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# THE JAPANESE VERSION OF THE COPING ORIENTATION TO PROBLEMS EXPEREINCED: A STUDY OF JAPANESE SCHOOLTEACHERS[1,2]

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*Summary.*—To investigate the internal consistency reliability and three types of validity of the Coping Orientation to Problems Experienced (COPE), a survey was conducted among 209 English schoolteachers in Japan. The Japanese version of the COPE Inventory was developed through a back-translation process. Cronbach coefficients alpha for the Japanese version were above .70 for all subscales except five, including Acceptance and Restraint, so internal consistencies for these five were insufficient. Goodness of fit indexes for a confirmatory factor analysis were acceptable except for the Comparative Fit Index. Scores on COPE subscales were significantly correlated with scores on other tests (29 of 75 correlations were in the expected directions). Further exploration is required for several subscales and for generalization to Japanese-speaking populations in careers other than teaching to ensure the Japanese version of the COPE will be useful in assessing coping strategies. Given the limitations, present data for Japanese teachers are encouraging.

"Coping" has been defined as cognitive and behavioral effort to manage specific external or internal demands appraised as taxing or exceeding persons' resources (Lazarus & Folkman, 1984). Coping has been the focus of much research and practice in the social and behavioral sciences, medicine, health psychology, and occupational mental health. This study of coping and adaptation has rarely been divorced from examination of individual

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differences (Suls, David, & Harvey, 1996). Coping may generally operate as a mediator of the stressor–strain relationship, so it is not only helpful in explaining individual variability in response to stressors but also serves as a focus for cognitive-behavioral intervention (Folkman & Moskowitz, 2004). Individual differences in coping skills might be a major mediator of the stressor–strain relationship.

Currently, several coping scales are used in Japan; however, most measure only limited aspects of coping. For example, the intervention study by Shimazu, Umanodan, & Schaufeli (2006) used the Active Solution subscale of the Brief Scales for Coping Profile (Kageyama, Kobayashi, Kawashima, & Kanamaru, 2004), which was developed from Lazarus' distinction of problem-focused and emotion-focused coping (Lazarus & Folkman, 1984). After factor analysis, six subscales were categorized to measure workers' coping strategies of Changing Mood, Active Solution for Problems, Avoidance and Suppression, Changing a Point of View, Seeking Help for Solution, and Emotional Expression Involving Others. However, these distinctions of coping seem to be too simple (Carver, Scheier, & Weintraub, 1989). Another intervention study by Shimazu and Kosugi (1997) used the Job Stress Scale with five subscales for Proactive, Distancing, Seeking Social Support, Resignation, and Restraint. The test items were derived mainly from other questionnaires, and the five subscales were based on factor analysis. Although both of these scales estimated validity and reliability, the tests are only of limited practical interest because they measure only a few coping strategies, six and five types, respectively.

The Coping Orientation to Problems Experienced (Carver, *et al.*, 1989) is one of the most widely used measures of coping (Rudisill & Edwards, 2002). It has 15 subscales, based on specific theoretical arguments about the Lazarus model of stress (Lazarus & Folkman, 1984), a model of behavioral self-regulation (Carver & Scheier, 1981, 1983, 1985; Scheier & Carver, 1988), and previous research on coping. This inventory has been translated into several languages (e.g., Spanish: Perczek, Carver, & Price, 2004; French: Muller & Spitz, 2003; Italian: Sica, Novara, Dorz, & Sanavio, 1997; Estonian: Kallasmaa & Pulver, 2000; and Croatian: Kardum & Hudek-Knežević, 1996) and has been used in a variety of studies to assess aspects of coping. For example, Mearns and Mauch (1998) reported that high negative mood-regulation expectancy predicted greater use of active coping strategies, measured by COPE in a sample of police officers in the USA. Ray, Jefferies, and Weir (1997) showed that impairment of patients with chronic fatigue syndrome was predicted by scores on behavioral disengagement on the COPE. Measuring a wide range of coping strategies may potentially satisfy many aspects of the specific stressor–strain relationship.

Given the inventory's success, the purpose of this study was to develop

a Japanese version of the COPE to extend research on coping in Japan. The first step was to test Japanese language items for internal consistency reliability and validity.

## Method

### *Participants*

The COPE was included in a large battery of assessment devices administered by mail to a sample of 1,000 randomly selected English teachers in high school and junior high school. The choice of this group allowed the direct comparison of the English and Japanese versions of the COPE, which did not differ much, since other samples would not have allowed such a comparison and the use of other English language tests in estimating construct validity. A total of 342 of the 1,000 participants returned the questionnaire (response rate = 34.2%). After excluding 133 participants, of whom four rejected consent and 129 left certain questionnaire items incomplete, the responses of the remaining 209 subjects were analyzed.

Their mean age was 42.1 yr. ($SD$ = 9.1) for 114 men and 37.9 yr. ($SD$ = 9.2) for 95 women. The average working hours per week for men were 50.7 ($SD$ = 7.4) and 50.4 ($SD$ = 6.5) for women. The Research Ethics Committee of the National Institute of Occupational Safety and Health reviewed and approved the study protocol.

### *Measures*

*Coping.*—The English and Japanese versions of the COPE (Carver, *et al.*, 1989) and the Japanese version of the Coping Inventory of Stressful Situations (Furukawa, Suzuki, Saito, & Hamanaka, 1993; Endler & Parker, 1999) were used to assess coping strategies. All participants completed three inventories.

The COPE has 60 Likert-scaled items to assess 15 coping strategies, namely, Positive Reinterpretation and Growth, Mental Disengagement, Focus on and Venting of Emotions, Use of Instrumental Social Support, Active Coping, Denial, Religious Coping, Humor, Behavioral Disengagement, Restraint, Use of Emotional Social Support, Substance Use, Acceptance, Suppression of Competing Activites, and Planning, with four items each. The COPE was translated into Japanese by the first, second, and third authors and was translated back into English by two bilinguals, including the fourth author, who were not provided the original English items. Dr. C. S. Carver reviewed the back-translation, and additional corrections were made on his suggestions.[3] Response categories had anchors of 1: "I usually don't do this at all" and 4: "I usually do this a lot." Item scores were summed for each

[3]The Japanese version of the COPE Inventory is available from the first author.

subscale, and higher scores represent greater use of the strategies. To lessen the possibility that participants would easily remember their responses to the inventory and each item in one language, order of administration and order of items were counterbalanced.

The Coping Inventory for Stressful Situations (CISS) has 48 items to assess three coping strategies of Task-oriented, Emotion-oriented, and Avoidance-oriented coping, rated on a 5-point Likert-type scale with anchors of 1: Not at all and 5: Very much. High scores indicate a stronger use of strategies. Cronbach coefficients alpha for Task-oriented, Emotion-oriented, and Avoidance-oriented subscales were .90, .89, and .87, respectively.

*Perceived control.*—Perceived control of the stressor should be linked to coping strategies. When situations can be controlled, problem-focused coping such as active coping or planning predominate, when situations seem less controllable, alternative strategies such as denial or substance use predominate (Folkman & Lazarus, 1980; Scheier, Weintraub, & Carver, 1986). In this study, Perceived Control over stressful situations was assessed by a single item with the stem, "When you are under stress, do you usually feel . . . ," followed by four answer choices using anchors of 1: "You definitely can do nothing about the situation" and 4: "You definitely can do something about the situation" (Carver, *et al.*, 1989). High scores indicate greater perceived control.

*Self-esteem.*—Self-esteem represents a sense of self-worth and carries the implication that one will be accepted rather than rejected by others (Brissette, Scheier, & Carver, 2002). People with high self-esteem tend to have active and positive coping strategies, such as positive reinterpretation or active coping; those with low self-esteem are likely to disengage from their goals under stress and to use passive and negative coping such as behavioral and mental disengagement or substance use. In this study, self-esteem was measured by the Japanese version of Rosenberg's 10-item Self-Esteem Scale (Rosenberg, 1965; Yamamoto, Matsui, & Yamanari, 1982), using anchors of 1: Strongly disagree and 4: Strongly agree. High scores indicate greater self-esteem. Cronbach coefficient alpha was .87.

*Statistical Analysis*

Mean values and standard deviations were calculated for each COPE subscale as were Cronbach coefficients alpha. To examine the factorial validity, the subscales were subjected to a confirmatory factor analysis with the EQS software system (Multivariate Software, Inc., Encino, CA, USA). Measurement models are built with 15 COPE subscales as latent variables, and four items of each subscale as observed variables.[4] The criterion validity of

[4]Item-total correlations for all items and subscales are listed in Document APD2008-010. Remit $5.00 for photocopy to the Archive for Psychological Data, P.O. Box 7922, Missoula, MT 59807-7922, for recipients inside the USA. Contact APD for shipping rates outside the USA.

each subscale was examined with Pearson correlations for scores of the subscales of the CISS. Construct validity was also examined with Pearson correlations of the Perceived Control Measure and Self-Esteem Scale. All analyses except for the confirmatory factor analysis were conducted with the SPSS software package, Version 14.0 (SPSS, Inc., Chicago, IL, USA).

## Results

### *Descriptive Statistics for COPE Subscales*

In Table 1 are means and standard deviations for the Japanese and English versions of the COPE subscales. The mean ratings and standard deviations for the English and Japanese versions of each COPE subscale were similar.

TABLE 1
Means and Standard Deviations and Cronbach Coefficients Alpha For COPE Subscales

| Subscale and Language | *M* | *SD* | α |
|---|---|---|---|
| Positive Reinterpretation and Growth | | | |
| Japanese | 11.9 | 1.7 | .67 |
| English | 11.9 | 1.8 | .67 |
| Mental Disengagement | | | |
| Japanese | 8.9 | 2.1 | .60 |
| English | 8.7 | 1.9 | .41 |
| Focus on and Venting of Emotions | | | |
| Japanese | 9.5 | 2.3 | .76 |
| English | 9.1 | 2.4 | .76 |
| Use of Instrumental Social Support | | | |
| Japanese | 11.2 | 2.4 | .83 |
| English | 11.2 | 2.5 | .85 |
| Active Coping | | | |
| Japanese | 11.6 | 1.9 | .71 |
| English | 11.3 | 1.8 | .61 |
| Denial | | | |
| Japanese | 5.6 | 1.6 | .72 |
| English | 5.7 | 1.8 | .74 |
| Religious Coping | | | |
| Japanese | 5.9 | 2.6 | .90 |
| English | 5.9 | 2.6 | .86 |
| Humor | | | |
| Japanese | 6.8 | 2.3 | .83 |
| English | 6.9 | 2.4 | .83 |
| Behavioral Disengagement | | | |
| Japanese | 7.3 | 1.8 | .74 |
| English | 7.5 | 1.9 | .68 |
| Restraint | | | |
| Japanese | 10.1 | 1.7 | .53 |
| English | 10.0 | 1.9 | .61 |

(continued on next page)

TABLE 1 (CONT'D)
MEANS AND STANDARD DEVIATIONS AND CRONBACH COEFFICIENTS ALPHA FOR COPE SUBSCALES

| Subscale and Language | *M* | *SD* | α |
|---|---|---|---|
| Use of Emotional Social Support | | | |
| Japanese | 10.4 | 2.6 | .82 |
| English | 10.4 | 2.7 | .84 |
| Substance Use | | | |
| Japanese | 6.4 | 3.2 | .96 |
| English | 6.3 | 3.3 | .96 |
| Acceptance | | | |
| Japanese | 11.4 | 1.6 | .46 |
| English | 11.5 | 1.6 | .43 |
| Suppression of Competing Activities | | | |
| Japanese | 10.0 | 1.8 | .61 |
| English | 9.9 | 1.7 | .46 |
| Planning | | | |
| Japanese | 12.1 | 2.0 | .80 |
| English | 11.9 | 2.0 | .78 |

*Internal Consistency*

Cronbach coefficients alpha for internal consistency of the Japanese version of the COPE were within the acceptable range except for five, namely, Positive Reinterpretation and Growth, Mental Disengagement, Restraint, Acceptance, and Suppression of Competing Activites (Table 1). Coefficients alpha for the English version were generally as high as those for the Japanese version, ranging from a low of .41 for Mental Disengagement to a high of .96 for Substance Use. Like the Japanese version, values of α were low for Acceptance and Restraint (α = .43 and .61, respectively) and for Mental Disengagement and Suppression of Competing Activities (α = .41 and .46, respectively).

*Factorial Validity*

Goodness-of-fit indexes for the confirmatory factor analysis were acceptable. The various fit indexes based on maximum likelihood estimation methods were Comparative Fit Index (CFI) = .830, Standardized Root Mean Square Residual (SRMR) = .077, and Root Mean-Square Error of Approximation (RMSEA) = .054. Hu and Bentler (1998, 1999) suggested a cutoff value close to .95 or more for the maximum likelihood-based CFI, a cutoff value close to .08 or less for SRMR, and a cutoff value close to .06 or less for RMSEA before one can conclude that there is a relatively good fit between the hypothesized model and the observed data. Although the CFI did not achieve the criterion of .95, the other requirements were met by the data, so analysis and interpretation were continued.

*Criterion Validity*

Table 2 shows the correlations between scores on COPE and CISS sub-

scales. Positive Reinterpretation and Growth, Active Coping, Acceptance, Suppression of Competing Activities, and Planning subscales of the COPE were positively correlated with CISS Task-oriented Coping. Behavioral Disengagement and Substance Use were negatively correlated with Task-oriented Coping. Ratings on CISS Emotion-oriented Coping, Mental Disengagement, Focus on and Venting of Emotions, Denial, Behavioral Disengagement, and Substance Use among the COPE subscales were positively correlated. Also, COPE Mental Disengagement, Use of Instrumental Social Support, and Use of Emotional Social Support were positively correlated with CISS Avoidance-oriented Coping.

TABLE 2
PEARSON CORRELATIONS AMONG COPE SUBSCALES AND OTHER MEASURES

| COPE Subscale | CISS Subscale | | | Perceived Control | Self-esteem |
|---|---|---|---|---|---|
| | Task-oriented | Emotion-oriented | Avoidance-oriented | | |
| Positive Reinterpretation and Growth | .59* | −.11 | .01 | .29* | .33* |
| Mental Disengagement | −.04 | .31* | .55* | −.17 | −.14 |
| Focus On and Venting of Emotions | −.08 | .55* | .29 | −.16 | −.29* |
| Use of Instrumental Social Support | .18 | .09 | .35* | .18 | .05 |
| Active Coping | .60* | −.13 | −.09 | .43* | .30* |
| Denial | −.18 | .38* | .22 | −.24* | −.30* |
| Religious Coping | .02 | .19 | .21 | −.02 | −.14 |
| Humor | −.05 | .07 | .12 | −.09 | −.12 |
| Behavioral Disengagement | −.38* | .41* | .19 | −.31* | −.39* |
| Restraint | .11 | .12 | .11 | −.04 | .03 |
| Use of Emotional Social Support | .07 | .26 | .54* | .04 | −.10 |
| Substance Use | −.28* | .34* | .11 | −.26* | −.32* |
| Acceptance | .25* | −.05 | −.03 | .17 | .11 |
| Suppression of Competing Activities | .50* | .04 | −.10 | .30* | .15 |
| Planning | .71* | −.11 | −.13 | .44* | .29* |

*$p < .001$.

*Construct Validity*

In Table 2 are Pearson correlations between scores on the COPE subscales and the other scales or items. Ratings on Positive Reinterpretation and Growth, Active Coping, Suppression of Competing Activities, and Planning were positively correlated with Perceived Control, but ratings on Denial, Behavioral Disengagement, and Substance Use were correlated negatively. With rated Self-esteem, Positive Reinterpretation and Growth, Active Coping, and Planning among the COPE ratings were positively correlated, whereas COPE scores on Focus on and Venting of Emotions, Denial, Behavioral Disengagement, and Substance Use were negatively correlated.

## DISCUSSION

In this study, the English version of the COPE was translated into Jap-

anese and reliability and validity were examined for a sample of school teachers. While it was not surprising to find the internal reliabilities of some COPE subscales fell in an accceptable range, several did not. This indicates further psychometric work is required. Also, scores for subscales correlated significantly with those on the CISS and the other tests as expected. However, the factorial structure of the translated COPE was not completely satisfactory.

The patterns of associations (cf. Table 2) provide some evidence of both the criterion and construct validities of this Japanese version. Converging patterns of associations suggest that the coping strategies postulated to be problem-focused were associated with task-oriented coping, which is regarded as beneficial in the working situation (Shimazu, *et al.*, 2006). Similarly, coping tendencies hypothesized to be emotion-focused or passive were associated with emotion- or avoidance-oriented coping, which are generally not effective in solving problems in a workplace.

Significant correlations among CISS Avoidance-oriented Coping and COPE Use of Instrumental and Emotional Social Support were found but these values were low. The CISS Avoidance-oriented Coping is defined as activities and cognitive changes aimed at avoiding the stressful situation (Endler & Parker, 1999). Endler and Parker (1999) argued that this can occur via social diversion, such as avoiding a stressful situation by seeking out other people, so general correlations seem interpretable although the values are low.

Other interesting findings were high correlations among CISS Emotion-oriented Coping and COPE Behavioral Disengagement and Substance Use. Although many researchers have reported associations between emotion-focused coping and distress, Folkman and Moskowitz (2004) criticized these observations as due partly to the fact that contents of many of the emotion-focused items of coping scales were confounded with distress. In fact, some items on CISS Emotion-oriented Coping (e.g., "become very tense") and COPE Behavioral Disengagement or Substance Use (e.g., "I use alcohol or drugs to make myself feel better") refer to symptoms of physical or mental illness or distress, or logical consequences of such problems. Such confounding requires direct psychometric analysis.

The data also suggest that the Japanese version of the COPE has suitable construct validity. Active, positive, or problem-focused coping, such as Active Coping, Positive Reinterpretation and Growth, and Planning, were positively correlated with Perceived Control and Self-esteem. However, passive, negative, or emotion-focused coping such as Behavioral Disengagement, Substance Use, and Denial were negatively correlated with Perceived Control and Self-esteem. People with high self-esteem presumably engage in positive and active attempts to cope with stressors (Pearlin & Schooler, 1978),

whereas those with low self-esteem tend to become preoccupied with distress (Carver, *et al.*, 1989). For Perceived Control, when stressful conditions are viewed as refractory to change, emotion-focused coping predominates; however, when they are appraised as controllable by actions, problem-focused coping predominates (Lazarus, 1993).

Generally, Cronbach coefficients alpha of the Japanese version of the COPE inventory were within the acceptable range, however, they did not reach acceptable levels for Positive Reinterpretation and Growth, Mental Disengagement, Restraint, Acceptance, and Suppression of Competing Activities. However, these scores were almost equivalent to those reported in previous studies (Carver, *et al.*, 1989; Kardum & Hudek-Knežević, 1996; Kallasmaa & Pulver, 2000; Todd, Tennen, Carney, Armeli, & Affleck, 2004), implying a need for further investigation to reconstruct the factor structure of the COPE inventory.

The low internal consistencies in some subscales may be attributable to failing to test the equivalence of items. Merenda (2005, 2006) proposed procedures for adapting instruments across cultures. Since his proposed steps were not applied, a better approach could be achieved by inclusion of this methodology in future studies. The new statistical method, namely, Differential Item Functioning analyses with Item Response Theory, should also be undertaken in a future study. Hambleton (2005) argued that one of the most important statistical analyses in validating a test for use in two or more cultural or language populations is an item-bias study or "differential item functioning study."

A major limitation of this study is that the participants were only selected from English schoolteachers and the sample size was relatively small; thus, one cannot draw clear conclusions based on this study. It is necessary to examine the validity and reliability of the COPE inventory with a larger sample including a broader range of occupations in multiple industries. It is encouraging that scores for the two versions and standard deviations for subscales were very similar, and that scores on the tests selected appeared meaningfully related.

An important criticism is that the study had a low response rate. Response bias may have occurred in this study because nonrespondents could have differed from respondents with respect to coping and other characteristics. One reason may be that subjects responded to the COPE in both Japanese and English, which may have been a burden for some subjects. Even as English teachers, the subjects may have felt difficulty in interpreting the meaning of the English version. Responding to two language versions, particularly the English version, may appear demanding, so we cannot deny the possibility that some participants chose their responses with reference to the corresponding Japanese-translated items, although the order had been coun-

terbalanced. Moreover, teachers who were not interested in this survey or those who had no problems with stress might not have participated in this survey.

Although questions remained in five subscales as well as other limitations, a Japanese version of the COPE could become applicable for assessing coping in Japanese English teachers if further psychometric analysis identifies present issues.

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