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Developing Coping Typologies of Minority Adolescents: A Latent Profile Analysis

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Abstract

Latent profile analysis (LPA) was used to develop a coping typology of minority adolescents ($M = 15.5$ yrs). A multiethnic sample ($n = 354$) was recruited from a program aimed at serving low-income students. LPA revealed three distinct coping profiles. The first comprised adolescents who used a number of specific coping strategies at a low level (Low Generic Copers). The second comprised adolescents who emphasized active/approach strategies (e.g., planning; Active Copers). The third comprised adolescents who emphasized avoidant/passive strategies (e.g., substance abuse; Avoidant Copers). Active Copers experienced significantly less depression and more stress-related growth than Low Generic Copers. Low Generic Copers experienced significantly less depression than Avoidant Copers but also significantly less stress-related growth than Active Copers. Discussion focuses on integrating the current *typology* with traditional coping *taxonomies*.

Keywords

Cope; Minority; Adolescents; Latent Profile Analysis

An integral component of development is the ability of children to adapt to the constant flux of their environment. Coping with stress is a process that can enhance or hinder adaptation. Coping plays a proximal (including mediational) role between stressful events and adjustment that may include psychopathologic vulnerabilities to disorders such as depression and anxiety (Grant, Compas, Thurm, McMahon, & Ey, 2000; Manne, Bakeman, Jacobson, & Redd, 1993; Tyc, Mulhern, Jayawadene, & Fairclough, 1995). Competing theories concerning coping and adjustment have attempted to explain the role of coping in adaptive adjustment. Lazarus and Folkman (1984) theorize that coping mediates the effect that stressors have on psychological adjustment and physical health. Additional theories suggest that coping is a process that changes in response to situations (Lazarus & Folkman, 1984; Spirito, 1996), yet others suggest that coping is a stable trait. For example, children have been categorized as repressors or sensitizers (Field et al., 1998), as well as monitors or blunters (Miller, Sherman, Combs, & Kruss, 1992).

Much of the confusion related to generalizing studies on stress, coping, and adjustment may be an artifact of investigations underpinned by divergent theories and conceptualizations of

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the coping construct (Kliewer, 1997; Patenaude & Kupst, 2005; Phipps, Fairclough, Tyc, & Mulhern, 1998; Spirito, 1996). As a consequence, to enhance the understanding of coping in adolescent adjustment there is a need to examine this construct with a methodology that can account for both the specific (e.g. social support) and general (e.g. approach) components of the coping construct. Latent profile analysis (LPA) may be such a tool, as it allows for both the measurement of specific coping strategies while simultaneously creating patterns or typologies of coping. The present study specifically investigates how these coping typologies are related to adolescent adjustment.

Although there are many definitions and theoretical approaches used to understand coping, it can generally be defined as a cognitive and/or behavioral attempt to manage (reduce or tolerate) situations that are appraised as stressful to an individual. Moreover, no single coping strategy or dimension can be considered (mal)adaptive. The quality of the coping strategy and process should be evaluated according to its impact on the outcome of importance. Coping resources and efficacy are also influenced by the cognitive, emotional, biological, and social development of the individual (Compas et al., 2001). For example, age differences in coping preferences have been observed throughout child and adolescent development. Studies have revealed that adolescents aged 15-years or older have a greater range of and utilize more adaptive strategies in response to stress than their younger counterparts (Hauser & Bowlds, 1990; Ebata & Moos, 1994; Seiffge-Krenke, 1995; Seiffge-Krenke, 2000). Regardless of the myriad of factors that can influence coping style and efficacy there have been two primary conceptualizations of the coping construct within the literature.

From the previous conceptual definition, Folkman and Lazarus (1980, 1985; Lazarus & Folkman, 1984) have distinguished two primary categories of coping: *emotion-focused* and *problem-focused*. Emotion-focused coping is an attempt to manage internal demands and conflicts such as stressful emotions. Strategies within this dimension include social support for emotional reasons and positive reappraisal. Problem-focused coping is an attempt to manage external demands or reduce the conflict between an individual and the individual's environment. Strategies within this dimension include instrumental social support and planful problem-solving.

In addition to the problem-focused/emotion-focused taxonomy, a coping taxonomy that emphasizes the focus or orientation of the coping strategy has also been emphasized. Many terms have been used to explain how cognitive and behavioral coping attempts are orientated towards a stressor (Roth & Cohen, 1986). For example, coping orientations have been describe as vigilance versus nonvigilance (Averill & Rosenn, 1972); vigilance versus avoidance (Cohen & Lazarus, 1973; Janis, 1977); attention versus inattention (Kahnemann, 1973); intrusion versus denial (Horowitz, 1976); engagement versus disengagement (Compas et al., 2001; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). However, a common label given to coping activity directed towards a threat is termed *approach* and coping activity that is deflected from a threat is often termed *avoidance* (Holahan & Moos, 1987; Moos & Schaefer, 1993). Approach-oriented coping is directed towards dealing with the problem or related emotions (Roth & Cohen, 1986). In contrast, avoidance-oriented coping is "removal" from experiencing or thinking about a stressful situation (Billings & Moos, 1981; Carver et al., 1989), and has also been explained as withdrawal from the situation or associated emotions (Roth & Cohen, 1986).

Recent studies that have assessed the coping construct in adolescents have revealed that a two-factor model of coping does not always provide the best fit for the data. This suggests that simply categorizing coping into approach versus avoidance coping or problem-focused versus emotion-focused coping dimensions may not sufficiently represent the coping dimensions utilized by children and adolescents (Compas et al., 2001). In a review by Compas and

colleagues (2001), three recent factor analytic studies that tested the structure of the coping construct in children and adolescents have revealed both primary and secondary factors that are related to broad and specific coping subtypes. Two of these studies revealed a three-factor model of coping. The first pertained to pediatric patients coping with pain, where the authors found active coping, passive coping, and accommodative coping (Walker, Smith, Garber, & Van Slyke, 1997). Similarly, Connor-Smith and colleagues (2000) identified a three-factor solution in young (12–18 years) and older (18–19 years) adolescents, identifying primary control engagement coping, secondary control engagement coping, and disengagement coping. The third study addressed in the review identified four factors of active coping, social support, distraction, and avoidance coping (Ayers, Sandler, West, & Roosa, 1996). As a result, examining the coping construct through novel ways, such as with LPA methodology, may help to explain and account for the varied ways in which adolescents and specifically minority adolescents cope.

In light of the discrepancies between early coping theory and subsequent empirical findings, new coping theories have emerged. Recent reviews on coping structure have argued that single functions like problem-focused versus emotion-focused coping or topological distinctions such as approach versus avoidance coping are not good “higher order categories,” since coping is “multidimensional” (Skinner, Edge, Altman, & Sherwood, 2003). Further, Skinner and colleagues argue that these categories are not mutually exclusive, rule out several important coping categories (e.g., rumination, aggression), and lack clear cut category definitions. Similarly, based on findings from several studies (e.g., Connor-Smith et al., 2000), Compas and colleagues (2001) support the theoretical framework of coping as a hierarchical model that can also be distinguished into first-order and higher order dimensions. Within this framework they propose a coping model that discriminates coping responses to stress as both involuntary and voluntary, and that are further defined along the dimension of engagement versus disengagement coping. More recently, Compas and colleagues (2006) utilized a novel approach to examine coping in adolescents with chronic pain. The authors performed a latent variable analysis to examine the latent variable of coping with anxiety, depression, and somatic symptoms. This analysis revealed that coping was comprised of primary control engagement coping (e.g., problem solving, emotional regulation), secondary control engagement coping (e.g., positive thinking, acceptance), and disengagement coping (e.g., denial, avoidance). Lower levels of anxiety, depression, and somatic symptoms were related to secondary engagement coping, while the inverse was true for disengagement coping, revealing the differential impact of these two coping dimensions on adjustment outcomes. Although this analysis provides a more descriptive contribution to the coping literature, these three latent coping variables represent global dimensions of coping.

Similarly, recent longitudinal studies on adolescent stress and coping have revealed that adolescents may change their coping preferences at different stages of development. Seiffge-Krenke and Klessinger (2000) found in their 4-year longitudinal study that adolescents could be categorized according to four coping styles that included “approachers,” “avoiders,” “high generic,” and “low generic” adolescent copers. The approachers and avoiders primarily employed strategies that resembled existing coping categories of approach and avoidance, respectively. However, the high generic copers frequently employed both styles of coping, whereas the low generic copers exhibited a coping style low in both approach and avoidance coping. Findings of this study revealed that adolescents who engaged in more approach coping at the beginning of the study, and/or at later stages, had lower or reduced symptoms of depression (Seiffge-Krenke & Klessinger, 2000). Those adolescents who either started off or later switched to primarily using avoidant coping exhibited more depressive symptoms up to two-years later. Strikingly, high generic copers in relation to low generic copers exhibited higher depressive symptoms supporting the supposition that low avoidance coping preferences yield better adjustment to stress. Herman-Stahl, Stemmler, and Petersen (1995) also found that

adolescents who employed higher levels of avoidance coping at the beginning or throughout their 1-year study had higher levels of depressive symptoms. These findings suggest that assessing coping through more dynamic methodologies can help to elucidate the relationship between stress, coping, and adjustment at different stages of adolescent development.

Beyond stress and coping research that has focused primarily on the continuous representation of coping as a construct, this literature has not been representative of ethnic diversity nor with respect to socioeconomic status (SES). For the latter, samples have typically consisted of middle-to upper-class Caucasians, thus confounding ethnicity with SES. Specifically, studies that have examined the influences of ethnicity on how stressful events are perceived, attributed, and coped with, consistently used Caucasians as a comparison group to the minority group, with the former largely outnumbering the latter group in sample size (Copeland & Hess, 1995; Markstrom et al., 2000; Bjorck, Cuthbertson, Thurman, & Lee, 2001). Ethnic minority group members (particularly Mexican Americans and African Americans) face many stressors that are unique to them, such as crime, poverty, violence, malnutrition, drugs, poor education and inadequate health care (Grant et al., 2000; Kobus & Reyes, 2000; Steele et al., 1999). Moreover, all ethnic minority group members (including Asian Americans) indicate that being treated unfairly because of their race is a particularly salient stressor (e.g., Alegria et al., 2004). The existence of these unique stressors (relative to Caucasians) makes the identification of both adaptive (e.g. social support) and maladaptive (e.g. substance use) coping strategies employed crucial for ethnic minority group members, particularly in light of the fact that members of ethnic minority groups underutilize psychological services (Constantine, Alleyne, Caldwell, McCrae, & Suzuki, 2005). The minimal representation of these adolescents within stress and coping research is cause for concern, as many of these stressors are chronic with adolescents experiencing them daily. However, recent studies with ethnic minority group members (relative to Caucasians) have found that they use more social support (e.g., Constantine, Wilton, & Caldwell, 2003; Tolan et al., 2001) and religious coping strategies (e.g., Bjorck et al., 2001; Culver, Arena, Wimberly, Antoni, & Carver, 2002) when encountering stressful events.

Relatively few studies have examined the relationship between coping processes, outcomes, and related constructs on sufficient numbers of minority adolescents (e.g., Ayers et al., 1996; Causey and Dubow, 1992; Copeland & Hess, 1995; Rosella, 1994). Adolescents, especially those from underrepresented groups, often have very little or no control over the several stressful life events they encounter, and thus they may feel overwhelmed and experience heightened distress (Figueira-McDonough, 1998). Maladaptive outcomes for these adolescents may result if they cannot cope adaptively with these overwhelming stressors. For example, at the end of a year long study with Mexican-American adolescents, those who experienced greater emotional distress reported more alcohol use and involvement in peer violence (Tschann, Flores, Pasch, & Marin, 2005). In another study with poor inner-city youth, Tolan, Guerra, and Montaini-Klovhahl (1997) found these adolescents were less able to control stressors and consequently relied more on avoidance coping. Strikingly, avoidance was found to be an adaptive strategy for these adolescents experiencing high levels of stress but not adaptive at low stress levels (Gonzales & Kim, 1997; Gonzales, Tein, Sandler, & Friedman, 2001). Grant and colleagues (2000) also reported that ethnic minority group members (and particularly African Americans) are exposed to chronic and severe stressors, and need to take advantage of the short-term benefits and protective effects that avoidant coping brings. This may suggest that avoidance is rather adaptive for significant and possibly uncontrollable stressors. Better outcomes such as lower levels of depression, reduced problem behaviors, and higher grades have resulted when minority adolescents employed problem solving, cognitive restructuring, and distraction (Gonzales et al., 2001; Sandler, Tein, & West, 1994). Additionally, consistent with most research conducted on Caucasians, some studies have found positive relations between approach-oriented coping strategies (e.g., instrumental social

support) and positive psychological adjustment (Kobus & Reyes, 2000; Lopez & Little, 1996; Steele et al., 1999) in samples of African and Mexican Americans. Contrary to these findings, some researchers (e.g., Sharpe, Brown, Thompson, & Eckman, 1994) have found no relation between specific coping strategies and psychological health within ethnic minority groups. These disparate findings, concerning specific ethnic minority groups, suggest that more descriptive research relating typologies of coping to psychological health outcomes in this population is of central importance.

The present study also introduces the construct of stress-related growth into the minority adolescent stress and coping literature. Stress-related growth is conceptualized as potentially both an individual difference variable and an outcome variable (see Park, Cohen, & Murch, 1996). Specifically, this construct is defined as the perception or experience of deriving benefits from encountering stressful circumstances, and thus going beyond one's original level of normative functioning (Milam, Ritt-Olsen, & Unger, 2004). While similar to other protective factors or strengths, such as resilience, it is the exceeding of normative functioning or "thriving" (Lewis & Frydenberg, 2004) that uniquely identifies this construct. To further underscore this point, Tedeschi, Park, and Calhoun (1998) define growth as "a significant beneficial change in cognitive and emotional life that may have behavioral implications" (p. 3). In a recent qualitative study, Salter and Stallard (2004) found that 42% of children interviewed reported that they experienced either growth in interpersonal relationships and/or greater appreciation of life after a traumatic event. These findings suggest that variability for this construct does exist for children. Moreover, the practical implications are far-reaching, whereby children who experience stress-related growth are likely to become adults who experience stress-related growth. This growth can also occur in a variety of psychological areas such as an enhanced knowledge base, increased acquisition of coping skills, and a more positive self-concept (Carver & Scheier, 1998) and has become a vital component in many theories of the stress and coping process (see e.g., Antonovsky, 1987; Janoff-Bulman, 1992; Taylor, 1983; Tedeschi & Calhoun, 1996). Beyond these theoretical frameworks there is empirical evidence that suggests individuals are changed in profound ways after they experience stressors (e.g., Folkman, 1997; Folkman & Moskowitz, 2000; Henderson, Davison, Pennebaker, Gatchel, & Baum, 2002; O'Leary, 1998; Siegel & Schrimshaw, 2000). Empirical research has shown that growth and related constructs, such as resilience, serve as protective factors for adolescents experiencing stress (Aldwin & Sutton, 1998; Oltjenbruns, 1991; Salter & Stallard, 2004), and particularly minority adolescents (Garmezy, 1991; Milam et al., 2004; Vaughn & Roesch, 2003).

Notwithstanding the diverse theories regarding the acceptable categorizations, descriptions, and taxonomies of coping dimensions, utilizing statistical methods such as latent profile analysis (LPA; an extension of latent class analysis; Lanza, Flaherty, & Collins, 2003) will allow researchers to identify *typologies* of people rather than a *taxonomy* of variables as is customary in research using exploratory or confirmatory factor analysis. Coping research has yet to focus on whether there exist coping typologies that vary by demographic group status, such as socioeconomic status or race. LPA will provide several benefits for this investigation in that it improves upon traditional grouping or clustering techniques.

In LPA, a person-centered categorical latent variable is derived whereby individuals are assigned to one mutually exclusive profile (or class) based on their responses to observed variables of interest (e.g., coping scales). These classes are then substantively characterized by interpreting responses within and between classes (i.e., conditional response means; Bauer & Curran, 2004). Identifying a categorical latent structure of a construct (i.e., coping) will reveal profiles of individuals who employ similar patterns of responses on the observed variables. Overall, LPA optimally uses the *categorical* latent class variables to find these homogeneous groups of individuals who can then be appropriately classified according to typologies. On the

contrary, factor analysis uses *continuous* latent variables or factors to examine underlying dimensions by explaining the correlations among observed variables (Muthen, 2006). Therefore, this categorical latent structure of coping will reveal profiles of minority adolescents who employ similar patterns of coping responses. This will allow for maximization of within coping class homogeneity, while accounting for heterogeneity between the emergent coping classes. Establishing coping typologies from specific coping strategies, rather than aggregating these strategies into global dimensions, will elucidate variations in the frequency of use of specific coping strategies. In turn, these typologies may be linked to adjustment variables and inform intervention programs by identifying optimal coping typologies and those that are maladaptive.

Present Study

The primary purpose of this current study was to develop a coping *typology* to identify coping profile structures or classes based on individual coping strategies employed by adolescents. Second, we were interested in assessing these identified classes or profile structures in minority adolescents. Third, once classes or typologies were identified, we explored the predictive ability of each class with respect to depression and stress-related growth. We hypothesized that there would be more than two distinct coping profiles to emerge from this group of minority adolescents. The current study both empirically derives and subsequently predicts target outcomes using each coping strategy simultaneously. Moreover, through employing Latent Profile Analysis, we examined coping strategies categorically to account for the most optimal explanation of coping patterns characteristic of the emergent classes.

Method

Participants

Participants included three hundred and fifty four high school students ranging in age from 14 to 18 ($M = 15.5$, $SD = 1.01$). The gender breakdown was roughly equivalent (51% male, 49% female). Participants were recruited from summer residential programs at San Diego State University and participation was voluntary. These programs are aimed at serving low-income students from historically underrepresented groups. It was a requirement of the programs that at least two-thirds of all participating students be both low-income (e.g. below the California poverty line) and first-generation, whereas the remaining one-third can be either low-income or first-generation. Consequently, our sample was primarily low SES. The majority of the sample was Hispanic (33.9%), with smaller percentages of other minority groups: Asian-Americans (32.2%), African-Americans (13.6%), Middle Easterners (4.8%), Biracial students (4.2%), Native Americans (3.4%), Others (3.4%), and Caucasians (2.3%).

Instruments

Coping—To assess dispositional coping style the participants completed the COPE (Carver, Scheier, & Weintraub, 1989). The COPE is a 60-item instrument that asks participants to indicate how they typically cope with stressful events. The COPE was developed to assess a broad range of theory derived coping responses (Carver, Scheier, & Weintraub, 1989). Further, the authors advise against combining scales into an “overall” coping index or into dimensional aggregates, but instead suggest examining each scale in relation to the others. Thus, identifying patterns of coping maximizes the COPE’s design and intended use. Participants were asked to respond to each coping item on a scale of 1–4 where 1 = “I usually don’t do this at all” and 4 = “I usually do this a lot.” Fifteen coping strategies (scales) are assessed with this instrument, with four items representing each scale. Some examples of the items include: “I try to grow as a person as a result of the experience” (positive reinterpretation), “I try to get advice from someone about what to do” (instrumental social support), and “I admit to myself that I can’t

deal with it, and quit trying” (behavioral disengagement). The factorial validity of COPE has recently been established in this multiethnic adolescent sample (Vaughn, 2002). The Cronbach reliabilities for the 13 of the 15 COPE scales used in the present study ranged from ($\alpha = .61$ to $.91$) and were moderate to large (see Nunnally & Bernstein, 1997). The suppression of competing activities and mental disengagement scales were discarded in the analyses due to low reliability values. Coping scores were formed by averaging across items of each of the 13 scales.

Stress-Related Growth¹—Stress-related growth was assessed using the 43-item revised Stress-Related Growth Scale (SRGS; see Armeli, Gunthert, & Cohen, 2001; Park, Cohen, & Murch, 1996) used by Armeli and colleagues (2001). Items on the scale assess the degree to which an individual has grown from their encounter with a stressful event (or events) and were rated from *not at all* (=1) to *a great deal* (=3). Participants were asked to respond to each item with respect to the most stressful event that had occurred over the past year. Sample items included “I learned to be nicer to others” and “I learned that there is a reason for everything.” This scale was internally consistent ($\alpha = .90$).

Depression—Depression was measured using the Children’s Depression Inventory (CDI; Kovacs, 1992). The CDI is a 27-item scale ($\alpha = .95$) that assesses depression levels for the past two weeks in children and adolescents. The CDI is the most widely used measure of depressive symptoms in children (Craighead, Curry, & Ilardi, 1995; Fristad, Emery, & Beck, 1997; Steele, Little, Ilardi, Forehand, Brody, & Hunter, 2006). It is not a diagnostic tool for clinical childhood depression but rather a severity rating scale of depressive symptoms.

Results

Latent profile analysis (LPA; Lanza et al., 2003) was employed to obtain typologies of copers within this minority adolescent sample, and then relate these typologies to the specific outcome measures aforementioned. LPA first utilizes all observations that are associated with the dependent variables and performs maximum likelihood estimation (Little & Rubin, 1987). LPA also allows for the probability of an individual’s membership in a coping profile to be estimated in the same model as the estimation of that profile (Hill, Degnan, Calkins, & Keane, 2006). The flexibility of LPA accounts for the likelihood that there is uncertainty in class membership by allowing both prediction of the probability of membership in a particular group while simultaneously estimating the coping classes. Consequently, each individual’s probability of class membership can be estimated so the person may be classified into the most appropriate class (Hill, Degnan, Calkins, & Keane, 2006). Although the points of the distribution are occupied by individuals in different latent classes, it is up to the analysis interpretations, in light of possible covariates and substantive theory, to decide if these classes can be seen as substantively different categories or simply representative of a single, non-normal distribution (Muthen, 2006). As a result of the flexibility and maximal information accounted for within this analysis, LPA was utilized to derive the optimal number of coping classes or typologies within this minority adolescent sample.

LPA was used to investigate the plausibility of 1-, 2-, 3-, and 4-class solutions. Classes were added iteratively to determine the best model fit for the data according to both statistical and interpretive perspectives. The purpose of this analysis was to derive latent classes that describe different categorical types of participants based on the response pattern associated with continuously-measured observed variables in the data set. LPA assumes a simple parametric

¹The SRG-A and Positive Reinterpretation scale on the COPE were found to be correlated at $.30$ (Vaughn, Roesch, & Aldridge, under review). In a prior study by Vaughn and Roesch (2003) the SRGS and COPE subscale were associated at $\beta = .21$ after controlling for age, gender and other coping strategies (e.g. religion, acceptance).

model and uses the observed data to estimate parameter values for the model (Mplus, Version 4). Model fit was evaluated using the Lo-Mendell-Rubin Adjusted Likelihood Ratio Test (LMRT) that is a statistical indicator of the number of classes that best fit the data (Lo, Mendell, & Rubin, 2001). The LMRT statistically compares the fit of a target model (e.g., a 2-class model) to a model that specifies one fewer class (e.g., a 1-class model). P-values less than .05 indicate that the "higher class" solution fits better (e.g., 2-class better than 1-class). P-values greater than .05 indicate that the "lower class" solution fits better. Both the Akaike Information Criterion (AIC; Akaike, 1974) and the sample size-adjusted Bayesian Information Criterion (BIC; Schwarz, 1978) were also examined to ascertain the most optimal class solution. Optimal model fit is defined by lower AIC and BIC values (i.e., closer to 0). Finally, the Entropy criterion was also examined. Entropy is an index that determines the accuracy of classifying people into their respective profiles or classes, with higher values (i.e., closer to 1.0) indicating that this solution fits better. Table 1 contains the AIC, BIC, LMRT, and Entropy values for the latent profile analyses conducted.

LPA revealed that the 2-class solution was better than the 1-class solution, evidenced by the significance of the LMRT value. The 3-class solution was considered better than the 2-class solution due to both lower AIC and BIC values, a higher Entropy value, and a significant LMRT value. The 4-class solution, despite having slightly lower AIC and BIC values than the 3-class solution, was not statistically different from the 3-class solution according to the LMRT and had a slightly lower Entropy value. As a result, the 3-class solution was deemed the best-fitting model. Class 1 was composed of 157 individuals (44.2%), Class 2 was composed of 171 individuals (48.3%), and Class 3 was composed of 26 individuals (7.3%).

To substantively interpret each class the conditional response means and the overall sample means were evaluated (see Table 2). All conditional response means for class 1 were lower than the overall sample means for every coping scale. Thus, this profile class was referred to as low generic copers, since this profile resembled a similar group of adolescent copers in a study by Seiffge-Krenke and Klessinger (2000). Interpretation of the conditional response means indicated that class 2 reflected individuals who engaged primarily in active coping methods (active coping, planning, instrumental social support) and engaged less in avoidant coping methods (substance use, denial, behavioral disengagement). Accordingly, this class was referred to as active copers. Conditional response means indicated that class 3 reflected individuals who engage in passive or avoidant coping strategies (denial, behavioral disengagement, substance use, focusing and venting emotions), but do not engage in active coping strategies (planning, active coping, instrumental social support) as readily. These adolescents primarily engaged in more avoidant and less active coping strategies than their counterparts in the other two classes, and thus are referred to as avoidant copers.

Subsequently, analyses of covariance with post-hoc comparisons were conducted to test mean differences between the 3 classes in depression and stress-related growth, respectively. Before conducting these analyses we also examined age and gender differences between the three classes. For age we found a small but significant correlation with class ($p = .033$), with active copers slightly older than the other two classes. However, the effect size for age was relatively small (partial $\eta^2 = .019$), indicating age accounted for only 2% of the variance between classes. Using a χ^2 -test of independence, gender effects were found to be non-significant ($p = .731$). Both gender and age of the adolescent were controlled for in all analyses. There were no significant ethnic differences between the three classes of adolescents. A significant omnibus effect was found for depression, $F(2, 340) = 3.84, p = .022$ (partial $\eta^2 = .022$). Avoidant copers experienced significantly more depression than both low generic copers and active copers, respectively ($ps = .006$ and $.014$). No significant difference in depression was found between low generic copers and active copers ($p > .05$). A significant omnibus effect was also found for stress-related growth, $F(2, 340) = 27.48, p < .001$ (partial $\eta^2 = .141$). Active copers

experienced significantly more stress-related growth than both low generic copers and avoidant copers, respectively ($ps < .001$ and $= .002$). No significant difference in stress-related growth was found between low generic copers and avoidant copers ($p > .05$). Descriptives for these adjustment outcome findings are reported in Table 3.

Discussion

The primary goal of the current study was to identify a typology of coping in adolescents. Secondly, the emergent coping typologies classified minority adolescents based on their patterns of coping and related these classes to psychological health outcomes. Overall, the current study found 3 coping profiles that represented a large sample of ethnic minority adolescents. Two of the 3 groups can be characterized according to the traditional coping dimensions of active and avoidant coping. However, a third class (low generic copers) is not represented by existing coping taxonomies. It appears that these low generic copers are experimenting with various coping methods but not employing these strategies to their fullest capacity. It may be that adolescents in this group are still in the process of developing their coping repertoires as they mature. Therefore, identifying simply what strategies an individual uses may not fully explain the effectiveness of those strategies, as could the frequency and pattern of use by that individual.

The results of this study support the notion that more than two typologies underlie the latent variable of coping. While two of the coping profiles that emerged, active and avoidant, resemble the domains of previously defined taxonomies such as approach/active vs. avoidant (Moos & Schaefer, 1993) or problem-focused vs. emotion-focused (Folkman & Lazarus, 1980, 1985), the third profile of low generic copers has yet to be substantially supported in the literature. More recent studies have shown that adolescent coping styles may be described by more than two coping categories. As previously discussed, Seiffe-Krenke and Klessinger (2000) found that adolescents in their longitudinal study could be classified according to four different coping styles. Three of their groups, approachers, avoiders, and low generic copers resembled the approach, avoidant, and low generic coping typologies emergent in the current study. Similar adjustment outcomes were also related to these profiles where both approach and low generic copers experienced better adjustment than the avoidant copers who experienced significantly more depressive symptoms. Further, in a study by Tolan and colleagues (2002) on minority adolescent coping patterns, five distinct coping profiles emerged with two profiles closely resembling the active and low generic copers in the current study. Their group of “complex copers” resembled the active copers of the present study, since adolescents engaged in high levels of coping across various methods except for substance abuse. The second group, classified as “minimal copers,” utilized relatively lower levels of coping across methods and resembled the current class of low generic copers. The avoidant copers of the current study, however, did not closely match any of the remaining three coping groups in the Tolan study. These findings underpin the importance of assessing coping typologies to explain patterns of coping, especially those unique to minority adolescents. Further, a pattern of coping responses unique to an individual may capture more information on coping composition and outcome efficacy, than by evaluating specific methods or coping dimensions alone (Tolan et al., 2002; Timko, Moos, & Michelson, 1993).

The typological profiles of the present study also reflect more recent conceptualizations of the coping model with respect to adolescent coping (e.g., engagement vs. disengagement) (Compas et al., 2001; Connor-Smith et al., 2000). Specifically, the three classes of copers that emerged, and their respective differences in symptoms of depression and stress-related growth, can be linked to Lewis and Frydenberg’s (2004) model of coping outcomes that include: “thriving” (e.g., well-being and contentment), “surviving” (e.g., lack of dysfunction and well-being), and “going under” (e.g., distress and dysfunction). Through their study, the authors

were able to identify both the frequency and effectiveness of particular coping strategies at different outcome levels. Those adolescents who employed productive coping strategies (e.g. solve the problem) frequently and effectively were found to have improved outcomes (or thrive) relative to those who employed nonproductive strategies (e.g. wishful thinking; Lewis and Frydenberg, 2004). First, in relating the current study's coping classes to this model, active copers could be considered "thrivers" since they experienced less depressive symptoms and increased stress-related growth. Second, the low generic copers appear to be "survivors" in that they have reduced symptoms of depression but fail to grow through their stressful experiences. Third, the avoidant copers do in fact "go under" as they not only fail to experience stress-related growth but actually experience more symptoms of depression. The impact of both coping frequency and effectiveness further underpins the importance of evaluating patterns of coping repertoires to create typologies of adolescent copers. These findings therefore provide a more descriptive and comprehensive conceptualization of the emergent coping typologies and related outcomes.

The considerably most adaptive coping typology that emerged via LPA was the group of active copers that comprised 48.3% of this low SES minority adolescent sample. Research has supported that active coping leads to improved psychological health and functioning (Compas, Worsham, & Ey, 1992; Kliewer, 1997; Suls & Fletcher, 1985). Active copers were found to primarily engage in positive reinterpretation, instrumental social support, and planning, respectively. These three primary strategies have been considered in the literature as active, engagement, or approach focused coping strategies (Compas et al., 2001; Holahan & Moos, 1987; Moos & Schaefer, 1993), evidencing the active nature in which this class of minority adolescents cope. The use of primarily active strategies (e.g. positive reinterpretation) within their coping repertoires coincides with the literature to reflect lower levels of depressive symptoms and increased stress-related growth (Compas, Worsham, & Ey, 1992; Carver, Scheier, & Weintraub, 1989; Kliewer, 1997; Seiffge-Krenke & Klessinger, 2000; Suls & Fletcher, 1985; Vaughn, Roesch, & Aldridge, under review). While active copers were found to use more active coping strategies than the other two coping groups, they also used avoidant or disengagement strategies, albeit to a lesser degree than the avoidant coping group members. Acceptance, religion, and humor, considered emotion-focused strategies (Folkman & Lazarus, 1988), were the only "non-active" coping strategies employed by active copers. These forms of coping are generally considered positive strategies that lead to more adaptive outcomes (Carver et al. 1993; Compass, Malcarne, & Fondacaro, 1988; Emmons, Colby, & Kaiser, 1998). Their increased use of acceptance indicates that active adolescent copers are likely more capable of conceptualizing stressors beyond their control, an adaptive function to cope with uncontrollable stressors (Altshuler & Ruble, 1989; Compas, Malcarne, & Fondacaro, 1988; Weisz, McCabe, & Denning, 1994). Greater use of religious coping has also been shown to enhance stress-related growth and improve adjustment in individuals for which religiosity is particularly salient (Emmons, Colby, & Kaiser, 1998; Pargament, Koenig, & Perez, 2000; Park, Cohen, & Murch, 1996). Reflective of these findings, active copers were the only group to experience increased stress-related growth in contrast to their low generic and avoidant copers counterparts. The use of humor as a strategy may also indicate that active copers are more adept at positively reframing stressful situations, ultimately leading to improved affect and psychological health (Kuiper, McKenzie, & Belanger, 1995), as well as positive reframing (Abel 2002; Carver et al. 1993), and reversal and minimization of threatening situations (Rim, 1988). Finally, active copers engaged in considerably less maladaptive avoidant strategies, such as substance use and behavioral disengagement, indicating an overall more adaptive use of their coping repertoires.

Adolescents within the avoidant coping typology were maladjusted in relation to the other two groups. However, there were relatively few of these adolescents, since they comprised only 7.3% of the entire sample. This indicates that perhaps only a small subset of minority

adolescents are likely at higher-risk for poor psychological health outcomes. Avoidant copers were those adolescents who engaged in more strategies considered avoidant/disengaging and less so in strategies considered active/engaging, distinguishing this group from low generic copers who minimally employed all forms of both active and avoidant coping. The avoidant group characteristically preferred to focus on and vent their emotions and engage in substance use, respectively. Though focusing on and venting of emotions could be considered adaptive in some circumstances (e.g., mourning, painful medical procedures), this is generally considered to impede more adaptive coping processes, resulting in worse adjustment outcomes (Aldwin & Revenson, 1987; Billings & Moos, 1984; Carver, Scheier, & Weintraub, 1989). Further, frequent engagement in substance use is also considered a maladaptive form of coping, likely leading to negative psychological health outcomes and risky consequences (e.g., personal injuries, unplanned sexual activity, legal and academic problems) for these adolescents (Cooper, 2002; Park & Grant, 2005; Perkins, 2002; Syre, Pesa, & Cockley, 1999; Wechsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998). Additionally, relative to the other coping groups, avoidant copers engaged in more denial and behavioral disengagement, which are strategies that have been linked to maladjustment (Compas et al., 2006; Lewis and Frydenberg, 2004; Seiffge-Krenke, 2000). Despite frequent use of an active coping method, instrumental social support, this typology of copers utilized more avoidant/disengaging strategies relative to the active/engaging coping strategies available within their repertoires.

The last coping profile to emerge, low generic copers, was uncharacteristic of any previously defined taxonomies, revealing a coping profile in which adolescents minimally employed the coping strategies measured. These copers comprised a large portion (44.6%) of the sample, highlighting the importance of this group in achieving a better understanding of coping processes in minority adolescents. The typology of this new class of copers suggests that distinguishing adolescents according to their coping preferences, based on disparate taxonomies of coping (i.e. active vs. avoidant, engagement vs. disengagement), does not adequately account for the way in which these adolescents cope. Overall, these minority adolescent low generic copers were relatively psychologically healthy, as their depressive symptoms were considerably lower than avoidant copers. These findings resonate with those of Seiffge-Krenke and Klessinger (2000), where their low-generic copers also experienced fewer depressive symptoms than adolescents employing more avoidant strategies. This indicates that though they are using the coping strategies in their repertoires sparingly, the coping strategies they do employ (though less frequently) are in fact useful and somewhat similar to active copers at reducing the effect of stress on their psychological health.

The current study sought to identify coping typologies in low SES minority adolescents for the purpose of elucidating coping profiles and how they relate to target outcome variables. Unlike much of the current research on coping that examines global coping dimensions, this study used LPA to examine coping profiles. Sparsely used within the adolescent coping literature, it was discerned through PsychINFO and PsychArticles literature searches that this procedure has yet to be employed for the assessment of coping processes in minority adolescents. Eid, Langeheine, and Diener (2003) similarly found attempts to use latent class analysis and extensions to compare typological structures between various cultures relatively insufficient. Utilizing LPA allows for the inclusion of all coping strategies used by minority adolescents, regardless of how strategies are classified within existing taxonomies (active vs. avoidant; engagement vs. disengagement). Identifying coping typologies of adolescents can enhance our understanding of the complex range of coping processes they employ, as well as inform future risk-assessment and intervention protocols.

Despite these positive implications, this study is not without several limitations. First, due to sample size constraints, it was not possible to assess individual ethnic groups within each profile or according to their respective psychological health outcomes. A more thorough test

of the latent coping variable and related profiles would be to use LPA, for example, in equally large samples of Hispanics/Latinos, Asians, and African-Americans. Second, the participants in this study were primarily low SES and ethnic minorities, so coping profiles should also be tested within both Caucasian samples and middle- to upper-SES samples of adolescents. Thus, the generalizability of these findings is questionable due to our low socioeconomic status minority sample. Third, evaluating stress exposure and type of stressor, rather than just stress reactivity, is crucial in understanding the stress and coping process (see Bolger & Zuckerman, 1990). Exposure is the extent to which an individual with certain characteristics (e.g., high in hope) is likely to experience a stressful event or type of stressful event (e.g., disagreement with a peer). This reactivity may differentially influence the choice of strategies adolescents ultimately exercise within their coping repertoires. Fourth, the study is cross-sectional by design and thus a longitudinal approach to measuring coping and adjustment outcomes would enhance the generalizability and utility of the findings. Fifth, the COPE is a dispositional or trait measure of coping. Thus, responses to specific external stressors may result in different coping profiles. Last, one could argue that a 2- or 4-class solution better represented the data based on LMRT, as well as AIC and BIC values respectively. The 3-class solution, however, parsimoniously represented the data both statistically and interpretively.

The findings from the current study have important implications for understanding the complex repertoires minority adolescents use to cope with stress, and more generally the underpinnings of the latent coping construct. A 3-class solution was found to best represent the data, and was comprised of active, low generic, and avoidant copers. These three coping typologies or profiles were associated with distinct outcomes in depression and stress-related growth, with active copers experiencing the least depression and avoidant copers experiencing significantly more depressive symptoms. Further, active copers were the only group to experience stress-related growth. Thus, results from this study elucidate possible markers for minority adolescents with high-risk coping profiles (e.g., avoidant copers), and may inform intervention programs to focus on improving adaptive use of specific coping strategies within an adolescent's coping repertoire.

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Table 1
Model Fit Indexes for the 2-, 3-, and 4-Class Solution

Fit Index	2-Class	3-Class	4-Class
AIC:	10004.411	9665.253	9514.925
BIC:	10159.183	9874.195	9778.037
LMRT:	504.445, $p = .01$	362.744, $p = 0.05$	176.184, $p = 0.11$
Entropy:	0.79	0.89	0.87

AIC = Akaike Information Criterion, BIC = sample size-adjusted Bayesian Information Criterion, LMRT = Lo-Mendell-Rubin Test.

Table 2
Coping Profile Conditional Response Means and Overall Sample Means

Coping Item	Sample Mean (n = 354)	(SD)	Class 1: Low Generic Copers (n = 157)	(SD)	Class 2: Active Copers (n = 171)	(SD)	Class 3: Avoidant Copers (n = 26)	(SD)
Positive Reinterpretation	2.91	(.69)	2.62	(.69)	3.23	(.60)	2.61	(.53)
Focus on Venting & Emotions	2.44	(.81)	2.10	(.79)	2.68	(.70)	2.99	(.71)
Instrumental Social Support	2.57	(.83)	1.92	(.59)	3.13	(.73)	2.77	(.54)
Active Coping	2.58	(.68)	2.23	(.63)	2.92	(.73)	2.43	(.52)
Denial	1.73	(.69)	1.65	(.69)	1.75	(.58)	2.13	(.69)
Religious	2.63	(.99)	2.48	(1.04)	2.81	(.84)	2.37	(.93)
Humor	2.05	(.94)	1.89	(.94)	2.17	(.97)	2.15	(.92)
Behavioral Disengagement	1.67	(.63)	1.65	(.59)	1.60	(.77)	2.33	(.58)
Restraint	2.34	(.65)	2.15	(.62)	2.52	(.71)	2.26	(.62)
Emotional Support	2.48	(.91)	1.77	(.61)	3.09	(.74)	2.70	(.65)
Substance Use	1.21	(.56)	1.08	(.24)	1.07	(.63)	2.95	(.22)
Acceptance	2.69	(.76)	2.49	(.76)	2.88	(.81)	2.62	(.70)
Planning	2.69	(.78)	2.30	(.72)	3.09	(.58)	2.42	(.64)

Table 3
Coping Profile Differences in Adjustment Outcome Variables

Outcome Measure	Class-1		Class-2		Class-3	
	(Mean)	(SD)	(Mean)	(SD)	(Mean)	(SD)
CDI:	1.73	(.54)	1.77	(.58)	2.07 ^{*1}	(.67)
SRGS:	2.24	(.40)	2.53 ^{*2}	(.34)	2.29	(.31)

^{*1} = $p < .01$ (class 3 experienced significantly more depressive symptoms than the other two classes).

^{*2} = $p < .01$ (class 2 experienced significantly more stress-related growth than the other two classes).