

OCCUPATIONAL STRESS AND ASSERTIVENESS IN ADMINISTRATIVE AND PRODUCTION WORKERS

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Abstract. *Occupational stress is the most common and most important type of stress people are exposed to in modern society. The nature of the working process itself is transformed almost on a daily basis, which affects the physiological condition of nearly all workers. This is why it is becoming increasingly important to investigate the relationship dynamics between man's capacity to overcome stress, including the occupational kind, on the one hand, and the capacity to possess optimal communication skills, such as assertiveness, on the other. This relationship is particularly at risk in work organizations in transitional social systems, like the Serbian one over the past ten years.*

The basic goal of this research was to determine the existence and the differences in the proneness to stress, the level of occupational stress and assertiveness between administrative workers and production workers employed in the Factory of Copper Pipes in Majdanpek. The group of administrative workers consisted of 50 workers and it was compared with the same number of workers employed in the production process, bearing in mind the differences in gender, and the length of employment.

The results confirmed the expectation that there would be differences between these two groups of employees on the basis of the examined variables, as well as that work experience represents a statistically significant factor in professional stress.

Key words: *proneness to stress, occupational stress, assertiveness, administrative and production workers.*

1. INTRODUCTION

Stress at work or occupational stress is an inescapable phenomenon of modern society. It is caused, mostly, by environment and workplace conditions which negatively affect the capacities, achievement and the totality of mental and physical health. The consequences of excessive occupational stress include, first and foremost, fatigue, anxiety and depression, and then a whole set of psychosomatic disorders that often lead to absence from

work and even more serious consequences such as occupational ailments, wounds and invalidity. For instance, the research conducted in the USA in the 1990s demonstrates that 29-40% of the employed mark their work as stressful or very stressful, while the data from the EU show that 12 million people (8%) complain about being frustrated by the management, 6 million (4%) have in some way been victims of physical violence, and 3 million (2%) have suffered sexual harassment. (Sutović, 2001). All this results in serious economic and social consequences, which is illustrated by the fact that Norway, for instance, loses 4 billion Euros of annual budget because of absence from work and stress-caused health problems (Hautman, Jettinghoff & Cedillo, 2007), while in the developed countries that loss is about 10% (Wilkinson, 1997; from: Čizmić, 2006).

Negative consequences of occupational stress may be indirectly reflected in all the other spheres of life – family and partner relations, parenthood, and the whole set of extra-occupational activities and relations where an individual realizes some of his social roles.

Among the most important models which treat the occurrence of stress in the context of work environment, (McGrath 1970; Nemčin, 1983; Lazarus & Folkman, 2004) we will single out and explain Cooper's comprehensive approach to the link between the individual and the source, symptoms and consequences of stress – plate 1.

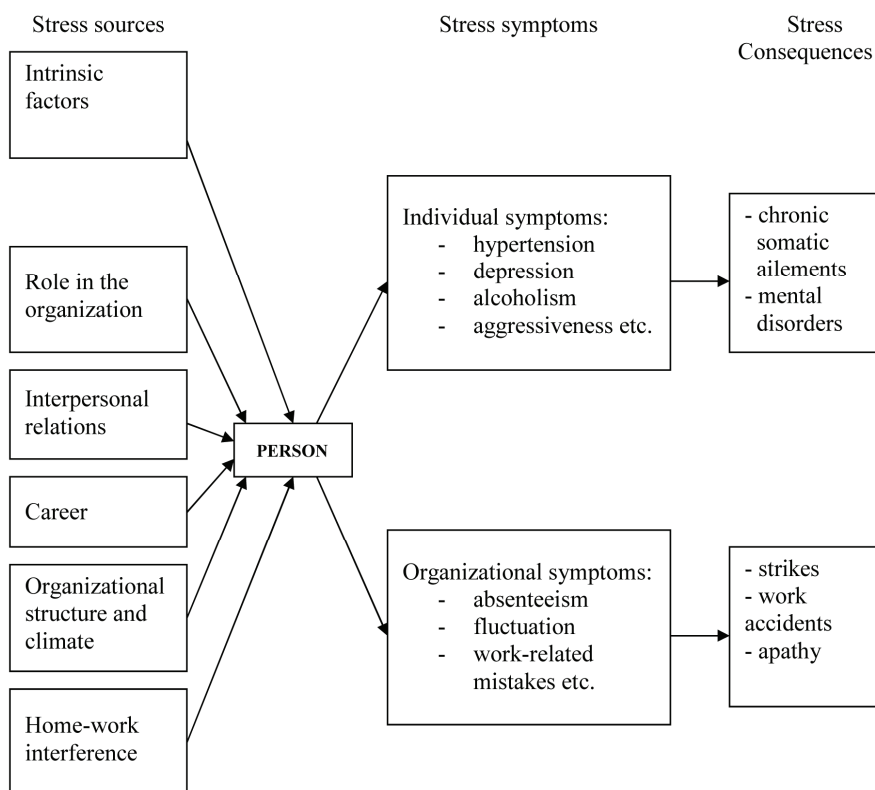


Plate 1. Sources, symptoms, and consequences of stress at work
(from: Cooper, 1988)

The question to ask is the following: which positive mechanisms can be used for stress prevention and treatment, with the aim of optimizing work conditions and adequate human resources management? From the variety of cognitive, emotive and behavioral techniques, we will focus on the notion of assertiveness and assertive behavior as one of the most efficacious methods of interpersonal relations, including the ones at work.

Assertiveness is a person's skill or capacity to express their attitudes, desires, opinions and convictions in a direct and honest way, while respecting and acknowledging the interlocutor's personality (Zdravković, 2007). Assertive behavior is not passive, submissive nor aggressive. It is a way of communicating between these two extremes and it implies the equality of the participants, regardless of their gender, ethnicity, skin color, professional qualifications, and social position. The rights of the speaker, in dyadic communication, are equal to the rights of the interlocutor, and vice versa, which is illustrated by the short comparative description in table 1.

Table 1. Comparing three communication styles

Passive behavior	Assertive behavior	Aggressive behavior
Not expressing one's feelings and opinions honestly and directly, regardless of the situation	Honest and direct expression of feelings and opinions, respecting the demands of the situation	Expressing one's feelings and opinions regardless of the situation
Constant apologizing	Fighting for one's rights	Constant demands, blaming others, issuing orders
Giving in to the demands and orders of others	Respecting other people's personality and rights	Disrespect for other people's rights
Allowing others to make decisions	Making one's decisions	Deciding for oneself and for others
Self-deprecation and low self-respect	High self-respect and a realistic self-image	High self-respect and unrealistic excessive estimation of the self
The feeling of hurt, dissatisfaction and anxiety as the consequence of one's behavior	Taking initiative in interpersonal relations	Rejecting initiatives from others and using others for one's own goals
Allowing others to be responsible for what is done, if the results are positive	Taking responsibility for one's actions regardless of the consequences	Not taking responsibility for one's actions if the consequences are negative

(modified from: www.smartsales.ba)

Assertive behavior, therefore, is a way of communicating that does not emphasize power and domination but readiness for cooperation and team work with the aim of achieving better work atmosphere and, in the long run, the greater profit for the organiza-

tion. That is why it is recommended as the management style to the managers of all levels, in small and average-sized companies and bigger corporate systems. Needless to say, in complex work interactions, the success of the managers' communication depends on the other side as well – task executors in production and administration. The research conducted in Serbia so far has not paid much attention to assertiveness, even though this (just like occupational stress) is an important issue in transitional societies since, being one of the components of job satisfaction, it affects the total work results of the employed.

2. THE RESEARCH

The subject matter and the objective of this research were determining the existence and the differences in proneness to stress, the level of occupational stress and assertiveness between production workers and administrative workers. In order to examine these issues we put forth three hypotheses, each of which postulated the existence of statistically significant difference between administrative workers and production workers in:

1. proneness to stress
2. the level of exposure to stress at work – occupational stress
3. assertiveness

The three listed notions represent dependant variable, whereas the type of work (administration and production) is an independent variable, with gender and the length of employment (divided into four categories: less than 5 years, from 5 to 15 years, from 15 to 25 and from 25 to 35 years of employment) serving as control variables.

The first dependant variable (proneness to stress) was determined by Bensabat's theoretical and methodological foundations (1999) and examined by the questionnaire 'Are you a candidate for stress?' by the same author, which measures the proneness to stress in different, extra-occupational spheres of life.

The level of exposure to stress was registered by Fontana's Occupational Stress Test' (1989), the complex instrument which measures several aspects of stress at work, grouped into three categories: general (bad organization and work conditions, the uncertainty of keeping the job, low salary etc.); specific causes of occupational stress (unclear roles or the conflicts of these at work, the inability to affect the decision making, monotonous work, conflicts with the superiors etc.); and the causes of stress that are linked with occupational stress, but do not originate from the work activity itself (great emotional investment in the work with clients, inadequate training, high level of responsibility at work, and many others).

Finally, two questionnaires were used to measure assertiveness: 'The Test for Discriminating Assertive Behavior from Aggressive and Defensive Behavior' by Zdravković i Krnetić and 'Are you assertive?' by Zdravković (both from 2007), which measure the level of assertive behavior in relation to aggressive and defensive behavior, on the basis of verbal and non-verbal reactions in imaginary life situations.

Fifty administrative workers and the same number of direct production workers took part in the research that was conducted in 2010 in the Factory of Copper Pipes in Majdanpek, Serbia.

3. THE RESULTS

Firstly, the reliability of the tests and questionnaires used in the research was tested using Cronbach's alpha – which is seen in table 2.

Table 2. The reliability of the tests and questionnaires

Test – questionnaire used in the research	Coefficient of reliability
Are you a stress candidate?	0.590
Occupational stress test	0.780
The Test for Discriminating Assertive Behavior from Aggressive and Defensive Behavior	0.820
Are you assertive?	0.825

The results received by statistical processing (SPSS program) are shown in the following tables – seen in table 3.

Table 3. The level of proneness to stress – total sample

Stress proneness	N	Middle value	Standard deviation	t-test	Sign-t
Administration	50	61.78	18.185	-3.174	.002
Production	50	52.13	13.723		

The table shows that administrative workers are more prone to stressful influences than their production colleagues, and that the difference is statistically significant.

The average value of the total sample is 56.95. Comparing the middle values it can be concluded that it is above the average (61.78) for administrative workers, whereas for production workers it is below the whole group average (52.13).

In the case of exposure to stress at work, that is, occupational stress, there are again statistically significant differences which demonstrate that administrative workers are more exposed to that particular type of stress.

The average value of the total sample is 44.78. As in the previous table, above-the-average results are found in administrative workers (47.65) and below-the-average are located in production workers (41.92) - which is seen in table 4.

Table 4. The level of occupational stress – total sample

Occupational stress	N	Middle value	Standard deviation	t-test	Sign-t
Administration	50	47.65	11.564	-3.245	.002
Production	50	41.92	9.863		

The results show that there is a statistically significant difference (0.001) between the groups on the Test for Discriminating Assertive Behavior from Aggressive and Defensive Behavior', that is, the workers employed in the administration notice the difference between these behavioral characteristics better. The middle value of their replies is 53.50

and is above the total sample average, which is 44.01, while the average of the production employees is merely 34.39.-which is seen in table 5.

Table 5. The degree of assertiveness – the results from both tests, total sample

Assertiveness	N	Middle value	Standard deviation	t-test	Sign-t
1. test administration	50	53.50	15.238	- 2.056	.001
production	50	34.39	6.586		
2. test administration	50	65.32	6.730	1.542	.131
production	50	64.17	6.650		

The other test, 'Test of Assertiveness', showed no significant difference, that is, administrative workers and production workers equally evaluate their behavior as assertive, with moderately high middle values of replies.

Wishing to test the relationship with the control variables, the sample was divided on the basis of gender and the length of employment. These are the results: - table 6.

Table 6. Comparing dependant variables on the basis of gender

	Gender	N	Middle value	Standard deviation	t-test	Sign-t
Stress proneness	M	50	55.97	15.605	-1.009	.315
	F	50	57.93	18.276		
Occupational stress	M	50	43.76	9.25	-1.239	.393
	F	50	45.80	10.24		
Discrimination of assertiveness	M	50	43.95	9.44	.101	.193
	F	50	44.07	10.71		
Self-evaluation of assertiveness	M	50	65.52	7.19	-4.978	.403
	F	50	63.96	6.73		

The results demonstrate that gender has no influence whatsoever on any of the tested variables. The influence of the length of employment on dependable variables (the '5 to 15' and '15 to 25 years of employment' categories are omitted as they had no discrimination value) – table 7.

Table 7. The influence of the length of employment on dependable variables the 5 to 15' and '15 to 25 years of employment' categories are omitted as they had no discrimination value

	Length of employment	N	Middle value	Standard deviation	t-test	Sign-t
Stress proneness	less than 5 years	27	57.08	16.223	.089	.315
	from 25 to 35 years	26	56.80	15.206		
Occupational stress	less than 5 years	27	53.00	7.59	3.630	.000
	from 25 to 35 years	26	32.56	5.62		
Discrimination of assertiveness	less than 5 years	27	45.75	7.44	-	.312
	from 25 to 35 years	26	42.12	4.57		
Self-evaluation of assertiveness	less than 5 years	27	65.71	7.30	-	.514
	from 25 to 35 years	26	63.11	7.44		

The results show that the length of employment is of great importance for exposure to stress at work. Namely, the employees who fall into the 'less than 5 years of employment' category are under considerably more occupational stress in comparison with the workers whose length of employment falls into the '25-35 years' category. Their middle value is 53.00, which, in keeping with normative measures, makes them the most vulnerable category of the employed that can exhibit psychosomatic disorders and illnesses.

4. DISCUSSION

The results have mostly confirmed our expectations. The increased presence of negative stress or distress (unlike positive stress or eustress), the everyday one as well as the occupational, in administrative workers can be explained by different factors. The first one is everyday communication with a larger number of people than their colleagues experience while working in production. Interpersonal relations, which entail relations with the superiors, inferiors, and colleagues, are the frequent sources of conflict and excessive competition (Cooper & Payne, 1983), which is especially strong in transitional societies. Namely, some researchers (Hautman, Jettinghoff & Cedillo, 2007) show that the quantity of occupational stress is at its highest and its consequences the most devastating in the situations of the transformation of a socio-political system of a country, which are necessarily followed by changes in the functioning and the organization of companies. In situations such as these, the parts of the company that form the so-called administration (including the management), in the context of the already represented Cooper's model, succumb to the additional sources of stress such as:

- the role in the organization (its indeterminacy and/or conflict, the level of work responsibility),
- the career (moving forward or stagnating, the safety of the job, as well as the evaluation of work performance by the superiors)
- the organizational structure and the work climate (where the two most important factors are participation in the decision making and the work atmosphere in the organization)

All of the abovementioned sources of stress are more likely to affect administrative staff than production workers. It is only intrinsic factors (or the factors related to the nature of work) such as: bad work conditions (noise, lightning, temperature), work in shifts, overtime work, introducing new technologies etc. that affect production workers more frequently and more intensely.

Furthermore, the greater intensity of stress in administrative workers might be the consequence of ergonomic and anthropometric factors as well. Work tasks in the administration are linked with the sitting position and limited body movement, which results in many anatomic and functional difficulties in the muscular and skeletal structure (Obrenović, 2003). Also, the amount of the information needed for work is received almost exclusively via visual sensory system (Štajnberger & Čizmić, 1991), coming from computer screens or different video terminals, and these have a very stressful effect on the employees after everyday multi-hour exposure, causing the decrease in the alertness of the sensory-neural apparatus, as well as a whole set of negative effects. Administrative employees exhibit more often the symptoms of mental fatigue, especially in the situations of complex, responsible and prolonged intellectual work, where cognitive-emotional exertion dominates, with minimal employment of the muscles. Unlike muscular work, which is characterized by the increased oxygen-burning with the intensification of the activity (1000 do 22000 ml/min), during mental work the quantity of blood in the brain tissue is only slightly higher than in the state of calm (700 - 750 ml/min). This is the origin of the erroneous belief that mental work is easier than the physical one, because it is based on oxygen-burning or cardio-vascular parameters, instead of the processes of cerebral excitement and inhibition which are much more adequate measures when it comes to mental processes (Čabarkapa, 2008).

When it comes to assertiveness, the received results are, at first sight, contradictory. Namely, administrative workers showed higher results on the "Test for discriminating assertive behavior from the aggressive and defensive behavior", statistically significant in comparison with their production colleagues. This might be explained by the fact that administrative tasks more often involve interpersonal communication, internal (within the company itself) as well as external (with clients and business partners). In order to be adequate to such communication, an employee must avoid aggressive or defensive approaches at all cost, in addition to building those behavioral patterns that will result in success in terms of personal and collective goals. Optimal business behavior patterns, therefore, contain assertiveness as an important component of the communication style that respects the opinion and the attitudes of all parties in conversation. This is why the courses and trainings that teach assertive forms of communication are on the rise at the present time. Needless to say, all this does not mean that direct production workers should not master assertive skills. Bearing in mind that their communication is mostly internal, and that the nature of their work is more machine-oriented, however, it is realistic to expect (and our results confirmed that) that this group of workers will discriminate assertiveness from aggressiveness and defensiveness somewhat less successfully.

On the other hand, there were no differences on the other, self-evaluating "Are you Assertive?" test, which might be explained by the desire of the both tested groups to behave in an assertive manner. The desire to behave in a certain way, however, is not the same as the realization of it in practice. As the attitude to assertiveness, and any other issue, always consists of three components: cognitive, emotive and behavioral (Hewstone &

Stroebe, 2001), it is more likely that they are present in different intensities in administrative and production workers. The first exhibit the cognitive component (better discrimination between the assertive and aggressive /defensive communication styles) to a greater degree than the emotive one (which is one of the causes of their greater proneness to stress, including occupational stress); whereas the other group shows reverse results, i.e. the emotive component (weaker discrimination between assertive and aggressive/defensive behavior, but better stress venting') is much more present. Both groups have an open road to strengthening the third, behavioral component, while it should be noted that administrative workers, considering the nature of their work, regard this as their priority.

Examining the influence of the control variables it was determined that gender was not statistically significant as the cause of stress and assertiveness, but the length of employment proved to be an important factor in occupational stress. The employees with the longer length of employment (from 25 to 33 years) show better resilience to stress in their work environment in comparison with their younger colleagues (whose length of employment is less than 5 years) due to, first and above all, the experience with the potential stressors which has allowed them to build more adaptable defense mechanisms and more flexible ways of adaptation to the already-mentioned causes of occupational stress. The younger employees, being as they are in the phase of the so-called prolonged adaptation, exhibit greater levels of ambition and competition at work, which, as a rule, increases their stressogenic effect. The fact that there is no difference in the influence of the length of employment on the proneness to non-occupational stress merely confirms this conclusion.

5. CONCLUSION

The research has demonstrated that administrative work and production work, in addition to the whole set of specific characteristics originating from the nature of the work itself, are characterized by differences on the basis of general proneness to stress, occupational stress and assertiveness. Leaving aside factors such as personality and education level, it was determined that the nature of the work itself generated the degree to which individuals would be exposed to different stress modalities. Social communication skills (assertiveness being one of them) represent an important factor in that exposure. This skill does not have the same significance for all the employee categories, that is, administrative employees tend to master it better because assertiveness participates to a greater degree in external communication, unlike production employees that mostly take part in internal communication within organizational systems.

The research findings, also, support the recommendation that employers and management structures of the more complex production systems (human resources departments, career development departments, medicinal-psychological ones) should periodically organize specific anti-stress program trainings and assertive behavior education seminars, in order to increase the work efficiency of all employee categories with the aim of optimizing the work process and increasing total productivity.

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PROFESIONALNI STRES I ASERTIVNOST KOD ADMINISTRATIVNIH I PROIZVODNIH RADNIKA

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Profesionalni stres je jedan od najučestalijih i najznačajnijih stresova kojima su ljudi izloženi u savremenom društvu. Priroda samog radnog procesa doživljava gotovo svakodnevne promene, koje bitno utiču na psihofiziološka stanja uposlenih u skoro svim profesijama. Iz tih razloga javlja se sve češća potreba istraživanja dinamike odnosa između čovekovih kapaciteta za prevladavanje stresa, uključujući i profesionalni, sa jedne strane, i poznavanja optimalnih veština u komunikaciji, kao što je asertivnost, sa druge. Posebno je taj odnos osetljiv u radnim organizacijama društvenih sistema u tranziciji, kakvo je i srpsko u poslednjih desetak godina

Osnovni cilj ovog istraživanja bio je da se utvrdi da li postoje i kakve su razlike u sklonosti ka stresu, nivou profesionalnog stresa i asertivnosti između administrativnih i proizvodnih radnika Fabrike bakarnih cevi u Majdanpeku. Grupu radnika administracije, kojih je bilo 50, upoređivali smo sa istim brojem radnika u proizvodnom delu fabrike, imajući u vidu i razliku u polu, kao i dužinu radnog staža.

Rezultati su potvrdili očekivanja da postoje razlike između ovih grupa radnika po pitanju istraživanih varijabli kao i da radno iskustvo predstavlja statistički značajan faktor profesionalnog stresa.

Ključne reči: *sklonost ka stresu, profesionalni stres, asertivnost, administrativni i proizvodni radnici.*