

THE ROLE OF THE SENSE OF COHERENCE AND STRESS COPING STRATEGIES AS INDICATORS OF READINESS TO EXECUTE TASKS IN CRISIS SITUATIONS AMONG POLICE OFFICERS, NATIONAL FIRE SERVICE MEMBERS AND MILITARY CAREER OFFICERS

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Abstract:

One of the main factors connected with the effectiveness of realizing tasks in crisis situations is the psycho-physiological condition of the team members. The specificity of tasks, which are carried out during crisis management, imposes the risk of functioning under pressure. Crisis response teams can counteract or foster the development of a crisis situation if the tasks are delayed or performed incorrectly. The aim of the article is to examine stress coping strategies and the sense of coherence in army, police, and fire brigade adepts. The level of the sense of coherence was assessed using the SOC-29 questionnaire (Antonovsky, 1995), whereas stress coping strategies were measured using the CISS questionnaire (Endler & Parker, 1990). The results revealed no significant differences between the representatives of the three formations in their sense of coherence or stress coping strategies. Statistical differences between the groups were noted for the following subscales: avoidance strategy, engagement in substitutionary tasks, and searching for social contact. There were no significant correlations between the total and subscale scores of the measures.

Keywords:

sense of coherence, coping styles, transaction of stress, crisis situation, crisis management

INTRODUCTION

Security is regarded as one of the most esteemed and protected values by the individuals. Appropriate security level constitutes essential base for development, realization of adaptation requirements in the modern world, as well as maintaining a national identity and interpersonal relations among the international community. A contemporary security dimension encompasses economic, technology, military aspects, as well as ecology, humanitarian and political factors. It is most often described as state free from disturbances, providing assurance, state of so-called "without custody," from Latin sine cura-securitas¹ which stresses two of its crucial aspects: protection and defense. Analyzing the definition of security it can be stated that despite of specific ranges of various types of security a synthesis presents the common function, which guarantees sanctity of particular subject's survival and its development.²

Threats are inextricably connected to security phenomenon, and are defined as indirect and direct destructive influences on subject.³ In the past, definition of threats was described in the military context of national security. Over time, and with the increase in numbers of catastrophic incidents, other types and characteristics of threats were identified.

A threat, generally understood as lack of security, becomes constant and unavoidable, and in some cases common, human life reality. Threats identification and knowledge about them are therefore fundamental conditions for beginning of countermeasures and defense preparations.⁴ Performing a potential threat evaluation, it can be assumed that a threat most often constitutes a chain of events, factors that might cause disturbance in function of individual or loss of stable function of social group, a country in the international relations. In case of reduction of state functions, the threats are an effect of application of political, psychological, economic or military abusive behavior. A peculiar characteristic of threats is a phenomenon of overlapping and escalation, which brings an accumulation effect that increase a risk of destructive influences. Unidentified threats can create a crisis situation, and lack of countermeasures that should protect against crisis situation effects leads consequently to a crisis, individual and social destruction. A crisis is a constant state, and there is term of "crisis management", and its extinguishing, as well as its effects prevention.

1. SPECIFICITY OF FORESEEABLE AND DEFINED THREATS

One of the primary typology of threats mentioned in the literature is source-based typology. Often the division of threats sources is dichotomous, and considers nature and human activities. Another example of threats classification is distinguishing them as primal and secondary. For example, the primal natural threat is flood, whereas fam-

¹ R. Zięba, *Kategoria bezpieczeństwa w nauce o stosunkach międzynarodowych*, Wydawnictwo Naukowe Grado, Toruń 2005, p. 33.

² R. Stańczyk, *Współczesne postrzeganie bezpieczeństwa*, PAN, Warsaw 1996, p. 19.

³ S. Koziej, *Teoria i historia bezpieczeństwa, skrypt internetowy*, Warsaw 2006.

⁴ Z. Ciekankowski, *Rodzaje i źródła zagrożeń bezpieczeństwa*, [in:] "Safety & Fire Technique", no. 1/2010, PIB, Józefów 2010, p. 28.

ine, mass deaths or epidemic diseases are secondary that result from flooding effects⁵. Threats can be divided depending on direction of effect on the subject. Based on the subject environment of origin (external threats) or resulted from subject's activities (internal threats).⁶ External threats conditioned by environment include: terrorism, armed aggression, technical disasters, global economic crises, etc., whereas most often occurring internal threats are: unemployment, popular unrests, disturbance of state's structure normal operations, crime, and threats resulting from forces of nature activity such as flood and other natural disasters. There are also other division criteria, in example the threat division into peace-time and war-time threats. Every war is preceded by a crisis.

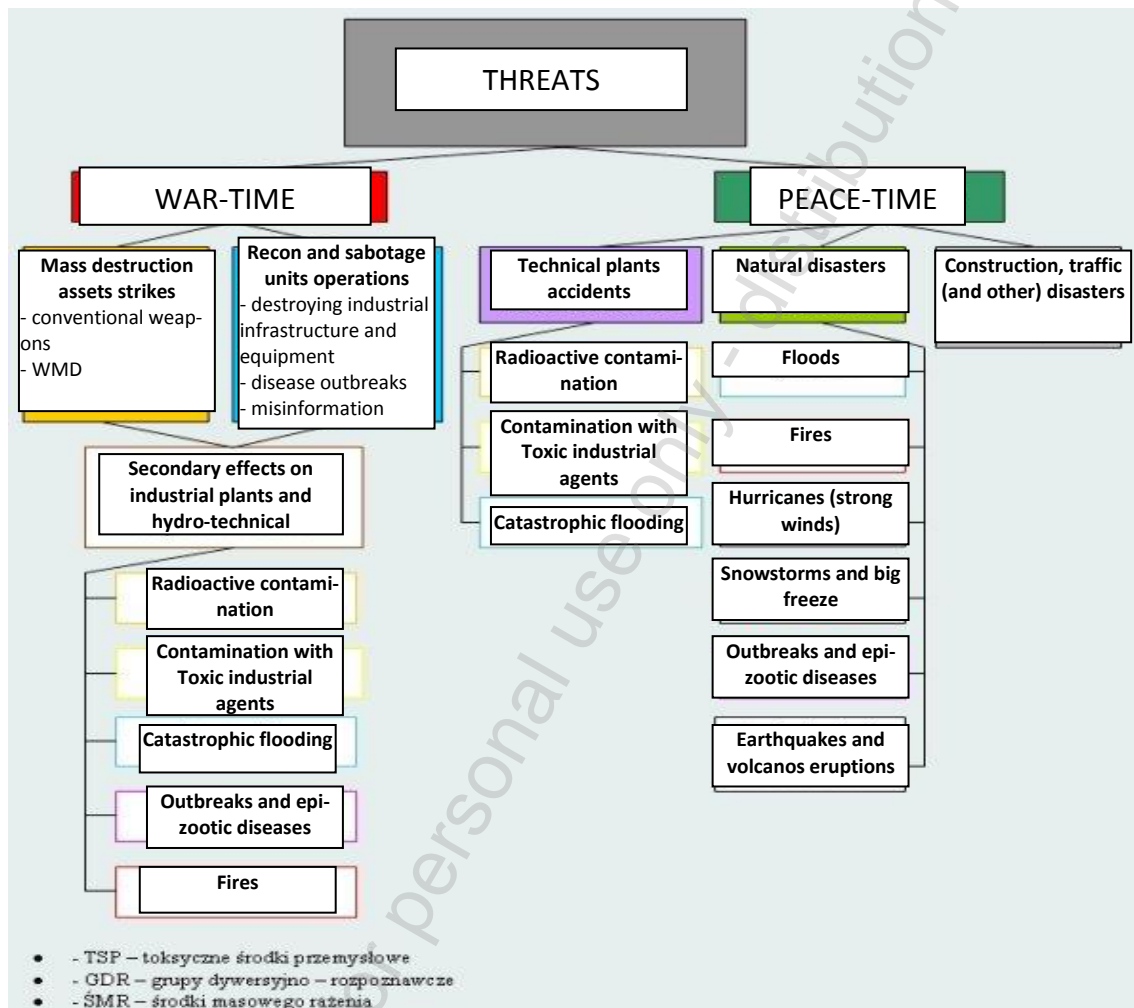


Fig.1. Dichotomous division of threats in regard to their occurrence during war and peace

Source: 7

⁵ Z. Ciekawski, *Rodzaje i źródła zagrożeń bezpieczeństwa*. [in:] "Safety & Fire Technique", no. 1/2010, PIB, Józefów 2010, pp. 27-46.

⁶ R. Stańczyk, *Współczesne postrzeganie bezpieczeństwa*, PAN, Warsaw 1996, p. 17.

The conducted analyses described in this paper, require a specifying of conditions that are usual for uniformed services operations while participating in a crisis response process. The most important factor, indicating a relation to an activated type of strategy and assets used for tasks realization, is a threat perception. In this regard there are objective and subjective threats. A threat perception determines a quality of decisions made and therefore the forces and assets used for its implementation. The key to making optimal decisions is correct evaluation of threat scale and escalation risk.

1.1. Extreme conditions

In relations to human being functioning, the extreme conditions are defined as difficult situations. A difficult situation occurs when an internal balance of the normal situation is disturbed, in a way that a regular conduct of basic activity is impeded and the probability of goal achieving at the normal level is decreased.⁷ Difficult conditions are the consequence of factors mutually affecting each other, so-called threats. Accumulated threats affecting both physical dimensions and mental dispositions are called extraordinary. While analyzing mental processes of the human being, it could be assumed that extreme conditions constitute the environment where executed tasks require extraordinary adaptation resources. The paper assumes that the meaning of extreme conditions is not the same as a trauma defined in accordance with generally known and cited mental disorders classifications. Both DSM-IV⁸, and ICD-10⁹ defining the extreme situations as experiences, overwhelmed with their burden and creating serious threat to individual life or its integrity, or events causing sudden and unpredictable change in life. The publication assumed that: a candidate training profile requires that an extreme situation constitutes a resolvable challenge or threat for those executing crisis response plan. This means that a level of coherence perception and stress coping strategies are treated only as the effectiveness predictors and trauma experiencing prevention resources. In the context of interpretation of a crisis situation as threat, a configuration of stress coping strategies and coherence perception level constitute the factors (perception schemes), conditioning reactions, and generating means necessary to overcome threats¹⁰.

⁷ J. Strelau ed., *Psychologia Podręcznik Akademicki Tom 3, Jednostka w społeczeństwie i elementy psychologii stosowane*, GWP, Sopot 2007, p. 468.

⁸ *American Diagnostic and Statistical Manual of Mental Disorders* – the classification of mental disorders of the *American Psychiatric Association* – APA. The DSM-IV is also a current NATO armies standard (The newest current classification DSM-5 (*Diagnostic and Statistical Manual of Mental Disorders*) (formerly DSM-V) – next edition of the mental disorders classification was published on 18 May 2013).

⁹ ICD10 – *International Statistical Classification of Diseases and Related Health Problems*. ICD-10 is developed by WHO, and since 1996, it has been in force in Poland.

¹⁰ Cognitive schemes can be subjected to modifications by so-called „reframing” (redefinition) – change of situation evaluation. The technique requires information assets, and availability to use them in mental processes and in responses to threats (see: training „reframing”), [in:] “The International Journal of Organizational Analysis”, 2006, Vol. 5 Iss. 1, pp. 9-24.

1.2. Crisis situation and crisis management

Since its conception, the humanity has been struggling with difficult, crisis situations caused by various random events. Both theory and practice of crisis management prove that this management's subject is human being, and its object the security¹¹. While the crisis situation is a time period during which an accumulation of threat effecting strength occurs (a pre-crisis phase of an adverse effect maximum strength exceeding the acceptable threshold), then crisis is the result of threats escalation. The term "crisis" derives from Greek 'krino' which means 'choice, deciding and "struggle", as well as fight in which requires operation under pressure. According to the Institute of Crisis Management¹², generally there are two types of crises: sudden crises and so-called long-drawn shouldering crisis (creeping crises). Examples of sudden crises are natural disasters, terrorist attacks, explosions in factory, strikes, produce counterfeit, sabotage, top leadership kidnappings, environment contamination, production ceasing. The shouldering crises are caused by events that initially were mere internal problems, but in time, had become stronger and escalated. In case of crisis situation occurrence, a control is taken over by crisis response plan executioners. Crisis management constitutes an integral part of national security or commercial organizations strategies. Considering the fact that it is an intentional action conducted by the authorities at all levels of state security (within the national security), it employs specialize uniformed services. Among various definitions of crisis management, the cohesive and comprehensive seems the K. Zieliński's proposal, who defines management process as "overall systemic solutions in the sphere of civil protection, fulfilled by the public authorities at all levels, cooperating with specialized organizations and other institutions, in order to prevent dangerous situations that threatens life and health of citizens and environment."¹³. Making decision on conducting researches on selected uniformed services representatives, selected were the attendees of preparatory training for units responsible for conducting crisis response operations in the Wielkopolska District. The research participants attended a first-stage-training preparing them for assuming rank of non-commissioned officer, fire officer candidate, and private.

2. TRAINING PROFILES OF TEST GROUP¹⁴

2.1. Essential professional training profile for police members taking part in recruitment procedure to Police

Candidates applying for service in the Police, take part in basic professional training during which they learn skills in establishing essential facts about and securing site of incident, ensuring public safety and order, undertaking intervention, and establishing

¹¹ B. Wiśniewski, B.Kaczmarczyk, *Zarządzanie kryzysowe Tom I, Uwarunkowania teoretyczne, prawne i organizacyjne*, PWSZ, Legnica 2012, p. 5.

¹² ICM, see: James E. J., Wooten L. P., *Leadership...*, op. cit., p. 142.

¹³ K. Zieliński, *Bezpieczeństwo obywateli podczas kryzysów niemilitarnych oraz reagowanie w razie katastrof i klęsk żywiołowych*, AON, Warsaw 2004, p. 29.

¹⁴ I would like to thank Professor Michał Bronikowski, PhD and COL Marek Sokołowski, PhD, for their help in my research realization.

person's identity. After successful completion of that training, a police officer's function authorize him to use the measures of direct coercion and firearms, detain personnel, conduct personal search, conduct securing procedures towards revealed individuals wanted by law enforcement institutions, conduct convoy duties. Extended operations include operational procedures and participation in fighting phenomena that threatens country's internal security. Therefore, it can be assumed that sense of coherence and stress coping ways can be crucial for effectiveness of activity and prevention against burnout resulting from large amount of stress accompanying this service.

2.2. Profile of professional preparation of the National Fire Service Officers School student

National Fire Service education system in Poland consists of two sub-systems, where one is responsible for an enhancement of general qualifications to prepare individuals for firefighters, fire service technician, and fire service engineer profession. The second in turn, is concerned with upgrading professional qualifications within the national fire service ranks. Theoretical classes supplement field exercises, where conducted is training on chemical, environmental, technical, water, medical, altitude rescue and firefighting. The training is also conducted inside of smoke chambers. After gaining appropriate qualifications, a firefighter executes professional tasks of rescuing people, animals, property and environment, fire and other natural disasters fighting, technical rescue, chemical and environmental rescue, medical rescue. He serves in the rescue and firefighting units of the Polish National Fire Service and other units responsible for fire protection. An education model regards general and detailed preparation for the future tasks.

2.3. Profile of professional preparation of active duty soldiers – non-commissioned officers training (Land Forces)

The non-commissioned officers training preparing candidates for military service is conducted in form of non-commissioned officers training after completion of preparatory military service. Candidates meeting the criteria for being ready for NCO rank are sent for an intensified training where they increase their skills in marksmanship, combat engineering and explosives, tactical and reconnaissance operations, signals, force protection of compounds. Specialized training is a systemic continuation of a basic training. After gaining elementary qualifications, a soldier learns essential knowledge to perform the duties on assigned post according to his military occupational specialty. It can, therefore, be assumed that during the non-commissioned officer training a professional soldier develops a readiness to execute combat tasks, and leadership competences required in conducting crisis response operations. A defined above range of responsibilities requires from those executing tasks an extraordinary psychological resilience.

3. SENSE OF COHERENCE AND STRESS COPING STYLES AS THE PREDICTORS OF READINESS TO CRISIS RESPONSE

The term of "sense of coherence" is derived from salutogenesis approach to health proposed by A. Antonovsky. It is described as "human a global orientation that ex-



presses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; the resources are available to one to meet the demands posed by these stimuli; and these demands are challenges, worthy of investment and engagement¹⁵." The author of the concept assumes that sense of coherence is not a uniform dimension, and there is possibility of its decomposition and isolating subordinate elements. Antonovsky has named these elements as follows: manageability, comprehensibility and meaningfulness. The author understands a comprehensibility as an extent to which human perceives stimuli arriving to him both from external and internal environments, as reasonable, organized and clear information that the person can cope with. Manageability therefore is an extent to which person perceives widely understood assets as adequate and sufficient to take care of things in life. Meaningfulness in turn is an extent to which person believes that life is sensible from emotional point of view, and despite some of the problems that life carries, it is worth of effort, devotion an engagement.¹⁶ A sense of coherence is a specific attribute of human being and distinctive one for particular individual way of reaction to stimuli. It might be assumed that a sense of coherence functional aspect occurs in situation characterized by large amount of stress. Antonovsky says that a characteristic for people with strong sense of coherence is the ability of choosing the most adequate, according the subject, strategy among all available ones.¹⁷ Thanks to that an individual with strong sense of coherence optimally engages stress coping strategies. However it is important to highlight that the strong sense of coherence is not the same as a stress coping strategy.

A stress coping presented in the literature is based among others on Endler, Parker concept (1995). In the publication was assumed that stress coping strategy is a qualification understood as a relatively constant tendency to use, in various specific situations for an individual, coping techniques directed to removal or reduction of stress.¹⁸ Defined as typical and constant disposition, an individual's behavior in stressful situations might show different reactions to the particular incident. The authors of the concept have distinguished three stress coping strategies:

- emotion-oriented style, where, in the stressful situation, an individual orients on itself, and particularly on experienced emotions connected to this situation;
- task-oriented style, where, in stressful situation, an individual undertakes certain measures to reduce stress;

¹⁵ A. Antonovsky, *Rozwikłanie tajemnicy zdrowia, jak radzić sobie ze stresem i nie zachorować*, IPN Foundation, Warsaw 1995, p. 34.

¹⁶ T. Pasikowski, *Stres i zdrowie: podejście salutogenetyczne*, Fundacja Humaniora, Poznań 2000, p. 14.

¹⁷ Ibidem, p. 146.

¹⁸ J. Strelau, A. Jaworowska, K. Wrześniewski, P. Sczepaniak, *Kwestionariusz Radzenia sobie ze stresem. CISS podręcznik do polskiej normalizacji*, Warsaw 2009, p. 9.

- avoidance-oriented style, where, in the stressful situation, an individual avoids a confrontation with occurring situation, and engaging itself in substitute activities or seeking social relations.

The analysis of the literature concerned with relations between a sense of coherence and stress coping strategies, shows that levels of sense of coherence and stress coping styles were researched involving, among others, groups of people suffering high blood pressure¹⁹ and military leaders,²⁰ but not any group of selected uniformed services during their introductory training for crisis response plan.

4. METHOD

A group of respondents constituted 68 fire officer cadets, 97 professional soldiers attending a non-commissioned officers training (land forces), and 97 candidates for police officers attending a basic training. The respondents held either a secondary school or university degree. The respondents' average age was 24 years. The A. Antonovsky's (1995) Questionnaire of Life Orientation (SOC-29) was used for measuring a sense of coherence. It consists of 29 testing questions measuring three components of a sense of coherence: comprehensibility, manageability, and meaningfulness. Each sense of coherence component is measured according separate sub-scale. The SOC-29 questionnaire allows an assessment of overall sense of coherence level by summing up points earned according to each scale. The questionnaire is satisfactorily reliable and accurate, with Cronbach α factor value at 0.87.²¹ In order to test stress coping strategies, the authors used the Stress coping strategy questionnaire (CISS) formulated by N.S. Endler and J.D. Parker and adapted by P. Szczepanik, J. Strelau, K. Wrześniewski (1996). It consists of 48 questions and three scales for stress coping strategies evaluation: emotion-oriented, task-oriented, and avoidance-oriented, where the latter consists of two sub-scales: a substitute activity engagement and seeking social relations. The CISS questionnaire is highly reliable and accurate. The Cronbach α factor for each scale ranges between values of 0.72 and 0.92.

5. RESEARCH GOAL

The goal of conducted research on a group of candidates for police, fire service and military duties was to estimate a mental readiness to execute crisis response tasks. A level of sense of coherence and chosen stress coping strategy mirrors the psychophysical condition of teams prepared for execution of tasks constrained by time and conditions. Covering the empirical gap, the following hypotheses were proposed:

First hypothesis assumes that Fire Service Officer School candidates present stronger values of sense of coherence than candidates for police and military duties.

¹⁹ K. Kurowska, A. Dąbrowska, *Poczucie koherencji a style radzenia sobie ze stresem u osób z rozpoznanym nadciśnieniem tętniczym*. [in:] "Nadciśnienie Tętnicze", Vol. 12, No. 6, "Via Medica", Bydgoszcz 2008, pp. 432-438.

²⁰ K. Piórowski, *Poczucie koherencji a style radzenia sobie ze stresem dowódców żołnierzy zawodowych*, [in:] "Polish Psychological Forum", 2008, Vol. 13, No. 1, pp. 50-60.

²¹ A. Antonovsky, *Rozwikłanie tajemnicy zdrowia, jak radzić sobie ze stresem i nie zachorować*, IPN Foundation, Warsaw 1995, p. 84.

Second hypothesis assumes that the candidates for the fire service, police and military are characterized mostly by dominating task-oriented stress coping strategy.

6. RESULTS ANALYSIS

The hypotheses assumed that a sense of coherence of officer cadets of the National Fire Service Officer School was higher than of groups of police officers candidates and attendees of a non-commissioned officer training, because of more independence in decision-making and stronger sense of agency during making these decisions. Achieved results in sense of coherence are presented in Table 1.

Table 1. Sense of coherence among attendees of preparatory course for National Fire Service (Officer School), Police (introductory training), Armed Forces (non-commissioned officers training)

Subscale	Group	N	Mean	Standard deviation	P
Manageability					p < 0,05
	Military	57	42,42	7,60	
	Police	97	42,19	7,68	
	Fire Service	68	44,14	6,92	
Average (complete value)		222	42,85	7,45	
Comprehensibility					p < 0,05
	Military	57	41,17	5,94	
	Police	97	42,11	5,98	
	Fire Service	68	38,11	6,05	
Average (complete value)		222	40,64	6,21	
Meaningfulness					p < 0,05
	Military	57	23,80	5,45	
	Police	97	22,73	3,40	
	Fire Service	68	27,42	4,90	
Average (complete value)		222	24,44	4,48	

Source: authors' own research

An average degree of a sense of coherence varies within each sub-scale's range. The manageability average values similar for groups of police and military are lower than these for fire fighters group. Whereas observed was that the average values of comprehensibility for police and military groups were higher than these for fire fighters group. The biggest difference was noted in the meaningfulness scale. The highest degree of meaningfulness was registered among candidates for national fire service.

It was also assumed that, because of high probability of stress load, attendees of principal training of fire service, police and military would more often present tendencies

to choose a task-oriented style, whereas less often emotion-oriented or avoidance-oriented. Achieved results presenting stress coping strategies are shown in.

In accordance with the second hypothesis, the most often chosen stress coping strategy among all three groups of respondents was task-oriented style. The B. Turkey's test was employed to verify assumed hypotheses. The intra-group differences in various sub-scales were also observed. Statistical validity criteria showed differences for avoidance-oriented style (NCOs more often than fire fighters chose the avoidance-oriented style), whereas differences were observed in two sub-scales of avoidance-oriented style (a substitute activity engagement and seeking social relations).

Table 2. Stress coping strategies of trainees of preparatory courses for police duty (introductory training), fire service (officer school), and NCO candidates (NCO training)

Stress coping strategies CISS					
Style type	Group	N	Scale Mean	Standard deviation	P
Task-oriented style					p<0,05
	Military	57	58,49	6,91	
	Police	97	57,92	6,66	
	Fire Service	68	57,47	5,82	
TOTAL		222	57,93	6,47	
Emotion-oriented style					
	Military	57	40,40	10,00	
	Police	97	42,53	9,70	
	Fire Service	68	39,67	9,52	
TOTAL		222	41,11	9,77	
Avoidance-oriented style					
	Military	57	48,24	8,07	p<0,05
	Police	97	50,27	10,02	
	Fire Service	68	45,48	7,61	p <0,05
TOTAL		222	48,28	9,05	
Engaging in the substitute activities					
	Military	57	20,91	4,15	p<0,05
	Police	97	22,72	6,15	p<0,05
	Fire Service	68	20,11	4,31	p<0,05
TOTAL		222	21,45	5,27	
Searching of social contacts					
	Military	57	17,38	3,26	p<0,05
	Police	97	18,56	3,64	
	Fire Service	68	16,73	4,39	p<0,05
TOTAL		222	17,70	3,80	

Source: authors' own research

It was observed that responders from police group more often than NCO and fire fighters groups choose “a substitute activity engagement.” Additionally, observed were differences in a tendency to choose a “seeking social relations” sub-style, which was more often chosen by the NCOs than fire fighters.

7. RESULT DISCUSSION

As an integral part of national security, a crisis management fulfils a crucial role in resolving crisis situations. The function focuses on threats prevention, preparation for their occurrence and stability restoration. It is an intentional activity conducted by state’s authorities on all levels employing specialized inspections, services and population²². Firefighters, police officers and professional soldiers, while realizing crisis response plan, are participating in situations characterized by uncertainty, and risk of harm to their health and life. Effectiveness of crisis management depends on proper flow of information between team elements, competences, mental abilities of those performing tasks, as well as material and logistic assets. Optimal mental capabilities of individuals responsible for realization of the plan include a perception adequate to highly unpredictable situation. The ability to take correct and timely decisions is one of the conditions allowing maintaining a balance between health assets and the efforts necessary to fulfil requirements of the environment. The way people react to incidents depends on situation interpretation. An individual estimates its capabilities to cope the situation, depending on its evaluation categorization. In case the primal assessment of the situation marks it as stressful, it will begin the consequential cognitive process – a secondary evaluation. The secondary evaluation regards a capability to undertake action aimed at removing stress causes or at least to sooth its effects, and, in case of facing a challenge, it regards possibility to take action leading to achieve available benefits.²³ It seems that strong sense of coherence (as well as its components) and selected stress coping strategies might have a critical importance for realization of tasks that require employment of extraordinary resilience means and competences. Based on the collected research results, it is obvious that representatives of fire service, police and military are generally characterized by average level of a sense of coherence, and regarding two sub-scales of comprehensibility and manageability, and diverse in meaningfulness. Considering the above mentioned, it can be stated that training attendees have a feeling that stimuli coming from external and internal environments are structured, predictable and can be explained. However, in situation of accumulated danger such feeling might be insufficient for action effectiveness. Diversity in meaningfulness can mean a tendency to more often perceive a situation as a threat, rather than a challenge. Assuming that meaningfulness is a result of an interpretation of an action’s purposefulness it can be concluded that in current training phase candidates asses their assets as insufficient to act effectively. The results proved that respondents, during their preparation for tasks in crisis response operations, most often implement a task-

²² B. Wiśniewski, B. Kaczmarczyk, *Zarządzanie kryzysowe Tom I: Uwarunkowania teoretyczne, prawne i organizacyjne*, PWSZ, Legnica 2012, p. 77.

²³ I. Heszen–Niejodek, *Teoria stresu psychologicznego i radzenia sobie*, [in:] J. Strelau (ed.), *Psychologia. Podręcznik akademicki*, Vol. 3, op. cit., pp. 471-474.

oriented stress coping style. Much seldom they chose emotion-oriented and avoidance-oriented styles. A domination of the task-oriented style may predict strong awareness of adequate actions in task-burden situation, characterized by contradicting incoming signals or information overload. Consequentially, it can be assumed that engagement of assets would proceed at the optimal level.

CONCLUSIONS

1. The respondents are characterized by medium level of sense of coherence and diverse sub-scale range of feeling of sense. Achieved results characterize all researched subgroups.
2. It was noticed that researched respondents from fire service, police and military most often tend to use task-oriented style.
3. There are differences within groups concerning sub-scales of stress coping strategies.
4. Development of believes, required in the analysis of situations burdened with large amount of stress, that allows treatment of such situations as challenges, should be included in the principal preparation of candidates for work in fire service, police and military.
5. Within the introduction of the research results, it is worth to consider including training of the Comprehensive Soldier Fitness Program (CSFP).²⁴

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²⁴ Comprehensive Soldier Fitness Program (CSFP) – structured and long-term program for development of resilience building and enhancement, that shows a relation to the operation effectiveness in emergency situations and PTSD prevention.

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BIOGRAPHICAL NOTES

Lidia BOROWICZ, MA – is a graduate of Psychology of the Cardinal Wyszyński University, Warsaw. During her apprenticeship, she is specializing in applied psychology in sport. Her scientific interest in the security science, she develops through a research project under the auspices of the Polish Naval Academy in Gdynia, regarding a candidate preparation for working in crisis management institutions. Her area of interest includes also an information coding and decoding processes, factors influence a process of crisis management, resilience²⁵.

Marek SOKOŁOWSKI, LTC, PhD – holds a doctorate in Physical Culture Sciences, and is an academic teacher at the Eugeniusz Piasecki University School of Physical Education in Poznań; Vice-Rector for students affairs and sport, and Director of the Department of Modern and Defense Sports of the Faculty of Physical Education, Sport and Rehabilitation. He directed inter-university research project within the grant “Motoric and somatic criteria for selection of land forces soldiers.” Results and conclusions of these researches regard solutions for human morph-functional capabilities development. He is the author and co-author of over 150 science and didactic works, including three books: *Field hockey player’s physical fitness and its measurement* (2002), *Axiological*

²⁵ It literally means suppleness, flexibility and pliancy. This term is translated in Polish literature in various ways, it relates to the abilities that allows effectively confront an extreme stress. [online]. Available on the Internet: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2777715/>.

and functional aspects of physical education in the military (2004) – together with Marian Marcinkowski, *Elements of family health promotion in tourism and recreation – theoretical fundamentals* (2010) – together with Alicja Kaiser. Scientific supervisor of one textbook, nine monographies and six books published in Poland and abroad. The organizer of nine international conferences “Bio-social effects of military service as the foundation of the future physical education and sport programs perfection.” The author of education program, head of team for new specialty: physical education in the uniformed services. Since 2008, the Chairman of the management Board of the Foundation for the Eugeniusz Piasecki University School of Physical Education in Poznan. Since 2011, the reviewer of the Selection Board of the Poznan Town Hall for public tasks reviews in the areas of: Physical culture support and promotion, and Tourism and sightseeing. The International Federation UNIFIGHT has appointed Marek Sokołowski as a member of the Scientific Advisors Team for tenure of 2013-2020.

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