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# TOLERANCE OF UNCERTAINTY AS A DETERMINANT OF EDUCATORS' PSYCHOLOGICAL HEALTH IN CONDITIONS OF SOCIAL TENSION

Karamushka, Liudmyla, Tereshchenko, Kira, Kredentser, Oksana, Ivkin, Volodymyr, Lagodzinska, Valentyna, Kovalchuk, Oleksandr, Vozniuk, Alla. Tolerance of uncertainty as a determinant of educators' psychological health in conditions of social tension.

**Introduction.** Social instability increases the importance of tolerance of uncertainty among representatives of different social and professional groups. In the context of the COVID-19 pandemic, educators' tolerance of uncertainty as a probable determinant of their psychological health is of particular interest for researchers.

Aim: to study tolerance of uncertainty as a determinant of educational staff's psychological health in conditions of social tension.

**Methods:** D. McLain's MSTAT-II (adapted by E.M. Osin), T. Galkina & N. Artemtseva's Attitude to Psychological Health Scale, Scale of Positive Mental Health by J. Lukat et al., and Locus of Health Control questionnaire.

**Results.** It was found that the most pronounced components of tolerance of uncertainty were the attitude to novelty and preference of uncertainty. Uncertainty tolerance components affected most aspects of educators' psychological health.

Conclusion. Tolerance of uncertainty should be seen as a determinant of educators' psychological health.

**Key words:** tolerance of uncertainty, indicators of uncertainty tolerance, psychological health, psychological health components, psychological health determinant, educators

Карамушка Людмила, Терещенко Кіра, Креденцер Оксана, Івкін Володимир, Лагодзінська Валентина, Ковальчук Олександр, Вознюк Алла. Толерантність до невизначеності як детермінанта забезпечення психологічного здоров'я освітнього персоналу в умовах соціальної напруженості.

**Вступ.** В ситуації соціальної нестабільності актуалізується значущість толерантності до невизначеності, що стосується представників різних соціальних та професійних груп. В умовах пандемії COVID-19 особливу увагу привертає толерантність до невизначеності освітнього персоналу як ймовірна детермінанта його психологічного здоров'я.

**Mema:** дослідити толерантність до невизначеності як детермінанту забезпечення психологічного здоров'я освітнього персоналу в умовах соціальної напруженості.

**Методи:** «Опитувальник толерантності до невизначеності» Д. Маклейна (адаптація Є.М. Осіна), «Шкала ставлення до психологічного здоров'я» Т. Галкіної, Н. Артемцевої, «Шкала позитивного психічного здоров'я» J. Lukat et al., «Опитувальник для вимірювання локус контролю здоров'я».

**Результати.** Встановлено, що найбільш вираженими складовими толерантності до невизначеності  $\epsilon$  ставлення до новизни та надання переваги невизначеності. Виявлено, що показники толерантності до невизначеності впливають на більшість компонентів психологічного здоров'я освітнього персоналу.

**Висновки.** Толерантність до невизначеності слід розглядати як детермінанту психологічного здоров'я персоналу освітніх організацій.

**Ключові слова:** толерантність до невизначеності, показники толерантності до невизначеності, психологічне здоров'я, компоненти психологічного здоров'я, детермінанта психологічного здоров'я, освітній персонал.

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Карамушка Людмила, Терещенко Кира, Креденцер Оксана, Ивкин Владимир, Лагодзинская Валентина, Ковальчук Александр, Вознюк Алла. Толерантность к неопределенности как детерминанта обеспечения психологического здоровья образовательного персонала в условиях социальной напряженности.

**Вступление.** В ситуации социальной нестабильности актуализируется значимость толерантности к неопределенности, касающейся представителей различных социальных и профессиональных групп. В условиях пандемии COVID-19 особое внимание привлекает толерантность к неопределенности образовательного персонала как вероятная детерминанта его психологического здоровья.

**Цель:** исследовать толерантность к неопределенности как детерминанту обеспечения психологического здоровья образовательного персонала в условиях социальной напряженности.

**Методы:** «Опросник толерантности к неопределенности» Д. Маклейна (адаптация Е.М. Осина), «Шкала отношения к психологическому здоровью» Т. Галкиной, Н. Артемцевой, «Шкала позитивного психического здоровья» J. Lukat et al., «Опросник для измерения локус контроля здоровья».

**Результаты.** Установлено, что наиболее выраженными составляющими толерантности к неопределенности является отношение к новизне и предпочтение неопределенности. Выявлено, что показатели толерантности к неопределенности влияют на большинство компонентов психологического здоровья образовательного персонала.

**Выводы.** Толерантность к неопределенности следует рассматривать как детерминанту психологического здоровья персонала образовательных организаций.

**Ключевые слова:** толерантность к неопределенности, показатели толерантности к неопределенности, психологическое здоровье, компоненты психологического здоровья, детерминанта психологического здоровья, образовательный персонал.

**Introduction.** Social instability increases the role of tolerance of uncertainty among representatives of different social and professional groups. In the context of the COVID-19 pandemic, educators' tolerance of uncertainty as a probable determinant of their psychological health is of particular interest for researchers.

The phenomenon of tolerance of uncertainty is considered as an individual tendency (Budner, 1962), emotional-perceptual personal quality (Frenkel-Brunswik, 1949), the range of reactions (McLain, Kefallonitis & Armani, 2015). Tolerance of uncertainty is understood as a personal quality, which determines a person's ability to respond positively to situations of uncertainty and to act in conditions of vaguely defined goals and lack of information (Semichenko & Artyushina, 2019).

Today, researchers agree that tolerance of uncertainty is not only associated with certain traits or behavioral symptoms, but also plays a role in the processes associated with overcoming or generating uncertainty primarily at the cognitive level (Tomarzhevska, 2018). Thus, tolerance of uncertainty is an integral characteristic of a person as well as a multilevel and multidimensional personality construct (Gusev, 2007; Semichenko & Artyushina, 2019; Tomarzhevska, 2018).

Scientific literature analyzes both tolerance of uncertainty and intolerance of uncertainty as the opposite manifestations of one personal attribute: on one pole is the acceptance of uncertainty and willingness to function productively in appropriate situations, while on the opposite pole is avoidance and fear of uncertain situations and stress caused by new and unusual situations (Semichenko & Artyushina, 2019). Intolerance of uncertainty is seen as an individual's tendency to make decisions using the «black-and-white» principle and to jump to conclusions without taking into account complex realities and the interests of other people (Tomarzhevska, 2018).

Some aspects of tolerance of uncertainty in the educational environment have been analyzed by O. Bryukhovetska (2015), T. Kornilova & S. Smirnov (2012), O. Myloslavska, O. Gulyaeva & Ye.O. Sapyan (2020), G.V. Pavlenko (2019), V. Semichenko & K. Artyushina (2019), S.O. Hilko (2018) and others. Thus, studying tolerance of uncertainty among secondary school principals, O. Bryukhovetska (2015) notes that uncertainty-tolerant secondary school principals search for situations of uncertainty, take comfort while in situations of uncertainty, perceive uncertain situations as desirable, try to solve problems, even if not all the facts and possible consequences of the decision are known, face conflicts and tension that arise in an ambiguous situation, keep self-control when receiving inconsistent or contradicting information, accept the unknown, withstand the stress of critical situations, perceive new, unfamiliar, or risky situations as stimulating, and readily adapt to obviously ambiguous situations or ideas. If a school principal is intolerant of uncertainty in management, they tend to perceive unusual and complex situations as threatening rather than offering new opportunities (Bryukhovetska, 2015).

A number of studies have highlighted the role of tolerance of uncertainty in promoting an individual's psychological health. In particular, there is evidence of an association between tolerance / intolerance of uncertainty and stress and anxiety disorders in employees (Carleton, 2012; Iannello et al., 2017).

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According to the findings obtained by M. Mykolaichuk & K. Troyanovska (2019), there are links between some components of tolerance of uncertainty and psychological well-being of married couples. Satisfaction with marriage is associated with all three components of tolerance of uncertainty: attitude to novelty, attitude to complex tasks, and attitude to ambiguous situations. Besides, spouses' inability to accept uncertainty is associated with their high levels of anxiety, guilt and tension.

According to research conducted by G.V. Pavlenko (2019), students' psychological well-being is achieved through their high-level tolerance of uncertainty. A person with developed tolerance of uncertainty is able to transform themselves and meet their needs in changing conditions as well as are open to new experiences. However, correlation and regression analysis, as noted by the researcher, showed no effect of students' tolerance of uncertainty on their psychological well-being, so psychological distress did not associate with intolerance to uncertainty, but associated with interpersonal intolerance (Pavlenko, 2019). Thus, the analysis of the relevant scientific literature reveled that tolerance of uncertainty in the context of psychological health of representatives of different social and professional groups needed further in-depth studies. At the same time, tolerance of uncertainty can be considered as a probable determinant of educators' psychological health.

**Aim:** to study tolerance of uncertainty as a determinant of educators' psychological health in conditions of social tension.

**Methods.** In our study we used: E. Osin's adaptation of D. McLain's MSTAT (Leontiev, Osin & Lukovitskaya, 2016) to measure the attitude to novelty, attitude to complex tasks, attitude to ambiguous situations, preference for uncertainty, and tolerance / avoidance of uncertainty as well as the general index of tolerance of uncertainty; T. Galkina and N. Artemtseva's Scale of Attitudes to Psychological Health (SAPH) (Galkina & Artemtseva, 2018) to measure the cognitive-emotional component of psychological health; J. Lukat, J. Margraf, R. Lutz, W.M. van der Veld, & E.S. Becker's Positive Mental Health Scale (PMH-scale) (Lukat et al., 2016) to measure the reflexive-personal component of mental health; the Multidimensional Locus-of-Control Health Scales (Greenberg, 2002) to measure the operative-functional component using the Internal Locus of Control scale (reflects the degree to which respondents feel in control of their health), the Powerful Others' Control scale (shows the degree of respondents' confidence that «the powerful others» (e.g., doctors, relatives) are responsible for their health, and the Case Control scale (shows how convinced the respondents are that their health depends on chance, luck or fate).

The results were processed using mathematical statistics (descriptive statistics, correlation analysis, analysis of variance (ANOVA)) using SPSS (version 22).

The study was part of the research topic of the laboratory of organizational and social psychology of the G.S. Kostiuk Institute of Psychology of the NAES of Ukraine called «Psychological and Organizational Determinants of Psychological Health of Staff of Educational Oganizations in Conditions of Social Tension» (2019-2021) and supervised by prof. L.M. Karamushka.

**Sample.** The study was conducted in 2020 and used a sample of 473 respondents who worked in secondary education institutions from different regions of Ukraine. The respondents were distributed as follows: 20.8% primary school teachers, 29.6% secondary school teachers, 24.5% high school teachers, 14.4% administrative staff, and 10.2% social workers and psychologists; 11.4% younger than 30 years, 27.7% 31 through 40 years of age, 34.3% 41 through 50 years of age, and 26.6% older than 50 years; 12.0% men, 88.0% women; 76.0% married, 24.0% unmarried.

**Results and discussion.** The first stage of our empirical study analyzed the components of educators' tolerance of uncertainty (Table 1). The highest-scored components of tolerance of uncertainty were the attitude to novelty (M = 3.95, SD = 1.02) and preference for uncertainty (M = 4.01, SD = 0.93). The attitude to complex tasks and the attitude to ambiguous situations scored less (M = 3.90, SD = 0.86 and M = 3.77, SD = 0.70 respectively). The tolerance to uncertainty index was at an average level (M = 3.83, SD = 0.67).

It was found that 40.6% of the respondents (Table 2) had a high level of attitude to novelty and 37.4% preferred uncertainty, 28.3% of the respondents had a high level of attitude to complex tasks, and every fourth respondent had a high level of attitude to ambiguous situations (24.7%). The results of the study showed that about 70% of the respondents had an average or high levels of tolerance components and less than a third of the respondents had them at low levels. These results are higher than those obtained by S. Khilko (2018) in relation to future psychologists, in which low tolerance of uncertainty index was found in every third respondent, average-level tolerance of uncertainty index in every second respondent, and high-level tolerance of uncertainty index in less than 1% of the respondents.

## Components and index of educators' tolerance of uncertainty (descriptive statistics)

Tolerance of uncertainty	Min	Max	M	SD
Attitude to novelty	1.00	7.00	3.95	1.02
Attitude to complex tasks	1.00	7.00	3.90	0.86
Attitude to ambiguous situations	1.00	6.33	3.77	0.70
Preference for uncertainty	1.00	6.90	4.01	0.93
Tolerance of uncertainty index	1.00	7.00	3.83	0.67

Table 2
Levels of educators' tolerance of uncertainty (% of the total sample)

Tolerance of uncertainty	High level	Middle level	Low level
Attitude to novelty	40.6	30.9	28.5
Attitude to complex tasks	28.3	45.2	26.5
Attitude to ambiguous situations	24.7	44.2	31.1
Preference for uncertainty	37.4	32.5	30.1
Tolerance of uncertainty index	27.4	42.4	30.2

It should be noted that according to literary sources those with high tolerance of uncertainty tend to perceive themselves in control of their own lives, are rather optimistic in assessing their successes and failures as well as their future (Leontiev, Osin, & Lukovitskaya, 2016). At the same time, those people are less reflective and anxious, more likely to move from plans to actions and to take risks than those with low tolerance of uncertainty.

At the next stage of the empirical study, we analyzed the relationship between the components of educators' tolerance of uncertainty and the components of educators' psychological health in conditions of social tension. At the next stage of the empirical study, we analyzed the relationship between the components of educators' tolerance of uncertainty and the components of educators' psychological health in conditions of social tension. (Table 3).

It was shown that educators' attitude to novelty positively correlated with their reflective-personal health component (r = 0.102; p <0.05) and «internal control» health component (r = 0.133; p <0.01) (Table 3) and negatively correlated with «case control» component (r = -0.125; p <0.01).

One-factor dispersion analysis (ANOVA) found (see Fig. 1) that educators' attitude to novelty positively correlated with reflective-personal (p < 0.05) and operational («internal control») (p < 0.001) components of their psychological health.

Also, there was a negative correlation between educators' attitude to novelty and «case control» component of their psychological health (p < 0.001).

Besides, educators' attitude to complex tasks negatively correlated with «powerful others' control» (r = -0.103; p < 0.05) and «case control» (r = -0.188; p < 0.001) health components (see Table 3). In other words, the more positive a person is about complex tasks, the less they rely on luck or «powerful others» (doctors, relatives, friends) in controlling their health.

Table 3
Relationships between types and index of educators' tolerance of uncertainty and components of educators' psychological health (r)

Psychological health components	Attitude to novelty	Attitude to complex situations	Attitude to ambiguous situations	Preference for uncertainty	Tolerance of uncertainty index
Cognitive-emotional	-0.032	-0.059	-0.050	0.053	-0.072
Reflective-personal	0.102*	0.082	0.304***	0.290***	0.219***
Operational:					
a) internal control	0.133**	0.047	0.095*	0.220***	0.100*
б) powerful others' control	-0.020	-0.103*	0.095*	0.118*	-0.005
в) case control	-0.125**	-0.188***	-0.028	0.058	-0.140**

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

Indeed, the results of one-way analysis of variance (ANOVA) showed (see Fig. 2) that educators' positive attitudes to complex tasks inversely affected «case control» component of their psychological health (p < 0.001).

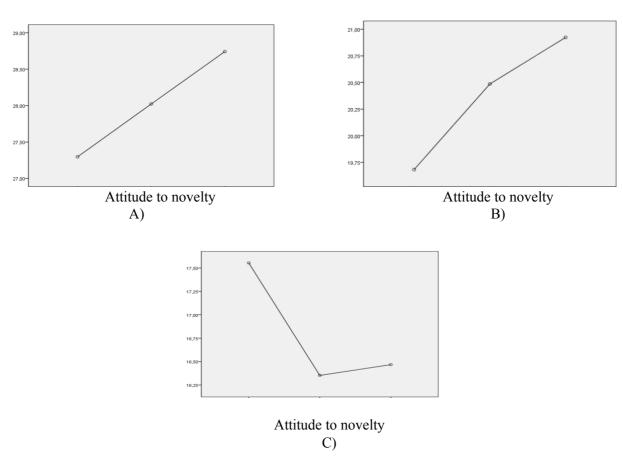


Fig. 1. Effects of educators' attitude to novelty on their psychological health components: reflective-personal (A); operational («internal control») (B); operational («case control») (C)

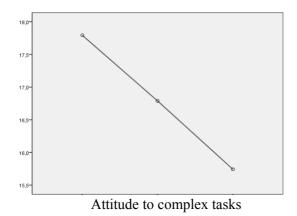


Fig. 2. Effects of educators' attitude to complex tasks on the operational component of their psychological health («case control»)

Educators' attitude to ambiguous situations positively correlated with the reflective-personal component (r = 0.304; p < 0.001) of their psychological health. Also, there was a positive correlation (r = 0.095; p < 0.05) between educators' attitude to ambiguous situations and «internal control» and «powerful others' control» operational components of their psychological health (see Table 3).

The results of one-way analysis of variance (ANOVA) showed that educators' attitude to ambiguous situations had a positive effect (see Fig. 3) on the reflective-personal component of their psychological health (p <0,001). In other words, the more favorable educators were to ambiguous situations, the better was their psychological health, which relates to the reflexive-personal component of psychological health. However, the results of the analysis of variance did not reveal the effects of educators' attitude to ambiguous situations on «internal control» and «powerful others' control» operational components of their psychological health.

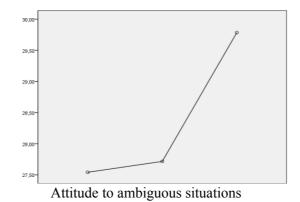
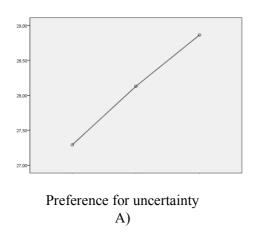
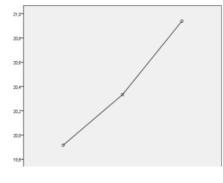


Fig. 3. Effects of educators' attitude to ambiguous situations on the reflective-personal component of their psychological health

It should be noted that there was a positive correlation between educators' preference for uncertainty and the reflective-personal component (r = 0.290; p < 0.001) and «internal control» (r = 0.220; p < 0.001) and «powerful others' control» (r = 0.118; p < 0.05) operational components of their psychological health (see Table. 3).

The results of one-way analysis of variance (ANOVA) showed (see Fig. 4) that educators' preference for uncertainty had a positive effect on the reflective-personal component (p <0.001) and «internal control» operational component of their psychological health (p <0.001).





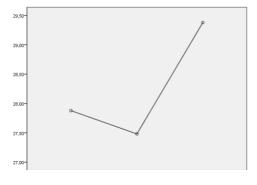
Preference for uncertainty B)

Fig. 4. Effects of educators' preference for uncertainty on their psychological health components: reflective-personal (A); operational («internal control») (B)

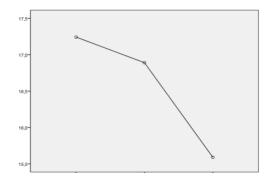
Educators' tolerance of uncertainty index had a positive correlation with the reflective-personal component (r = 0.219; p < 0.001) and «internal control» operational component (r = 0.100; p < 0.05) of their psychological health (see Table 3). Also, there was a negative relationship between educators' tolerance of uncertainty index and «case control» operational component of their psychological health (r = -0.140; p < 0.01).

The results of one-way analysis of variance (ANOVA) showed that educators' tolerance of uncertainty index had a positive effect (see Fig. 5) on the reflexive-personal component of their psychological health (p <0.001).

At the same time, educators' tolerance of uncertainty index was found to have a negative impact on «case control» operational component of their psychological health (p < 0.001). In other words, educators with a high tolerance of uncertainty did not rely on luck or chance in controlling their health.



Tolerance of uncertainty index A)



Tolerance of uncertainty index B)

Fig. 5. Effects of educators' tolerance of uncertainty index on their psychological health components: reflective-personal (A); operational («case control») (B)

The reflective-personal and operational («internal control») components of educators' psychological health were affected by tolerance of uncertainty components the most. It should be noted that tolerance of uncertainty components did not affect the cognitive and emotional components of educators' psychological health.

In general, it can be concluded that the tolerance of uncertainty components affected most components of educators' psychological health, so they can be considered as determinants of educators' psychological health.

#### Conclusions.

- 1. Tolerance of uncertainty is seen as an integral personal characteristic and a multidimensional and multilevel construct that determines a person's ability to positively perceive situations of uncertainty and act in conditions of vaguely defined goals and objectives.
- 2. The highest-scoring components of educators' tolerance of uncertainty are the attitude to novelty and preference for uncertainty. Attitudes to complex tasks and ambiguous situations are less developed. More than two thirds of educators have tolerance of uncertainty at a medium or high level, while almost every third educator has it at a low level.
- 3. Educators' tolerance of uncertainty index as well as the most developed components of tolerance of uncertainty (attitude to novelty and preference for uncertainty) affect most components of educators' psychological health, therefore tolerance of uncertainty should be considered as a determinant of educators' psychological health.
- 4. Among the components of educators' psychological health, the reflective-personal and operational («internal control») components are affected by tolerance of uncertainty the most.

**Further research** may focus on the analysis of the relationship between educators' psychological health and tolerance of uncertainty in different types of educational organizations.

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