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A Preliminary Validation of the Brief COPE Inventory for Assessing Coping Strategies among Pakistani House Job Doctors

Yousaf Jamal[1], Faiqa Yaseen[2], Mohammad Khalid[3]

Abstract

Health care is one of the most challenging professions associated with several challenges and issues leading the doctors and nurses towards several mental health issues which make it necessary to explore coping strategies and skills that help the professionals in overcoming their mental health issues. As a result, the present study was conducted on a sample of Pakistani house-job doctors to validate the Coping Orientation to Problem Experienced (COPE) scale. A sample of 315 house-job doctors (men = 60%, women = 40%) employed in various hospitals of Lahore was recruited through purposive sampling method. Confirmatory Factor Analysis (CFA) was used at first to confirm Carver's factor structure, which resulted in poor fit. As a result, the structure of coping factor in a Pakistani sample was investigated through an Exploratory Factor Analysis (EFA). Problem-focused coping, emotion-focused coping, and avoidant coping were discovered to be three-factor solution of COPE. Furthermore, the scale had high psychometric qualities including good reliability and validity.

Keywords: Coping Skills, Factor Analysis, Health Care Professionals, Reliability, Validity

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[1]Assistant Professor, Department of Psychology, Effat University, Jeddah, Kingdom of Saudi Arabia.
[2]Assistant Professor, Department of Psychology, Lahore Garrison University, Lahore, Pakistan.
[3]Assistant Professor, Department of General Education, Effat University, Jeddah, Kingdom of Saudi Arabia.

Corresponding Author Email:
faiqayousaf@hotmail.com

Introduction

Coping can be defined as efforts to avoid or reduce harm, threat, and loss, or to lessen the distress "that we experience during stressful circumstances (Baumstarck et al., 2017; Carver, 2013; Halamova et al., 2022). The coping inventory for stressful situations (Folkman & Lazarus, 1985), the coping strategies evaluation (Rosenstiel & Keefe, 1983), as well as the COPE (Carver et al., 1989), are some of the most well-known methods for measuring coping (Kato, 2015). The COPE inventory evaluates several effective and ineffective coping techniques that people use to cope with stress (Carver et al., 1989). In contrast to earlier empirically constructed coping measures, as a theory-based measure, the COPE Inventory was created (Folkman & Lazarus, 1985; McCrae & Costa, 1986).

The cognitive aspect of coping, as per the cognitive transactional theory, is centered on a thought representation whereby the individual assesses the situation, and this judgment influence stress level and the individual's distinct coping methods (Ashktorab et al., 2017; Lazarus & Folkman, 1984). The effectiveness or ineffectiveness of coping depends upon situation. Individuals and their environment both have an impact on one another (Halamova et al., 2022; Mohanraj et al., 2015). When confronted with a potentially unpleasant incident, people

assess it to see if it has any personal significance. The main and secondary appraisals are the two sorts of appraisals (García et al., 2018). In primary assessment, the individual intentionally examines the circumstances, whether this is a lost or suffering, a struggle or a danger. In the subsequent evaluation, the person evaluates his or her ability to cope with stress. Physical resources like strength and stamina, support networks like friends and family for assistance, emotional and social resources like personality characteristics, identity, and self-esteem, and financial means like money are all examples of coping resources (Ashktorab et al., 2017; Lazarus & Folkman, 1984).

Emotion oriented and problem oriented coping methods are frequently divided into two types (Folkman & Lazarus, 1984). Emotion-focused techniques use expression of emotion and changing expectations, whereas problem-focused strategies use behavioral actions like action and preparation (García et al., 2018). Positive results, such as improved health and less negative affect, have been linked to problem-focused techniques (Dunkley et al., 2006). Emotion-focused techniques, particularly the employment of avoidance strategies, on the other hand, are connected to undesirable consequences such as poor health and a higher level of emotional affect (Pritchard et al., 2007). Acceptance and positive reframing are two emotion-focused techniques that have been related to greater happiness (Scheier et al., 1994).

The measure, according to Folkman and Lazarus (1985), featured several coping responses that were necessary for both problem focused coping (PFC) and emotion-focused coping (EFC). EFC was concerned with managing stress distress, whereas PFC was concerned with taking some action during the response to stress (Carver et al., 1989). Planning, reduction of conflicting tasks, restraining coping, and mechanical emotional benefits were the problem-focused responses on the assessment, while positive interpretations, tolerance, turn to religion, and emotion support network were the emotion-focused responses (Carver et al., 1989). Component factor loading, on the other hand, revealed that coping reactions could never be easily divided into PFC and EFC, as numerous responses loaded on the very same second-order factor whilst dealing with diverse focusses (Carver et al., 1989; Litman, 2006; O'Connor & O'Connor, 2003; Stowell et al., 2001).

In their initial paper, Carver et al. (1989) mentioned four second-order components: 1. PFC, that included first-order factor structure comprising of active coping, suppression of competing activities, and planning; 2. EFC, that included first-order factors of seeking instrumental and emotional social support, and venting; 3. disengagement, that included the first-order factors of mental disengagement, denial, and behavioral disengagement; and 4. acceptance, that included the first-order factors of restraint, positive reinterpretation, and restraints. However, when the metric was applied further, it revealed discrepancies in the higher-order factor structure. Some studies reported four second-order factor loadings (Crașovan & Sava, 2013; O'Connor & O'Connor, 2003), while others identified three (Litman, 2006; Stowell et al., 2001), and still others discovered five (Crașovan & Sava, 2013). As a result, the different coping reactions are considered to be essentially exclusive, fact that many people can mix effective and less effective responses of coping (Carver et al., 1989). Litman (2006) believes that differentiating among socially assisted and inner coping methods is much more important, based on previous research, however, the measure's creator suggests re-examining each subscale individually (Carver, 2013).

Considering the discrepancy in number of factors of COPE, it was necessary to

investigate COPE factor structure in a sample of Pakistani house-job doctors.

Method

Participants

A sample size of 315 house job doctors (men = 60%; women = 40%), having 3-12 months' work experience and currently working in various Lahore's public teaching hospitals was drawn by using purposive sampling technique.

Measures

Coping Orientation to Problem Experienced (COPE)

Carver et al. (1989) created the COPE model. COPE is a trademarked tool for assessing coping skills during stressful situations. The COPE is made up of 60 items that are rated on a four-point scale ranged from 1 (I generally don't do this at all) to 4 (I usually do this a lot). With the author's consent, two items (12 and 26) were changed to fit the Pakistani cultural setting. COPE is divided into 15 subscales suppression of competing activities, detachment, emotional venting, behavioral disengagement, positive reinterpretation and growth, acceptance, humor, planning, instrumental social support, restraint, denial, emotional social support, active coping, substance use, and religious coping.

Professional Life Stress Scale (PLSS)

The discriminant and concurrent validity of COPE was determined using the PLSS (Fontana, 1989). The PLSS is a self-reporting tool with 24 items. The items have a variety of response options. As a result, to evaluate the participant's workplace stress, Fontana (1989) advises using alternate scoring techniques based on the number of viable responses offered to the respondents. There are ten items on the scale, each with three alternative responses: zero equals a, one equal's b, two equal's c, and three equals d. There are two alternative responses for each of the thirteen items, with zero signifying Yes and one suggesting No. PLSS had a Cronbach alpha of .71 for the existing study, indicating that the scale showed adequate internal consistency.

Procedure

The relevant hospital authorities were asked for permission to collect data from house-job doctors. Participants were informed about current study's nature and purpose. Respondents were guaranteed that all personal information would be considered secret, permitting them to openly discuss themselves without fear of being criticized and have right to withdraw from study at any stage. The exercise took about 20 minutes to complete on average.

Results

Table 1

Confirmatory Factor Analysis for Coping Orientation to Problems Experienced (N = 315)

	X^2/df	X^2 (df)	CFI	NFI	RMSEA
Model	4.12	251.46(61)	.67	.62	.13

Confirmatory Factor Analysis (CFA) of COPE

Initially, Confirmatory Factor Analysis was used to confirm Carver et al. (1989) factor's structure. However, the results showed that proposed model and current data had a poor absolute model fit (X^2/df = 4.12, df = 61, $p <$ .001). Furthermore, the relative fit indices CFI =.67, NFI =.62, and RMSEA =.13 were likewise low, according to the data. Table 1 shows the results of the CFA.

Table 2

Principal Component Analysis of COPE (N=315)

	Factor Loadings			
Coping Strategies	**F 1**	**F 2**	**F 3**	
Active Coping	**.69**			
Use of Instrumental Social Support	**.47**	.38		
Positive Reinterpreting and Growth	**.77**			
Suppression of Competing Activities	**.73**	.32		
Turning to Religion	**.52**			- .33
Restraint	**.57**			
Planning	**.80**			
Behavior Disengagement	-.33	**.59**		
Venting of Emotion		**.68**		
Mental Disengagement		.34	**.40**	
Emotional Social Support		**.64**	-.51	
Substance Use	-.34	**.**32	**.49**	
Humor		.42	**.62**	
Denial		.51		
Acceptance			.35	
% Variance	23.64	14.43	10.56	

Note. Boldface items indicate factors.

Table 3

Carver et al. (1989) and Jamal et al. (2022) COPE Factor Analysis Comparison (N=315)

Coping Strategies	**Carver**	**Jamal**
Behavioral disengagement	AC	EFC
Planning	PFC	PFC
Active	PFC	PFC
Mental disengagement	AC	AC
Denial	AC	X
Emotional social support	EFC	EFC
Substance use	X	AC
Instrumental social support	PFC	PFC
Suppression	PFC	PFC
Positive reinterpretation	EFC	PFC
Venting of emotion	AC	EFC
Acceptance	EFC	X
Restraint	EFC	PFC
Humor	X	AC
Turning religion	EFC	PFC

Note. X = not included; PFC = problem-focused coping; AC = avoidance-coping; EFC = emotion-focused coping

Exploratory Factor Analysis (EFA) of COPE

The EFA was used to investigate the factors structure of COPE due to the poor match of the Confirmatory Factor Analysis. The primary components underlying the fifteen COPE sub-scales were determined using Principal Component Factor Analysis (PCFA) with Varimax Rotation. The adequacy of sample was 0.74, statistically relevant assessed through Kaiser-Myer-Olkin Measure (KMO) before running PCA. KMO value of 0.60 or higher indicates statistical significance which has been achieved in this study (Field, 2006). Similarly, Bartlett's sphericity test result in the current study was <.001 which is statistically significant and satisfactory for factor analysis (Field, 2006). The factors having Eigen values ≥ 1 were maintained by using Kaiser's (1960) maintaining criterion. Likewise, only those COPE subscales in a component whose factor loadings on that factor were higher than 0.40 were preserved. All fifteen COPE sub-scales could be grouped into three basic components, which the researcher labels as PFC, EFC, and AC, according to the findings reported in Table 2. PFC, EFC, and AC accounted 23.58 percent, 14.52 percent, and 10.63 percent of the variance, respectively. PFC included seven coping techniques with factor loadings varying from .47 to .80: active coping, suppression of competing activities, use of instrumental social support, restraint, positive reinterpretation and growth, religious coping, and planning. EFC included three coping strategies: attention on venting sentiments, usage of emotional social support, and behavioral disengagement having a factor loading range of .59 to .67. AC includes humor, substance usage, and mental disengagement, having .40 to .62 factors loadings. It might be postulated that the variations in sub-scale loadings are due to differences in demographic features and cultures.

Table 4

Summary of Inter Correlations, Mean, and Standard Deviations (N = 200)

Factors	F1	F2	F3	PLSS
F1.Emotion-focused Coping	-	.17*	.14*	.28**
F2. Avoidance Coping	-	-	-.02	.21**
F3. Problem-focused Coping	-	-	-	-.33**
PLSS	-	-	-	-
M	26	22	77	21.05
SD	5.37	4.43	10.8	7.03
A	.66	.56	.67	.71

*p < .05, **p < .01

Note. PLSS = Professional Life Stress Scale

Validity of COPE

The PLSS was used to determine the discriminant and construct validity of COPE (Fontana, 1989). The results depicted a significant positive relationship of AC (r =.21, p < .01) and EFC (r =.28, p < .01) with professional life stress, indicating that COPE is having good construct validity. Furthermore, findings revealed a significant negative association of PFC and professional life stress (r = -.33, p <.01), demonstrating COPE's discriminant validity.

Table 5
Reliability of COPE

Scale	No of Items	α	Split-half Coefficient
COPE	60	.74	.70

*p<.05, **p<.01
Note. COPE= Coping Orientation to Problem Experienced, α= Cronbach Alpha

Reliability of COPE

Even-odd method was used to find out the split half reliability of the scale. Findings indicated good split half reliability for total scale (.70). Furthermore, findings indicated good internal consistency of all subscales with Cronbach alpha value of .74.

Discussion

This study aimed to determine how Pakistani health-care employees communicate and show their coping skills. The most important finding of the study was that the CFA results did not match the data. As a result, the data did not support the EFC, PFC, or AC techniques (Carver et al., 1989). The authors of COPE and Brief COPE did not advocate merging related subscales into "PFC" and "EFC" indices, or forming an "overall" index, in a consistent manner. Instead, they recommend that studies investigate correlations between coping and other variables using independent subscales or factors derived from EFA (Carver, 1997). When using the Brief COPE tool, such findings and ideas should be considered.

The underlying characteristics of COPE were investigated using exploratory factor analysis, which provided the three-factor solution PFC, EFC, and AC. These findings are in line with earlier research findings that back up these three factors (Carver et al., 1989; Fontaine et al., 1993; Litman, 2006; Stowell et al., 2001). The pattern of components, however, differs from Carver et al (1989). Table 3 indicates the loading of behavioral disengagement in current study but not in findings of Carver. Mental disengagement, humor, and substance/drug usage make up the third component designated as avoidance coping, with factor loadings ranging from .40 to .62. Carver et al. (1989) conclusions are partially supported by these findings. Table 3 also indicates high loading of substance usage in this study while not in findings presented by Carver.

The first factor, PFC, was divided into seven subcategories: instrumental social support, positive reappraisal and growth, active coping, restraint, planning, religion, and suppression of competing activities. This factor depicted resilient attributes and adaptive emotion regulation strategies which are the key components of adaptive or healthy coping strategies (Ashktorab et al., 2017; Garcia et al., 2018). Furthermore, this factor is also giving the true religious picture of the society of Pakistan which is characterized by religious norms and values as fundamental components of their lives showing consistency with findings of Carver et al. (1989) indicated in Table 3.

EFC was identified as a second component of COPE which included a focus on venting feelings, behavioral disengagement, and the usage of emotional social support. This variable reflects dysfunctional coping mechanisms. These findings, however, differ from those of Carver et al. (1989). Behavioral disengagement was high loaded in this study while it is not loaded in findings revealed by Carver.

These results are to some extent compatible with those of Carver et al. (1989), who labelled the third factor as AC. According to the data in Table 2, this study report loading

of substance use but not in Carver's study. Supported by literature, PFC is adaptive coping strategy. However, EFC and AC are recognized as maladaptive coping strategies (García et al., 2018; Halamova et al., 2022).

The current study explored the coping styles of Pakistani house-job doctors. These factor structure is consistent with factor structure of brief COPE explored in Western cultures. Problem-focused coping is the manifestation of individualistic coping is negatively linked with distress. Moreover, emotion-focused coping is the expression of collectivistic coping is positively associated with distress. These findings are in line with the findings explored by Bailey and Dua (1999), and Triandis (1995) and who suggested that with time, individuals of collectivistic cultures learn individualistic coping skills such as planning and active problems solving. Furthermore, findings reveled that most frequently used coping strategy is religious coping. This coping style is consistent with those reported by Muslim Immigrants in Italy and France (Fillion et al., 2002; Muller & Spitz, 2003; Sica et al., 1997). Moreover, these results suggested that individual maintain their bonds with religion and use the religion as a productive and healthy coping strategy. Religious practices and beliefs assist the participants to focus and rely on their personal resources to involve in healthy coping skills.

The current study revealed considerably negative association of PFC with perceived stress while demonstrating discriminant validity of COPE. Furthermore, the findings revealed that both EFC and AC are positively connected with stress depicting the construct validity of COPE. Similarly, other studies conducted in the past also indicates that adaptive coping strategies such as PFC can help people cope with stress (Kriakous et al., 2019; Skaalvik & Skaalvik, 2015). Using maladaptive coping methods, such as EFC and AC, on the other hand, increases stress and other mental health problems.

Limitation and Recommendations

The current research, like many others, has some limitations. Because the research sample consisted solely of doctors on house jobs from Lahore public teaching hospitals, the current findings had limited generalizability. The future studies must recruit house job doctors from different cities of Pakistan to guarantee maximum external validity. Furthermore, this study was merely conducted on house-job doctors. In future, it is recommended to get data from other professionals and explore the factors structure of COPE in diverse professions like nurses, senior doctors, bankers, and teachers.

Conclusion

The findings indicate that when applying the COPE, researchers should consider cultural diversity. The psychometric evidence for this new factor structure should be reassessed and confirmed in house-job doctors and other Pakistani communities. The current research yields an empirically valid and approved factor structure of brief COPE for Pakistani house-job doctors. Hence, Pakistani researchers can use this factor structure of brief COPE as a reliable and valid scale to assess coping skills of Pakistani health care professionals.

Contribution of Authors

Yousaf Jamal: Conceptualization, Investigation, Formal Analysis

Faiqa Yaseen: Methodology, Writing-Original draft

Mohammad Khalid: Investigation, Data Curation, Writing – Review & Editing

Conflict of Interest

There is no conflict of interest declared by authors.

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