>119</td>
<td>.87</td>
<td>.83</td>
<td>.85</td>
<td>51.71**</td>
<td>12</td>
</tr>
<tr>
<td>Factor loadings &amp; error variances free,</td>
<td>945.61</td>
<td>107</td>
<td>.87</td>
<td>.82</td>
<td>.85</td>
<td>28.00*</td>
<td>12</td>
</tr>
<tr>
<td>same correlations only</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same factor structure only</td>
<td>930.84</td>
<td>106</td>
<td>.87</td>
<td>.82</td>
<td>.86</td>
<td>14.77**</td>
<td>1</td>
</tr>
</tbody>
</table>

* $p < .01$. ** $p < .005$.

### Table 3. Results of CFA for Roberts Model for each Individual Group

<table>
<thead>
<tr>
<th>Sample</th>
<th>$\chi^2$</th>
<th>df</th>
<th>N</th>
<th>p</th>
<th>$\chi^2$/df</th>
<th>RMSEA</th>
<th>CFI</th>
<th>RFI</th>
<th>NNFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>668.23</td>
<td>53</td>
<td>1429</td>
<td>.00</td>
<td>12.61</td>
<td>.096</td>
<td>.85</td>
<td>.80</td>
<td>.84</td>
</tr>
<tr>
<td>Non-White</td>
<td>262.61</td>
<td>53</td>
<td>550</td>
<td>.00</td>
<td>4.95</td>
<td>.086</td>
<td>.90</td>
<td>.85</td>
<td>.88</td>
</tr>
</tbody>
</table>

### Exploratory Factor Analyses

Given that the CFAs failed to confirm the Roberts model, exploratory factor analyses (EFA) with oblimin rotation were conducted in SPSS (SPSS 2000) to determine the factor structure. Oblimin rotation was used
because both Phinney (1992) and Roberts et al. (1999) reported correlated factors and employed this specific rotation. The final factor solution was accepted based on consideration of several criteria including eigenvalues greater than 1.0, scree plot analysis, factor loadings of .30 or above, and simple structure. The items loading on each factor for each group are reported in Table 4. A two-factor solution emerged for both the White and non-White groups, however, these solutions were different. Specific differences in factor loadings for the two groups included the following: item 2 loaded on Factor 2 for the non-White sample but did not load on either factor for the White group; item 3 loaded on Factor 2 for the White sample while it double-loaded for the non-White sample; and item 12 double-loaded for both groups. Based on these results, items 2, 3, and 12 were dropped from the MEIM-R to create a new version of this scale, hereafter referred to as the Sobansky model. Given the strong similarity to the factors of the Roberts model, the same names were used to identify the factors in the Sobansky model (i.e., Affirmation-Belonging-Commitment and Exploration).

Table 4. Exploratory Factor Analysis with Oblimin Rotation, Factor Loadings for the MEIM Items by Groups

<table>
<thead>
<tr>
<th>MEIM Items</th>
<th>Non-White</th>
<th></th>
<th></th>
<th>White</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Feel good about culture</td>
<td>20</td>
<td>.81</td>
<td>-.11</td>
<td>-.72</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>Strong attachment to group</td>
<td>18</td>
<td>.58</td>
<td>.25</td>
<td>-.69</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>Pride in ethnic group</td>
<td>14</td>
<td>.73</td>
<td>-.01</td>
<td>-.69</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Sense of belonging to group</td>
<td>11</td>
<td>.51</td>
<td>.25</td>
<td>-.62</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>Happy to be member</td>
<td>6</td>
<td>.64</td>
<td>-.04</td>
<td>-.61</td>
<td>-.12</td>
<td></td>
</tr>
<tr>
<td>Understand group membership</td>
<td>12</td>
<td>.38</td>
<td>.34</td>
<td>-.07</td>
<td>.30</td>
<td></td>
</tr>
<tr>
<td>Spend time to learn</td>
<td>1</td>
<td>-.08</td>
<td>.65</td>
<td>-.07</td>
<td>.70</td>
<td></td>
</tr>
<tr>
<td>Talked to others about group</td>
<td>13</td>
<td>-.06</td>
<td>.66</td>
<td>-.01</td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>Clear sense of ethnic background</td>
<td>3</td>
<td>.38</td>
<td>.32</td>
<td>.19</td>
<td>.50</td>
<td></td>
</tr>
<tr>
<td>Think about group membership</td>
<td>5</td>
<td>.02</td>
<td>.56</td>
<td>-.04</td>
<td>.48</td>
<td></td>
</tr>
<tr>
<td>Participate in cultural practices</td>
<td>16</td>
<td>.19</td>
<td>.47</td>
<td>.23</td>
<td>.34</td>
<td></td>
</tr>
<tr>
<td>Active in ethnic organizations</td>
<td>2</td>
<td>.13</td>
<td>.40</td>
<td>.24</td>
<td>.11</td>
<td></td>
</tr>
</tbody>
</table>

Note. White (N = 1429), Non-White (N = 550). Bold-face type indicates factor loadings of .30 or higher.
Confirmation of the Sobansky Model

A multiple-group CFA using ML estimation was used to determine whether the Sobansky model was invariant across the groups of White and non-White participants. In contrast to the Roberts model, the most stringent test (i.e., factor loadings, error variances, and covariances held constant) of the Sobansky model appeared to fit the data for Whites and non-Whites. Although the invariance test yielded a significant chi square ($\chi^2 = 450.65$ (71), $p < .001$), all of the other goodness-of-fit indices satisfied the established cutoff of .90 (CFI = .92, NNFI = .92, and RFI = .90). Given these results, less stringent multiple-group analyses of the Sobansky model were not needed. Factor loadings for the total participant pool, as well as White and non-White groups, are reported in Table 5.

The Affirmation-Belonging-Commitment and Exploration factors were distinct but nevertheless moderately to highly correlated, with interfactor correlations for Whites, non-Whites, and the total sample of .48, .71, and .55, respectively. Means, standard deviations, and reliability coefficients for these factors for each of the participant groups are reported in Table 6. Cronbach’s coefficient alphas ranged from .64 to .83.

Table 5. Multiple-Group CFA Estimates (Unstandardized) for Sobansky Model.

<table>
<thead>
<tr>
<th>Item and Path</th>
<th>White</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>factor loading</td>
<td>error variance</td>
</tr>
<tr>
<td>1. Spend time to learn (E)</td>
<td>.56</td>
<td>.56</td>
</tr>
<tr>
<td>5. Think about group membership (E)</td>
<td>.63</td>
<td>.74</td>
</tr>
<tr>
<td>6. Happy to be member (A-B-C)</td>
<td>.49</td>
<td>.44</td>
</tr>
<tr>
<td>11. Sense of belonging to group (A-B-C)</td>
<td>.67</td>
<td>.50</td>
</tr>
<tr>
<td>13. Talked to others about group (E)</td>
<td>.59</td>
<td>.59</td>
</tr>
</tbody>
</table>
Differences in Ethnic Identity by Demographic Variables

Differences in ethnic identity related to ethnicity, gender, and grade level were examined. Specifically, 2 x 2 x 3 (Ethnic Group by Gender by Grade) factorial ANOVAs revealed significant main effects. For Factor 1, there was a significant main effect for ethnic group ($F(1, 1888) = 37.61, p < .001, \eta^2 = .2\%$), with the non-White group being significantly higher. Regarding Factor 2, the ANOVA resulted in main effects for ethnic group ($F(1, 1888) = 194.05, p < .001, \eta^2 = .93\%$) and gender ($F(1, 1888) = 13.61, p < .001, \eta^2 = .7\%$). Specifically, the non-Whites had a higher mean than did the Whites, and females had a higher mean score than did males. In regard to the total mean ethnic identity score, there were significant main effects for both ethnic group ($F(1, 1888) = 129, p < .001, \eta^2 = 6.4\%$) and gender ($F(1, 1888) = .968, p = .005,$
eta squared = .4 %). Once again, the non-White group scored significantly higher than the White group and females scored higher than males.

All other main and interaction effects for factor 1, factor 2, and the total score were non-significant. Means and standard deviations for factor and total mean scores by group and gender are shown in Table 7.

### Table 7. Means and Standard Deviations for Factor 1, Factor 2, and Total Mean Scores

<table>
<thead>
<tr>
<th></th>
<th>Factor 1 Mean Score</th>
<th>Factor 2 Mean Score</th>
<th>Total Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White M SD</td>
<td>Non-White M SD</td>
<td>Total M SD</td>
</tr>
<tr>
<td>Gender Male</td>
<td>3.18 .75</td>
<td>3.03 .64</td>
<td>3.07 .68</td>
</tr>
<tr>
<td>Female</td>
<td>3.27 .62</td>
<td>3.02 .61</td>
<td>3.08 .62</td>
</tr>
<tr>
<td>Total</td>
<td>3.23 .69</td>
<td>3.02 .62</td>
<td>3.02 .62</td>
</tr>
</tbody>
</table>

| Gender Male   | 2.68 .69            | 2.24 .66            | 2.37 .70         |
| Female        | 2.83 .72            | 2.34 .60            | 2.46 .66         |
| Total         | 2.76 .71            | 2.29 .63            | 2.42 .68         |

| Gender Male   | 2.96 .64            | 2.67 .53            | 2.76 .58         |
| Female        | 3.08 .58            | 2.72 .51            | 2.81 .55         |
| Total         | 3.02 .62            | 2.70 .52            | 2.79 .56         |

Note. Number of participants: Non-White male = 266; Non-White female = 251; White male = 610; White female = 773.

**Correlation of Ethnic Identity with Ethnic Self-Esteem**

Previous research with the MEIM (e.g., Lorenzo-Hernandez & Ouellette, 1998; Phinney, 1992; Roberts et al., 1999) has suggested a relationship between ethnic identity and self-esteem. Accordingly, correlations between ethnic identity (as measured by the Sobansky model) and self-esteem (using the EISES scale) were calculated separately for the White and non-White participants in this sample (see Table 8). For both Whites and non-Whites, there were positive, statistically significant relationships.
Table 8. Correlations Between the MEIM-S (Factor 1, Factor 2, and Total) and EISES (Self-Esteem)

<table>
<thead>
<tr>
<th>Group</th>
<th>MEIM Factor 1</th>
<th>MEIM Factor 2</th>
<th>MEIM Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-White</td>
<td>.66**</td>
<td>.42**</td>
<td>.63**</td>
</tr>
<tr>
<td>White</td>
<td>.68**</td>
<td>.29**</td>
<td>.60**</td>
</tr>
<tr>
<td>Total</td>
<td>.68**</td>
<td>.32**</td>
<td>.60**</td>
</tr>
</tbody>
</table>

**p < .01

Correlation of Ethnic Identity with School Achievement

A Mann-Whitney U test was conducted to evaluate whether there was a difference between the ethnic groups in terms of self-reported cumulative grade point averages. The results of the test were significant, $z = 3.68, p = .00$, suggesting that school achievement for non-Whites was significantly lower than for Whites.

Spearman’s rho was used to assess the relationship between ethnic identity and school achievement, as determined by self-reported cumulative grade point averages. No significant relationships were found between achievement and the ethnic identity subscales or total score for either White or non-White groups.

DISCUSSION

The primary purpose of this study was to investigate whether the Roberts model of the Multigroup Ethnic Identity Measure (MEIM-R; Roberts et al., 1999) measures the construct of ethnic identity similarly among White and non-White ethnically diverse adolescents. Results of a multiple-group CFA and individual group CFAs indicated that the MEIM-R was not invariant across the two groups. Given that this contradicts Robert et al.’s contention that the MEIM-R can be used as a global composite index of ethnic identity across diverse ethnic groups, one should be cautious when using the MEIM-R as the results may not be interpretable in the manner suggested by its authors. That is to say, the results for one ethnic group may not be comparable to results for another when using this measure.
Given the findings stated above, subsequent exploratory analyses were conducted to determine what factor structure best captured the MEIM-R. Results revealed a similar two-factor structure for Whites and non-Whites that was comprised of nine of the 12 items included on the MEIM-R. This nine-item version of the MEIM-R, hereafter referred to as the MEIM-S, reflects the Sobansky model of the scale. The two factors of the MEIM-S were found to be distinct statistically, yet highly correlated, suggesting that they appear to represent distinguishable but related aspects of ethnic identity. As these factors were similar to the factors identified in the Roberts model, the same names were used for the MEIM-S (Affirmation-Belonging-Commitment and Exploration). These two factors support previous research findings (e.g., Bernal & Knight, 1993; Keefe, 1992; Phinney, 1990, 1992; Phinney & Ong, 2007; Roberts et al., 1999) reporting that ethnic identity is comprised of a sense of membership in an ethnic group and the attitudes and feelings associated with that membership, as well as involvement in cultural practices.

An additional multiple group confirmatory factor analysis was conducted on the MEIM-S items. In this analysis, similar factor structures were obtained at the most stringent level for both groups, demonstrating that this new model was invariant across the White and non-White groups. In contrast, five error covariances had to be added to the MEIM-R to achieve an adequate model across groups in the Roberts et al. (1999) study. Thus, the MEIM-S appears to measure ethnic identity invariantly across diverse ethnic groups more effectively than the MEIM-R.

The moderate to high interfactor correlations suggest that the MEIM-S may be used confidently as a global assessment of ethnic identity. Additionally, because this measure was found to have a robust factor structure, its two factors may be used separately as indicators of strength of identification and exploration of ethnic identity. This differs from Roberts et al.'s failure to find simple structure, although the authors suggested that the Affirmation, Belonging, and Commitment factor could be used independently.

In addition to the factorial invariance found for the MEIM-S, its construct validity was also supported by positive correlations with self-esteem. Not only were the correlations strong, they were replicated among both White and non-White groups. Additional analyses showed that gender and group membership were also significantly related to ethnic identity.
That is, ethnically diverse group members showed higher ethnic identity scores than their White counterparts. This finding was similar to previous research (Gloria & Hird, 1999; Phinney, 1992; Phinney & Alipuria, 1990; Roberts et al., 1999). As to gender, females showed higher total and Factor 2 (Exploration) scores than males. This implication should be kept in mind when working with both gender groups.

In this sample of White and non-White adolescents, there was no correlation between ethnic identity and self-reported school achievement. Whether this is a reflection on the validity of the MEIM-S or the use of self-report to address school achievement is unclear. While it will be important to examine the former possibility in future studies, the latter hypothesis is supported by Johnson-Green et al. (1997), who found that some participants were inaccurate in estimating their educational attainment.

Two major limitations of this study should be considered in interpreting the results. First, although the total sample size was adequate, there were insufficient numbers of participants in specific ethnic groups (e.g., African American, Asian American) to factor analyze each of these data sets independently. Although Phinney (1992) and Roberts et al. (1999) have stated that the MEIM can be used globally with samples that are ethnically diverse or that are of unknown ethnicity, future researchers should consider replicating the findings of this study with specific ethnic groups. Second, the participants were solicited from a predominantly European American, midwestern city. Although the sample used in this study was an excellent representation of adolescents in that city, the reader should be wary of generalizing these findings to adolescents residing in different geographical areas. Future researchers should consider conducting similar studies in other diverse cultural and multicultural contexts, including communities that have different racial/ethnic mixes.

To conclude, the present study suggests that ethnic identity can be measured among diverse groups utilizing the MEIM-S. It provides evidence that ethnic identity as measured by the MEIM-S is comprised of two general factors measuring affirmation, belonging, and commitment toward one’s identified ethnic group as well as one’s exploration of that ethnic group. Additionally, the results show that there are indeed differences in ethnic identity for non-White group members as well as for females. Finally, the study demonstrates that ethnic identity is correlated
positively with psychological well-being, i.e., self-esteem. Although more research is needed before definitive conclusions can be drawn, the MEIM-S appears to provide school psychologists with an instrument that can be used successfully with highly diverse populations.

References


SIEKIANT KULTŪRIŠKAI BENDRO ETNINIO TAPATUMO MATO SKIRTINGOMS PAAUGLIŲ GRUPĖMS: DAUGIAGRUPIO ETNINIO TAPATUMO INSTRUMENTO (MULTIGROUP ETHNIC IDENTITY MEASURE (MEIM)) TOBULINIMAS


Santrauka. 

Tyrimo tikslas. 

Tyrimu analizuojamas pataisyto Daugiargupio etninio tapatumo instrumento (Multigroup Ethnic Identity Measure (MEIM)) faktorinis stabiliumas skirtingose etninėse grupėse. 

Metodika. 

Taikant MEIM ir savęs vertinimo klausimyną buvo ištirti 1979 baltieji ir ne baltieji įvairios etninės kilmės vidurinės mokyklos mokiniai, besimokantys Vidurio vakarų regiono mokyklose, JAV. 

Rezultatai, išvados. 


Pagrindiniai žodžiai. 

Etninis tapatumas, matavimas, Daugiargupis etninio tapatumo instrumentas (MEIM). 

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