

УДК 37:159.9

DOI: 10.32342/2522-4115-2019-2-18-9

Y.V. KOVALENKO,

Corresponding member of G.S. Kostyuk Institute of Psychology, Kyiv; Faculty of ALSUN of Misr International University, Cairo, Egypt

ADAPTATION AND VALIDATION OF THE UKRAINIAN DISPOSITIONAL 'COPE' QUESTIONNAIRE

Метою цього дослідження є адаптація диспозиційного опитувальника COPE авторів C.S. Carver, M.F. Scheier, J.K. Weintraub, запропонованого у 1989 р., українською мовою. Адаптація опитувальника проводилася на вибірці студентської молоді. Така вибірка видається доречною для реалізації мети уніфікації досліджень копінгу, оскільки більшість попередніх досліджень психометричних властивостей опитувальника COPE проводилися також на студентах вищих навчальних закладів. Культурна адаптація диспозиційного опитувальника COPE проводилася відповідно до вимог Міжнародної комісії з тестування (ITC) щодо правил перекладу та адаптації тестів (Test Translation and Adaptation Guidelines), які визначають процедуру культурної адаптації тестових методик з психології. У дослідженні взяли участь 109 студентів двох вищих навчальних закладів Києва та Львова. Вибірка випробуваних мала такі демографічні характеристики: 46 чоловіків, 63 жінки; середній вік учасників емпіричного дослідження склав 24,5 роки. Значення коефіцієнта α -Кронбаха ($\alpha = 0,715$) для шкали українською мовою свідчить про наявність високих внутрішніх кореляцій змінних у межах шкали, що також свідчить про досить високу надійність результатів, отриманих за допомогою української версії диспозиційного опитувальника COPE. Аналіз факторної структури української версії опитувальника COPE визначив п'ятифакторну модель з близькою відповідністю авторській оригінальній версії опитувальника COPE (76,166% сумарної дисперсії). Також підтверджена конструктивна валідність української версії диспозиційного опитувальника COPE. Отже, можна стверджувати, що українська версія диспозиційного опитувальника COPE може застосовуватися на україномовній вибірці для виміру стилів та стратегій поведінки подолання.

Ключові слова: опитувальник COPE; адаптація; копінг-стратегії; факторна структура; конструктивна валідність.

Целью настоящего исследования является адаптация диспозиционного опросника COPE, предложенного C.S. Carver, M.F. Scheier, J.K. Weintraub в 1989 г., на украинский язык. Адаптация опросника проводилась на выборке студенческой молодежи. Такая выборка представляется уместной для унификации исследований совладающего поведения, поскольку большинство предыдущих исследований психометрических свойств опросника COPE проводились также на студентах высших учебных заведений. Культурная адаптация диспозиционного опросника COPE проводилась в соответствии с требованиями Международной комиссии по тестированию (ITC) и правилами перевода и адаптации тестов (Test Translation and Adaptation Guidelines), которые определяют процедуру культурной адаптации тестовых методик по психологии. В исследовании приняли участие $N = 109$ студентов двух вузов Киева и Львова. Выборка испытуемых имела следующие демографические характеристики: 46 мужчин, 63 женщин; средний возраст участников эмпирического исследования составил 24,5 года. Значение коэффициента α -Кронбаха ($\alpha = 0,715$) для шкалы на украинском языке подтверждает наличие высоких внутренних корреляций переменных в пределах шкалы, что свидетельствует о достаточно высокой надежности результатов, полученных с помощью украинской версии диспозиционного опросника «COPE». Анализ факторной структуры украинской версии опросника «COPE» определил пятифакторную модель, которая близко коррелирует с факторной структурой авторской оригинальной версии опросника COPE (76,166% суммарной дисперсии). Также подтверждена конструк-

тная валидность украинской версии диспозиционного опросника COPE. Таким образом, можно утверждать, что украинская версия диспозиционного опросника COPE может применяться на украиноязычной выборке для измерения стилей и стратегий копинга.

Ключевые слова: опросник COPE; адаптация; копинг-стратегии; факторная структура; конструктивная валидность.

Introduction. Despite the long history of coping behavior research, the problem of finding effective measurement instruments for the latter remains unresolved. No agreement has been reached among the researchers on either standardizing the psychometric properties of existing instruments measuring coping strategies, or unifying a myriad of approaches to categorize coping strategies.

These and other considerations reignited an interest in improving theoretically developed questionnaires, including “Coping Orientations to Problems Experienced” (‘COPE’) (Carver et al., 1989) for assessing coping behavior. In general, theoretical taxonomies of coping strategies can be employed for various groups of subjects. Besides, such instruments are studied by applying the confirmatory factor analysis, which allows for better replicating of results, and thus, for unifying the approaches to studying coping strategies (Ayers et al. 1996; Donoghue, 2004). Another factor in favor of the ‘COPE’ questionnaire is an international interest to it, which adds to the unification of the coping behavior research.

This paper aimed at adaptation and validation of the Ukrainian version of the ‘COPE’ dispositional questionnaire (Carver, Scheier, & Weintraub, 1989).

‘COPE’ Questionnaire background. Researches of coping behavior have used the ‘COPE’ questionnaire in a variety of natural settings, including university examinations (Carver & Scheier, 1994), in studies of perfectionism (Dunkley et al., 2000) and romantic relationships (Knee, 1998), etc. At its core, the ‘COPE’ questionnaire follows Folkman and Lazarus’s (1980) theory of behavior, which conceptualized coping in terms of a cognitive transaction between an individual and the environment within a particular context. The transactional model of coping defines the latter as process-oriented. Central to the transactional model is an assessment process, during which a person evaluates the importance of a stressful event for his or her well-being and the availability of resources to overcome such an event (Lazarus & Folkman, 1984). Carver (1988) proposed a somewhat more complex approach to coping, enriching it with their own model of self-regulation of behavior (cited in Carver, Scheier, & Weintraub, 1989). The model above abstains from dividing coping strategies into problem- and emotion-oriented ones. Instead, it takes into account both situational and dispositional influences on the coping behavior of individuals.

It is worth noting, however, that self-report techniques, including the COPE questionnaire, have been criticized. They were blamed for conflicting results (Donoghue, 2004); methodological and sample variability (Aldwin & Revenson, 1987); ambiguity of formulations, variability in factor structures obtained from different samples (Skinner et al., 2003; Steed, 1998); and insufficient reliability and validity of such instruments at large (Donoghue, 2004). On the other hand, repetitive results obtained using dispositional questionnaires for different coping situations have renewed interest in dispositional coping. In general, dispositional coping (or coping style) is defined as a stable characteristic of a personality influenced by various factors, including socio-cultural ones (Moos & Holahan, 2003). Lazarus (1999) criticized such studies, noting that they provided fuzzy, socially desirable, or ideal answers. In addition, the results received using such techniques were described as running counter to the reality (Carver & Scheier, 1994; Schwartz et al., 1999). At the same time, the unique ability of the ‘COPE’ questionnaire to measure both situational and dispositional coping has contributed to its popularity among researchers of coping behavior.

The ‘COPE’ questionnaire (Carver, Scheier, & Weintraub, 1989) is a widely used retrospective self-report technique designed to measure situational responses/strategies and dispositional styles, depending on the “usualness” or specificity of the stress situation for the subject. The full version of the questionnaire consists of 60 items combined into

15 scales. Each scale includes four statements evaluated on a four-point Likert scale, from "1" ('I don't do this at all') to "4" ('that's exactly what I do') for the dispositional version; and from "1" ('I usually didn't do it at all') to "4" ('that was exactly what I usually did') for the situational version. The data of the subjects are analyzed for each scale individually or through the second-order factor analysis in a separate sample.

Method: Participants. The adaptation and validation of the questionnaire were conducted on a sample of students. Such a sample seems appropriate for unifying coping studies, since plentiful data on the psychometric properties of the 'COPE' questionnaire were also obtained from university students (Gordeva et al., 2010; Litman, 2006). 109 students from two universities of the cities of Kyiv and Lviv, Ukraine, participated in the study. The sample had the following demographic characteristics: 46 men, and 63 women; the average age of the participants in the empirical study was 24.5 years. The adaptation of the 'COPE' dispositional questionnaire (60 coping strategies and 15 coping scales) was conducted in the period from October 2017 to January 2018.

Method and procedure. The adaptation of the Ukrainian version of 'COPE' underwent two stages. During the initial stage, the cultural adaptation of the questionnaire was performed according to the *Test Translation and Adaptation Guidelines* (Hambleton, 2001). First, an independent qualified translator translated the original dispositional 'COPE' questionnaire into Ukrainian. Second, two other translators translated the Ukrainian version again into English, and back into Ukrainian. Finally, both versions – the two English and two Ukrainian ones – were given comparative expert judgment. Based on the confirmed correspondences between the original and the Ukrainian-language versions of the 'COPE' questionnaire, an adequate Ukrainian version of the questionnaire was proposed (see Appendix). The Ukrainian-language version of 'COPE' also consists of 60 statements that must be answered on a Likert scale from "1" to "4". All items in the questionnaire are grouped into 15 scales following the original version. The scores on the scales above are determined simply by adding all the values of the answers to the question (numbered from 1 to 60) included in a certain scale below.

1. Positive reinterpretation and growth: 1, 29, 38, 59;
2. Mental disengagement: 2, 16, 31, 43;
3. Focus on and venting of emotions: 3, 17, 28, 46;
4. Use of instrumental social support: 4, 14, 30, 45;
5. Active coping: 5, 25, 47, 58;
6. Denial: 6, 27, 40, 57;
7. Religious coping: 7, 18, 48, 60;
8. Humor: 8, 20, 36, 50;
9. Behavioral disengagement: 9, 24, 37, 51;
10. Restraint: 10, 22, 41, 49;
11. Use of emotional social support: 11, 23, 34, 52;
12. Substance use: 12, 26, 35, 53;
13. Acceptance: 13, 21, 44, 54;
14. Suppression of competing activities: 15, 33, 42, 55;
15. Planning: 19, 32, 39, and 56.

The main limiting factors of this technique, like of any self-report questionnaire, are related to possible distortions associated with natural forgetfulness, selective reproduction, and insufficient reflexivity in individual subjects. Thus, the probability that under the conditions of reflection about sufficiently hypothetical stressful situations, the response of the subjects may also be "hypothetical" is quite high, whereby the ways of perception and emotional experience of a stressful event vary significantly from person to person. To overcome the limitation above, this empirical study examined coping behavior of the subjects tested during the exams or immediately before/after the exams, i.e. as near as possible to the natural conditions of academic stress.

Results. During the second stage, the reliability of the Ukrainian dispositional COPE questionnaire was tested. Table 1 below presents the statistical results of the internal consistency check using α -Cronbach coefficient.

Table 1

Internal consistency

Chronbach's alpha	Corrected item-total correlation	N of items
0.715	0.732	15

The value of α -Cronbach for the Ukrainian version of 'COPE' confirms high internal correlations among the variables within the scale, which testifies to the sufficient reliability of the results obtained ($\alpha = 0.715$; $\alpha = 0.732$ for corrected item-total correlation). The values of Chronbach's alpha for individual scales of the questionnaire in the range from $\alpha = 0.683$ to $\alpha = 0.757$ also indicate the appropriate reliability and consistency of the latter (see Table 2).

Table 2

Item-total α -Chronbach's reliability

COPE scales	Chronbach's alpha
Positive reinterpretation and growth	0.701
Mental disengagement	0.705
Focus on and venting of emotions	0.695
Use of instrumental social support	0.683
Active coping	0.697
Denial	0.699
Religious coping	0.757
Humor	0.709
Behavioral disengagement	0.710
Restraint	0.699
Use of emotional social support	0.693
Substance use	0.688
Acceptance	0.669
Suppression of competing activities	0.695
Planning	0.706

In addition, Guttman's lambda-2 ($\lambda_2 = 0.834$) is higher than α -Cronbach, which again reflects an adequate internal consistency of the Ukrainian version of the dispositional COPE.

Factor structure of the Ukrainian version of the 'COPE' disposition questionnaire. During the third stage of adaptation, the factor structure of the COPE questionnaire was analyzed. Considering that the COPE questionnaire is theoretically constructed, its factor solutions have not been clearly reproduced in any of the works testing this instrument (Donoghue, 2004). Carver et al. (1989) applied an exploratory factor analysis to the selected 13 scales of 52 strategies identifying four factors: 1) problem-focused coping; 2) emotion-centered coping; 3) coping focused on the social support and expression of emotions, and 4) avoidance. However, the scales of 'Substance Use' and 'Humor' were not included in the original factor structure. In the same line, Litman (2006) presented two independent studies on two independent samples. The first study showed a four-factor model similar to the factor solution of Carver et al. (1989). Yet, the results of the second study showed only a three-factor model, including self-sufficient, socially-supported, and avoidant coping strategies (Litman, 2006). Deisinger, Cassisi, and Whitaker (1996) identified a five-factor model that was similar to the factor model proposed by Carver et al. (1989), but with an additional factor consisting of 'Substance Use' and 'Humor'.

Adaptations of the 'COPE' questionnaire to other languages also produced different results. For example, a factor analysis of the Italian version of 'COPE' revealed a five-factor model: (1) problem-focused coping (active coping, planning, suppression of competing activities); (2) avoidance (denial, mental or behavioral disengagement, substance use, and humor); (3) social support (use of social instrumental support, and social emotional support); (4) emotion-focused coping (positive reinterpretation and growth, restraint, and acceptance), and (5) religious

coping(Sica, Novara, Dorz, & Sanavio, 1997). In the Estonian version of COPE, a three-factor model was identified: (1) problem-centered coping (active coping, planning, suppression of competitive activities, positive reinterpretation and growth, and humor); (2) avoidance (denial, behavioral and mental disengagement, restraint, and acceptance), and (3) coping focused on seeking social support (social instrumental support and social emotional support). On the other hand, the factor solution of the Estonian ‘COPE’ did not include the scale of ‘Substance Use’ or ‘Religious Coping’ (Kallasmaa & Pulver, 2000). The Romanian version of ‘COPE’ also presented a four-factor solution: (1) problem-focused coping (planning, active coping, and suppression of competing activities); (2) emotion-focused coping (positive interpretation and growth, restraint, and acceptance); (3) seeking social support (social instrumental support), and (4) avoidance (denial, mental and behavioral disengagement) (Craşovan & Sava, 2013).

Thus, in this study, the Ukrainian version of the ‘COPE’ questionnaire has not implied an exact replication of the original questionnaire factor loadings proposed by Carver, Scheier, and Weintraub (1989). In order to achieve the goal of validating the factor structure of the Ukrainian ‘COPE’ dispositional questionnaire, this work employed the principal component method with Varimax rotation and Kaiser data normalization. The results obtained were interpreted based on the factor loadings significance set at 0.55 for N = 109 (Kyriazos, 2018; de Winter, Dodou, & Wieringa, 2009). The PCA converged in seven iterations resulted in five factors (see Table 3). Such a factor solution explains 76.166% of the total variance.

Table 3

Factor Loadings of the Ukrainian version of ‘COPE’

	Factor Loadings				
	Factor 1: Seeking Social Support	Factor 2: Avoidance	Factor 3: Emotions-focused coping	Factor 4: Problem-focused coping	Factor 5: Religious coping
Use of social emotional support	0.876				
Use of social instrumental support	0.857				
Focus on and venting of emotions	0.776				
Denial		0.912			
Behavioral disengagement		0.846			
Substance Use	0.533	0.605			
Mental disengagement		0.55			0.501
Positive reinterpretation and growth			0.821		
Acceptance			0.689		
Humor			0.686		
Restraint			0.590		
Suppression of competing activities				0.878	
Active coping				0.807	
Planning				0.635	
Religious coping					0.856

In the process of factor validation of the Ukrainian version of the ‘COPE’ questionnaire, a psychological interpretation of the factor loadings was conducted. It is obvious that the factorial model acquired is similar to that of the original ‘COPE’ questionnaire (Carver, Scheier, & Weintraub, 1989). The first factor includes the scales of “Use of social instrumental support”, “Use of social emotional support” and “Focus on and venting of emotions”. Such factorial content is identical to the third factor (“Focus on social support») of the original version of ‘COPE’.

The second factor includes such scales as “Denial”, “Behavioral disengagement”, “Substance Use”, and “Mental disengagement”, which is almost identical to the fourth factor of avoidance in the original factorial model. The only difference from the latter was that the “Substance Use” scale is included in the same factor in this. The third factor includes such scales as “Positive reinterpretation and growth”, “Acceptance”, “Humor” and “Restraint”, which replicates the original factor of emotion-focused coping. Yet, instead of the “Religious Coping”, the Ukrainian factorial model includes the scale of “Humor”, which was not included in the similar factor of the original factor solution. This corresponds to the results obtained by Litman (2006). The fourth factor includes “Suppression of Competing Activities”, “Active Coping” and “Planning”, which thoroughly replicates the content of the first factor in the original model, namely: problem-focused coping. The scale of “Religious coping” makes the fifth factor, which corresponds to the factor solution of the Italian version of the ‘COPE’ questionnaire (Sica, Novara, Dorz, & Sanavio, 1997). Such a factor model explains 76.166% of the total variance.

Thus, it is possible to confirm the successful validation of the factor structure of the Ukrainian version of the “COPE” dispositional questionnaire.

Construct validity of the Ukrainian version of the COPE questionnaire. To evaluate the construct validity of the COPE questionnaire, a correlation analysis was conducted to quantify the association between the variables of the Ukrainian ‘COPE’ and the SACS questionnaire – The Strategic Approach to Coping Scale (Hobfoll, Dunahoo & Monnier, 1994) – adapted as SPSS (Stress Management Strategy) (Vodopyanova & Starchenko, 2001). The SPSS questionnaire consists of nine scales, namely: “Assertive Action”, “Social Joining”, “Seeking Social Support”, “Cautious Action”, “Instinctive Action”, “Avoidance”, “Indirect Action”, “Antisocial Action”, and “Aggressive Action”. According to S. Hobfoll’s interpretation, the scales proposed are associated with the three axes of behavior: (1) prosocial behavior, (2) active-passive behavior, and (3) direct-indirect behavior. This model reflects an individual activeness in stressful situations. S. Hobfoll refers to the resource theory of coping envisaging the degree of employment of available resources in a stressful situation (Hobfoll & Lerman, 1989).

Table 4 shows that a number of scales of the Ukrainian version of the COPE questionnaire have moderate and strong positive- and moderate negative correlations with the SPSS scales. Such correlations include the following association between the variables:

- “Mental Disengagement” (COPE) and “Avoidance” (SPSS) ($\rho = 0.478, p \leq 0.01$);
- “Focus on Emotions and Venting Emotions” (COPE) and “Aggressive Action” (SPSS) ($\rho = 0.490, p \leq 0.01$);
- «Use of Social Instrumental Support» (COPE) and the SPSS scales of «Social Joining» ($\rho = 0.701, p \leq 0.01$) and «Seeking Social Support» ($\rho = 0.657, p \leq 0.01$);
- “Active Coping” (COPE) and “Assertive Action” (SPSS) ($\rho = 0.225, p \leq 0.05$);
- significant positive correlations between “Denial” (COPE) and “Avoidance” (SPSS) ($\rho = 0.495, p \leq 0.01$);
- “Denial” (COPE) and “Cautious Action” (SPSS) ($\rho = 0.542, p \leq 0.01$);
- “Behavioral Disengagement” (COPE) and “Avoidance” (SPSS) ($\rho = 0.457, p \leq 0.01$);
- “Behavioral Disengagement” (COPE) and “Cautious Action” (SPSS) ($\rho = 0.440, p \leq 0.01$);
- between the “Restraint” (COPE) and “Cautious Action” (SPSS) ($\rho = 0.490, p \leq 0.01$);
- “Restraint” (COPE) and “Avoidance” (SPSS) ($\rho = 0.342, p \leq 0.05$);
- “Avoidance” (COPE) and “Indirect Action” (SPSS) ($\rho = 0.310, p \leq 0.05$);
- between the scales «Use of Social Emotional Support» (COPE) and Seeking Social Support” ($\rho = 0.746, p \leq 0.01$), and “Social Joining” ($\rho = 0.504, p \leq 0.01$) (SPSS);
- between the “Substance Use” scale (COPE) and the scales of “Indirect Action” ($\rho = 0.413, p \leq 0.01$) and “Aggressive Action” ($\rho = 0.329, p \leq 0.05$);
- as well as negative correlation between the scale of “Planning” (COPE) and “Instinctive Action” ($\rho = -0.373, p \leq 0.05$) and “Avoidance” (SPSS) ($\rho = 0.306, p \leq 0.05$).

Obviously, all the positive and negative correlations found between the scales of the two questionnaires are quite logical. On the other hand, such ‘COPE’ scales as “Positive Reinterpretation and Growth”, “Religious Coping”, “Humor”, “Acceptance”, and “Suppression of Competing Activities” have found no associations with the variables of SPSS, which can be explained by the absence of the relevant scales in the SPSS questionnaire. Conversely, the “Antisocial Action” scale (SPSS) did not manifest any association with the ‘COPE’ scales.

Table 4

r-Spearman correlation between the scales of 'COPE' and SPSS

SPSS	Assertive Action	Social Joining	Seeking Social Support	Cautious Action	Instinctive Action	Avoidance	Indirect Action	Antisocial Action	Aggressive Action
COPE									
Positive reinterpretation and Growth	0.086	0.112	0.150	0.153	0.130	0.088	-0.105	-0.026	-0.250
Mental Disengagement	-0.294	0.188	-0.254	0.308	0.123	0.478**	0.304	0.366	0.377
Sig. (2-tailed)						0.001			
Focus on Emotions and Venting of Emotions	-0.180	0.235	0.269	0.151	0.012	0.193	0.296	0.040	0.490**
Sig. (2-tailed)									0.001
Use of Social Instrumental Support	-0.128	0.701**	0.657**	0.010	-0.036	0.221	0.150	0.185	0.252
Sig. (2-tailed)		0.000	0.000						
Active Coping	0.225*	0.120	0.069	-0.188	-0.212	-0.297	0.237	0.263	0.121
Sig. (2-tailed)	0.03								
Avoidance	0.079	0.173	-0.357	0.542**	0.041	0.495**	0.325	0.287	0.334
Sig. (2-tailed)				0.000		0.001			
Religious Coping	0.114	0.368	0.087	0.007	0.315	0.060	0.027	0.114	-0.034
Humor	0.196	-0.058	0.017	-0.067	-0.074	0.061	0.079	0.094	-0.088
Behavioral Disengagement	0.066	0.188	-0.248	0.457**	0.367	0.440**	0.182	0.045	0.286
Sig. (2-tailed)				0.002		0.004			
Restraint	0.114	-0.085	-0.121	0.490**	-0.094	0.342*	0.310*	0.198	0.197
Sig. (2-tailed)				0.001		0.027	0.046		
Use of Social Emotional Support	-0.374	0.504**	0.746**	0.128	-0.049	0.238	0.093	-0.077	0.268
Sig. (2-tailed)		0.001	0.000						
Substance Use	0.000	0.143	0.020	0.368	0.024	0.282	0.413*	0.202	0.329*
Sig. (2-tailed)							0.007		0.033
Acceptance	-0.176	0.181	0.282	0.158	-0.199	0.286	0.226	0.146	0.159
Suppression of Competing Activities	0.185	0.152	0.148	0.110	-0.287	-0.155	0.129	0.210	0.305
Planning	0.090	q0.016	0.049	-0.101	-0.373*	-0.306*	0.146	0.147	0.001
Sig. (2-tailed)					0.015	0.048			

* $p \leq 0.05$; N = 109/

** $p \leq 0.01$.

Conclusion. Thus, based on the analysis of the data obtained in the process of adaptation of the Ukrainian version of the 'COPE' dispositional questionnaire, a sufficiently high internal consistency and reliability of the methodology were revealed. In addition, the factor validation of the questionnaire, as well as its construct validity, was successfully carried out. It can therefore be claimed that the Ukrainian version of the 'COPE' dispositional questionnaire can be used in a Ukrainian-language sample to measure coping behavior.

The results of the study can be used to further standardize and summarize empirical studies of coping behavior in a cross-cultural context.

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