RELATIONSHIPS BETWEEN COPING STYLE AND PAI PROFILES IN A COMMUNITY SAMPLE

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Relationships between coping style and psychological functioning were examined in a heterogeneous community sample \((N = 168)\). Psychological functioning was categorized with the Personality Assessment Inventory (PAI; Morey, 1991). Subjects were assigned to PAI configural profile clusters, using T-scores from PAI clinical scales. Three PAI clusters were prominent in this sample: normal, anxious, and eccentric. Multivariate analysis of covariance revealed that these clusters differed significantly in coping style, as measured by the dispositional format of the COPE Inventory (Carver, Scheier, & Weintraub, 1989). Normals coped through avoidance significantly less than anxious or eccentric subjects. Also, normals engaged in seeking social support and venting more than eccentric but less than anxious subjects. Gender differences also were noted, with women more likely to cope by seeking social support and men more likely to cope through hedonistic escapism. © 1996 John Wiley & Sons, Inc.

The relationship between coping style and psychological functioning has received considerable attention in past research. An early study (Pearlin & Schooler, 1978) found that using adaptive coping strategies, such as self-reliance or positive comparisons, affected emotional well-being by reducing stress. Pearlin and Schooler (1978) concluded that effective coping was predictive of good psychological health.

Other studies also have supported the premise that adaptive coping was negatively associated with psychopathology (e.g., McCrae & Costa, 1986; Mitchell, Cronkite, & Moos, 1983; Petrosky & Birkimer, 1991). Furthermore, several studies indicated that the use of maladaptive coping behaviors was positively associated with psychological dysfunction (e.g., Billings & Moos, 1981; Menaghan, 1982; Nowack, 1989).

Variation in relationships between coping and psychopathology may depend on the type of dysfunction in question (Wheaton, 1983). For instance, depressed individuals may cope through avoidance (Coyne & Downey, 1991), emotional discharge (Billings & Moos, 1984; Coyne & Downey, 1991; Folkman & Lazarus, 1988), seeking instrumental or emotional social support (Coyne & Downey, 1991), or engaging in wishful thinking (Coyne, Aldwin, & Lazarus, 1981), while highly anxious individuals may cope through seeking information and ruminating about their problems (Fuller & Conner, 1990).

Currently, the DSM-IV (American Psychiatric Association, 1994) includes behavioral descriptors in its diagnostic criteria, but provides almost no information regarding coping...
styles associated with diagnostic categories. DeNelsky and Boat (1986) sought to expand DSM criteria by categorizing individuals on the basis of coping skills or deficits. In this same vein, Donat, Geczy, Helmrich, and LeMay (1992) examined personality concomitants and coping styles of psychiatric inpatients. They described five distinct personality clusters that differed significantly in the extent to which cluster members engaged in active coping, acceptance, cognitive reinterpretation, or denial.

A recent investigation (Endler, Parker, & Butcher, 1993) examined relationships between coping styles and psychopathology in a nonclinical sample. Endler et al. (1993) administered the MMPI-2 (Hathaway & McKinley, 1989) and the Coping Inventory for Stressful Situations (CISS; Endler & Parker, 1990) to 167 normal adult males. Scale scores from the MMPI-2 content scales and the CISS scales were then subjected to a second-order factor analysis, using principal components extraction with varimax rotation. Results indicated a strong positive relationship between emotion-focused coping and psychopathology.

**PURPOSE**

Like Endler et al. (1993), the chief purpose of the present study was also to examine relationships between coping behaviors and psychological functioning in a heterogeneous sample of subjects. Psychological functioning was categorized by assigning subjects to configural profile clusters of the PAI (Morey, 1991). Using the PAI responses of 300 subjects from various patient settings, Morey (1991) derived 10 clusters, each with a distinctive PAI configural profile. The PAI manual gives a detailed description of characteristics associated with each of these clusters. However, information about the types of coping strategies commonly used by cluster members is provided only indirectly. This study expanded the definitions of identified PAI clusters to include coping strategies typically employed by cluster members.

In the process of exploring coping correlates of PAI clusters, a second-order factor analysis was performed using subjects’ scale scores on the COPE Inventory (Carver, Scheier, & Weintraub, 1989). This analysis facilitated exploration of general coping styles associated with PAI clusters. In addition, it presented an opportunity to replicate the second-order factor structure reported by Carver et al. (1989). Finally, factor analysis provided information regarding the placement of two experimental primary factors, humor and alcohol/drug use, in the COPE’s second-order factor structure.

An auxiliary focus of this study was to examine gender differences in subjects’ coping styles. Based on the findings of Carver et al. (1989), it was hypothesized that women would engage more frequently in social support seeking and in venting as means of coping, while men would be more likely to use alcohol or drugs as a coping mechanism. Several studies have reported gender differences in coping responses (e.g., Billings & Moos, 1981; Brems & Johnson, 1989; Hovanitz & Kozora, 1989; Long, 1990; Parkes, 1990), but some exceptions were noted (e.g., Folkman & Lazarus, 1980; Hamilton & Fagot, 1988). The lack of consensus in the literature about the existence of gender differences in coping behavior indicated that this topic bore further scrutiny.

**METHOD**

**Subjects**

Subjects included a diverse group of volunteers (N = 183) over the age of 18 and residing in the greater metropolitan Chicago area. One-third (33%) of the subjects were recruited from Governors State University, a medium-sized suburban institution that serves primarily full-time employed and returning adult students. Thirty percent of the subjects came from the Illinois Institute of Technology, a medium-sized urban university with a traditional undergraduate and graduate student population. The rest of the sample (37%) con-
Coping Style and PAI Profiles

sisted of individuals from various community groups such as volunteer organizations and church groups.

Fourteen subjects were excluded from subsequent data analyses due to failure to complete all questionnaires, while one was excluded for failing to meet normative age requirements for the PAI. The remaining sample \( N = 168 \) was predominantly White (78.6%) and female (59.5%). Subjects ranged in age from 18 to 76 \( M = 34.0, SD = 12.8 \), and in educational attainment from 11 to 21 years of schooling \( M = 15.4, SD = 2.2 \).

Self-Report Measures

Subjects' coping styles were assessed with a 60-item instrument called the COPE Inventory (Carver et al., 1989). The COPE can be used to measure either dispositional or situational coping across 15 different strategies, e.g., active coping, seeking social support, or denial (Carver & Scheier, 1994; Carver et al., 1989). Respondents rate how much they use each strategy on a scale from 1 (almost never used) to 4 (almost always used). Scale scores thus ranged from 4 to 16.

Psychological functioning of subjects was measured with the PAI (Morey, 1991). The PAI is a 344-item questionnaire subdivided into 22 non-overlapping scales. Four validity scales check subjects' responses for inconsistent or random responding, malingering, or exaggerated positive self-representation. Eleven clinical scales measure symptoms of familiar clinical constructs such as anxiety, depression, or schizophrenia. The PAI also includes five treatment scales intended to examine issues such as the presence of suicidal ideation or likelihood of aggressive behavior, as well as two interpersonal scales to assess clients' dominance and warmth. Subjects' responses are converted to T-scores for each scale. Although little published research using the PAI is currently available (cf. Costa & McCrae, 1992; Rogers, Ornduff, & Sewell, 1993), psychometric information found in the test manual suggests that this instrument is an acceptable device for assessing psychological functioning in an adult population.

Procedure

A brief explanation of the study was presented to potential subjects. Participants received packets containing an instruction sheet, volunteer consent forms, a demographic information survey, the COPE Inventory in its dispositional format, the PAI, and a PAI scoresheet. These materials were completed in either individual or group administrations and then returned to the experimenter.

RESULTS

PAI Clusters

Subjects' psychological functioning was classified by assigning each individual to one of 10 PAI clusters, following the exact procedures identified by Morey (1991). First, the mean T score of the 11 PAI clinical scales \( X \) was computed for each subject. Next, deviation scores were calculated by subtracting \( X \) from a subject's T score on each of the clinical scales. These 11 deviation scores were entered into formulas given by Morey (1991) to calculate a subject's squared Euclidean distance from each of the 10 PAI cluster centroids. Each subject was then assigned to the PAI cluster from which its profile was least distant, in other words, most similar. This approach minimizes the influence of scale elevations and stresses the interrelationship between scales. The resulting clusters have distinct configural profiles, which can be used to draw inferences about psychopathology, in much the same way that MMPI two-point codes are used.

The largest group of subjects (42.3%; \( n = 71 \)) belonged to Cluster 1, which Morey (1991) described as comprised of generally well-functioning individuals who give little evidence of psychological difficulties. The next largest group (23.8%; \( n = 40 \)), matching Morey's Cluster 5, contained subjects experiencing anxiety due to acute stress. The third group
of subjects (23.2%; n = 39), equivalent to PAI Cluster 6, were described as eccentric; tending to be cold, aloof, impulsive, and aggressive, and harboring unusual beliefs.

Clusters 1, 5, and 6 accounted for 89.3% of the sample, with the remaining subjects (n = 18) distributed among four other PAI clusters (Clusters 2, 7, 8, and 10). Because the number of subjects in each of these four clusters was too small to permit meaningful statistical comparisons, these clusters were excluded from further analyses.

Kruskal–Wallis one-way analyses of variance (ANOVA) were conducted to check for differences in categorical demographic variables among Clusters 1, 5, and 6. No significant differences were observed for subjects’ language, ethnicity, or marital status; however, the clusters differed significantly with regard to gender, tie-corrected Chi-square \((2, N = 150) = 12.4731, p < .002\). Cluster 1 contained 28 males and 43 females, Cluster 5 contained 9 males and 31 females, and Cluster 6 contained 24 males and 15 females.

One-way ANOVAs were performed to assess for differences among the three clusters on the continuous demographic variables of age and education. No significant differences in educational level were revealed. There was a trend for cluster differences in the age of subjects, \(F(2, 147) = 2.93, p = .057\). Mean years of age for subjects in Clusters 1, 5, and 6 were 35.1, 36.4, and 30.0, respectively.

**COPE Factor Analysis**

To explore coping strategies associated with the PAI clusters identified in this sample, a replication of the second-order factor structure of the COPE was performed. The first step in this replication involved creating a correlation matrix from subjects’ scores on the 15 scales of the COPE Inventory, to determine whether orthogonal or oblique rotation should be used in the factor analysis.

The resulting 15 \(\times\) 15 matrix revealed 44 statistically significant intercorrelations among the primary factors of the COPE, suggesting that oblique rotation should be used in subsequent factor analysis. Carver et al. (1989) also employed oblique rotation when performing a second-order factor analysis of the COPE. Thus, oblique rotation was justified on the basis of systematic replication as well as on the basis of sample data.

A second-order factor analysis, using principal components extraction with oblique rotation, was performed on subjects’ scale scores for the COPE Inventory. Five factors with eigenvalues greater than one emerged in the analysis. Eigenvalues for Factors One through Five were 3.35, 2.26, 1.64, 1.31, and 1.13, respectively. The pattern matrix is presented in Table 1.

The five factors accounted for roughly 65% of the variance in subjects’ responses. Factor loadings with absolute values greater than or equal to .30 were used as cutoff points to determine the composition of each second-order factor. A label was then assigned to each factor, in keeping with terminology previously found in the literature (e.g., Aldwin & Revenson, 1987; Clark & Hovanitz, 1989; Lazarus & Folkman, 1984; Miller, Brody, & Summerton, 1988; Parkes, 1990; Roth & Cohen, 1986; Terry, 1994; Vitaliano et al., 1990).

Factor One was comprised of the following COPE scales (in descending order according to factor loading): suppression of competing activities, planning, restraint coping, and active coping. This factor was labelled Problem-focused Coping. Factor Two consisted of the denial, behavioral disengagement, and mental disengagement scales, with negative loadings on active coping and planning; it is dubbed the Avoidance factor. Factor Three, termed the Social Support factor, was formed by strong negative loadings on the emotional social support, focus on venting of emotions, and instrumental social support scales. The fourth factor included negative loadings on the acceptance, religion, positive reinterpretation/growth, and restraint scales, as well as a positive loading on the alcohol/drug scale. This factor was labelled Positive Reappraisal.

Factor Five, composed of the humor and alcohol/drug scales, did not directly correspond to any coping factors previously identified in the literature. Although the coping strategies affiliated with this factor could be construed as similar to avoidance, they involve...
Table 1
Pattern Matrix for COPE Inventory (N = 168)

<table>
<thead>
<tr>
<th>COPE Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Coping</td>
<td>.47</td>
<td>-.50</td>
<td>-.17</td>
<td>-.13</td>
<td>.21</td>
</tr>
<tr>
<td>Planning</td>
<td>.60</td>
<td>-.44</td>
<td>-.11</td>
<td>-.15</td>
<td>.12</td>
</tr>
<tr>
<td>Suppression</td>
<td>.83</td>
<td>.11</td>
<td>.00</td>
<td>.18</td>
<td>-.09</td>
</tr>
<tr>
<td>Restraint</td>
<td>.58</td>
<td>.13</td>
<td>.03</td>
<td>-.31</td>
<td>-.10</td>
</tr>
<tr>
<td>Instrumental Social Support</td>
<td>.12</td>
<td>-.16</td>
<td>-.75</td>
<td>-.11</td>
<td>.24</td>
</tr>
<tr>
<td>Emotional Support</td>
<td>-.03</td>
<td>-.01</td>
<td>-.91</td>
<td>-.09</td>
<td>-.01</td>
</tr>
<tr>
<td>Growth</td>
<td>.13</td>
<td>-.25</td>
<td>-.02</td>
<td>-.62</td>
<td>.23</td>
</tr>
<tr>
<td>Acceptance</td>
<td>.01</td>
<td>.12</td>
<td>.01</td>
<td>-.71</td>
<td>.12</td>
</tr>
<tr>
<td>Religion</td>
<td>-.00</td>
<td>.09</td>
<td>-.09</td>
<td>-.66</td>
<td>-.21</td>
</tr>
<tr>
<td>Venting</td>
<td>-.08</td>
<td>.18</td>
<td>-.83</td>
<td>.14</td>
<td>-.18</td>
</tr>
<tr>
<td>Denial</td>
<td>.09</td>
<td>.82</td>
<td>.00</td>
<td>-.05</td>
<td>-.07</td>
</tr>
<tr>
<td>Behavioral Disengagement</td>
<td>-.02</td>
<td>.74</td>
<td>-.09</td>
<td>.03</td>
<td>.02</td>
</tr>
<tr>
<td>Mental Disengagement</td>
<td>.09</td>
<td>.70</td>
<td>.01</td>
<td>-.16</td>
<td>.27</td>
</tr>
<tr>
<td>Alcohol/Drugs</td>
<td>.20</td>
<td>.26</td>
<td>-.04</td>
<td>.38</td>
<td>.61</td>
</tr>
<tr>
<td>Humor</td>
<td>-.20</td>
<td>.00</td>
<td>.04</td>
<td>-.14</td>
<td>.82</td>
</tr>
</tbody>
</table>

pleasure-seeking behaviors. In contrast, the coping methods associated with the Avoidance factor involve denial and disengagement. Consequently, Factor Five was named Hedonistic Escapism.

**Multivariate Analysis of Covariance**

Differences in coping style among the three PAI clusters in the present sample were examined through a 2 (gender) X 3 (cluster) multivariate analysis of covariance (MANCOVA), with age as a covariate and subjects' factor scores as the dependent measures. No interaction between independent variables was demonstrated; however, a significant main effect was obtained for cluster group, Pillai's V = .17861, approximate F(10, 280) = 2.75, p = .003. Univariate analyses of variance (ANOVA) indicated significant differences among the clusters on COPE factors Two/Avoidance, F(2,143) = 4.14, p = .018, Three/Social Support, F(2,143) = 3.61, p = .030, and Four/Positive Reappraisal, F(2,143) = 3.49, p = .033.

A post-hoc test using Tukey's b procedure (Norusis, 1993) showed that subjects in Cluster 1 ("normals") engaged in avoidance significantly less than subjects in Clusters 5 and 6. Tukey's b procedure also revealed that the three clusters differed in their use of social support and venting as coping behaviors; Cluster 1 subjects tended to employ these methods more than subjects in Cluster 6 ("eccentric"), but less than those in Cluster 5 ("anxious"). No pairwise differences between clusters were obtained on Factor Four/Positive Reappraisal. A comparison between Cluster 6 and a combination of Clusters 1 and 5 showed a trend for differences, p = .059; eccentric subjects were less likely to cope through the use of positive reappraisal than normal or anxious subjects.

A significant main effect also was observed for gender, Pillai's V = .12121, exact F(5,139) = 3.83, p = .003. Univariate ANOVAs revealed that men and women differed on Factor Three/Social Support, F(1,143) = 5.03, p = .026, and on Factor Five/Hedonistic Escapism, F(1,143) = 9.39, p = .003. These results indicated that women were more likely than men to seek social support and to vent when coping with stress. In contrast, men were more likely than women to utilize alcohol, drugs, or humor as coping aids.

**DISCUSSION**

The present study identified three separate groups of subjects within the sample on the basis of their responses to the PAI. While the largest group of subjects gave little indication
of psychological dysfunction, the other two groups were characterized respectively by stress-related anxiety or by tendencies toward idiosyncratic thinking, social isolation, and impulsivity.

It was further demonstrated that these three groups differed significantly in terms of dispositional coping style. This information has potential clinical relevance and can be used to supplement the descriptions found in the PAI manual for these three groups. The normal group tended to engage in less avoidance than either the anxious or eccentric groups. In addition, normals tended to seek social support and to vent their feelings more frequently than eccentric subjects, but less frequently than anxious subjects. The latter finding supports the results of Fuller and Conner (1990), who reported that anxious individuals tended to seek information (i.e., instrumental social support) and to ruminate about problems (in other words, to focus on their emotions).

According to Blashfield (1984), one possible approach to validating a clustering solution is to test for significant differences among the clusters on a set of independent variables that were not used in forming the clusters (p. 256). As described above, the three clusters in the present study differed significantly on three of the five coping factors assessed by the COPE Inventory. Therefore, these differences support the validity of Morey's (1991) cluster solution with regard to the three clusters identified in the present sample.

Eighteen subjects in this study were assigned to one of four other PAI clusters. Five subjects were assigned to Cluster 2, which Morey (1991) described as depressed, withdrawn individuals. Four subjects were identified as members of Morey's (1991) Cluster 7, which was characterized by severe, agitated depression. Two subjects from the present sample matched Morey's (1991) Cluster 8, indicating subjects with somatic complaints, while seven subjects belonged to Morey's (1991) Cluster 10, which corresponds to traits typically found in borderline personality disorder.

Clusters not found in the present sample included Morey's (1991) Clusters 3, 4, and 9. Morey (1991) described subjects from these three clusters as having significant problems with alcohol and/or drug abuse; individuals in Clusters 4 and 9 also might have histories of antisocial conduct.

The nature of the clusters identified in the present sample makes sense in a nonclinical sample. That is, a sample comprised of students and members of community organizations would be less likely to include individuals who have significant problems with substance abuse and/or antisocial behavior.

In the process of examining coping styles among the three groups of subjects, the second-order factor structure of the COPE Inventory was replicated. This matrix was essentially the same as the second-order factor structure of the COPE reported by Carver et al. (1989).

This study also provided new information about the placement of the alcohol/drug and humor scales in the second-order factor structure of the COPE. These two experimental scales were not included in the original second-order factor analysis conducted by Carver et al. (1989). Although the alcohol/drug scale loaded inversely on Factor Four/Positive Re-appraisal, it loaded strongly on a fifth factor that also contained the humor scale. This new factor was coined Hedonistic Escapism, to encompass the connotations associated with the use of alcohol, drugs, and humor as means of coping with stress.

Results indicated that men tended to engage in hedonistic escapism as a coping strategy significantly more than women did. Another gender difference that emerged was women's greater preference for seeking social support, as well as for focusing on and venting their emotions. These findings matched the gender differences reported by Carver et al. (1989), confirming the hypothesis presented in the introduction.

Nolen-Hoeksema (1987) has reported that depressed men are likely to pursue distracting, mood-dampening activities, while depressed women are likely to ruminate about their depressive states. Distracting, mood-dampening behavior appears to be synonymous with hedonistic escapism in the present study, while rumination is analogous to focusing on one's emotions. Thus, results of the present study support Nolen-Hoeksema's (1987) findings and lend further support for the reliable existence of gender differences in coping style.
The lack of independent diagnostic information regarding subjects' psychological status is a limitation of this study, as is the use of only self-report measures of subjects' coping styles. Such measures may be influenced by social desirability and may only be reporting subjects' self-perceptions of coping, rather than actual coping style. The inclusion of behavioral observations by the experimenter, information from collateral sources, or other methods of assessment would have enhanced the generalizability of this study.

Hence, future research in this area should employ multiple assessment methods so that subjects' coping styles may be determined with greater accuracy. Gender differences in coping style merit additional study. Further exploration of coping style in relation to psychosocial factors and personality characteristics would have enhanced the generalizability of this study.

The multidimensional nature of coping styles requires a thorough understanding of behavioral differences among different diagnostic categories. Lastly, the clinical utility of diagnostic information about coping style needs to be established.

REFERENCES


