

Declared by medical students actions towards of people in emergency situations – mixed assessments as a basis for analysis of simulation studies

Authors' Contribution:

- A Study Design
- B Data Collection
- C Statistical Analysis
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Ryszard Kałużny^{1ABCDE}, Jarosław Klimczak^{2ACDE}

¹ General Tadeusz Kościuszko Military University of Land Forces, Wrocław, Poland

² Faculty of Environmental Sciences, Department of Tourism, Recreation and Ecology, University of Warmia and Mazury in Olsztyn, Olsztyn, Poland

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Abstract

Background and Study Aim:

Results of the research on the willingness to assist people in various health or life-threatening situations can be considered as an objective indicator of mental health (individuals) and social health (conjunction social groups). The aim of this study is knowledge about declared by medical students actions towards of people in emergency situations.

Material and Methods:

The group of 111 students of the second and third year from the department of the medical university from central Poland (48 female, 63 male) were being examined. The average age of the respondents was 21.4 years (the oldest 27 years and the youngest 20 years). Only 8% of students declared sport and social activity and participation in solving difficult situations in microscale. Lack of such experience stated the 10% of respondents. The largest group (63%) are students who did not engage in social activities. The authors used questionnaire KK'017 based on mixed assessments („efficiency – ethical”) of 12 simulated actions. Diagnosis based on declared actions in 3 situations: the need to help others; a serious accident on the road when the respondent is in a hurry for an important meeting; jump into the water to save the drowning.

Results:

Ethical actions in each simulated situation are declared by 65% students. Stability of „efficiency – ethical” in each of the three simulated situations revealed 35% of the respondents. This indicator in relation to the two declarations (a dangerous accident on the road when the respondent is in an emergency meeting, jumping into the water to save the drowning) is 57%. The closest social expectations are the declarations of students cumulating three activities: sport, social and participation in solving difficult situations in the microscale (ethical actions 75%; stability of „efficiency – ethical” in two specific simulations of threats to health or life 62.5%). The opposite is the declaration of students who lack these experiences (respectively: 72%; 36%).

Conclusions:

Applied questionnaire KK'017 based on mixed assessments turned out to be a synthetic tool for diagnosing mental health and predicting the effectiveness of rescue operations. The questionnaire KK'017 results associated with rescue skills and swimming tests of particular social groups (especially students, teachers, educators and candidates for on-demand and uniformed public services) may be the basis of an educational strategy and promotion of social health.

Key words:

innovative agonology • mental health • on-demand and uniformed public services • questionnaire KK'017 • social health • survival ability.

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Author's address:

Ryszard Kałużny; General Tadeusz Kościuszko Military University of Land Forces, Czajkowskiego str. 109, 51-147 Wrocław, Poland; e-mail: ryszard_kaluzny@op.pl

Bravery – means efficiency in good deeds, efficiency combined with estimable aspirations [5, 6].

Aggression (in psychology) – is deliberate behaviour by the perpetrator intended to either hurt the opponent, harm or distress him/her in any other way, cause pain (regardless of whether this aim is achieved), or destroy things [4, 54].

Aggression (in praxeology) – is to initiate destructive fight or move in a verbal dispute from material arguments to those causing distress to the opponent [6].

Aggressiveness – a human characteristic manifesting itself in inclinations to hurt others, to destructive behaviour. Aggressive = virulent, truculent, attacking [6].

Praxeology (praxiology) – science about good work. *A Treatise on Good Work*, a fundamental lecture of praxiology by T. Kotarbiński (the first edition in 1955) has been translated into majority of the so-called congress languages (English, German, Russian) and as well: Czech, Japanese, and Serbo-Croatian.

On-demand and uniformed public services – in Poland they consist of professional formations (police, armed forces, border guard, fire service). The characteristic features of these groups are as follows: orders, uniforms, being placed in barracks, restrictions on private and family life, a possibility to receive special perks from the state [17].

On-demand public services – these are social groups in which availability consists in the assumed type of social relationships. They include subordinating some participants of social life to others. The people in charge do not only give orders to those under them, but also they are in a position to enforce these orders or obedience [17].

Mental attitude – *noun* whether a person is optimistic or pessimistic about their chances of success [50].

Mental health – *noun* the condition of someone's mind [50].

INTRODUCTION

The results of research informing about readiness to help people who are in various situations threatening health or life can be considered as an objective indicator of mental health (individuals) and social health (conjunction of social groups) [1, 2]. This assumption is based both on the premises resulting from the analysis of scientific papers and the systematic monitoring of this category of events by the media.

Amongst others, Aronson et al. [3] associate helping others in situations when they expect such help with pro-social behaviours. Zimbardo and Ruch [4] give examples of altruism as the need to support others (another explanation of altruism is based on the notion of empathy). Tadeusz Kotarbiński [5] defined “bravery” (see: glossary) as a category of actions assessed in terms of efficiency (praxeological) and ethics. Pszczołowski [6] gives “bravery” as an example of mixed assessment; Kalina and Barczynski [2] designate mixed assessment in *innovative agonology* (i.e. prophylactic and therapeutic agonology [7]) as the basic methodological criterion.

The media all over the world report on a daily basis on events when individuals, local societies or even the international community are helping victims of incidents that result in fatalities and/or people's chronic disability. Although a certain number of injured people will regain physical fitness, the traumatic experiences of those events may permanently affect the quality of further life (e.g. avoiding large clusters of people, frequent depression, distrust towards others, susceptibility to stress and anxiety). The list of events that cause the abovementioned effects is long, for example, acts of terror, robberies, murders, rape, transport accidents and catastrophes, natural disasters, pandemics and epidemics.

On the one hand, the media message of these events uncovers the involvement of various social actors in delivering aid to victims and affected parties. This message is often enough to formulate opinions on the efficiency of interventional actions of particular on-demand public services and/or on-demand uniformed public services classified as dispositional groups [8-10]. On the other hand, there are unknown reasons and proportions of people who are on site of a given event who did not participate in a rescue operation or refused to help victims and endangered individuals or groups who had asked for it. What

is more, it appears a difficult task to determine the proportion of those who take advantage of this kind of extreme situations to accomplish their own shameful goals (plundering, rape, escalating destruction, enjoying destruction and suffering of others).

These phenomena can, however, be studied by scientific methods. The causes of behaviours and negative actions can be investigated and postulates of expected changes in various social structures and activities (especially in education, management, technology) formulated. The development of simulation methods has caused that science (in fact the scholars) can explore these issues in various aspects. Formal scientific qualifications of researchers and expert teams are primarily decisive for the selection of those aspects. For example, Umberson and Montez [11] attribute sociologists the leading role in establishing the link between social relationships and health outcomes, identifying explanations for this link, and discovering social variation (e.g., by gender and race) at the population level. Meanwhile, deeply esoteric, unknown science “agonology” [12, 13] provides new arguments that these relationships can be studied in a broader interdisciplinary perspective. Countering any threats to loss of life or health is on the one hand a form of struggle (negative cooperation), on the other, positive cooperation, and it is not only about situations when counteraction is taken by at least two people. The observation of social reality and current results of simulation studies [14-19] provide evidence that even in the situation of extreme physical aggression persons defending themselves or others observe (or declare that they are ready to respect) basic ethical norms.

The assumption of using objective indicators to evaluate mental health and social health, i.e. the declared willingness to help individuals and teams in various emergencies, the refusal of the necessary intervention of such activities in virtual reality (simulation studies) and direct observation of dispositional groups' intervention measures, does not exhaust methodological aspects of the issue. Kalina's [20] disclosure of the attempts of the group of demoralized professors to destroy an independent subject of science and culture – the journal *Archives of Budo*, led to defining two phenomena that can be investigated not only by agonology experts. What we have in mind here is “intellectual violence” and “institutional violence” [7]. Those professors have been directing

these types of violence since 2014 against the authors of works published in *Archives of Budo*, who applied for the title of a sport science professor or a postdoctoral degree. These yet publically unknown events are important empirical evidence of far-reaching consequences of destroying the common good – science – by professors cultivating post-communist methods of power over the academic promotion system. It is the mixed assessment methodology that allows the unequivocal identification of specific perpetrators and institutions using these sophisticated varieties of violence. From the perspective of maintaining power over the system of the most prestigious academic promotions in the country, these actions are effective though evidently shameful (some were deprived of career advancement, while the unworthy title of professor was elevated to this dignity [20]).

On the basis of such evidence (apart from the likelihood of corruption) one can formulate conclusions regarding the pathology of mental health and social health among the elites of a given society. The task of scholars is not to denounce crimes or prosecute perpetrators. This does not mean that scholars are exempt from the responsibility to investigate such phenomena. In addition to mixed assessment [1, 2] the expert of agonology has detailed theories, clear language of this unknown science [7, 12, 13, 20] to identify all structures unworthy of mutual benefits, as well as applied rules, methods, means and techniques. It is not an agonology expert who will decide if the entities of the disclosed structure, which are unworthy of mutual benefits have violated the law. The results of his/her research may, however, be at least the premises to initiate prosecution proceedings.

Sportsmen are probably the only social group (including professional) whose activities are subject to public mixed assessment not only by sports referees, but also by every observer of a sports event. The largest mixed assessment saturation occurs during games (one against one, tem versus tem) and combat sports. Formulating a mixed assessment by people whose number often exceeds sport events is possible for the actions of public figures (politicians, celebrities, journalists). However, these activities monitored by the media are subject to frequent deformations by media workers. The doubtful credibility of the source of information deters the conclusion that this category of media reports could be

considered as commonly available social health indicators of certain groups of social elites.

The results of simulation tests made available in the publication meet the criteria of scientific credibility and refer to an important professional group from the perspective of health service planning (in the layer related to training of medical manpower). The aim of this study is knowledge about declared by medical students actions towards of people in emergency situations.

MATERIALS AND METHODS

Participants

The group of 111 students of the second and third years of study from the department of the medical university from central Poland (63 males, 48 females) were examined. The average age of the respondents was 21.4 years (the oldest 27 and the youngest 20 years old).

Procedure

The authors used the KK'017 questionnaire based on mixed assessments („efficiency – ethical”) of 12 simulated actions. The diagnosis based on actions declared in 3 situations: the need to help others; a serious accident on the road when the respondent is in a hurry for an important meeting; jump into the water to save somebody drowning.

The applied research tool is a modification of the KK'98 questionnaire [14-19]. In addition to the respondent's activities in three simulated circumstances analysed in these studies (mentioned above), the questionnaire includes 9 statements (or questions) informing about hypothetical situations with its participation. Six of them about aggression is directed to the respondent, a person close to the respondent, a person unknown to the respondent (at one time the aggression is aimed at depriving the victim of life, at another – a goal of physical aggression is not specified), moreover they concern the respondent's conduct in a sporting battle; the respondent's preferred way to resolve a conflict with the intention of achieving a relatively long-lasting effect; the way the respondent presents people the facts in various life situations. Each of the 12 simulated circumstances (situations) is complemented by four alternative actions, from which the respondent selects only one (accurately illustrating his/her actions in the described situations or is the

Health service planning

– balancing the needs of a community, assessed by such indices as mortality, morbidity, and disability, with the resources available to meet these needs in terms of medical manpower (ensuring the numbers in training grades meet but do not exceed future requirements for career grades) and technical resources , such as hospitals (capital planning), equipment , and medicines. Success is measured by a process **medical audit in** which the use of resources is weighed against the efficiency of their use (e.g. treatments undertaken, bed occupancy) and effectiveness in terms of outcome (e.g. deaths, complications, quality of life, return to work) [33, p. 296]

Negative cooperation

– struggle characterized by non-compliance purposes (rivalry) [6].

Positive cooperation

– interaction for compliance purposes [6].

Simulation – caused in model an event, which under some circumstances is similar to the event occurring in examined real object [6].

Social health – is defined as: how a person gets along with other people; a person's level of support from people and institutions around them; how well a society does at offering every citizen the equal opportunity to obtain access to the goods and services critical to being able to function as a contributing member of society. An example of social health: a) is the amount of interaction a person has with their community; b) for a society is laws and regulations being applied to all citizens equally; c) is public access to the decision-making processes; d) is when an individual feels the support offered by being a part of the society, causing him to feel the encouragement to better himself through personal growth such as increased education or the development of a talent [51 see also 52].

The Delphi method (Delphi technique) – a method of group decision-making and forecasting that involves successively collating the judgments of experts [53].

closest to the action the respondent would be willing to take). Using the Delphi method, three competent judges decomposed the diagnostic theorems (questions) from the KK'98 questionnaire and assessed the accuracy of new ones. Alternative activities are described in a way that a researcher who knows the methodology of mixed assessments should differentiate them according to the following criteria: "effective – ethical (fair)"; "ineffective – ethical (fair)"; "effective – unethical (shameful)", "ineffective – unethical (shameful)" [1, 2]. All competent judges confirmed that these criteria were met by 12 simulated situations (circumstances). Assigning a numerical indicator to each criterion (respectively: 3; 2; 1; 0) simplifies the statistical analysis.

The KK'017 questionnaire reliability testing using the "test-retest" method of 38 female students of tourism and recreation confirmed the following correlations: $r = 0.859$ for "the need to help others"; $r = 0.723$ for "a serious accident on the road when the respondent is in a hurry for an important meeting"; $r = 0.869$ for "jump into the water to save a drowning person" [21]. For male students of ($n = 22$) the correlations were respectively: $r = 0.766$; $r = 0.795$; $r = 0.882$ [22].

Furthermore, the analysis of the research results, in addition to the distribution of mixed assessments in each emergency situations, covered the phenomenon of sustainability of declared actions ("stability"), i.e. meeting identical criteria in each situation simulated by the description, e.g. "effective – ethical (fair)". The proportions of people declaring ethical action in every simulated emergency situations (regardless of the expected effectiveness) were considered as a simple devotion indicator. Both indicators, "stability" and "devotion", are analysed in relation to gender, sports and social activity as well as experience in solving difficult situations declared by the respondents.

Statistical analysis

The authors use the indicator of proportions between independent sets of individual empirical variables. The correlations of the declared actions with numerical indicators.

RESULTS

Gender is not a factor that significantly differentiates students in terms of experience in solving difficult situations (ESDS). The "occasionally" declarations dominate (male 76%, female 67%), while the greatest similarity (16% and 15% respectively) concerns "often" (Table 1).

People who declare both sports activity and ESDS (male 75%, female 48%) are the only sets of students, where gender is a factor significantly differentiating the number ($p < 0.05$). Men constitute the larger group (Table 2). In general, students most often declare experience in solving difficult situations (87%) and sports activity (73%). Only 8 students (7%) declare sports and social activity as well as ESDS at the same time. Every 10 of the surveyed medical students indicates the lack of both activities and ESDS (Table 2).

Most students declare effective and ethical actions in a simulated situation "a serious accident on the road when the respondent is in a hurry for an important meeting" (87%), followed by "jump into the water to save a drowning person" (65%). Effective and ethical action in the situation "the need to help others" is declared by 60% of students, while 23% indicates effective and unethical action (Table 3).

The proportions of men and women (35% for the "stability" indicator) are identical, who in each of the simulated emergency situations declared the effective – ethical action (Table 4).

Table 1. Proportions of medical students declaring experience in solving difficult situations (ESDS).

Subject	Scale of experience					
	never		occasionally		often	
	n	%	n	%	n	%
male (n = 63)	5	7.93	48	76.19	10	15.87
female (n = 48)	9	18.75	32	66.66	7	14.58
difference in proportion	4	10.82	16	9.53	3	1.29
total (n = 111)	14	12.61	80	72.07	17	15.31

Table 2. Proportions of medical students (n = 111) declaring sports and social activity as well as experience in solving difficult situations (ESDS), and the lack of both activities and ESDS.

Activity	Male (n = 63)		Female (n = 48)		Difference in proportions [%]	Total (n = 111)	
	n	%	n	%		n	%
sport	50	79.36	31	64.58	14.78	81	72.97
social	4	6.34	6	12.5	6.16	10	9
ESDS	58	92.06	39	81.25	10.81	97	87.38
sport & social	2	3.17	6	12.5	9.33	8	7.2
sport & ESDS	47	74.6	23	47.91	26.69*	70	63.06
social & ESDS	4	6.34	6	12.5	6.16	10	9
sport, social, ESDS	2	3.17	6	12.5	9.33	8	7.2
lack of both activities & ESDS	4	6.34	7	14.58	8.24	11	9.9

*p<0.05

Table 3. Proportions of medical students declaring a specific course of action in three emergency situations.

Mixed assessments	Male (n = 63)		Female (n = 48)		Difference in proportions [%]	Total (n = 111)	
	n	%	n	%		n	%
„the need to help others”							
“effective – ethical”	39	61.90	28	58.33	3.57	67	60.36
“ineffective – ethical”	7	11.11	10	20.83	9.72	17	15.31
“effective – unethical”	16	25.39	9	18.75	6.64	25	22.52
“ineffective – unethical”	1	1.58	1	2.08	0.5	2	1.8
“a serious accident on the road when the respondent is in a hurry for an important meeting”							
“effective – ethical”	56	88.88	41	85.41	3.47	97	87.38
“ineffective – ethical”	-	-	-	-	-	-	-
“effective – unethical”	7	11.11	5	10.41	0.7	12	10.81
“ineffective – unethical”	-	-	2	4.16	4.16	2	1.8
„jump into the water to save the drowning”							
“effective – ethical”	41	65.07	31	64.58	0.49	72	64.86
“ineffective – ethical”	19	30.15	11	22.91	7.24	30	27.02
“effective – unethical”	3	4.76	3	6.25	1.49	6	5.4
“ineffective – unethical”	-	-	3	6.25	6.25	3	2.7

Table 4. Proportions of medical students evidencing “stability” and “devotion” in three emergency situations simulated by the description.

Mixed assessments	Male (n = 63)		Female (n = 48)		Difference in proportions [%]	Total (n = 111)	
	n	%	n	%		n	%
„stability”							
“effective – ethical”	22	34.92	17	35.41	0.49	39	35.13
„devotion”							
“effective – ethical” & “ineffective – ethical”	41	65.07	31	64.58	0.49	72	64.86

Table 5. Proportions of medical students declaring sporting activity and ESDS (n = 70), that evidences “stability” and “devotion” in three emergency situations simulated by the description.

Mixed assessments	Male (n = 47)		Female (n = 23)		Difference in proportions [%]	Total (n = 70)	
	n	%	n	%		n	%
Stability [“effective – ethical”]	20	42.55	6	26.08	16.47	26	37.14
Devotion [“effective – ethical” & “ineffective – ethical”]	36	76.59	13	56.52	20.07*	49	70

*p<0.05

Table 6. Proportions of medical students extremely differing in terms of sports, social and ESDS activities, that proves “stability” and “devotion” in three emergency situations simulated by the description.

Activity	Stability [“effective – ethical”]		Devotion [“effective – ethical” & “ineffective – ethical”]	
	n	%	n	%
sport, social, ESDS (n = 8)	3	37.5	6	75%
lack of both activities & ESDS (n = 11)	3	27.27	5	45.45
difference in proportion	-	10.23	1	29.55

Table 7. Proportions of medical students extremely differing in terms of sports, social and ESDS activities, that proves “stability” and “devotion” in two emergency specific simulations of threats to health or life (a dangerous accident on the road when the respondent is in an emergency meeting, jumping into the water to save the drowning).

Activity	Stability [“effective – ethical”]		Devotion [“effective – ethical” & “ineffective – ethical”]	
	n	%	n	%
sport, social, ESDS (n = 8)	5	62.5	6	5%
lack of both activities & ESDS (n = 11)	4	36.36	8	72.72
difference in proportion	1	26.14	2	2.28

Table 8. Correlations of specific modes of operation declared by medical students (men) (n = 63) in three emergency situations simulated by the description.

Simulated situations	„the need to help others”	“a serious accident on the road when the respondent is in a hurry for an important meeting”
„the need to help others”	-	
“a serious accident on the road when the respondent is in a hurry for an important meeting”	0.241	-
„jump into the water to save the drowning”	0.010	-0.068

Table 9. Correlations of specific modes of operation declared by medical students (women) (n = 48) in three emergency situations simulated by the description.

Simulated situations	„the need to help others”	“a serious accident on the road when the respondent is in a hurry for an important meeting”
„the need to help others”	-	
“a serious accident on the road when the respondent is in a hurry for an important meeting”	0.402**	-
„jump into the water to save the drowning”	0.029	-0.134

**p<0.01

The proportions (65% of the “devotion” indicator) relating to ethical actions regardless of their effectiveness are also identical. These indicators analysed in the sets of students who declared sports activity and ESDS provide evidence that “stability” and “devotion” (here the difference in proportion $p < 0.05$ is statistically significant) more often occurs among men (Table 5). The analysis of both indicators in a few sets of students who declare total sports and social activity as well as ESDS altogether (7%) and those who declare lack of both activities and ESDS (10%) reveals that the active dominate the inactive (Table 6).

“Stability” indicator in relation to the two declarations (a dangerous accident on the road when the respondent is in an emergency meeting, jumping into the water to save the drowning) is 57%. The closest social expectations are the declarations of students cumulating three activities: sport, social and ESDS in the microscale (ethical actions, i.e. “devotion”, 75%; stability of „efficiency – ethical” in two specific simulations of threats to health or life 62.5%). The opposite is the declaration of students who lack these experiences (respectively: 72%; 36%) (Table 7).

The lack of significant correlations between the declared actions of men (Table 8) proves a

modifying effect of a specific difficult situation on a man who may try to overcome it or even refrain from preventing it (including helping endangered people). In the case of women, these relationships are similar (Table 9). However, the low correlation between “the need to help others” and “a serious accident on the road when the respondent is in a hurry for an important meeting” is statistically significant ($p < 0.01$).

DISCUSSION

The results of the research in question are for the first time based on this new questionnaire. This does not mean that references to research with similar axiological assumptions in the both narrower and broader sense are unauthorized. Although the KK'017 questionnaire contains 12 simulated emergency situations, only three of them were chosen, and not exclusively due to editorial limitations. In Poland, road accidents (compared to other European Union countries) are frequent events. In 2015 year, 3.938 people died and 3.9778 were injured in 3.967 accidents [23]. According to the estimates of the World Health Organization, around 35 million people have died all over the world since the first car accident in London in 1896. Experts

believe that by 2020 traffic accidents will become one of the most frequent causes of premature death [24]. In Poland, due to climatic conditions, the activity of people on water areas is seasonal (May to September), but this is not the only reason that drowning accidents amount to only about 10% compared to the number of fatalities of road accidents. In Poland in 2011 there were 393 drowning of people, and 319 in 2016 [23].

In the authors' opinion, these three situations, despite two concretizations (a road accident, a drowning person) refer to a wide range of circumstances "the need to help others". Naming some of these verbal simulations "circumstances" has justification in the level of generalization of a being described emergency situation. A very general wording "the need to help others" is inclusive and may apply to an extreme situation when there is a high risk of loss of life or health by a person providing aid. Such risk applies to personnel of dispositional groups (e.g. rescue workers, firefighters, policemen, soldiers). A certain category of situations are universally considered difficult but not for the above mentioned specialists. However, professional preparation and even long-term practice in dispositional groups will not compensate for factors that modify behaviours or even actions (that is conscious behaviours) of specific people in given situations.

Two most well-known experiments from the 1970s demonstrate the power of certain circumstances to modify people's actions. Darley and Batson [25] observed 40 volunteer students who were preparing for pastoral work at the Princeton Theological Seminary. The research officially concerned religious education and the vocation to the priesthood. After receiving the instruction in one building, the students moved to the second building where they were supposed to give a speech, some of which was a sermon about the parable of the Good Samaritan (Gospel of Saint Luke, chapter X). Before a student left for the second building to give his speech (or sermon), the experimenters systematically manipulated his belief about how much time he had to get to the place. There was a man in the gate (the experimenters' assistant): coughing, groaning, head on the ground, eyes closed. There was an opportunity to become a Good Samaritan. Overall, 60% of the observed students did not stop to help. Assistance was provided by 63% of those who were not in a hurry, 45% of those rushing and only 10% of students who were late.

Although almost half a century has passed, other society, the age of electronic media, other research tools (indirect versus indirect observation), yet the results of the research authorize the conclusion about the similarity of social sensitivity to the need to help people in danger. Regardless of the gender 65% of medical students is willing to sacrificial selfless help (the "devotion" indicator). Thirty-five percent of students (men and women) in each of the three simulated emergency situations declared the effective – ethical action (the "stability" indicator). Thus, every third medical student is not susceptible to factors that would result in abandoning the social mission ("the need to help others"). The proportion is similar to the number of students preparing for pastoral work who stopped to provide help (40%). Therefore, the cognitive effect is similar at the disproportionately lower costs of research using the KK'017 questionnaire and the possibility of multiple repetition with the participation of numerous groups of people. This statement does not diminish the importance of the Darley and Batson's experiment [25]. On the contrary, the results of that experiment enabled a positive verification of the relevance of the questionnaire KK'017.

The second of well-known experiments was carried out in 1971 at the Stanford University and concerned taking the role of a prisoner or a guard. A team of researchers led by Philippe Zimbardo [24] selected 24 people from the USA and Canada from among 70 candidates. The experiment planned for two weeks was completed on the sixth day for two reasons: a disastrous impact on the prisoners' psyche (the moral side of the experiment was negated); the guards began to behave like ruthless sadists (including forcing convicts to play homosexual acts). Although the KK'017 questionnaire does not include relations regarding the penitentiary environment, half of the simulation is related to interpersonal aggression. This issue is so extensive that it goes beyond the scope of this publication. The reference to the experiment of Zimbardo et al. [26] is to strengthen the argumentation both about the modifying impact of specific circumstances on interpersonal relations, as well as the cognitive and applicative value of using mixed assessment. Especially since the KK'017 questionnaire contains a wide range of simulations of difficult situations and this formula of research (primarily anonymous) does not hurt anyone. In addition, other recent simulation studies using

the KS-4M projective test [19] provide evidence that the intervention of a police officer in a similar situation of interpersonal aggression at the micro scale significantly modifies the activities of women and men. When a policeman does not participate in the incident, the tendency to aggression is manifested by 2-3% respectively, when a policeman intervenes, the migration of such declarations reaches 20-21%.

Thus, the methodology of innovative agonology based on mixed assessment and the wide application of two types of simulations: projection tests (verbal, written, computer-mediated, pictorial ones) modelled on the achievements of psychology [27-29]) or motor tests (staging, decision games, fun forms of martial arts) does not exclude the possibility of diagnosing anyone in laboratory conditions. If a person or group for some reason cannot temporarily or permanently participate in motor tests, it is possible to apply appropriate projection tests. A comfortable situation appears when the use of both categories of tests and direct observation of a person during his/her daily activities (especially professional) can be carried out. Aside from prisoners and technology that enables round-the-clock monitoring, such possibilities appear in institutions of dispositional groups. For example, the periodic results of a simulation of firemen's rescue task [30] can be associated with either projection tests or observations from rescue operations. Similarly monitored intervention actions of police officers and officers of each dispositional group [31] can be compared with the results of laboratory tests [32].

This research perspective combined with the possibilities of direct observation of people of various professions creates opportunities to improve the recruitment to professions considered in some respects as elitist. In the light of the discussed simulation studies, the phenomenon of corruption, failure to perform duties and other unethical events in the medical environment are not surprising. In health service planning [33], this is about the optimal number of appropriately selected and educated cadres. If the results of raw research provide evidence that in a simulated situation "the need to help others" 2% of men and women "most often does not participate in such an action", during an accident on the road 4% of women will "never stop in such situations" (hurrying to an important meeting), and 6% would not jump into the water (being able to

swim) to save a drowning person, such declarations should eliminate the candidate for a health service employee. In total, from 5% to 27% men and from 12% to 21% women from among medical students declare unethical actions. These are at the same time simple indicators concerning social health candidates for one of the most elite professions. It is obvious that simulations related to interpersonal aggression will have primarily the diagnostic value in the selection of candidates for policemen, soldiers and security personnel. The KK'017 questionnaire, due to the variety of simulations of difficult situations, can have a wide range of applications in dispositional groups.

A methodological dilemma arises – will we achieve the same level of sincerity when using the questionnaire in an open manner? It seems rather doubtful, however, having such empirical knowledge, a specialist responsible for the selection of candidates may search for this type of information about a candidate during a properly conducted interview. From the perspective of health service planning and dispositional groups, this type of continuous research of pupils, students and trainees will enable gaining the knowledge necessary at a given stage of education, selection and professional activity. Previous studies of police officers conducted with an interval of 12 years [9] or the research on sports activity organizers for the youth cited above [19] provide empirical arguments that such an application is necessary.

The offer of innovative agonology, i.e. prophylactic and therapeutic agonology [7], is broad and apart from diagnostic tools useful at every stage of ontogenesis of each individual, offers methods of therapy based solely on the intellectual effect (martial arts bibliotherapy [34-37], or intellectual and behavioural impact [38, 39], self-defence training [40, 41] and health related training [42, 43]). Notwithstanding the barriers to overcome [44], the highest form of innovative agonology is the complementary life-long use of these methods with emphasizing the most appropriate ones for an individual's age (a person should learn safe fall [45-47], avoiding collision [48] and collision with a vertical obstacle [49] as early as possible). Early diagnosis and prophylaxis (i.e. education at every level) and permanent health related training for all (with family [42]) will significantly reduce the need for elderly people's therapy. The KK'017 questionnaire meets the criteria of a tool that used in the

anonymous version in all types of schools can provide reliable knowledge about social health. It appears a simple tool that comprehensively measures the sense of positive health and survival abilities indices (the SPHSA questionnaire is the subjective assessment [43].) The SPHSA method includes mental health and social health assessments of an individual (verifies indicators declared with the results of test measurements – the use of the KK'017 questionnaire is possible).

CONCLUSIONS

Applied questionnaire KK'017 based on mixed assessments turned out to be a synthetic tool for diagnosing mental health and predicting the effectiveness of rescue operations. The questionnaire KK'017 results associated with rescue skills and swimming tests of particular social groups (especially students, teachers, educators and candidates for on-demand and uniformed public services) may be the basis of an educational strategy and promotion of social health

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