**RESEARCH NOTE**

# University Students: Connection between Representations of Stress and Coping Strategies

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**ABSTRACT**

This paper discusses the representations of stress (concept of stress) and a variety of coping strategies that people in collectivistic cultures use in attempting to deal with problematic situations. The Conceptual Representations of Stress technique and Adolescent Coping Scale are applied. An assumption was made that correlations between the representations present in a culture and coping strategies selected by its representatives may reveal the specific features of coping behaviour in this culture. The sample comprised 98 Russian, 70 Turkish and 58 Chinese students. The results have proven the fact that culture affects both the representations of stress and choice of coping strategies. As the comparative analysis has demonstrated, the more differentiated the concept of stress is in a culture, the more differentiated and individualistic coping strategies its representatives select. Comparing the characteristics of coping strategies in the studied cultural groups has shown that group-oriented strategies play different functional roles in the way students manage stress. Practical relevance of the research lies in developing and implementing of stress-relieving programs, targeting different cultural groups with account of specific interpretations of stress and patterns of coping with difficult situations. Limitations of the research are noted.

**KEYWORDS**

stress, representations of stress, concept of stress, coping strategy, collectivistic culture, cultural differences, university student

## Introduction

In everyday life a person faces multiple challenges that make him/her search for ways to manage and cope with their stressful effects. Ambiguity and emergency,

increased responsibility, a need to decide and carry out control, the lack of time, constant information overload – inclusively, can contribute to a person's stress and disturb the homeostasis, subsequently claiming psychological efforts to restore well-being. In the terms of psychology, stress is the state of the fundamental mobilisation of the body's resources, developing under the influence of various factors, long-term action of which leads to negative consequences (Leonova, 2007).

Different aspects of living, such as global social changes, hardships and routine actions (at work, while studying, within the family, via interpersonal communications etc.) may arouse stressful feelings in humans. The state of stress proves itself in physiological, psychological, and behavioural changes (Selye, 1976; Sapolsky, 2004). The consequences of stress may be positive for a person – eustress – and be expressed in personal development, professional achievements, the improvement of life standards, etc. Negative consequences of stress – distress – manifest themselves in deterioration of physical state, mental well-being, self-efficiency, in the rising of interpersonal conflicts, etc. Personal perception of difficulties and subjective assessment of them determine the choice and realization (or activation) of coping strategies (Lazarus, 1966). Focus on the problem solving, regulation of physical and emotional state, a search of social and religious support, aggressive and antisocial actions, denial or distraction from the problem – are all the possible ways of regulating human internal stress and overcoming difficult situations. However, personal attitudes in relation to difficulties, coping strategies, and possible behavioural practices are heavily predetermined by their cultural context.

According to G. Hofstede, culture helps to distinguish the members of one group from another (Hofstede, 2011). Culture is a filter consisting of national value systems, traditions, language system, etc., through which a person perceives and interprets the reality. Language as a tool of communication is the mirror of a culture; it aims to reflect the specific mentality of a nation. One and the same category can find different representations in different cultures, which in turn determine specific behavioural patterns selected by their representatives.

Numerous works have shown that cultural background determines both the interpretation of stress (concept or conceptual structure) and the choice of coping behavioural patterns (Kholodnaya, 2012; Kholodnaya et al., 2007; Liu et al., 2004). Cross-cultural studies in the field of stress and coping behaviour are frequently dedicated to a comparative analysis of the intensity of experienced stress and preferred coping strategies among the representatives of individualistic and collectivistic cultures.

According to the data provided by Poltavski & Ferraro (2003), Russian students tend to experience a higher level of stress in comparison with their fellow students from the USA; however, Americans mentioned suffering from more diseases. In comparison with German respondents, Turkish high school students experience tougher stress, and therefore they are in need of extended social support (Yeresyan & Lohaus, 2014). Frydenberg et al. (2003) have found out that Palestine and Columbian youth comparing to German and Australian students extensively use such strategies as belongingness, social actions, problem solving, positive focus, religious support and concern. Kryukova (2005) established that non-productive styles of coping behaviour prevail among

Polish students; Australian youth relies on both, productive and non-productive coping, whereas Russian students greatly use a social style of overcoming difficult situations. Australian domestic students in comparison with non-resident fellows (mostly from Asian countries) enjoy stronger social support and use more functional coping strategies in achieving coherence between personal expectations and reality of the university life (Khawaja & Dempsey, 2008). The abovementioned studies have proven that the intensity of perceived stress and routes of overcoming difficulties are determined to a large extent by whether the culture belongs to the individualistic or collectivistic type. However, connections between perceived stress concepts and coping strategies, which reflect personally meaningful aspects of stressful events and acceptable ways of stress regulation in a specific cultural context, remain to be elucidated.

The present study aims to analyse the correlations between the concept of stress and coping strategies among representatives of different collectivistic cultures. Collectivistic cultures are characterized by a high level of interdependence among their members, social conformism and a high rate of uncertainty avoidance following with respect for traditions (Hui & Triandis, 1998; Matsumoto & Juang, 2012). Russian, Turkish and Chinese cultures are generally classified as collectivistic (Karabati & Cemalcilar, 2010)[1]. We assume that correlations between the stress concept and coping behaviour strategies inherent in a culture can help to reveal group-oriented aspects of overcoming stress specific to this society. The resource approach was employed to study a variety of key strategies within the system of resources of personal coping behaviour (Frydenberg & Lewis, 1993; Khasova, 2015). Among other research methods were structural analysis of concepts and psychological testing of coping strategies preferred by respondents in overcoming stressful events. By using the abovementioned methods, we were able to find correlations between the concept of stress and coping strategies. Our results have shown that group-oriented coping strategies perform different functional roles in Russian, Turkish, and Chinese cultures.

The cultures under study – Russian, Turkish and Chinese – are known to differ significantly in understanding of what stress is (Kuvaeva, Achan, Lozovskaya, 2017). Our findings have demonstrated that the perception of stress in Russian culture is associated with various stress manifestations and its chronic course. In Turkish students, stress results from everyday educational activities and concerns about future prospects. In Chinese students, stress is described by generalized stress indicators, as well as by the need to react immediately to challenging life situations. All respondents, regardless of their cultural identity, pointed out that stress as a mental state requires adjustment and prevention measures.

## Method

### 1. Procedure

Testing was performed according to the generally accepted ethical norms. Testing was anonymous.

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[1] https://geert-hofstede.com , last accessed date: 29 August 2017.

Data was collected in each of the cultural groups by using a simple instrument (a pencil and paper). Russian and Chinese students were surveyed together in the university classrooms while Turkish respondents were surveyed separately (in person or via e-mail). In our research, the students were provided with instructions in their native languages – Russian, Turkish and Chinese. The translation procedure, which involved back-translation, was used with Chinese and Turkish respondents.

The translation procedure for the Chinese version of the questionnaire, for example, included the following steps. First, three Chinese language specialists and two Master's degree students (Chinese native speakers) translated the instructions into Chinese and provided five translated versions. To select the most appropriate version, the group of specialists assessed the translations: one professor of the Russian Language, two Chinese language PhD specialists, and one PhD specialist in Psychology. Second, in order to ensure that the equivalence is continuous across both languages; three other bilingual consultants provided back translations of the instruments. The first-translation and the back-translation were thoroughly compared for equivalence. Third, to ensure clarity and comprehensibility of the translated instructions, a Chinese language PhD specialist assessed the translated versions of the instruments. Eventually, a Chinese language PhD specialist, two PhD psychologists, one PhD specialist in Culture Studies and two native speakers (Master's degree students) translated the respondents' answers into Russian. In order to process and interpret the results, two native speakers and Chinese culture PhD specialists were involved as consultants. A similar translation technology was applied to the instruments' versions prepared for the Turkish sample.

## 2. Participants

The sample consisted of 226 university students (102 m. / 124 f.) aged 17–30 (mean 20.8±2.5). Respondents were selected based on the following criteria: (1) a first, second or third university student; (2) specialisation – Linguistic and International Affairs; (3) voluntary decision to take part in the research.

The Russian sample comprised 98 people (25 m. / 73 f.) aged 18–23 (mean 19.28±1.05). The Turkish sample comprised 70 students (43 m. / 27 f.) aged 17–30 (mean 22.49±2.6); the Chinese sample comprised 58 students (34 m. / 24 f.) aged 17–27 (mean 21.74±2.6). Russian and Chinese students were students from the Ural Federal University, Russia. Turkish respondents were students either from the Ural Federal University or from Turkish universities (Gazi, Anadolu, Atatürk, and Trakya).

## 3. Demographics form

This form was used to gather information about participants' age, gender and program type, faculty of enrolment, course name, university title and country of citizenship or nationality.

## 4. Assessment of the stress concept

A Conceptual Representations of Stress (CORES) technique was used for quantity and quality assessment of the stress concept and different stress indicators. CORES

is a modified, validated, and shortened version of the 'Integral Conceptual Structures' technique (Kholodnaya & Volkova, 2016). CORES contains three questions, which allowed us to estimate a degree of differentiation/integration of concept of stress, its content and structural organization. The mean Cronbach's Alpha for the CORES was obtained as 0.80 (Russian sample), 0.78 (Turkish sample), 0.74 (Chinese sample).

According to Kholodnaya (2012), concepts are basic cognitive units activated by specific verbal stimuli and characterized by own structural organization and content. The structure of a concept comprises the following modalities: sensory-emotional, verbal-semantic and visual. The sensory-emotional modality reflects a human experience of interaction between a person and particular subject environment, gathering so-called "luggage" of various impressions and experiences. The verbal-semantic modality is formed on the basis of acquisition of words and their meanings from a natural language. The visual modality organizes visual experience, which reveals typical and essential features of the object. The content of a concept is an internal, personal understanding of a specific subject, social phenomenon, or a scientific concept. According to Volkova, any cognitive unit (concept) can be presented in the form of a psychological model that includes various types of experiences (Volkova, 2014). Therefore, we singled out the following content criteria of stress assessment: its causes, cognitive appraisal and immediate effects, long-term effects (consequences), and dynamics.

Participants were asked to describe their psychological perceptions and representations of stress and experiences of overcoming difficulties in the line with the open-ended tasks given below:

1.      Write as many adjectives as possible to characterise the word STRESS. Time: 3 minutes, (sensory-emotion modality).

2.      Outline problems, which, in your opinion, could occur while studying STRESS. Time: 2 minutes, (verbal-semantic modality).

3.      Draw a picture of the STRESS object with its most essential characteristics. Time: 2 minutes, (visual modality).

We estimated the degree of differentiation/integration of the concept of stress by calculating the total number of categories of stress reflected in the three modalities. According to the method, maximal differentiation in each modality was 4 points and implied the presence of four stress characteristics in the respondents' answers. Captions that the respondents made to the pictures were taken into account when assessing visual modality. The points were assigned when a respondent mentioned all four stress criteria indicated above.

Thus, the total list for statistical treatments included 8 indexes: 1 degree of differentiation/integration of concept, 3 modalities and 4 content criteria. Table 1 demonstrates these indexes of stress concept.

## 5. Assessment of coping strategies

For the assessment of coping strategies, we applied an 80-item "Adolescent Coping Scale" (ACS) developed by E. Frydenberg and R. Lewis to measure coping

behaviour (Frydenberg et al., 1993). This instrument measures 18 strategies of overcoming difficulties and the frequency of their selection in dealing with hardships and anxiety. The students were asked to use a Likert-Scale to assess different coping strategies. The authors of the ACS identified eighteen strategies, which can be broadly categorized as productive, social, and non-productive styles. However, some studies proposed other criteria for estimating the efficiency of coping behaviour, arguing that ACS styles appropriately describe only western cultures. For example, by using cluster analysis, four styles were distinguished for a group of Russian students (n=336): problem-oriented, mobilization, emotion dominated, and sociotropic (Kholodnaya et al., 2007). Table 1 below demonstrates these styles and involved strategies. The description and interpretation of our research results were performed in accordance with the given classification.

The mean Cronbach's Alpha for the ACS was obtained as 0.86 (Russian sample), 0.74 (Turkish sample), 0.84 (Chinese sample).

*Table 1.* Research variables

| Instrument | Variables |
|---|---|
| A conceptual representations of stress technique | *Structural organization (modalities):*<br>(1) Sensory-emotional – a human experience of interaction between a person and particular subject environment, gathering so-called "luggage" of various impressions and experiences;<br>(2) Verbal-semantic – is formed on the basis of acquisition of words and their meanings from a natural language;<br>(3) Visual – a visual experience, which reveals typical and essential features of the object. |
| | *Content categories:*<br>(4) Causes or stress-factors;<br>(5) Cognitive appraisal and immediate effects;<br>(6) Long-term effects (consequences);<br>(7) Features of stress process (dynamics). |
| | (8) Degree of differentiation/integration of the concept – result of calculating the total number of categories of stress reflected in the three modalities. |

| Adolescent coping scale | *Problem-oriented style:*<br>(1) Problem solving – systematic reflection on the problem;<br>(2) Working hard and achieve – responsible attitude to work and orientation towards success;<br>(3) Social action – organization of group activities;<br>(4) Professional help – consulting specialists. |
|---|---|
| | *Mobilization style:*<br>(5) Ignoring – consciously blocking out the problem;<br>(6) Self-absorption – keeping to oneself;<br>(7) Positive focus – optimism;<br>(8) Active leisure – playing sports and keeping fit. |
| | *Sociotropic style:*<br>(9) Social support – discussing the problem with other people;<br>(10) Friends – seeking support from close friends;<br>(11) Feeling of belonging – caring about other people's opinions, seeking their approval;<br>(12) Relax – trying to relax and distance oneself. |
| | *Emotion dominated style:*<br>(13) Anxiety – concern about one's future;<br>(14) Miracles – wishful thinking;<br>(15) Not coping – being unable to deal with the problem and developing psychosomatic symptoms;<br>(16) Tension reduction – tears, aggression, harmful habits;<br>(17) Self-accusation – criticising oneself for feeling worried;<br>(18) Spiritual support – seeking spiritual guidance. |

## 6. Statistical analysis

The data obtained were processed using the standard software 'SPSS 21.0 package for Windows'. To test the data for the normality of distribution, the Kolmogorov-Smirnov criterion was applied. The Kruskal-Wallis H test was used to determine the impact of the independent variable 'culture' on the dependent variables (concept indicators and coping strategies). Correlation analysis (Pearson) was also applied to find correlations between the research variables.

## Results

### 1. Dependence of the stress concept and coping strategies on culture

Our results shown in Table 2 have proven the fact that culture affects both the representations of stress and choice of coping strategies. Our research failed to reveal, however, any statistically significant impact of culture on the visual modality of the stress concept and on socio-tropic strategies.

## 2. Correlations between the stress concept and coping strategies

Table 3 depicts significant correlations in all compared groups, with the highest number of correlations found in the Russian sample and the lowest in the Chinese sample.

For the Russian students, the degree of differentiation/integration was connected primarily with the strategies of "social supporting" and "anxiety". Other two groups did not show any correlation between the chosen coping strategies and the degree of differentiation. However, we found correlations between modalities and coping strategies for the Russians and Turks. In the Russian sample, all four content characteristics of stress correlated with different strategies. The strategies and only two content characteristics – the causes and immediate effects – correlated in Turkish and Chinese samples. Turks compensated the negative effects of stress with "friends" and "positive focus", while the Chinese familiarly overcome stress with the help of "self-absorption". The cognitive appraisal/immediate effects had a negative correlation with "spiritual support" (Turks) and "ignoring" (Chinese).

*Table 2.* Dependence of stress concept and coping strategies on the culture

| Dependent variables | Cultural groups | | | Chi-square test |
|---|---|---|---|---|
| | Russian (*n*=98) | Turkish (*n*=70) | Chinese (*n*=58) | |
| Degree of differentiation/ integration | 146.01 | 89.03 | 80.65 | 50.85*** |
| Sensory-emotional modality | 147.61 | 87.15 | 80.17 | 59.17*** |
| Verbal-semantic modality | 132.30 | 93.99 | 98.75 | 20.18*** |
| Visual modality | 119.95 | 109.70 | 100.76 | 3.77 |
| Stress causes | 117.36 | 127.96 | 82.13 | 18.45*** |
| Cognitive appraisal and immediate effects | 138.04 | 79.71 | 106.70 | 39.90*** |
| Long-term effects | 134.28 | 99.07 | 88.76 | 24.77*** |
| Process of development | 128.72 | 92.96 | 106.44 | 15.46*** |
| Problem solving | 126.74 | 108.96 | 89.60 | 12.03** |
| Working hard and achieve | 128.51 | 102.12 | 95.16 | 11.93** |
| Social action | 77.82 | 119.10 | 163.86 | 64.74*** |
| Professional help | 88.70 | 122.81 | 141.54 | 27.70*** |
| Ignoring | 106.97 | 127.28 | 101.52 | 6.04** |
| Self-absorption | 122.74 | 111.98 | 92.98 | 7.64* |
| Positive focus | 118.74 | 121.32 | 88.12 | 10.19** |
| Active leisure | 118.06 | 107.65 | 106.75 | 1.56 |
| Anxiety | 142.87 | 101.05 | 70.93 | 46.97*** |

| | | | | |
|---|---|---|---|---|
| Miracles | 127.57 | 113.08 | 82.89 | 17.02*** |
| Not coping | 117.29 | 118.46 | 94.36 | 5.52 |
| Tension reduction | 121.07 | 94.66 | 117.91 | 7.53* |
| Self-accusation | 131.91 | 98.97 | 93.11 | 17.05*** |
| Spiritual support | 92.95 | 165.80 | 77.47 | 73.50*** |
| Social support | 122.07 | 106.35 | 101.25 | 4.49 |
| Friends | 104.02 | 118.52 | 117.93 | 2.70 |
| Feeling of belonging | 115.24 | 97.59 | 124.56 | 5.88 |
| Relax | 109.72 | 115.69 | 111.36 | 0.36 |

*$p < 0.05$;          **$p < 0.01$;          ***$p < 0.001$

**Table 3.** Correlations between the concept and coping strategies in three cultural groups

| Indicators of the stress concept | Cultural groups | | |
|---|---|---|---|
| | Russian | Turkish | Chinese |
| Degree of differentiation/ integration | Social support ($r=0.205$*), Anxiety ($r=0.284$**) | | |
| Sensory-emotional modality | Anxiety ($r=0.312$**), Self-accusation ($r=0.202$*) | Spiritual support ($r= -0.269$*), Belonging ($r=0.270$*) | |
| Verbal-semantic modality | | Spiritual support ($r= -0.333$**) | |
| Visual modality | | | |
| Stress causes | Working hard and achieve ($r=0.261$*) | Friends ($r=0.323$**), Positive focus ($r=0.282$*) | Self-absorption ($r=0.319$*) |
| Cognitive appraisal and immediate effects | Not coping ($r=0.233$*), Self-accusation ($r=0.202$*) | Spiritual support ($r= -0.274$*) | Ignoring ($r= -0.276$*) |
| Long-term effects | Ignoring ($r=0.330$**) | | |
| Process of development | Anxiety ($r=0.309$**) | | |

*$p < 0.05$;          **$p < 0.01$;          ***$p < 0.001$

## Discussion and conclusion

Our findings distinctly show that the stress concept and coping strategies both have cultural specifics (except for the visual modality and socio-tropic coping style strategies). In the investigated collectivistic cultures – Russian, Turkish and Chinese – both the indicators of the concept, the degree of its differentiation and coping strategies showed a dependence on culture. The representatives of Russian culture were shown to share a more differentiated concept, which reflects a long-term experience of surviving stressful situations and emphasizes individual differences in coping strategies. Our results are in good agreement with those studies that proved stress to be a constituent feature of contemporary social life in Russia (Pietila & Rytkonen, 2008; Poltavski et al., 2003), with its key stressors being information overloads, deprivation of sleep and tight deadlines (Kosheleva, Amarnor & Chernobilsky, 2015).

Our comparative analysis has demonstrated that the more differentiated the concept of stress is in a culture, the more differentiated and individualized coping strategies are used by its representatives. It is only in Russian culture that stress is associated with certain coping strategies. For instance, overcoming difficulties in Russian culture means an activation of various strategies, the most popular of which being anxiety and self-accusation. As soon as stressful experience is accumulated, the personal need in social support increases. In Turkish culture, religious support appears to be one of the most productive strategies, which helps Turkish people find relief from negative emotions and thoughts. As for the representatives of Chinese culture, they tend to turn to self-absorption when the number of stress factors increases: growing inner tension mobilizes them to accept problems on the conscious level.

In our view, a wide differentiation of the stress concept in Russian culture can be connected with a substantial experience of surviving stress situations. Persistent stress conditions present in modern Russian life contribute to deeper knowledge of the stress factors, stress reactions, and the negative effects of the phenomenon.

Comparing the characteristics of coping strategies in the studied cultural groups has shown that group-oriented strategies play different functional roles in the way people manage stress. In Russian culture, e.g., social support enables people to regulate their emotional states. Russian students demonstrated predominantly individualized coping strategies, such as anxiety and self-accusation, more often than the representatives of the other two groups. As for Turkish students, reliance on friends and feeling of belonging are important ways of regulating their emotional states and managering difficult life situations. Spiritual support as an emotional dominant strategy is a great coping recourse for Turks. Our study has contributed to the understanding of coping behaviour displayed by Turkish students, highlighting its social orientation and reliance on religion in coping with stress. Thus, Kaynak Key, Donmez & Tuzun (2004) stated that passive leisure is a popular method of physical relaxation for Turks. Concerning Chinese students our results have demonstrated the correlation between stress representations and mobilization style coping strategies.

It should be mentioned that our research has some limitations. The term "stress" has a different duration of existence in the Russian, Turkish and Chinese languages. The

word stress has been used in everyday language and academic vocabulary for the last fifty years (both in the Russian and Turkish languages). Having been adopted from the western culture, this term is rather new for everyday speech in China and mostly popular within young people. This was the reason why we used a combination of hieroglyphs 紧张  as a synonym for the word "stress" in our research. It may be recommended that researchers working on similar problems take into account the degree of awareness of the respondents on used terms.

Another limitation follows from using the Conceptual Representations of Stress (CORES) technique in assessing cultural concepts. The Russian language is rich in adjectives, which are used to describe various features of subjects and phenomena. Native Turkish speakers, on the contrary, tend to use participles. Thus, our Turkish respondents used different parts of speech in describing stress: adjectives, participles and synonymous nouns. Chinese hieroglyphs strongly depend on the contexts, which substantially determine the meaning of the word and the part of speech. Hieroglyphics are less specific – they can transmit a wide range of expression (for example, from a light fright to horror). Thus, future studies should carefully interpret concepts, taking into account the linguistic features of the language as culturally specific ways of perceiving and processing information.

Practical relevance of the research lies in developing and implementing of stress-relieving programs, targeting different cultural groups of students with account of specific interpretations of stress and patterns of coping with difficult situations.

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