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TEMPERAMENTAL CHARACTERISTICS OF THE STUDENTS OF THE POLISH AIR FORCE ACADEMY IN DĘBLIN

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Introduction: The theoretical basis for the study was the Regulative Theory of Temperament as developed by J. Strelau. The goal of the study was to characterize the temperament of the students of the Polish Air Force Academy in Dęblin (PAFA) as compared to the students of other technical universities.

Methods: The study group consisted of the students of PAFA (n=23), aged 20 to 23 years, while the control group consisted of the students of civilian technical universities (n=22) aged 19-24 years. The tool used to assess the temperament was the Formal Characteristics of Behavior - Temperament Questionnaire developed by Jan Strelau and Bogdan Zawadzki.

Results: Studies revealed that the students of PAFA were characterized by different temperamental structure compared to students of other technical universities.

Conclusions: The temperamental structure of officer cadets is correlated with their resistance to stress, which may be due to the aptness of the process of selection of pilot candidates.

Keywords: temperament, Strelau Regulative Theory of Temperament, military aviation

Tables: 1 • **References:** 5 • **Full-text PDF:** http://www.pjamp.com • **Copyright** © 2013 Polish Aviation Medicine Society, ul. Krasińskiego 54/56, 01-755 Warsaw, license WIML • **Indexation:** Index Copernicus, Polish Ministry of Science and Higher Education

INTRODUCTION

Researchers investigating the temperament can be classified into two groups. Some of them tend to restrict the use of the term "temperament" to emotions only, while others expand it to include other groups of behaviors as well. Nonetheless, there is consensus between most researchers with regard to a certain set of characteristics common for both concepts of temperament.

The temperament is considered to have a biological background and to be characterized by relative stability throughout the life as well as consistency in different situations. It provides information on behavioral traits accounting for differences between individuals and pertains to formal characteristics of behavior [2].

Jan Strelau defines the temperament as "basic personality traits that are relatively stable in time and manifested in formal characteristics of behavior (energy and temporal parameters) [1]. These features can be observed in early childhood and are common to humans and animals. Being primarily determined by congenital physiological mechanism, the temperament is subject to changes occurring upon maturation (and aging) as well as certain environmental factors".

The temperament may be described using energy and temporal characteristics. Energy-related traits are responsible for the management of physiological mechanisms associated with accumulation and relief of energy [1]. They include activity, endurance, emotional reactivity and sensory sensitivity.

Activity is a trend to engage in behaviors associated with high arousal levels or leading to strong external arousal. Another feature is the endurance. High endurance reflects one's capability to cope in difficult situations and is defined as the ability to react in an adequate manner in situations that require long-term or high-arousal activity The emotional reactivity is the tendency to react strongly to emotion-inducing stimuli and. It is characterized by low performance of tasks in stress situations. Finally, sensory sensitivity reflects one's capability to react to low-intensity sensory stimuli [1].

The temporal characteristics of temperament include traits responsible for the course of one's reaction over time, i.e. vigorousness and perseverance. Vigorousness is the ability to react quickly, maintain high pace of activity and easily change the behavior in response to changes in the environment. Perseverance is the tendency to continue and repeat certain behaviors after withdrawal of the stimulus [3].

These traits are present at different intensity in different individuals, providing grounds to identification of individual differences in reaction times, agitation, activities or sensitivity.

METHODS

The goal of the study is to verify the hypothesis regarding the differences in temperamental traits as defined by the RTT between the students of the Polish Air Force Academy and students of other technical universities.

The tool used to assess the temperament was the Formal Characteristics of Behavior - Temperament Questionnaire developed by Jan Strelau and Bogdan Zawadzki [5]. The questionnaire consists of 120 items, each requiring a "Yes" or "No" answer. All questions are divided into six scales: vigorousness (VI), perseverance (PE), sensory sensitivity (SS), emotional reactivity (ER), endurance (EN) and activity (AC), which can be interpreted as being equivalent to temperamental dimension as described by the authors of the Regulative Theory of Temperament.

The study group consisted of 23 students of the Polish Air Force Academy in Dęblin, aged 20 to 23 years. The group included 7 women and 16 men.

The control group consisted of students of other technical universities, including Warsaw University of Technology, Military University of Technology, Poznań University of Technology, or Warsaw University of Life Sciences. Overall, the group consisted of 22 subjects, including 20 men and 2 women aged 19-24 years.

RESULTS

The hypothesis was verified by Student's t-test (parametric test for two independent samples). The compared groups were equivalent in numbers.

The independent samples t-test analysis revealed differences in some temperamental traits between the study group and the control group. The perseverance level in PAFA students was significantly lower than in the students of other technical universities, $t(43) = -3.341$; $p < 0.05$. Also the emotional reactivity level was significantly lower in PAFA students than in the other students, $t(43) = -3.405$; $p < 0.05$.

The levels of endurance, $t(43) = 2.791$; $p < 0.05$ and activity, $t(32{,}205) = 5.73$; $p < 0.001$, were sig-

Tab. 1. Student's independent sample t-test comparison of individuals with higher education and the remaining population.

Temperamental trait	Academy	Mean	F	Significance	t	df	Significance (double-sided)
Vigorousness	PAFA	16.65	0.396	0.532	1.705	43	0.095
	Other	14.86					
Perseverance	PAFA	9.09	0.377	0.543	-3.341	43	0.002
	Other	12.73					
Sensory sensitivity	PAFA	14.78	2.28	0.138	1.702	243	0.096
	Other	12.55					
Emotional reactivity	PAFA	5.04	0.000	0.989	-3.405	43	0.001
	Other	9.59					
Endurance	PAFA	13.91	1.444	0.236	2.791	43	0.008
	Other	9.95					
Activity	PAFA	16.48	9.497	0.004	5.730	32.205	**0.000**
	Other	10.05					

nificantly higher n PAFA students than in the students of civilian universities.

The analyses revealed the presence of temperamental trait differences between aviation students and students of other specialties at universities other than PAFA. The PAFA students were characterized by higher endurance and activity and lower perseverance and emotional reactivity compared to the control subjects. The differences might be due to the specificity of the future occupation of aviation pilots as well as from the preselection of candidates for the studies at PAFA. Due to the strict recruitment requirements, aviation students are characterized by a specific temperamental structure. According to the literature, this structure acts as the basis for the development of resistance to stress, which in turn is a qualification criterion for military aviation [4].

CONCLUSIONS

1. The study confirmed the hypothesis regarding temperamental trait differences between the students of PAFA and the students of other technical universities.
2. The temperamental structure of officer cadets is correlated with their resistance to stress, which may be due to the aptness of the process of selection of pilot candidates.

AUTHORS' DECLARATION:

Study Design: Agnieszka Szymanik, Klaudia Wacławek, Aksana Wietrow; **Data Collection:** Agnieszka Szymanik, Klaudia Wacławek, Aksana Wietrow; **Statistical Analysis**: Agnieszka Szymanik, Klaudia Wacławek, Aksana Wietrow; **Manuscript Preparation:** Agnieszka Szymanik, Klaudia Wacławek, Aksana Wietrow; **Funds Collection:** Agnieszka Szymanik, Klaudia Wacławek, Aksana Wietrow. The Authors declare that there is no conflict of interest.

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