The Utility of the MAPI in Predicting Urban Middle School Competence.

A sample of 107 eighth graders from a large urban middle school in the Midwest was administered the Millon Adolescent Personality Inventory (MAPI) to determine its utility in predicting grades earned, attendance, and social competence. The results of hierarchical multiple regression analysis indicated that the MAPI coping patterns significantly predicted social competence. Two specific MAPI coping patterns helped explain some of the variance of average grades. Female students received significantly better grades. Results are discussed in terms of the utility of the MAPI, the MAPI coping patterns, and T. Millon's biosocial learning theory in explaining urban middle school competence. As expected, the active-dependent, sociable, gregarious, talkative coping pattern had a strong positive association with social competence. The passive-independent, confident, narcissistic pattern also had a strong positive relationship to urban middle school competence, while an active-detached, avoidant coping pattern was associated with low ratings of social competence. The active-ambivalent, moody, negativistic coping pattern was also negatively related to social competence. These results are to some degree consistent with other studies of adolescent coping. (Contains 1 figure, 3 tables, and 30 references.) (SLD)
The Utility of the MAPI

in

Predicting Urban Middle School Competence

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Abstract

A sample of 107 eighth grade students from a large urban middle school in the Midwest were administered the Millon Adolescent Personality Inventory (MAPI) to determine its utility in predicting grades earned, attendance, and social competence. The results of hierarchical multiple regression analysis indicated that the MAPI coping patterns significantly predicted social competence. Two specific MAPI coping patterns helped explain some of the variance of average grades. Female students achieved significantly better grades. Results are discussed in terms of the utility of the MAPI, the MAPI coping patterns, and Millon's biosocial learning theory in explaining urban middle school competence.
The Utility of the MAPI in Predicting Urban Middle School Competence

During the 1980’s and early 1990’s an increasing number of studies have attempted to identify the individual, personality, family, and environmental factors that help predict resilience or competence in children and adolescents in the urban school setting (Garmezy, 1981; Garmezy, Masten, and Tellegen, 1984; Grannis, Fahs, and Bethea, 1989; Taylor, Casten, Flickinger, Roberts, and Fulmore, 1994). These personality and environmental factors related to youth competence are becoming of increasing importance as urban youth underachievement and dropout rates are continuing to be pressing issues for American society. While the national dropout rate for high schools is estimated at 25% (O’Connor, 1985; Weber, 1988), large urban school districts have a substantially larger share of this challenge with dropout rates ranging from 30% to 50% (Hammack, 1986; Smith, 1986).

In general, researchers have found that demographic/person factors (such as sex, age, race),
educational factors (math and reading achievement), family factors (such as family socioeconomic level, family discord, family structure/family break-up, family size), and personality factors to be related to academic achievement and social competence in urban youth. For instance, being average for one's grade, usually as a result of being held back in earlier grades, has been a consistent predictor of dropping out of school (Goll, Holland, and Lanese, 1989; Hammack, 1986). Just as age affects the likelihood of dropping out, so, too, have sex differences been observed in dropping out behaviors, with boys dropping out at higher rates than girls (Ekstrom, Goertz, Pollack, and Rock, 1986; Hammack, 1986; Rumberger, 1987). The sexes differ in reasons for dropping out, with males frequently citing poor grades, dislike of school, working, and inability to get along with teachers (Bowman and Mathews, 1960; Hammack, 1986), whereas females more often cite marriage, dislike of school, poor grades, and pregnancy (Bowman and Mathews, 1960; Ekstrom et al., 1986; Hammack, 1986). Race also has
been found to be an important predictor of academic
achievement and number of school suspensions, absences, and dropout rates with black and Hispanic youths performing more poorly than white youths (Block, Covill-Servo, and Rosen, 1978; Ekstrom et al., 1986; Goll et al., 1989; Hammack, 1986).

In addition to these demographic/person variables, educational factors, especially math and reading achievement, also have been linked to academic achievement and social competence in urban middle and high school youth. For example, math achievement scores were consistently found to be the strongest predictor of academic success in a New York City middle school (Grannis et al., 1989). Similarly, Ekstrom et al. (1986) found that poor mathematics skills, measured by sophomore year achievement tests, and sophomore year grades were key indicators of dropping out, particularly for white students. Other studies have found a link between poor reading ability and dropping out of school. In their 'Youth in Transition' studies Bachman (1970) and Bachman, O’Malley, and Johnston (1978) found a strong
relationship between reading ability, educational achievement, and dropping out. Other studies have verified the link between poor reading ability and dropping out of school (Ekstrom et al., 1986).

Family discord/rapport, family socioeconomic level, family size, and family structure have been shown to be variables that relate significantly to academic achievement, social competence and mental health of youth. Since the pioneering work of Rutter (1970), a number of researchers have linked family discord with mental health and behavior problems in youth. Rutter concluded that the quality of family relationships was the most important variable in relation to the rate of behavioral and psychiatric disorders in children. In their longitudinal, multivariate study, Feldman, Stiffman, and Jung (1987) examined the influence of mentally-ill parents' family relations, spousal conflict, and parent-child conflict on the adaptation and behavior of at-risk children. Feldman et al. (1987) observed that mother-child discord, family discord, and the proportion of mentally ill family members to be the best predictors of
children's behavior problems. Lower family socioeconomic status, larger family size, and divorced, single parent, and step-parent family structure, have been found to be associated with increased behavior problems, poor school achievement, and increased risk for dropping out of school (Bachman et al., 1978; Feldman et al., 1987; Rumberger, 1987; Spencer, Dobbs, and Swanson, 1988).

Finally, coping skills and personality characteristics appear to be associated with success or failure academically and socially in the urban middle and high school setting (Garmezy, 1981; Garmezy et al., 1984). A weak positive relationship was found between positive coping and final grades and a weak negative relationship was found between denial and final grade point average for a sample of female urban adolescents (Fahs, 1987). Urban middle school youth who had higher stress appraisal scores and who were more sensitive in personality fared better academically at an urban New York middle school (Grannis et al., 1989). In a study of Hawaiian children, Werner and Smith (1982) observed
that resilient children were more socially oriented and socially responsive, were higher on verbal reasoning and perceptual motor skills, and had higher IQ scores than poorly coping youngsters. While resilient children were found to be more independent, aggressive, and active than other children, coping problem children were seen as more withdrawn and as more ambivalent. Grannis et al. (1989) observed competent youth in the urban middle school setting to be more sensitive and to have greater internal locus of control than their peers. They also found that youth with higher math achievement scores, greater sensitivity toward stress, and male youth with a more androgynous personality adjusted better and earned higher grades. In their "Project Competence", Garmezy et al. (1984) reported that 'engaged' competent youth are academically oriented, are not isolates, and have close relationships with parents and siblings.

Although these studies have identified some demographic, personality, and family factors related to urban school competence, there is a need for more
comprehensive, multivariate studies of urban youth using multiple sets of person, coping, and family variables as predictors in order to clarify the relative contribution of each to urban school competence and to begin to examine the relationship of social competence to urban middle school competence (Bachman, 1970; Bachman et al., 1978; Garmezy et al., 1984). Garmezy et al. (1984) recommend entering the organismic variables of sex and age first in these regression models to control for their effects on the other criteria of competence. Second, personality factors found to be influential in predicting social competence need to be linked to theories of personality and psychopathology in order to guide the development of future interventions by mental health professionals.

The purpose of this study was twofold: first, to extend the findings from previous research by following Garmezy et al.'s recommendations; and, second, to determine the utility of the eight coping scales and the Family Rapport scale from the Millon Adolescent Personality Inventory (MAPI) (Millon, Green, and Meagher, 1982) in predicting urban middle school
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competence (see Figure 1). The MAPI scales were selected as predictor variables because the MAPI is based on a theory of personality and psychopathology that is linked to a specific model of intervention. It was specifically designed for use by school counselors and mental health professionals in working with adolescents in school and clinical settings. Millon et al. (1982) stated that this instrument should help clinicians in predicting which students are likely to act out, to underachieve, or to attend school irregularly. Millon (1969) derived the eight youth coping patterns from 'three polarities that govern all mental life' (the active-passive dimension, pleasure-pain dimension, and the dimension of self-other). The active-passive dimension indicates whether an individual takes the initiative with events or whether the person's behavior is largely reactive to events. The pleasure-pain dimension indicates whether the person is motivated by positive, attractive reinforcing events or by aversive or negatively reinforcing events. Thirdly, the dimension of self-other is similar to the introversive-extroversive
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dichotomy and the concept of internal versus external locus of control.

Method

Participants

One hundred seven (71 girls and 36 boys) eighth grade students attending three urban middle schools in a large Midwestern city volunteered to answer questionnaires. Fifty-three percent (N=57) were Afro-American and forty-two percent (N=45) were white. One student was Asian. The majority (37.4%) came from mother-only households; 34.6% from two-parent homes, and 17.8% from mother and stepfather households. The largest percentage of this urban middle school sample (37%) came from middle income (SES) families. An additional 28% of these students were from lower middle class (SES) income families; 23% came from low income families; and finally, 11% are of high (SES) level families.

Instruments

Coping patterns, personality style, and family rapport (discord) were assessed by the Millon
Adolescent Personality Inventory (MAPI). The MAPI is composed of eight scales which assess the eight Millon coping patterns (i.e., passive-detached, active-detached, passive-dependent, active-dependent, passive-independent, active-independent, passive-ambivalent, and active-ambivalent), eight scales of Expressed Concerns (including family rapport/discord), and four scales of Behavioral Correlates to indicate the degree of adjustment of the youth in the school setting.

The MAPI has been standardized on a combined clinical and non-clinical sample of 2,157 adolescent subjects, including 1,071 males and 1,086 females. Racial composition of the sample included 84% white American youth and 16% minority American students. Internal consistency estimates have been found to be satisfactory for all clinical scales. Test-Retest reliability estimates range from 0.74 for a five month interval to 0.65 for a one year interval. Convergent validity with the subscales of the 16PF and CPI have been found. The MAPI has differentiated clinical from non-clinical populations in several studies.
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(Millon et al., 1982).

Reading and Math Achievement were measured by the Comprehensive Tests of Basic Skills (CTBS, forms U and V).

Social competence was assessed by combining the Social Acceptance and Close Friendship scales from the Self-Perception Profile for Adolescents (Harter, 1982, 1986). Internal consistency estimates for these scales range from .77 to .90 (Harter, 1988). The Self-Perception Profile scales have demonstrated convergent and discriminant validity with the Self-Description Questionnaire (Marsh and Gouvernet, 1987).

Demographic data were collected from the Adolescent Survey designed by the first author following guidelines offered by Bachman (1970) and Bachman et al. (1978). Final grades and end-of-the year attendance were obtained from student records.

Procedures

Students were solicited for this study with brief presentations in their English classes at the three middle schools. Students were told this study would
examine how youth are coping with the middle school environment; and they were given parent information letters and parental permission forms to participate in the study. Follow up calls were needed to explain the study to parents and encourage the return of permission forms. All of the measures were administered in random order.

Results

Preliminary Analysis

In order to make the results of hierarchical multiple regression more understandable correlations among all the variables were conducted. Table 1 shows the relationship between significant predictor variables and the criteria of urban eighth grade student competence.

| Insert Table 1 about here |
Primary Analysis

Results for Hypothesis 1.

This hypothesis tested the hierarchical model of sex, age, and the set of eight Millon coping patterns regressed, first, on the criteria of attendance, second, on grades, and third on social competence. Table 2 shows the results of this hierarchical analysis.

The set of Millon Coping patterns were found to significantly predict social competence of this sample of urban middle school youth, $F(8,96) = 6.06, p<.01$; and accounted for 33% of the incremental variance beyond that of sex and age. In other words, there is a strong association between the eight coping patterns measured by the Millon Adolescent Personality Inventory (MAPI) and the students’ self-ratings of social competence on Harter’s Self-Perception Profile for Adolescents. Table 1 shows the relationships between four of the MAPI coping patterns and other predictor
variables of urban youth competence. A reading of Table 1 shows that the active-dependent (gregarious) coping pattern and the passive-independent (narcissistic) coping pattern have a strong positive relationship to the self-ratings of social competence in this sample of urban youth and the active-detached (avoidant) and active-ambivalent coping patterns have a strong negative relationship to social competence.

Surprisingly, this total regression model of sex, age, and MAPI coping patterns explained 27% of the variance of average grades of this sample of urban youth and this result was found to be moderately significant: $F(10,96) = 3.63, p<.05$ (see Table 2). However, the set of MAPI coping patterns contributes only 10% of this variance. Active-ambivalent coping was found to have a negative relationship to average grades, $F(10,96) = 6.66, p<.05$; and passive-independent coping also was found to have a negative relationship to average grades, $F(7,99) = 4.24, p<.05$. Although the MAPI coping patterns explained only 10% of the incremental variance of attendance, the passive-ambivalent (conforming) coping pattern has a
significant positive relationship with attendance:  
$E(1,96) = 5.89, \ p<.05$; and the passive-dependent,  
submissive coping pattern has a significant negative  
relationship with attendance:  $E(1,96) = 5.32, \ p<.05$;  
as does the active-ambivalent, negativistic coping  
pattern:  $E(1,96) = 5.68, \ p<.05$.

**Results for Hypothesis 2.**

The second hypothesis tested the assumption that  
by the age of adolescence the set of person variables  
(i.e., sex, age, Afro-American race, white race, Asian  
race, math achievement, and reading achievement) will  
have significantly more influence than family factors  
[family discord (MAPI Family Rapport scale scores),  
family socioeconomic level, both parent household,  
mother and stepfather household, mother-only household,  
father-other household, and family size] on urban  
middle school competence. Table 3 presents the results  
of the hierarchical analysis testing this hypothesis.

Insert Table 3 about here

A reading of Table 3 shows that nearly 50% of the
variance ($\text{Cum R}^2$) of average grades is explained by this two-set regression model. The percentage of variance explained by this model for the remaining dependent variables is considerably less than 40% (see Table 3). Our assumption that person variables account for appreciably more variance of the criteria of school-based competence than family variables was only confirmed for final grades earned. The set of family variables does come close to making a significant contribution to the variance of attendance, however. It is likely, with the large number of variables in this model, that the power of the (F) test was greatly diminished for the set of family variables with the set of person variables having already taken much of the variance of these criteria.

In the hierarchical regression model of person and family variables regressed on average grades, only person variables make significant contributions to the variance of average grades. A reading of Table 1 shows that sex has a strong, positive relationship with female middle school youth earning considerably better average grades, $E(1,92) = 17.16, p<.0001$. Other strong
(positive) predictors of average grades included math achievement, $E(6,92) = 38.17, p<.0001$; and reading achievement, $E(7,92) = 4.65, p<.05$. Age has a significant, negative relationship to average grades, $E(2,92) = 13.43, p<.001$. In this two-set regression model, family discord finished a surprising fifth place in predicting average grades, $E(8,92) = 2.85, p<.10$.

Of the person variables, black race shows a significant positive relationship to attendance, $E(3,92) = 6.87, p<.05$. Among the family variables, mother-only household shows a negative relationship to attendance, $E(12,92) = 5.89, p<.05$; and father-other household shows a positive relationship to attendance, $E(13,92) = 4.42, p<.05$. These results seem to suggest that family structure plays a role in school attendance as Galloway (1985) has already stated (see Table 1).

In sum, in this two-set hierarchical regression model, person variables explained the bulk of the variance in eighth grade student final grades earned. Person and family variables shared almost equally in explaining the variance of school attendance. These two sets of variables explain very little of the
variance of urban youth social competence, $F(13,92) = 4.42, p<.05.$

Discussion

A major intent of this study was to determine the utility of the Millon Adolescent Personality Inventory (MAPI) as a predictor of school competence for urban middle school youth. A major finding of this study was that the set of MAPI coping patterns significantly predicted social competence. Social competence, as measured by the Self-Perception Profile for Adolescents, is an indicator of social acceptance and the friendship-making ability of these urban eighth graders. This finding means that there is a strong association between the study participants' self-ratings of friendship and popularity and their predominant coping patterns. One can conclude that how well these youth fit into their middle school milieu can be predicted to a large degree by the MAPI's profile of coping patterns. We would expect that the active-dependent, sociable, gregarious, talkative coping pattern would have a strong, positive association with social competence, and indeed it does.
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In addition, we would expect the passive-independent, confident, narcissistic pattern to have a strong, positive relationship to urban middle school social competence and it does as well. Similarly, we expect an active-detached, avoidant coping pattern to be associated with low ratings of social competence. Likewise, the active-ambivalent, moody, negativistic coping pattern was negatively related to social competence.

These results are to some degree consistent with other studies of adolescent coping. Griffith and Dubow (1993) in their study of adolescent coping found that adolescents use more avoidance than approach coping strategies for family stressors; and more approach than avoidance coping for peer situations and stressors and they concluded that "regardless of the type of stressor, approach coping strategies predicted more favorable outcomes and avoidance coping strategies predicted more unfavorable outcomes." The mildly pathological Millon active-detached (avoidant) coping pattern appears to have a similar outcome to these
avoidance strategies in the urban middle school setting. Garmezy (1981) and Garmezy and Neuchterlein (1972) found that resilient and competent (yet disadvantaged) urban youth were rated by clinicians and teachers to have social skills, to be friendly and well-liked, and to be more socially-responsive, interpersonally sensitive, less sullen and restless than their less adaptive peers. Grannis et al. (1989) found similar characteristics for adaptive urban youth in a New York City middle school. Interestingly, Griffith and Dubow (1993) observed developmental trends in adolescent coping with the use of approach (interpersonal) coping strategies being increasingly utilized from 7th to 12th grade. As students' social skills and cognitive/problem-solving skills increase with age, they may increasingly use a problem-solving, interpersonal/approach coping style.

While the coping patterns as a set were not a significant predictor of grades earned, two of the Millon coping patterns were found to be negatively related to grades. The active-ambivalent, negativistic coping pattern makes a significant, negative
contribution to the variance of English grades, and to the variance of average grades. The passive-independent, confident, narcissistic coping pattern has a significant, negative relationship to average grades.

What Millon (1981) stated about the negativistic, active-ambivalent, passive-aggressive coping pattern illuminates why this coping pattern may be detrimental to achievement in the urban middle school. Millon stated that this personality resists demands for adequate performance in both occupational and social settings. This oppositional youngster uses much energy in coping with restlessness, irritability, and low frustration tolerance, and therefore she or he has difficulty following long-term goals, including earning of good school grades.

The narcissistic, passive-independent coping youth is hindered in the school setting by his or her inflated self-worth and an indifference to shared responsibilities. These youth can justify achievement deficits through arrogance, expansive fantasies, and rationalization. Middle school youth with this coping
pattern can insulate themselves from the demands, expectations, and values of parents and teachers when it comes to achievement.

Although the set of Millon coping patterns does not make a significant contribution to the variance of attendance, three coping patterns were found to have a significant relationship to attendance. The active-ambivalent, negativistic coping pattern and the passive-detached, submissive coping pattern, have significant negative relationships with attendance. The passive-ambivalent, conforming coping pattern has a positive relationship to attendance.

These results make sense when we examine how these personality types interact with their environments. The negativistic, oppositional personality will challenge authority, including the need to attend school. This personality may drift toward peers who also flaunt conventional rules, including regular school attendance. The passive-detached, submissive youngster may have an enmeshed relationship with a parent and such a relationship often encourages
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absenteeism, particularly when the youth is 'needed at home'. We expect the conforming personality to heed school rules and attend regularly. We can conclude that the set of MAPI coping patterns can be a useful indicator of how well youngsters fit in socially at their school and how well they adapt to school rules.

A second, major purpose of this study was to examine the relative and comparative influence of person and family factors (including the MAPI Family Rapport scale) on urban middle school competence. The results suggest that person variables are better predictors of school competence than family variables. It was not surprising to find that reading achievement and math achievement scores on the CTBS were significant predictors of grades earned as these variables were frequently cited to be good predictors in the literature; Grannis et al. (1989) found that math achievement was related to good grades and adaptive coping in an urban New York middle school. Math achievement was found to have a significant and positive relationship to social competence in this study as well. It is likely that youth with good
verbal/math reasoning skills also can utilize them in interpersonal and stressful situations.

Sex was a surprisingly strong predictor of grades earned, including average grades and math grades. Interestingly, active-dependent coping also had a (mild) positive relationship to math grades. Like Grannis et al. (1989), we found that female students were adapting better to the middle school milieu.

In sum, the MAPI coping scales appear to add useful information to the prediction of urban middle school competence, especially to social competence. In addition, the active-ambivalent, negative coping pattern and the passive-independent, confident, narcissistic coping patterns help to explain some of the variance in average grades achieved by students. This information is especially relevant for school counselors and school psychologists who can make use of Millon’s model of therapeutic interventions associated with the MAPI scales as they consult with teachers and counsel adolescents to strengthen positive coping behaviors in students.
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References


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The ecology of students' stress in an intermediate school: Findings from the project on academic striving. Unpublished manuscript presented to the New York Public Education Association, New York.

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Figure 1. Predictive Model of Urban Middle School Competence
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Table 1

Pearson Product-Moment Correlations of Selected Predictor Variables Related to Criteria of Urban Middle School Competence

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Average Grades</th>
<th>Math Grades</th>
<th>Attendance</th>
<th>Social Competence</th>
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</thead>
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<td>Sex</td>
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<td>.22**</td>
<td>-.16*</td>
<td>.13</td>
</tr>
<tr>
<td>Age</td>
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<td>-.09</td>
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<td>-.05</td>
<td>.23**</td>
<td>-.06</td>
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<td>-.26***</td>
<td>.07</td>
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<td>.46******</td>
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<td>.26***</td>
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<td>Reading Achievement</td>
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<td>.25**</td>
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<td>-.04</td>
<td>-.07</td>
<td>-.08</td>
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<td>Family SEL</td>
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<td>.26***</td>
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<td>.03</td>
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<td>-.10</td>
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<td>Mother-other Household</td>
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<td>-.01</td>
<td>.12</td>
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<td>-.09</td>
<td>-.01</td>
<td>-.22**</td>
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*p<.10.  **p<.05.  ***p<.01.  ****p<.001.  *****p<.0001.
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Table 2
Hierarchical Multiple Regression Analysis for the Set of Coping Patterns (Entered After Sex and Age) and the Criteria of Urban Middle School Competence

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Patterns</th>
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<th>df</th>
<th>Cum R²</th>
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<td>10,96</td>
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<td>8,96</td>
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<td>Social Competence</td>
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<td>.35</td>
<td>5.17**</td>
<td>10,96</td>
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*p<.05.  **p<.01.
Table 3

Hierarchical Analysis of the Set of Family Variables and the Criteria of Competence While Controlling for the Set of Person Variables

<table>
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<tr>
<th>Criteria</th>
<th>Increments in R2 for the Set of Person Variables</th>
<th>Increments in R2 for the Set of Family Variables</th>
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<td>Attendance</td>
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I. DOCUMENT IDENTIFICATION:

Title: The Utility of the MAPI in Predicting Urban Middle School Competence

Author(s): John A. Paulus, Ph.D. and Linda M. Berosa, Ph.D.

Corporate Source: Office of Educational Research and Improvement (OERI)

Publication Date: 1995

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