

**The Effects of Risk-Taking Personality Trait on Reactive Stress Tolerance in Army
Personnel**

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Abstract

Stress Tolerance is an important survival ability when it comes to the armed forces. Even though stress affects us externally, internal forces- such as personality traits, are also involved, which indirectly influence one's capacity to cope. This study aims to establish a link between internal Risk-Taking behavior and the reactive stress tolerance of 48 Force One officers. By using the state-of-the-art Vienna Testing System technology, Determination test (reactive stress tolerance) and the Eysenck Personality Profiler, EPP-6 9 (Risk taking parameter) were conducted. Results show a negative correlation of -0.1 between risk-taking personality traits and reactive stress tolerance, indicating an inverse relationship between the two. Since this study gives conclusive results, it gives way to obvious speculation about the degree of effect personality can have on stress response as well as tolerance.

Keywords: Personality, Stress tolerance, EPP6, DT, Risk Taking behavior, Force One

The Effects of Risk-Taking Personality Trait on Reactive Stress Tolerance in Army Personnel

The armed forces are known to be physically and mentally trained for facing adversities. However rigorous training for brutal situations does not fully guarantee a bulletproof mind set, and strict resilience to potential trauma. Stress among army personnel is a less discussed but concerning topic. Due to this neglect, chronic, i.e., prolonged stress generated due to the scenarios being experienced by army personnel gets materialized in the form of disorders such as PTSD, adjustment disorders, anxiety, and many others (Ryali, Bhat & Srivastava, 2011). Stress tolerance, therefore, is not only important but crucial in the on-field, and post-combat lives of soldiers. To understand stress tolerance, it is firstly important to conceptualize stress, and the factors affecting it. Stress as a concept in Psychology has been a topic of research for a significant period now. After its foundation by Hans Selye (1972) as a set of physiological responses made to any stressful situation, the transaction theory as proposed by Lazarus & Folkman (1984), and then its gradual linkage to personality psychology, the concept of stress has been shaped in different ways over time. The capacity to deal with stress can be impacted by many variables, which is especially true for a soldier in combat. However, these variables may not just be extraneous, and might also be uncontrollable factors within the person. One of the innate factors which might influence one's capacity to tolerate extreme stress is personality. As per the trait approach, personality refers to relatively enduring characteristics that influence a person's thinking and behavior (Bergner, 2020). Even though it has no unanimously agreed upon definition, an influence of individual personality traits may be observed on the perception, and hence choice as well as degree of coping for a stressful situation. Exemplary research which explains a positive amalgamation of personality traits and the stress response is one major product of stress research. The Type Approach explores a group of personality typologies, each displaying different traits and hence different susceptibilities as well as coping strategies to stress. The Eysenck personality model, involving broad dimensions of personality, each observed to a distinct degree in individuals, is another significant advancement in linking stress tolerance to personality (Vollrath, 2001).

Role of Personality in Stress

The link between personality and stress or the stress response has been established through several ways. A foundational concept here is the Transactional Theory of stress, which emphasizes the process of attributing meaning to environmental experiences, giving way to a two-directional cognitive exchange, leading to stress (Biggs, Brough & Drummond, 2017). The process involves a continuous appraisal, or evaluation of one's environment at different levels. This forms one's perception of the situation as neutral or threatening, and of one's own capacity to cope. This postulate by Lazarus and Folkman has been an anchor in stress as well as coping research and is held in high value till date (Biggs, Brough & Drummond, 2017). This theory is the key to understanding the role of personality in stress response, since it puts importance on one's ongoing thoughts and feelings, as well as the underlying attitudes and beliefs supporting them, during perceived stress.

Research on the major theories of personality has also proven a significant relation between personality traits and an overwhelming stress response. Firstly, the Eysenck Theory of Personality, which comprises 3 dimensions of personality – Psychoticism, Extraversion and Neuroticism, forming the PEN System (Eysenck & Eysenck, 1985). Each of the three dimensions express a personality trait on a continuum, observed to different degrees in people. Out of these, it has well been established that Neuroticism, i.e., the tendency to be highly reactive and cope in a maladaptive way, correlates positively with a stress response (Amestoy, D'Amico & Fiocco, 2023). In terms of other theories, studies on Big Five Personality Inventory by Paul Costa & Robert McCrae, postulating 5 main traits of personality also provide empirical evidence on the tendency of neurotic personalities to experience “trait-anxiety”, while Extraverted personalities tend to correlate negatively with a stress response (Vollrath, 2001). Personality typology gives another proof. Vollrath (2001) in a comprehensive review of stress and personality reiterates how Type A personalities are prone to the physiological symptoms of chronic stress, namely coronary heart disease, hypertension, along with general irritability and inability to relax. Baur & Semple (2014) in a study found a significant finding in terms of neuroticism and stress, known as displacement

behavior, furthering the argument for the influence of personality on stress response. Similar to fidgeting, displacement behavior is a key sign of stress.

Apart from this, the effects of stress on decision making, especially in situations of uncertainty are proven to be negative. According to Morgoda, Sousa and Cerqueira (2014), chronic stress impairs brain functions responsible for memory, behavioral flexibility and habit formation. Acute stress specifically, tends to increase risk taking behavior. Considering the uncertain circumstances witnessed by army personnel on a regular basis for long periods of time, chronic stress is almost an expected outcome. The Risk-Taking subscale of Eysenck's test, can naturally be speculated to have an influence on reactive stress tolerance of army personnel. Therefore, examining the effects of personality on stress tolerance among the armed forces is not only valid, but also a dire need.

Method

Hypothesis

Null Hypothesis (H0) = The personality trait of risk taking does not influence stress tolerance of Force One officers

Alternative Hypothesis (H1) = The personality trait of risk taking does influence the stress tolerance of Force One officers

Sampling and Participants

This study included 48 Force One army officials, between the age range of 22-28. The process of selecting this sample was through Purposive Sampling.

Inclusion Criteria

- Army personnel specifically in the Force One category
- Between the ages of 22-28
- Male subjects

Exclusion Criteria

- Civilians
- Participants outside the age range of 22-28
- Female Subjects

Selected Variables

- Independent Variable – Risk Taking
- Dependent Variable – Reactive Stress Tolerance

Measures

This study involved two measures – the EPP6 and Determination Test, or DT on the Vienna Testing System. The Vienna Testing System, or VTS is a state of the art, user-friendly extensive psychological testing system which simplifies complicated test conduction and interpretation to a great level. By employing the latest technology in computerized testing, VTS provides a range of software and hardware-based tests, spanning across the fields of neuro, clinical, traffic, aviation, personnel, sports and research psychology.

EPP6 – Derived from H J Eysenck's personality profiler, the EPP6 is a multidimensional personality scale judging three main aspects of Eysenck's personality theory – Extraversion, Emotionality (Neuroticism) and Adventure (Psychoticism). These 3 dimensions consist of 7 sub scales each giving a holistic, all round overview of personality. Additionally, the test also includes an honesty or openness scale. There are two forms – long (S1) and short (S2), each with a reliability.

DT – Another test on the VTS, DT is an instrument measuring reactive stress tolerance, reaction time as well as attention deficits in rapidly changing visual and auditory stimuli. Majorly applied in traffic psychology, aptitude diagnostics, pharmacology and motor aptitude domains, DT is highly reliable, with a score in between 0.98 and 0.99. Furthermore, it has 10 test forms. This study however, made use of test form S6, the Vienna form.

Procedure

Following participant selection, each and every individual provided their informed consent. Before the test was given to any participants, a thorough test introduction and appropriate instructions were distributed. During a quick demo test, all participants were introduced to the computer testing module. The test does not require any prior computer skills to be completed. Every step was carefully explained to the participants, and their consent was obtained before the test began. A quiet, disturbance-free atmosphere was upheld under the administration. Additionally, it was properly verified that each participant was at ease and in good physical condition to do the test. In case there were any issues, administrative guides were available during the test. But no such circumstance ever came up.

Statistical Analysis

FIGURE 1/[Statistical Analysis]

CORRELATIONS
CORRELATION
/VARIABLES = Var0001 Var0002
/PRINT = TWOTAIL NOSIG.

Correlations

		Var0001	Var0002
Var0001	Pearson Correlation	1.00	-.10
	Sig. (2-tailed)		.518
	N	48	48
Var0002	Pearson Correlation	-.10	1.00
	Sig. (2-tailed)	.518	
	N	48	48

Results

SPSS software was utilized for the statistical calculations. Before the actual correlation, the normality of data was checked, i.e., skewness, Kurtosis, and extreme outliers. Figures 1, 2 and 3 show that data is normally distributed for both DT and RT variables, considering the acceptable value for Kurtosis to be 1.96 in a sample <50.

Normality tests were followed by a Pearson Correlation (FIGURE 4). The results give a correlation of -0.1, i.e., an inverse relationship between risk taking behavior and reactive stress tolerance. However, these are insignificant results and do not provide conclusive evidence in support of the alternative hypothesis. Therefore, the null hypothesis, which predicts no effect of risk-taking on reactive stress tolerance is not rejected.

Discussion

These results make it evident that there are serious deficits in research on stress levels and coping among the armed forces. The aim of this study was to consider and understand the circumstances of Force 1 officers, since risk taking behavior is not only common, but is one of the major requirements of their job role. However, another essential requirement is the ability to not let extreme stress or trauma cloud their judgment. Such contradictory situations may lead to massive errors of judgment, leading to loss of life, strategic blunders, and other such problems.

Related research shows that effects can be observed in war veterans as well, where Post Traumatic Stress Symptoms (PTSS), or if more severe, Post Traumatic Stress Disorder (PTSD), directly link to higher risk-taking tendencies – i.e., a lower stress tolerance may be linked to higher risk taking. Symptoms may include, or may lead to alcoholism, numbed responses, flashbacks or dreams, recklessness, and violence. Even though risk taking behavior is largely associated with higher stress, there is not much evidence to either support or contradict its effects on reactive stress tolerance. This increases the importance of this topic, making this a unique, exploratory research.

Considering the insignificant results, it can only be speculated that personality may have an impact on the very threshold of one's capacity to cope. One of the direct reasons for insignificant results could potentially be the small sample size of 48 Force One officers.

Further research into this area on a larger scale may lead to significant results and have positive implications in terms of psychiatric rehabilitation of veterans, as well as mental training for new soldiers. Therefore, mental assessments of Force 1 officers are vital to prevent damage of any kind in combat, and post combat circumstances.

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