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**DEVELOPMENT OF RESILIENCE IN CHILDREN AND  
TEENAGERS: A META-ANALYSIS OF EMPIRICAL  
STUDIES FROM 2006-2017 (PERSONALITY AND MENTAL  
STATE)**

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***Abstract***

*The purpose of this meta-analytical study was to synthesize the results of resilience research over the last decade. Were taken into account the findings of about 90 studies worldwide, although there is no consensus regarding the definition of psychological resilience construct. Of the multitude of studies, those who have resilience in relation to health, well-being, emotional regulation and adaptability have been selected. Also selected were those studies that addressed the relationship between resilience and personality in the light of the theory of the five traits. Another important selection criterion was the approach from the point of view of systems involved in the world literature on resilience: the family system, the school system, the peer system, the cultural and societal systems, etc. The usefulness of this meta-analysis is to provide students and researchers with a useful theoretical and methodological basis in studying psychological resilience from the point of view of development theory, a synthesis of research to which their future research can relate.*

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***Keywords:*** *resilience, personality, adaptation, development, adaptative systems, mental state, Big five.*

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**1. INTRODUCTION**

The term resilience, in a psychological sense, describes the individual's ability to overcome negative emotional experiences and to flexibly adapt to the changing demands of stressful or potentially traumatic experiences (Block, 2002; Bonnano, Westphal, and Mancini, 2011; Diehl et al., 2012), those generating anxiety and depression (Weiss et al., 2008; Bitsika et al., 2010).

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Over the past decade, research and psychological interventions on developing child and adolescent resilience have drawn the attention of an increasing number of experts in psychology, psychopathology, sociology, biology and even cognitive neuroscience. The relationship between resilience and mental health has always been a topic of interest in various disciplines. Researchers have conducted numerous theoretical and empirical studies that have led to various conclusions about this construct, but there is no uniform operational definition and methodology appropriate for its study.

Current definitions of resilience include three guidelines: the trait, the outcome, and the process. The orientation of resilience-trait suggests that resilience is a personality trait that helps individuals cope with adversity and achieve good adaptation and development. Researchers who support this view see resilience as a personality trait that prepares individuals against the hypothetical impact of adversity or traumatic events (Connor & Davidson, 2003).

Outcome orientation defines resilience as a function or behavioral outcome that helps individuals recover from adversity/trauma (Harvey and Delfabbro, 2004). Process assessment addresses resilience as a dynamic process in which individuals adapt quickly and recover from major adversities or traumas (Fergus and Zimmerman, 2005). The debate on the concept of resilience is very important because it helps us to be realistic in determining the boundaries of research and clarifying from one study to another their nature, direction and veracity. Conceptual discrepancies impede the evaluation and comparison of research results, exclude meta-analysis and make it difficult to operationalize the construct for measurement purposes. Therefore, the meta-analysis referred to in this article only includes research on resilience as a personality trait and its role in the well-being and excludes studies using other conceptual definitions of resilience.

A review of the resilience measurement scales suggests that there are four broad-based scales with good psychometric evaluations, with Cronbach alpha greater than .75, namely the Connor-Davidson Resilience Scale - CD-RISC (Connor and Davidson, 2003), the Dispositional Resiliency Scale-DRS (Bartone, 2007), Ego-Resiliency Scale - ERS (Block, 2002) and Resilience Scale-RS (Wagnild, 2009).

## **2. OBJECTIVE AND HYPOTHESES**

### **2.1. OBJECTIVE**

The meta-analysis of resilience and personality / mental state studies published during 2006-2017.

### **2.2. HYPOTHESES**

It was assumed that there are significant relationships between the resilience ability of children and adolescents and their personality traits in the Big Five model. We also assume that resilience is an important indicator of well-being.

### 3. METHOD

#### 3.1. SELECTION OF STUDIES

The documentation was carried out in three stages. First of all, we took into account the articles written in English and I chose the databases and keywords of the electronic library by February 2018. ELSEVIER ScienceDirect, EBSCO, (ERIC) Proquest, Google Scholar, JSTOR, PsycINFO, PubMed, Scopus, Web of Science, SAGE were selected.

Selected keywords were possible combinations of *resilience, personality, adaptation, development, adaptive systems, mental state, Big Five*. It was searched for articles that using the Big Five (Costa and McCrae, 1992; John, 2008; Cetin et al., 2015; Miller and Harrington, 2011; Nakaya, 2006; Shi et al., 2015) to assess personality and only articles that used these scales or are based on the Big Five model were considered.

Secondly, it was searched for full-text articles and where this was not possible (despite direct request to the digital library or author), it was used the data from the authors' research syntheses, it was identified works and articles presented at different events (conferences, symposiums, communication sessions). Also it was considered the analysis of previous meta-analysis bibliographies.

The third step was to analyze the collected studies and filter them based on the inclusion and exclusion criteria.

#### 3.2. INCLUSION CRITERIA

The inclusion criteria were the following: peer-reviewed studies published in specialist journals, indexed in prestigious databases, studies in which resilience was assessed as a personality trait, studies in which the participants were children and adolescents, studies that reported the coefficients of Pearson correlation between traitability and other personality factors, between resilience and indicators of well-being and mental health (Baek et al., Masten, 2012, 2010; Pietrzak et al., 2010; Norman et al., 2006; Bruwer, 2008), measured with valid psychometric methods. Only studies published between January 2006 and December 2017 were introduced in the meta-analysis.

#### 3.3. VARIABLES CODING AND DATA ANALYSIS

The following information was encoded for each study: 1. the author, 2. the year of publication, 3. the number of participants, 4. the age, 5. the gender, 6. the personality pattern of the Big Five, 7. the health indicators, 8. Pearson Correlation Index.

In this article it were presented the results regarding the relationships between resilience and personality traits, resilience and positive / negative indicators of mental state. For the data analysis it was used Comprehensive Meta-Analysis 2.0.

## 4. RESULTS

### 4.1. CHARACTERISTICS OF THE STUDY

90 studies were processed, totalling 62350 participants. The average age was 16.47 years. The number of independent samples varied from study to study, between 1 and 8. 52 dimensions (personality traits, mental status indicators, and demographic data) were calculated.

### 4.2. RESILIENCE AND PERSONALITY

Bivariate meta-analytical relationships between global resilience and the five personality traits of the Big Five model have been reported. The overall hypothesis was that resilience is moderately correlated with each personality trait in the 5 Factors model.

Specific hypotheses presumed that emotional stability, openness to experience and extraversion would produce the highest correlations with global resilience. Thus, resilience was much correlated with emotional stability ( $p = .62$ ,  $k = 87$ ) and openness to experience ( $p = .55$ ,  $k = 84$ ). However, the relationship with extraversion was somewhat lower ( $p = .46$ ,  $k = 88$ ), and the relationship with conscientiousness was correlated to the most significant of the five major features ( $p = .66$ ,  $k = 81$ ). Agreeability also correlated with global resilience ( $p = .38$ ,  $k = 80$ ). The confidence interval was 95% for all five features.

The relative weights of resilience variance have been calculated according to personality traits (Table 2).

Table 1. Correlations between resilience and personality traits

Resilience-trait	k	N	r	$\rho$	SD $\rho$
Emotional stability	87	54 712	.54	.62	.35
Agreeability	80	47.206	.34	.38	.07
Extraversion	88	55.329	.39	.46	.09
Conscientiousness	81	47. 608	.55	.66	.32
Opening	84	50 286	.47	.55	.21

Table 2. The relative weight of prediction of personality-resilience factor

Big five traits	+/-	Resilience % R <sup>2</sup>
Emotional stability	+	16.8
Agreeability	+	8.2
Extraversion	+	19.3
Conscientiousness	+	39.7
Opening	+	32.3
Total R <sup>2</sup>		96.4

### 4.3. RESILIENCE AND MENTAL STATE

Criteria for psychological status were relatively numerous, over 30. For practical purposes, they have been reduced to two criteria: positive status indicators and negative status indicators (Amler, 2015; Bathke, 2011; Cohen 2014; Davydov, 2010; Fitzke, 2015; Harding, 2014).

In most studies, mental health has been measured with questionnaires dedicated to psychological distress, such as anxiety scale (k = 56), depression (k = 61) or distress (k = 33). Additionally, life quality scales (k = 21), quality of emotional functioning (k = 8), well-being (k = 24) were used. We list some of the tools used: HADS, BSI-18, BSCL, GAD-7, STAI, BDI-II, RSC, SAS. Table 3 presents the data from the analysis of the correlations between resilience and mental state.

For the purpose of this meta-analysis, it has been calculated the weighted average (r), sample size (k), 95% confidence intervals, and total homogeneity statistics using a fixed-effect model.

As assumed, the results showed a negative correlation between resilience and negative indicators of psychic status, and a positive correlation between resilience and positive indicators. The mean correlation between the resilience and the negative results was  $-.537$  ( $p < 0.001$ ,  $k = 43$ ), the correlation between resistance and positive mental status indicators was  $.479$  ( $p < 0.001$ ,  $k = 43$ ). These dimensions of the effect are considered as medium-effect dimensions.

Table 3. Correlations between resilience and mental state

Mental state	k	N	r	df	p
positive	43	53.470	.479	42	.001
negative	61	32.478	-.537	60	.0001

## 5. CONCLUSIONS

The meta-analysis presented in this article investigated 90 studies on the relationship between resilience as a personality trait and psychological state. The following results were found:

1. The trait resilience is moderately correlated with all the personality traits according to the Big Five model:  $r = -.37$  (with Neurotism),  $r = .39$  (with Extraversia),  $r = .31$  (with Opening),  $r =$  with Agility),  $r = .41$  (with Conscientiousness).

2. Trait resilience has been correlated with negative mental status indicators (frustration, depression, anxiety and negative affects) and directly correlated with positive indicators of good mental state (life satisfaction and emotions and positive feelings) (Zelenski et al., 2013).

The operationalization of resilience as a personality trait involved in the ability to cope with adversity is essential for both research and therapeutic approaches. This is directly related to efforts to study the relationship between the

relatively stable internal feature, which is resilience and well-being. Using meta-analysis, this study analyzed 90 empirical studies to examine the quantitative relationship between personality trait resilience in terms of the Big Five model and positive and negative state of mind. The results showed that resilience is moderately correlated with all five personality traits (Fiborg et al., 2005; Wilt et al., 2012). Resilience was also correlated inversely with negative mental health indicators and correlated directly with positive mental health indicators. In other words, the resilience was lower in people who have had multiple rates of depression, anxiety, behavioural or emotional negative and higher for people with higher levels of life satisfaction and positive emotions (Cloninger et al., 2012). The magnitude of the effect for these results was average.

Resilience favours mental health, reduces or limits the negative impact of adversity or exposure to traumatic events. In addition, resilience seems to provide protection against the negative effects of events in everyday life and improves people's ability to cope with potential threats. In fact, resilience is a positive way of adapting to the conditions of adversity (Meichenbaum, 2005), to create a biological and psychological balance in the face of hazard-dominated conditions. It is therefore very important that it be developed with priority for children and adolescents.

*Received at: 12.02.2019, Accepted for publication on: 19.02.2019*

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