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Investigating perceived stress levels and its underpining in Rabat-Sale-Kenitra Region, Morocco

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Abstract

Background: Our attitude towards stress remains individual and unique and strongly depends on our perception. Our personality traits shape our perception of our resources and environmental constraints. Public service officers are a population under enormous pressure ; this is why it is interesting to study the interaction between perceived stress and big five within this population, in the Rabat-Sale-kenitra Region.

Methods: The study involved a sample of 387 individuals whose 55.8% (n=216) are male and 44.2% (n=171) are female, with a minimum age of 22 years and a maximum age of 65 years, with an average age of 32.75 9.79. The big five inventory and the PSS10 were used for the collection of information.

Results: Our results pointed to a significant and positive relationship between neurosis and perceived stress as well as a negative and significant relationship between the other four big five and perceived stress. Moreover, Neurosis and Extraversion predict a high perception of perceived stress, respectively in a positive and in a negative way.

Conclusion: This study provides a better understanding of this interaction, which could now be taken into account through a primary intervention aimed at eliminating or controlling the risk factors present in the workplace in order to reduce their negative impacts on the individual.

Introduction

Two main types of factors, situational and individual, can determine stress jointly [1]. Because these individual factors include, personality factors, and as personality influences the perception of events, we believe that personality can explain people's vulnerability to stress [2]. Many studies [3] have emphasized the relationship between personality (which can be assessed according to the big five model) and mental and physical health. For the European Agency for Safety and Health at Work, a state of stress occurs when there is an imbalance between a person's perception of the constraints imposed by his environment and his perception of his own resources to cope with them. Although the process of assessing constraints and resources is psychological, the effects of stress are not of the same nature. They also affect physical health, well-being and productivity [4].

Personality factors undoubtedly play a role in the onset of stress. Emotional instability or lack of self-confidence are known to influence stress. The first classifications of personality were created in antiquity. This concept of personality, in spite of scientific progress, remains firmly rooted in human culture. There are many theoretical differences, but all agree that personality is built from childhood, on the one hand, and that it is built primarily by interaction with the social environment. The researchers focused on identifying traits that could help them analyze human behavior, but to no avail. Thus Allport, in 1967, [5] had identified 4000 traits of character, and even if this number had been reduced to 16 the task was still difficult. It was then that the big five theory was elaborated by Fiske, in 1949,[6] then developed and deepened by other researchers such as Norman in 1967 [7], Smith in 1967 [8], Goldberg in 1981[9] and McCrae & Costa in 1987 [10].

An ambiguity remains, however, between personality traits and perceived stress. The link between these variables, once understood, will allow us to accomplish prowess in the areas of professional recruitment. For example by assigning a given task to the person who will accomplish it most effectively, with less mental effort.

In the Moroccan context, there are no studies that combine these two variables in the same research framework, hence the important and original character of this work.

The purpose of this study is to shed light on the relationship between the Big Five or personality traits and the perceived stress within a population of civil servants in the Rabat-Sale-Kenitra Region.

According to the latest report on human resources of the Ministry of Economy, Finance and Administration Reform, carried out for the year 2021, at the level of the Kingdom of Morocco, the number of civil servants of the State is 568,149, Of which 23.4% for the Rabat-Sale-Kenitra Region, which makes a workforce of 132,947 for that Region. Since we have adopted a margin of error of 5% and a confidence level of 95% for our statistical study, our representative sample should be at least 384 individuals.

Our study involved 387 participants with a minimum age of 22 and a maximum age of 65. The criteria for inclusion are volunteering and at least one year's seniority at work. The criteria for exclusion are a history of characterized anxiety or depressive disorders, use of psychotropic medications, history of psychological trauma.

Methods

-PSS10: PS10 is a scale that can be used for secondary assessment (perceived control). It assesses the frequency with which life (or work) situations are perceived as "threatening, that is, unpredictable, uncontrollable and distressing." As such, it does not address stress symptoms, specific events (which explains the very "open" wording of items), or stressors.

Three versions exist, the PSS14, which includes 14 items. The PSS10, which includes the items1 to 3, 6 to 11 and 14. The PSS4, which includes items 2, 6, 7 and 14 of version 14. Numerous translations (about twenty) including French [11]. The use of the PSS10 version is the most recommended because it has the most satisfactory psychometric qualities [12].

Method of administering

For each item, the subject estimates its frequency of occurrence over a recent period (the past month). Five-point frequency scale from "never" to "very often".

Rating

For each item, it is assigned a score of 0 to 4. Items 4, 5, 6, 7, 9, 10 and 13 are inverted (4 becoming 0; 3: 1; 2: 2, 1: 3 and 0: 4); then the sum is calculated.

The big five inventory: short instrument measuring the prototypes of the five personality factors. In French, the BFI-Fr, as the authors called it, includes in its final version 45 items. The items of the five factors, of the final version are as follows: E (Extraversion, Energy, Enthusiasm): eight items, no 1, 6R, 11, 16, 21R, 26, 31R, 36; A (Agreeableness, Altruisme, Affection): ten items, no 2R, 7, 12R, 17, 22, 27R, 32, 37R, 42, 45R; C (consciousness, Control, Constraint): nine items, no. 3, 8R, 13, 18R, 23R, 28, 33, 38, 43R; N (Neurosis, Negative emotion): eight items, no. 4, 9R, 14, 19, 24R, 29, 34R, 39; O (Openness, Originality, open-mindedness): ten items, no. 5, 10, 15, 20, 25, 30, 35R, 40, 41R, 44.

In addition, a questionnaire was developed to collect anthropometric, social and health information.

Statistical analysis

- Coding of questionnaire items;
- Statistical analysis of the data, which was carried out using the IBM SPSS Statistics 21 software, to calculate means and standard deviations and to make correlations between the various parameters, a correlation is considered significant if the p-value is less than 0.05.

Results

Socio-demographic profile of subjects

Our study focused on 387 participants whose 55.8% (n=216) are male and 44.2% (n=171) are female. The average age of our participants was 32.75 9.79, with a minimum age of 22 and a maximum age of 65.

The BFI:

The Agreeableness dimension

76.74% of our study subjects have a high score of the "Agreeableness" dimension; while for 23.26% of the sample have a low score.

The Consciousness dimension

78.29% of our study subjects have a high Consciousness score, while 21.71% have a low one.

The Extraversion dimension:

For the Extraversion dimension, 59.69% of our sample has a high score, while 40.31% of participants have a low score.

The Neurosis dimension

A slight increase in the percentage that has a high score in neurosis compared to the one that has a low score with 51.94% that 48.06%.

The Openness dimension:

On the one hand, 79.84% of study participants have a high score of openness, on the other hand that only 20.16 have a low score.

The PSS10

5.43% of participants perceive a perpetual threat, 74.42% are moderately able to cope with stress and finally 20.16% manage their stress very well.

Bivariate Analyses

Big five	Pearson coefficient	P value
Openness	-.180**	0.000
Consciousness	-.279**	0.000
Extraversion	-.196**	0.000
Agreeableness	-.236**	0.000
Neurosis	.366**	0.000

**p<0.01;r=Pearson coefficient

Table 1: Correlation between perceived stress and Big Five.

The table above shows that 04 traits correlate, moderately, negatively and very significantly with the Anxiety score, while the Neurosis trait correlates positively strongly and significantly.

Big five	Bêta	T	P
Openness	-.041	-.744	.457
Consciousness	-.061	-.960	.338
Extraversion	-.103	-2.068	.039
Agreeableness	-.067	-1.188	.236
Neurosis	.288	5.389	.000

Adjusted R-square=0.155**p<0.01

Table 2: Multiple linear regression between perceived stress and Big Five.

The table above represents a multiple linear regression by considering the perceived stress as a dependent variable to be explained and the Big five as independent explanatory variables. We find that the two traits that have a significant causal relationship p<0.05, are Neurosis and Extraversion. This model explains 15.5% of the variance; p<0.01.

Discussion

Our study showed a positive relationship between the neurotic dimension and perceived stress. Neurosis represents a stress preacher among our participants; the study conducted by Vollrath in 2000 confirms this finding. It is significantly and positively associated with the discomfort and frequency of stressful events perceived by call center staff [13]. Another study conducted in 2015 with university students in France by Saleh et al found a correlation between perceived stress and three dimensions of the Big Five (Extraversion, Consciousness and Neurosis) [14].

The results found by[15] confirm our findings by stating that Neurosis and Extraversion are significantly associated with perceived stress in a population of full-time workers. In this sense, our results clearly show that these two personality traits, namely Extraversion and Neurosis, predict perceived stress.In two other studies, one conducted in 2011[16]and the other in 2016 [17], the researchers found negative correlations between perceived stress and traits of consciousness, extraversion, agreeableness and openness, except that the association with this last trait was not significant, with Neurosis the relationship was significant and positive. These results confirm our previously presented results.

The study of Hemenover[18] has already spoke of the power to preach Extraversion and Neurosis on the appearance of stress. This corroborates what we found to be a significant prediction of perceived stress for both Extraversion and Neurosis traits. Positive for neurosis and negative for extraversion.Swickert and his collaborators[19]found,in 2002, that extroverts can actually moderate their perception of stress if they

have a good perception of their social support, especially at work.

Studies have shown positive correlations between extraversion and positive life experiences [20], well-being and positive mental health[21], happiness[22] and resilience [23]. The researchers concluded that extroverts are happier, and that facets of extroverts such as sociability, warmth, social participation and activity contribute to greater life satisfaction.

The civil servants of this Region are subjected, like most workers, to enormous pressure from their hierarchies. This combined with the difficulties of the task and their personal resources, in this case their personality traits, makes everyone unique in their way of perceiving everyday stressful situations.

The vast majority of this sample, which represents our study population, is characterized by Openness, Consciousness and Agreeableness. The vast majority perceive moderate stress. Moreover, the Extraversion and Neurosis that constitute dominant poles in more than half of our sample remain preachers of high-perceived stress. Neurosis positively and Extraversion negatively.

We can conclude that those who are more emotionally stable, more responsible and more willing to help others have less perceived stress and therefore would perform their tasks more effectively.

Stress remains a huge psychosocial risk that requires the dissemination of information programs, especially to the various public administrations. This measure seems necessary to improve their knowledge in order to raise awareness. It is also important to take seriously the impact of stress on the individual and the company. In order to reduce self-medication and absenteeism, companies must seriously take into consideration, whether at the time of recruitment or after, differences in personality traits and the predisposition of individuals to manage their emotions and stress. In front of the latter, we are not all equal, our personality traits shape our way of perceiving things. This study provides a better understanding of this interaction, which could now be taken into account through a primary intervention aimed at eliminating or controlling the risk factors present in the workplace in order to reduce their negative impacts on the individual.

Competing Interest

The authors declare that there is no conflict of interest.

Author Contributions

Eliesse DRISSI:Conceptualization, writing-original draft
Azzaoui Fatima Zahra:Supervision, methodology
Ahami Ahmed:Data curation
Samira Boulbaroud:Writing-Review and editing
Hind Hami:Writing-Review and editing

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