

A. Zhengiskyzy¹, G. Kudaibergenova², L. Rogaleva³,
S. Kudaibergenova^{1*}, Zh. Aliyeva⁴

¹Al-Farabi Kazakh National University, Almaty, Kazakhstan

²Turan University, Almaty, Kazakhstan

³Ural Federal University named after the first President of Russia B.N. Yeltsin, Ekaterinburg, Russian

⁴RSE REM “Republican Scientific and Practical Center for Mental Health”,

Ministry of Health of the Republic of Kazakhstan, Almaty, Kazakhstan

*e-mail: sandugash.kudaibergenova@kaznu.kz

CULTURAL ADAPTATION AND FACTOR STRUCTURE OF THE KAZAKH VERSION OF THE BRIEF COPE

The present study is devoted to the translation and adaptation of the Brief COPE questionnaire, as well as to the evaluation of its psychometric properties. The aim of the study is the cultural and linguistic adaptation of the Brief COPE questionnaire and the analysis of its factor structure in a Kazakh-speaking sample from the Republic of Kazakhstan. The study involved 495 respondents aged 16–67 years. The questionnaire was administered in a dispositional format and was intended to assess relatively stable ways of coping with stress.

Exploratory factor analysis was conducted to examine the structure of the instrument. The suitability of the data for factor analysis was confirmed by a high Kaiser–Meyer–Olkin measure ($KMO = 0,878$) and a statistically significant Bartlett’s test of sphericity ($\chi^2 = 6793,286$; $df = 378$; $p < 0,001$). The analysis revealed a seven-factor structure of the Kazakh version of the Brief COPE. The identified factors reflect the main functional domains of coping with stress and together explain 54.7% of the total variance.

The final model included 25 items; three items from the original version were excluded due to high uniqueness and the presence of cross-loadings. Content analysis of the factors demonstrated their psychological interpretability and consistency with the conceptual framework of the original instrument. Internal consistency coefficients were at an acceptable level and ranged from $\alpha = 0,611–0,809$. Study limitations include characteristics of the sample structure and the dispositional format of the questionnaire, which may limit the generalizability of the results and their interpretation in the context of situational coping.

The scientific value of the study lies in expanding empirical evidence on the structure and applicability of the Brief COPE and in contributing to the development of culturally sensitive psychodiagnostic tools for coping strategies in Kazakhstan. The practical significance of the study consists in the possibility of using the adapted version of the questionnaire in scientific research, educational practice, and applied psychological work.

Overall, the results indicate that the Kazakh version of the Brief COPE can be used as a psychometrically acceptable and substantively interpretable instrument for assessing dispositional coping strategies.

Keywords: coping, Brief COPE, cultural adaptation, exploratory factor analysis, Kazakhstan.

А. Жеңісқызы¹, Г. Құдайбергенова², Л. Рогалева³,
С. Құдайбергенова^{1*}, Ж. Алиева⁴

¹Әл-Фараби атындағы Қазақ ұлттық университеті, Алматы, Қазақстан

²Тұран университеті, Алматы, Қазақстан

³Ресейдің тұңғыш Президенті Б.Н. Ельцин атындағы Орал федералдық университеті, Екатеринбург, Ресей

⁴ҚР ДСМ «Республикалық психикалық денсаулық ғылыми-практикалық орталығы» ШЖҚ РМК,
Алматы, Қазақстан

*e-mail: sandugash.kudaibergenova@kaznu.kz

Brief COPE сауалнамасының қазақша нұсқасын мәдени бейімдеу және факторлық құрылымы

Зерттеу Brief COPE сауалнамасын аударуға және бейімдеуге, сондай-ақ оның психометриялық көрсеткіштерін бағалауға арналған. Зерттеудің мақсаты – Brief COPE сауалнамасын мәдени-лингвистикалық бейімдеу және оның Қазақстан Республикасының қазақ тілді іріктемесіндегі факторлық құрылымын талдау. Зерттеуге 16–67 жас аралығындағы 495 респондент қатысты. Сауалнама диспозициялық форматта қолданылды және стресспен күресудің тұрақты әдістерін бағалауға бағытталған.

Әдістеменің құрылымын зерттеу үшін эксплораторлық факторлық талдау жүргізілді. Деректердің факторлық талдауға жарамдылығы Кайзер–Мейер–Олкин көрсеткішінің жоғары мәнімен ($KMO = 0,878$) және Бартлеттің статистикалық маңызды сфералық өлшемшартымен расталды ($\chi^2 = 6793,286$; $df = 378$; $p < 0,001$). Талдау нәтижелері бойынша Brief COPE қазақ тіліндегі нұсқасының жеті факторлық құрылымы анықталды. Бөлінген факторлар стреспен күресудің негізгі функционалды әдістерін көрсетеді және жалпы дисперсияның 54,7%-ын түсіндіреді.

Қорытынды модельге 25 тармақ кірді; түпнұсқа нұсқасының үш тармағы жоғары бірегейлігі мен көденең жүктемелердің болуына байланысты алып тасталынды. Факторлардың мағыналы талдауы олардың психологиялық интерпретациясын және түпнұсқа құралдың тұжырымдамалық логикасына сәйкестігін көрсетті. Факторлардың ішкі келісім көрсеткіштері қолайлы деңгейде болды және $\alpha = 0,611–0,809$ аралығында өзгеріп отырды. Зерттеудің шектеулеріне іріктеме құрылымының ерекшеліктері және сауалнаманың диспозициялық форматы жатады, бұл алынған нәтижелердің жалпылануын және оларды ахуалдық копинг контекстінде түсіндіруді шектеуі мүмкін.

Зерттеудің ғылыми құндылығы Brief COPE сауалнамасының құрылымы мен қолданылу мүмкіндігі туралы эмпирикалық деректерді кеңейтуімен және Қазақстандағы копинг-стратегияларды мәдени тұрғыдан сезімтал психодиагностиканы дамытуға қосқан үлесімен айқындалады. Жұмыстың практикалық маңыздылығы бейімделген сауалнама нұсқасын ғылыми зерттеулерде, білім беру тәжірибесінде және қолданбалы психологиялық жұмыста пайдалану мүмкіндігімен айқындалады.

Тұтастай алғанда, алынған нәтижелер Brief COPE қазақ тіліндегі нұсқасы қазақ тіліндегі іріктемелердегі диспозициялық копинг-стратегияларды бағалау үшін психометриялық тұрғыдан қолайлы және мазмұнды түсіндіретін құрал ретінде пайдаланылуы мүмкін екенін көрсетеді.

Түйін сөздер: копинг, Brief COPE, мәдени бейімделу, эксплораторлық факторлық талдау, Қазақстан.

А. Жеңісқызы¹, Г. Кудайбергенова², А. Рогалева³,
С. Кудайбергенова^{1*}, Ж. Алиева⁴

¹Казахский национальный университет имени аль-Фараби, Алматы, Казахстан

²Университет Туран, Алматы, Казахстан

³Уральский государственный федеральный университет

имени первого Президента России Б.Н. Ельцина, Екатеринбург, Россия

⁴РГП на ПХВ «РНПЦ психического здоровья» МЗ РК, Алматы, Казахстан

*e-mail: sandugash.kudaibergenova@kaznu.kz

Культурная адаптация и факторная структура казахской версии опросника Brief COPE

Исследование посвящено переводу и адаптации опросника Brief COPE, а также оценке его психометрических показателей. Целью является культурно-лингвистическая адаптация опросника Brief COPE и анализ его факторной структуры на казахоязычной выборке Республики Казахстан. В исследовании приняли участие 495 респондентов в возрасте 16–67 лет. Опросник применялся в диспозиционном формате и был направлен на оценку устойчивых способов совладания со стрессом.

Для изучения структуры методики был проведен эксплораторный факторный анализ. Пригодность данных для факторного анализа была подтверждена высоким значением показателя Кайзера–Мейера–Олкина ($KMO = 0,878$) и статистически значимым критерием сферичности Бартлетта ($\chi^2 = 6793,286$; $df = 378$; $p < 0,001$). По результатам анализа была выявлена семи-факторная структура казахской версии Brief COPE. Выделенные факторы отражают основные функциональные способы совладания со стрессом и в совокупности объясняют 54,7 % общей дисперсии.

В итоговую модель вошли 25 пунктов; три пункта оригинальной версии были исключены вследствие высокой уникальности и наличия перекрёстных нагрузок. Содержательный анализ факторов показал их психологическую интерпретируемость и соответствие концептуальной логике оригинального инструмента. Показатели внутренней согласованности факторов находились на приемлемом уровне и варьировали от $\alpha = 0,611–0,809$. К ограничениям исследования относятся особенности структуры выборки и диспозиционный формат опросника, что может ограничивать обобщаемость полученных результатов и их интерпретацию в контексте ситуативного копинга.

Научная ценность исследования заключается в расширении эмпирических данных о структуре и применимости Brief COPE и вкладе в развитие культурно чувствительной психодиагностики копинг-стратегий в Казахстане. Практическая значимость работы состоит в возможности

использования адаптированной версии опросника в научных исследованиях, образовательной практике и прикладной психологической работе.

В целом, полученные результаты показывают, что казахская версия Brief COPE может использоваться как психометрически приемлемый и содержательно интерпретируемый инструмент для оценки диспозиционных копинг-стратегий.

Ключевые слова: копинг, Brief COPE, культурная адаптация, эксплораторный факторный анализ, Казахстан.

Introduction

In Kazakhstan, as in many countries worldwide, exposure to stressors affecting both mental and physical health has substantially increased due to accelerating social, economic, and professional changes. Chronic stressors, situations of uncertainty, and heightened adaptive demands are widely recognized as significant risk factors for psychological distress and reduced quality of life. In this context, the study of psychological mechanisms that enable individuals to cope with adverse conditions and maintain functional adaptation becomes particularly important.

One of the key mechanisms examined in psychological research is coping with stress. Coping is understood as a set of cognitive and behavioral processes through which individuals manage internal and external demands arising from stressful situations; the nature and use of these processes are context-dependent and may change over time (Folkman, 2011). Depending on the theoretical perspective, coping may be conceptualized either as a relatively stable dispositional characteristic or as a situational, dynamically changing response to a specific stressor.

At present, a variety of instruments are used to assess coping strategies. Among the most widely applied measures are the COPE Inventory, the Ways of Coping Questionnaire, and the Coping Inventory for Stressful Situations. The Brief COPE was later developed as a shortened form of the original COPE Inventory, intended to provide a more concise and time-efficient assessment of coping strategies (Carver, 1997). Since its introduction, COPE-based measures have occupied a central position in empirical coping research. A large-scale meta-analytic review of 2,000 empirical studies published between 1998 and 2010 showed that COPE-based instruments accounted for approximately one fifth of all reported uses of coping measures, underscoring their prominence in the field (Kato, 2013). With regard to the Brief COPE specifically, a systematic review of studies published between 1997 and 2021 demonstrated its extensive use across a broad range

of populations, research settings, and cultural contexts, with cumulative samples exceeding 45,000 participants (Solberg et al., 2021). The scale has also been translated and applied in numerous linguistic and cultural settings, supporting its applicability in cross-cultural research. More recent review-based analyses continue to confirm the widespread international use and ongoing relevance of the Brief COPE in contemporary coping research (Rodrigues et al., 2022).

An analysis of recent peer-reviewed psychological research conducted in Kazakhstan indicates that coping processes are most often examined in the context of stress, emotional burnout, and adaptation among specific applied populations, such as students, healthcare professionals, and social workers (Prilutskaya et al., 2020; Duanaeva et al., 2023; Kulsharipova et al., 2023; Abdakimova & Grossul, 2024; Uteulova et al., 2024; Issenova et al., 2025). Despite this increasing empirical attention, the existing body of research reveals a limited diversity of measurement approaches. Most studies rely on Russian-language versions of established coping measures, including the Ways of Coping Questionnaire developed by Lazarus and Folkman, the Coping Strategy Indicator developed by Amirkhan, and the Strategic Approach to Coping Scale developed by Hobfoll, typically referring to previously developed Russian adaptations without reporting cultural-linguistic adaptation procedures or psychometric validation conducted specifically on Kazakhstani samples (Kulsharipova et al., 2023; Abdakimova & Grossul, 2024). English-language studies conducted on Kazakhstani samples or on culturally comparable populations, such as international students from Central Asian or post-Soviet contexts, similarly incorporate coping within broader models of stress, resilience, or adaptation, yet provide no information regarding local adaptation of the measurement tools employed (Prilutskaya et al., 2020; Duanaeva et al., 2023; Issenova et al., 2025). Notably, within the available body of peer-reviewed psychological research conducted in Kazakhstan, no studies have explicitly focused on the development, adaptation, or validation of coping instruments in the Kazakh

language. This observation is particularly salient given that contemporary psychological research conceptualizes coping as a dynamic and context-dependent phenomenon, sensitive to cultural, social, and situational conditions (Kuo, 2011). Taken together, these observations point to a clear methodological gap between the expanding empirical literature on coping in Kazakhstan and the absence of culturally and linguistically adapted measurement tools for Kazakh-speaking populations.

Aim of the Study

The aim of the present study is to conduct a cultural and linguistic adaptation and to evaluate the psychometric properties of the Brief COPE in a sample of the population of Kazakhstan.

Objectives of the Study

To achieve this aim, the study pursued the following objectives:

1. To review international evidence on the use and psychometric evaluation of the Brief COPE, including findings from systematic reviews and cross-cultural adaptation studies.
2. To translate and culturally adapt the Brief COPE into the Kazakh language, taking into account linguistic and sociocultural characteristics of the target population.
3. To examine the factor structure and assess the reliability of the Kazakh-language Brief COPE, and to compare the obtained results with findings reported in international studies.

Research Questions

1. What is the factor structure of the Kazakh version of the Brief COPE in a sample of the population of Kazakhstan?
2. What are the substantive characteristics and psychological interpretation of the identified coping factors?
3. What are the indicators of internal consistency and the descriptive characteristics of the identified factors of the Kazakh-language Brief COPE?

Literature review

Research on coping as a psychological construct has been characterized by pronounced methodological and structural variability since its inception. In a meta-analytic review of the most widely used coping measures, Kato (2013) demonstrated that variability in factor-analytic outcomes represents a normative feature of this class of instruments rather than an exception. The author emphasized that identified structures are strongly contingent on the theoretical foundations of the measure, sample character-

istics, research context, and the analytical strategies employed. These conclusions provide an essential methodological framework for examining abbreviated coping instruments, including the Brief COPE.

The Brief COPE was introduced by C. S. Carver as a shortened version of the original COPE inventory, designed to reduce respondent burden while preserving coverage of a broad range of coping strategies (Carver, 1997). In the original publication, the Brief COPE was presented as a pragmatic instrument consisting of 14 two-item subscales (28 items), facilitating its use in clinical, field-based, and longitudinal research settings. Carver explicitly highlighted the applied orientation of the instrument and noted its flexibility, indicating that it could be administered in either a situational or a dispositional format through modifications of instructions and verb tense. Importantly, no formally specified or universally applicable factor model was proposed. The internal structure was examined using exploratory factor analysis within a specific sample, without claims regarding invariance or generalizability of the resulting configuration (Carver, 1997).

Early methodological discussions further underscored that the abbreviated format of the Brief COPE and the use of two-item subscales impose inherent limitations on the interpretation of factor-analytic results. Pais Ribeiro and Rodrigues (2004) argued that the Brief COPE should be conceptualized primarily as a descriptive instrument for assessing repertoires of coping strategies rather than as a scale intended to capture a stable latent structure. A similar position was articulated by Kapsou et al. (2010), who emphasized the sensitivity of factor-analytic outcomes to analytical procedures, sample composition, and decisions regarding the aggregation of coping strategies. Within this framework, the Brief COPE is best understood as a set of relatively autonomous indicators of coping that may be used modularly, depending on specific research objectives.

The most comprehensive synthesis of evidence concerning the factor-analytic properties of the Brief COPE was provided by Solberg et al. (2021). Their systematic review included 85 English-language peer-reviewed studies published between 1997 and 2021. The authors reported a wide range of factor-analytic outcomes, with solutions varying substantially across studies and no single configuration demonstrating consistent replication in independent samples. The review also documented marked heterogeneity in analytical approaches, including principal component analysis, exploratory

factor analysis, and confirmatory factor analysis, while only a limited number of studies directly examined the original 14-subscale configuration. Solberg et al. concluded that structural heterogeneity constitutes a robust and enduring characteristic of the Brief COPE literature rather than a consequence of isolated methodological shortcomings.

Converging conclusions were presented in the review by Rodrigues et al. (2022), which combined an overview of existing empirical findings with bifactor modeling. The authors showed that attempts to reproduce the original configuration using confirmatory factor analysis frequently resulted in unsatisfactory model fit, whereas exploratory approaches yielded diverse empirical representations. These findings were interpreted as reflecting a mismatch between the conceptual logic of the Brief COPE and the assumptions underlying strict latent variable modeling, rather than as evidence of inadequate construct validity.

Empirical psychometric studies further indicate that factor-analytic representations of the Brief COPE are highly sensitive to analytical decisions. Research by Müller and Spitz (2003) and Baumstarck et al. (2017) demonstrated that variations in factor extraction methods, rotation techniques, and criteria for factor retention lead to divergent empirical outcomes. Brasileiro et al. (2016) additionally highlighted that reliance on two-item subscales is associated with unstable factor loadings and constrained indices of internal consistency, particularly in cross-cultural research contexts.

Cross-cultural adaptations of the Brief COPE consistently reveal context-dependent empirical patterns. European studies, including Greek, French, Italian, and Spanish adaptations, report heterogeneous factor-analytic outcomes that reflect local coping practices, social norms, and analytical conventions (Kapsou et al., 2010; Müller & Spitz, 2003; Baumstarck et al., 2017; Fernández-Martín et al., 2022). Similar findings have been reported in Latin American contexts, where studies conducted in Brazil, Chile, Colombia, and Peru demonstrate modified empirical groupings of coping strategies and underscore the role of cultural context in shaping analytic representations (Brasileiro et al., 2016; García et al., 2018; García-Mejía et al., 2025; Zeldita-Huaman et al., 2024).

Research conducted in Asian and Middle Eastern countries likewise points to substantial variability in empirical representations of the Brief COPE. Adaptations developed in China, Vietnam, Indonesia, Sri Lanka, Saudi Arabia, and Iran yield

heterogeneous factor-analytic results that depend on cultural context, population characteristics, stressor specificity, and analytical decisions, rather than indicating a stable and invariant latent structure (Su et al., 2015; Alosaimi et al., 2015; Matsumoto et al., 2020; Huda et al., 2022; Ashktorab et al., 2017; Weeratunga et al., 2022). At the same time, a limited number of studies have retained the original 14-subscale configuration of the Brief COPE for analytical or interpretative purposes. Notably, this approach has been reported in the Saudi Arabian adaptation and in selected Spanish-speaking samples, where the original subscales were applied without substantial structural aggregation (Alosaimi et al., 2015; Fernández-Martín et al., 2022). Importantly, these cases represent context-specific applications of the instrument rather than evidence of a consistently replicable or invariant factor structure across cultures.

The literature also includes studies employing the Brief COPE in a situational format to assess coping strategies in response to specific stressors. In such research, the instrument is applied without the expectation of reproducing a fixed factor structure, and resulting analytic representations are interpreted in relation to the targeted stressor. A formalized example of this approach is the Italian situational version of the Brief COPE (Bongelli et al., 2022). Comparable approaches have been adopted in studies of students, healthcare professionals, and caregivers exposed to context-specific stressors (Pels et al., 2023; Steindorsdottir et al., 2024; Cheng et al., 2025).

Within the post-Soviet research context, empirical studies have predominantly focused on the original COPE inventory. In particular, research conducted by Russian authors has addressed the adaptation and psychometric evaluation of shortened versions of the original COPE questionnaire rather than the cultural adaptation of the Brief COPE as an independent instrument. Existing adaptations of the Brief COPE in the region remain limited in scope and are primarily based on adolescent samples (Marakshina et al., 2023). Ukrainian versions of the Brief COPE likewise report pronounced structural variability and emphasize the necessity of local validation of the instrument (Kovalenko, 2018; Yablonska et al., 2023).

Overall, studies on the adaptation of the Brief COPE characterize this questionnaire as a widely used instrument for the assessment of coping strategies that does not possess an invariant factor structure, while at the same time demonstrating high

practical applicability and flexibility for adaptation to the aims of specific studies. Systematic reviews, methodological analyses, and empirical research consistently show that factor-analytic solutions for the Brief COPE are sensitive to cultural context, sample characteristics, stressor specificity, and the analytical approaches employed. The empirically identified features of Brief COPE adaptations establish the methodological context for the development and evaluation of new cultural versions of the instrument and provide a rationale for the use of exploratory approaches when examining its structure in new sociocultural settings.

Materials and methods

Permission to use the methodology, questionnaire format, and translation procedure

The cultural and linguistic adaptation of the Brief COPE questionnaire was conducted in accordance with the publicly available terms stated by the author of the original instrument, Charles S. Carver. According to information provided on the author's official academic webpage, the translation, adaptation, and use of the COPE and Brief COPE questionnaires are permitted for scientific and educational purposes without the need for a separate license, provided that authorship is properly acknowledged and the instrument is used for non-commercial purposes (Carver, n.d.). The present study adhered to these conditions. The translation and cultural adaptation procedure was carried out in accordance with international standards for cross-cultural adaptation of psychometric instruments (International Test Commission, 2017).

The Brief COPE questionnaire was translated and adapted by the authors for use in a dispositional format, that is, without anchoring responses to a specific stressful situation. This format is intended to assess typical, relatively stable coping strategies that individuals tend to use across difficult life circumstances in general rather than in response to a single stressful episode. The choice of the dispositional format is consistent with the conceptual position of the author of the instrument and is widely applied in international research focused on examining individual differences in coping strategies (Carver, 1997; Carver, n.d.). This approach is further supported by systematic reviews documenting the use of Brief COPE across diverse cultural and research contexts (Solberg et al., 2021; Ravinthiran et al., 2025). In line with the dispositional format, minor clarifications were introduced into the instructions and item wording to eliminate references to a spe-

cific stressor, while fully preserving the content structure and psychological meaning of the original items.

The translation and cultural adaptation of the Brief COPE questionnaire were performed in several stages. At the first stage, independent forward translations of the original English version into Kazakh were carried out by a professional philologist and a psychologist, both fluent in English and Kazakh. Following comparison and discussion of the two translations, a reconciled Kazakh version was developed. At the next stage, a back-translation into English was conducted by an independent psychologist who had not participated in the previous stages and had no access to the original version. The back-translation was used as an auxiliary procedure to check for major discrepancies and was compared with the original instrument; no substantial differences in meaning were identified.

The adapted Kazakh version of the Brief COPE is available from the authors upon reasonable request for research and educational purposes.

Assessment of content and construct validity

An expert evaluation was conducted to assess the content and construct validity of the Kazakh version of the Brief COPE. The expert panel consisted of five psychologists with combined experience in research and professional practice in the field of psychodiagnostics. The experts evaluated the correspondence of the translated items to the theoretical content of the original coping strategies, the clarity of item wording, and potential difficulties in interpretation for Kazakh-speaking respondents. Based on the expert discussion, minor revisions were introduced to eliminate ambiguities and refine wording while maintaining conceptual equivalence with the original version. After these revisions, the final version was considered suitable for empirical investigation.

Preparation of the online version and data collection procedure

Following the completion of the translation and expert evaluation stages, an online version of the Brief COPE questionnaire was prepared for data collection. The online format was selected to expand sample coverage, standardize the data collection procedure, and increase accessibility for participants. The online version fully reproduced the content of the items in the finalized Kazakh version and was accompanied by standardized instructions oriented toward dispositional assessment of coping strategies. Technical settings of the online survey prevented repeated submissions and did not allow missing responses.

Empirical data were collected between November 10 and December 20, 2025.

Sample size

Sample size determination was guided by methodological recommendations for exploratory factor analysis. According to the literature, an acceptable ratio of participants to analyzed items ranges from 5:1 to 10:1, with a more conservative approach recommending at least 10 observations per item to ensure stability of factor solutions (Costello & Osborne, 2005). The Brief COPE questionnaire consists of 28 items; therefore, based on the criterion of at least 10 observations per item, the minimum required sample size for the present study was 280 respondents.

Inclusion and exclusion criteria

Inclusion criteria were age 16 years or older and sufficient proficiency in the Kazakh language to independently complete the questionnaire. The selection of the age threshold of 16 years was justified, on the one hand, by evidence from international studies supporting the use of Brief COPE in adolescent and young adult samples, as reflected in systematic reviews of its application in these populations (Solberg et al., 2021; Ravinthiran et al., 2025), and, on the other hand, by the legislation of the Republic of Kazakhstan, which allows individuals aged 16 years and older to independently provide informed consent for participation in non-invasive assessments and receipt of psychological assistance without mandatory consent from legal representatives (Law of the Republic of Kazakhstan “On Public Health and the Health Care System,” Article 78). In addition, inclusion of respondents aged 16 years and older substantially expands the applied potential of the adapted instrument. This developmental period is particularly important for the formation and consolidation of coping strategies, making the questionnaire relevant for use in preventive, educational, and practice-oriented psychological interventions targeting adolescents and young adults. From a methodological perspective, inclusion of this age group also contributes to greater variability in coping responses and the formation of a more heterogeneous sample, which enhances the stability and interpretability of factor solutions in exploratory factor analysis.

Exclusion criteria included age under 16 years and insufficient proficiency in the Kazakh language that could interfere with comprehension of the questionnaire instructions and items.

Statistical analysis methods

The study employed a nonexperimental cross-sectional design aimed at the primary cultural and

psychometric examination of the Brief COPE in a Kazakh-speaking sample. Exploratory factor analysis was used to examine the structure of the Kazakh version of the Brief COPE questionnaire. Exploratory factor analysis was conducted based on a Pearson correlation matrix. This approach was selected due to the characteristics of the instrument and its documented cultural sensitivity. Evidence from international research indicates that the factor structure of the Brief COPE is not invariant and may vary depending on cultural context, sample characteristics, and administration format. Accordingly, exploratory factor analysis allowed identification of the empirical structure of coping strategies in the Kazakh-speaking sample without imposing a pre-defined model.

Factor loadings of 0.40 or higher were considered substantively meaningful and served as the primary criterion for item retention and factor interpretation. Loadings in the range of 0.30–0.39 were examined at an exploratory stage to identify potential cross-loadings and to inform decisions regarding item exclusion.

In addition to factor analysis, descriptive statistics were calculated for individual items and composite scores, including means and standard deviations. Internal consistency of the extracted factors was assessed using Cronbach’s alpha coefficient. Statistical analyses were conducted using SPSS (version 22.0) and JASP (version 0.17.2).

Results and discussion

Demographics of the sample

A total of 509 respondents took part in the study. Following data cleaning and the removal of cases with missing values on key demographic variables, the analysis was based on 495 participants for whom valid information on gender and age was available, as summarized in Table 1.

Table 1 – Demographic characteristics of the sample by gender and age

Indicator	Female	Male	Total
n	385	110	495
%	77,8	22,2	100
Age, M	32,66	29,73	32,00
Age, SD	11,80	12,10	11,91
Age range	16–67	16–63	16–67

In the final sample used for the calculation of psychometric indicators, women constituted the majority of respondents (77,8%), while men accounted for 22,2%. As the study was conducted within the framework of a primary cultural and linguistic adaptation of the instrument and focused on examining its applicability and factor structure, the research team considered the use of this sample to be appropriate. At the same time, given the imbalance in gender and age distribution and the absence of research objectives related to demographic comparisons, analyses by gender and age were not performed in the present study and may represent a focus for future research.

Assessment of Data Suitability for Factor Analysis

Prior to factor extraction, the suitability of the data for exploratory factor analysis was assessed. The Kaiser–Meyer–Olkin measure of sampling adequacy was 0.878, indicating a high level of shared

variance among the items. Bartlett’s test of sphericity was statistically significant ($\chi^2 = 6793.286$, $df = 378$, $p < .001$), suggesting that the correlation matrix differed from an identity matrix and was suitable for factor analysis.

Analysis of the Scree Plot and Explained Variance

Inspection of the scree plot (Figure 1) revealed a clear break after the seventh factor, followed by a gradual flattening of the curve, indicating a reduced contribution of subsequent factors. This pattern was consistent with the results of parallel analysis, in which the eigenvalues of the first seven factors derived from the empirical data exceeded the corresponding eigenvalues obtained from randomly generated datasets, whereas this was not observed for the remaining factors. Taken together, these results supported the retention of a seven-factor solution for the structure of the instrument.

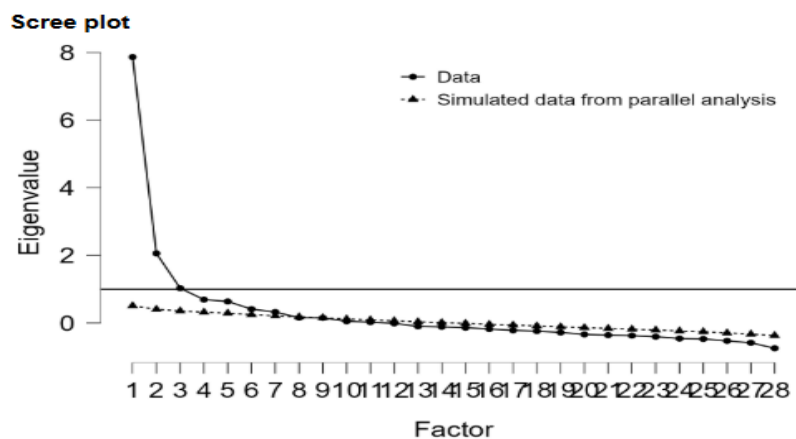


Figure 1 – Scree plot and results of parallel analysis

The resulting factor structure explained 54,7% of the total variance. This level of explained variance is considered acceptable for multidimensional psychological constructs, particularly for instruments designed to assess coping strategies, which are inherently heterogeneous and context-dependent. As noted by the author of the instrument, the Brief COPE was not developed to represent a rigid or compact latent structure, as coping reflects a set of functionally distinct responses employed depending on situational and contextual demands (Carver, 1997). Review and analytical studies further demon-

strate substantial variability in the factor structures of the Brief COPE across different samples and cultural contexts, with moderate levels of explained variance being typical for exploratory models of this instrument (Rodrigues et al., 2022).

Items 1 and 13 of the original Brief COPE version did not load on any factor and were characterized by high uniqueness indices (0,777 and 0,671, respectively), indicating limited contribution to the common factor structure. Accordingly, their exclusion from the exploratory factor model was considered methodologically justified.

Table 2 – Exploratory Factor Loadings for the Brief COPE (Kazakh Version)

Item (Original Brief COPE numbering)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Item 10	0,728						
Item 23	0,684						
Item 15	0,675						
Item 9	0,657						
Item 5	0,486						
Item21	0,454						
Item18		0,885					
Item17		0,622					
Item 28		0,509					
Item 12		0,459					
Item 2			0,675				
Item7			0,660				
Item14			0,409				
Item25				0,462			
Item24				0,813			
Item26				0,399			
Item20				0,396			
Item16					0,647		
Item 6					0,588		
Item 8					0,479		
Item 19					0,409		
Item 27						0,821	
Item22						0,816	
Item 11							0,941
Item4							0,777

Note. The table presents factor loadings from the exploratory factor analysis (EFA) with oblique rotation. Only factor loadings ≥ 0.30 are reported. Item numbering corresponds to the original version of the Brief COPE.

Item 3 of the original version demonstrated nearly identical cross-loadings on Factor 3 (0,404) and Factor 5 (0,398), without a clearly dominant loading on either factor, and was therefore excluded from the final factor solution.

Item 25 of the original Brief COPE version showed factor loadings on Factor 3 (0,311) and Factor 4 (0,462). Given the dominant loading on Factor 4 and the substantive consistency of the item with the thematic content of this factor, the item was assigned to Factor 4. This approach preserves interpretability and conceptual coherence of the factor structure

The final factor structure of the Kazakh version of the Brief COPE is presented below. Item wordings are provided in the Kazakh language, while factor labels are given in both English and Kazakh. In naming the factors, we aimed to preserve as closely as possible the conceptual logic and terminological continuity of the original Brief COPE scales.

Factor 1. Social Support and Venting (6 items; 10.8% of variance).

This factor included items from the original emotional support, instrumental support, and venting scales. It reflects coping strategies centered on seeking emotional and practical support from oth-

ers, along with the expression of emotions as a means of emotional release. The co-occurrence of these strategies points to their functional proximity and is consistent with the original author's view of venting as a form of active emotional responding.

Factor 2. Emotional Processing and Humor (4 items; 7,9% of variance).

This factor comprised items corresponding to the positive reframing and humor scales of the original Brief COPE. These strategies involve cognitive and emotional processing of stressful experiences by altering subjective interpretations and using humor to alleviate emotional tension.

Factor 3. Active Coping and Planning (3 items; 7,6% of variance).

This factor included items from the active coping and planning scales. It represents deliberate behavioral and cognitive efforts aimed at directly addressing the stressor and developing concrete courses of action. Within the original Brief COPE framework, planning is conceptualized as an integral component of action-oriented active coping.

Factor 4. Acceptance and Internal Cognitive Processing (4 items; 7,4% of variance).

This factor brought together items related to acknowledging the stressful situation, reflective consideration of what is happening, and self-directed attribution. It captures an internal mode of coping in which individuals come to terms with stressful experiences through reflection and self-evaluation rather than through direct action. In contrast to behaviorally focused coping strategies, this factor primarily reflects intrapsychic processes and is not oriented toward immediate attempts to change the situation.

Factor 5. Self-Distraction and Behavioral Disengagement (4 items; 7,2% of variance).

This factor included items from the self-distraction, behavioral disengagement, and denial scales. These strategies are characterized by attentional shifting, reduced involvement, and withdrawal from active attempts to cope with the stressor. The factor label follows the behavioral logic of the original Brief COPE scales. Similar combinations of avoidance-related strategies have been reported in other national adaptations, supporting the context-dependent nature of these coping responses.

Factor 6. Religion (2 items; 7,0% of variance).

This factor consisted of items from the religion scale and demonstrated a high degree of conceptual homogeneity. Its label directly corresponds to the original Brief COPE terminology.

Factor 7. Substance Use (2 items; 6,8% of variance).

This factor included items reflecting the use of alcohol or other psychoactive substances as a coping strategy. The original scale terminology was retained when naming this factor.

Below, the internal consistency estimates for the factors of the Kazakh version of the Brief COPE are presented (see Table 3).

Table 3 – Internal Consistency of the Factors of the Kazakh Version of the Brief COPE

Factor	Number of items	Cronbach's α	95% CI
F1	6	0,809	0,781 – 0,837
F2	4	0,760	0,720 – 0,800
F3	3	0,679	0,623 – 0,736
F4	4	0,756	0,718 – 0,793
F5	4	0,611	0,550 – 0,671
F6	2	0,752	0,701 – 0,803
F7	2	0,676	0,561 – 0,792

Note. Cronbach's alpha coefficients are reported for each factor of the Kazakh version of the Brief COPE. Confidence intervals were calculated at the 95% level.

Cronbach's alpha coefficients ranged from moderate to high, indicating generally acceptable reliability of the extracted factors. Higher alpha values were observed for factors comprising a larger number of items and more conceptually homogeneous coping strategies, particularly for the factor reflecting social support and emotional release.

Lower alpha coefficients were found for factors that included fewer items or combined more heterogeneous coping strategies, which is consistent with the characteristics of brief coping measures and has been reported in previous research using the Brief COPE. Accordingly, reliability indices for some factors should be interpreted in light of scale length, conceptual heterogeneity, and the exploratory nature of the factor solution.

Table 4 presents descriptive statistics for the factors of the Kazakh version of the Brief COPE, including means and standard deviations. These values are reported for descriptive purposes only and are not intended for comparative interpretation.

Table 4 – Descriptive Statistics for the Factors of the Kazakh Version of the Brief COPE

Factor	N	Minimum	Maximum	Mean	SD
F1	495	1,00	4,00	2,44	0,75
F2	495	1,00	4,00	2,94	0,77
F3	495	1,00	4,00	3,094	0,80
F4	495	1,00	4,00	2,56	0,84
F5	495	1,00	4,00	2,346	0,69
F6	495	1,00	4,00	2,746	1,02
F7	495	1,00	4,00	1,24	0,56

The presented statistics reflect score distributions within the current sample and may serve as reference values for future studies employing the Kazakh version of the instrument in specific populations and research contexts.

Comparison of the Kazakh Version with the Original and National Adaptations

Systematic reviews of studies using the Brief COPE demonstrate a wide range of factor solutions, particularly in translated versions of the instrument, where the number of factors varies from several broad domains to models closely approximating the original 14-scale structure. Against this background, the seven-factor solution obtained in the present study falls within the typical range of empirical structures reported in the international literature, although it is not the most frequently reproduced variant (Solberg et al., 2021; Rodrigues et al., 2022).

The exclusion of items reflecting the coping strategy of self-distraction, as well as the inclusion of the coping strategy of self-blame within a factor related to acceptance and internal cognitive processing, is consistent with findings from other adaptations of the Brief COPE. In these studies, such strategies often demonstrate high uniqueness, weak or unstable factor loadings, or are incorporated into broader higher-order factors. Similar variability has also been reported for denial strategies, which in a number of studies fail to form a stable, independent factor and instead exhibit cross-loadings. Taken together, these patterns highlight the contextual sensitivity of these coping strategies and the absence of their universal structural stability.

The assignment of a single item reflecting the coping strategy of planning to the factor associated with acceptance and internal cognitive processing is consistent with the conceptual logic of the Brief COPE, in which planning may be conceptualized

not only as a component of active problem-focused coping but also as a form of cognitive appraisal, reflection, and adjustment to the situation. Cross-loadings of planning-related items have likewise been reported in other national adaptations of the instrument, supporting the methodological appropriateness of this decision within an exploratory factor-analytic framework.

Overall, the findings of the present study support the view of the Brief COPE as a flexible instrument that allows for empirically grounded modifications of its factor structure while preserving the core functional domains of coping.

Several limitations of the present study should be acknowledged. Although the sample size was sufficient for conducting exploratory factor analysis, it remains moderate, which limits the broader generalizability of the findings. In addition, the sample was characterized by a predominance of female participants, which should be taken into account when interpreting the identified factor structure. The analysis was restricted to basic sociodemographic characteristics, namely gender and age, while other potentially relevant factors, such as socioeconomic status, educational level, occupational background, or the nature of experienced stressors, were not examined.

The Kazakh version of the Brief COPE presented in this study **represents a stage of cultural and linguistic adaptation** of the dispositional version of an internationally recognized and validated instrument. The present study provides an initial empirical examination of its factor structure. Accordingly, future research may focus on further refinement and extension of the psychometric evidence in more heterogeneous samples, as well as on applying the measure in situational contexts, where coping strategies are assessed in relation to specific stressors or life circumstances.

Conclusion

The present study was aimed at the cultural and linguistic adaptation of the Brief COPE questionnaire and the examination of its factor structure in a Kazakh-speaking sample. The obtained findings address the stated research questions and clarify the applicability of the adapted version of the instrument within this sociocultural context.

Exploratory factor analysis revealed a seven-factor structure of the Kazakh version of the Brief COPE. Although this structure does not replicate the original 14-subscale model, it captures the main functional domains of coping with stress and is consistent with international evidence demonstrating structural variability of the Brief COPE depending on cultural context, administration format, and sample characteristics.

The identified factors demonstrated clear psychological interpretability and remained aligned with the conceptual logic of the original instrument. The integration of individual coping strategies into broader factors reflects their functional proximity

and context-specific patterns of use, supporting the flexible and culturally sensitive nature of coping as a psychological construct.

Internal consistency estimates indicated acceptable reliability levels for the extracted factors. Descriptive statistics characterized the distribution and relative prominence of coping strategies in the studied sample and may be considered as preliminary reference values for future research.

The findings indicate that the Kazakh version of the Brief COPE may be used as a compact, conceptually interpretable, and functionally oriented tool for assessing coping repertoires in Kazakh-speaking populations. At the same time, the study demonstrates that even widely used international instruments require empirical examination of their factor structure when applied in new linguistic and sociocultural settings. In this respect, the present work contributes not only to the adaptation of a specific questionnaire but also to the development of a psychometrically grounded culture of psychological assessment in the national research and applied context.

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Author Contributions

Zhengiskyzy Assel: Investigation; Data Curation; Writing – Original Draft.

Kudaibergenova Gulzhan: Formal Analysis; Visualization.

Rogaleva Lyudmila: Methodology.

Kudaibergenova Sandugash: Writing – Review & Editing; Supervision; Project Administration.

Aliyeva Zhuldyzai: Validation; Investigation.

Information about authors:

Zhengiskyzy Assel – PhD student at the Department of General and Applied Psychology, Al-Farabi Kazakh National University (Almaty, Kazakhstan, e-mail: zhengiskyzy_assel@live.kaznu.kz).

Gulzhan Kudaibergenova – Senior Lecturer of the Graduate School of Psychology, Turan University (Almaty, Kazakhstan, e-mail: g.kudaibergenova@turan-edu.kz).

Rogaleva Lyudmila – Candidate of Psychological Sciences, Associate Professor of the Department of Theory of Physical Culture at the Institute of Physical Culture, Sports and Youth Policy, Ural State University named after the first President of Russia B.N. (Yekaterinburg, Russian Federation, e-mail: liudmila.rogaleva@yandex.ru).

Kudaibergenova Sandugash (corresponding author) – Candidate of Psychological Sciences, Assistant Professor in the Department of General and Applied Psychology, Al-Farabi Kazakh National University (Almaty, Kazakhstan, e-mail: sandugash.kudaibergenova@kaznu.kz).

Aliyeva Zhuldyzai – Head of the Psychological Laboratory, Republican Scientific and Practical Center for Mental Health, Ministry of Health of the Republic of Kazakhstan (Almaty, Kazakhstan, e-mail: zhady.77kz@mail.ru).

Авторлар туралы мәлімет:

Жеңісқызы Асель – Әл-Фараби атындағы Қазақ ұлттық университетінің жалпы және қолданбалы психология кафедрасының докторанты (Алматы, Қазақстан, e-mail: zhengiskyzy_assel@live.kaznu.kz).

Құдайбергенова Гүлжан – психология жоғары мектебінің сениор-лекторы, Туран университеті (Алматы, Қазақстан, e-mail: g.kudaibergenova@turan-edu.kz).

Рогалева Людмила – психологиялық ғылымдарының кандидаты, Физикалық мәдениет теориясы кафедрасының доценті, Физикалық мәдениет, спорт және жастар саясаты институты, Ресейдің тұңғыш Президенті Б.Н.Ельцин атындағы Орал федералдық университеті (Екатеринбург, Ресей Федерациясы, Екатеринбург, Ресей Федерациясы, e-mail: liudmila.rogaleva@yandex.ru).

Құдайбергенова Сандугаш (корреспондент-автор) – психология ғылымдарының кандидаты, Әл-Фараби атындағы Қазақ ұлттық университетінің жалпы және қолданбалы психология кафедрасының ассистент-профессоры (Алматы, Қазақстан, e-mail: sandugash.kudaibergenova@kaznu.kz).

Алиева Жулдызай – психологиялық зертхананың меңгерушісі, ҚР ДСМ «Республикалық психикалық денсаулық ғылыми-практикалық орталығы» ШЖҚ РМК (Алматы, Қазақстан, e-mail: zhady.77kz@mail.ru).

Сведения об авторах:

Жеңісқызы Асель – докторант кафедры общей и прикладной психологии Казахского национального университета имени аль-Фараби (Алматы, Казахстан, e-mail: zhengiskyzy_assel@live.kaznu.kz);

Құдайбергенова Гүлжан – сениор-лектор Высшей школы психологии, Университет Туран (Алматы, Казахстан, e-mail: g.kudaibergenova@turan-edu.kz);

Рогалева Людмила – кандидат психологических наук, доцент кафедры теории физической культуры Института физической культуры, спорта и молодежной политики, Уральский государственный федеральный университет имени первого Президента России Б.Н. Ельцина (Екатеринбург, Российская Федерация, e-mail: liudmila.rogaleva@yandex.ru);

Құдайбергенова Сандугаш (автор-корреспондент) – кандидат психологических наук, ассистент-профессор кафедры общей и прикладной психологии, Казахский национальный университет имени аль-Фараби (Алматы, Казахстан, e-mail: sandugash.kudaibergenova@kaznu.kz);

Алиева Жулдызай – заведующая психологической лабораторией, РГКП «Республиканский научно-практический центр психического здоровья» МЗ РК (Алматы, Казахстан, e-mail: zhady.77kz@mail.ru).

*Келін түсті: 1 желтоқсан 2025 жыл
Қабылданды: 03 наурыз 2026 жыл*