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## Personality Traits that Foster Ambulance Workers' Professional Performance

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### Abstract

The present study explores the links between personality factors and the professional performance of four different categories of ambulance workers: doctors, nurses, ambulance drivers and dispatchers. The 458 participants' scores for personality factors (according to the Big Five Model), sensation seeking and time perspective scales were compared among professional and performance based groups. Results revealed significant differences among professional groups regarding neuroticism, openness to experience and time perspectives. Also, significant differences were found between high-level and low-level performance groups of nurses and dispatchers.

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The ambulance workers represent a professional category submitted to very difficult working conditions considering the great risks their patients, as well as themselves, are exposed to. The decisions they have to make within seconds about their patients' health and life combined with the traumatic events that these professionals live every day have a significant impact on their performance as well as on the quality of their life. This impact also extends to all patients benefitting from their services. Given the nature of their work, the personalities of the ambulance workers play a significant role in their performance and decision-making process. The present study explores the links between personality factors and the professional performance of four different categories of ambulance workers: doctors, nurses, ambulance drivers and dispatchers.

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## 1. Research studies regarding ambulance workers

Research on the psychological and social dimensions of the ambulance service is not very abundant when compared to the large number of medical and technical studies available. Yet, there is quite a large amount of research on the personality of different professionals involved in emergency services. This includes ambulance workers along police officers, firefighters, and other volunteer categories. Mitchell and Bray (apud Wagner, Martin, & McFee, 2009) used the term „rescue personality” to describe a personality type attributed to people involved in emergency services. Following their theory, the research studies of Wagner et al. (2005, 2009) found no data to support the hypotheses regarding the high levels of dedication, social conservativeness, speedy decision making or need for achievement.

Similar to the studies on all types of emergency personnel, most published research specific to ambulance workers has focused on a few topics related to the concepts of stress and trauma: stressors (Sterud, Hem, Ekeberg, & Lau, 2008), post-traumatic stress disorders versus psychological wellbeing (Brough, 2005; Clohessy & Ehlers, 1999; Gayton & Lovell, 2012), coping mechanisms (Kirby, Shakespeare-Finch, & Palk, 2011) and posttraumatic growth (Shakespeare-Finch, Gow & Smith, 2005).

### 1.1. *Sensation Seeking and time perspective*

Originated in sensory deprivation research, the concept of sensation seeking is defined by Zuckerman (2007) as "the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience". If the unpredictability and the high frequency of atypical, tense situations specific for the ambulance services are appealing for the workers of this field, then their level of sensation seeking could be an important factor that fosters performance and resilience in such a challenging and stressful line of work.

Sensation seeking proved to be linked to risky driving (Jonah, 1997), which is relevant for at least one professional category of ambulance workers. A Western Transport Institute Report (Heyward, Stanley, & Ward, 2008) analyzes the link between sensation seeking and risk-seeking behaviors in ambulance drivers, concluding that individuals with high level of sensation-seeking tendencies are more likely to engage in risky driving actions. Whether these actions foster or damage performance in ambulance services is still difficult to establish.

As described by Zimbardo and Boyd (1999), time perspective is a process that allows individuals to integrate experiences and events into different time frames or temporal categories in order to provide them with meaning and coherence. Given the time-sensitive nature of all ambulance personnel tasks, it is reasonable to assume that time perspective could be significant for their performance. No research study could be found to support this hypothesis. An older research study replicated three times linked present time perspective with risky driving behaviour. (Zimbardo, Keough, & Boyd, 1997) Also, Zimbardo and Holman reported significant correlations between time perspective and coping with trauma in college students. (1999, apud Zimbardo and Boyd, 1999)

## 2. Method

### 2.1. *Participants*

The participants of the study were 458 Romanian ambulance workers, aged between 22 and 65, employed by the Bucharest and Ilfov Ambulance Service. Of the 251 female and 207 male participants, the majority was married (329). Sixty-eight were single, while 54 declared their marital status as divorced and 2 as widower. At the time of the study, the participants' experience in the ambulance service ranged from 1 to 45 years ( $M=16,25$ ;  $SD=11,03$ ). The ambulance workers were selected from the professional categories directly involved in assisting patients: 58 ambulance dispatchers, 175 ambulance drivers, 58 doctors and 168 nurses.

## 2.2. Procedure

The ambulance workers were invited to participate in the study as an initial phase of a project designed to provide them with psychological counseling and training. The 458 people who came to the testing site located at the headquarters represented 50% of the potential sample. All ambulance service personnel underwent their annual professional evaluation in advance of the psychological testing. The evaluation was conducted by the Ambulance Service management and was based on the employees' results for medical knowledge tests and other indicators such as: total number of patients assisted, number of cases per shift etc. The participants were divided into three groups based on their professional performance. Evaluation results were categorized in 3 tiers of employee performance (high, mid and low-end) and then psychological measures such as personality scales, time perspective and sensation seeking were compared among the tiers.

## 2.3. Measures

- Personality inventory: The Big Five©plus Personality Inventory, authors Constantin, T et al. is a 240-item inventory, that measures the 5 main factors: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness and 30 sub factors for an exhaustive profile and a "complete screening of the individual's personality" (Constantin, Macarie, Gheorghiu, Potlog, & Iliescu, 2010) It includes a control scale that evaluates the positive and negative distortion tendencies.
- Time perspective: Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999), a 56-item instrument organized in 5 scales: 2 past perspectives (positive  $\alpha=0,672$  and negative  $\alpha=0,703$ ), 2 present frames (hedonistic  $\alpha=0,712$  and fatalistic  $\alpha=0,624$ ) and one future perspective ( $\alpha=0,601$ ).
- Sensation Seeking: Sensation Seeking Scale (SSS), a revised version of the original 1964 measure developed by Zuckerman (Zuckerman, Eysenck, & Eysenck, 1978) is a 40 items questionnaire, using forced-choice format. Its four scales are: Thrill and Adventure Seeking ( $\alpha=0,609$ ), Disinhibition ( $\alpha=0,675$ ), Experience Seeking ( $\alpha=0,701$ ) and Boredom Susceptibility ( $\alpha=0,636$ ).

## 3. Results

Data analysis was performed using the Statistical Package for the Social Sciences and followed the differences among professional categories and among performance-based groups regarding the participants' scores to the personality scales presented above.

### 3.1. Personality profiles for different ambulance worker categories

The One-Way ANOVA revealed significant differences between professional groups regarding their neuroticism scores. ( $F(3,458)=11,63$   $p<0,01$ ) The post hoc comparisons showed that dispatchers gained significantly higher scores than the other groups to the neuroticism scale and four of its subscales: anxiety, anger, depression and timidity, while the ambulance drivers scored lowest to the same factors but one. (See Table 1)

There were significant differences among the ambulance workers professional groups regarding their scores for the openness to experience scale ( $F(3,451)=5,72$   $p<0,01$ ) and two of its subscales: intellect ( $F(3,453)=11,27$   $p<0,01$ ) and artistic interest ( $F(3,452)=16,57$   $p<0,01$ ). Post hoc Bonferroni comparisons revealed that doctors scored highest in intellect and openness to experience, while ambulance drivers scored lowest at artistic interest subscale.

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<sup>†</sup>  $\alpha$ -Cronbach coefficients were calculated for the Romanian versions of the instruments, using the data gathered for the present study.

Table 1. Differences among ambulance professional groups regarding neuroticism scores

Factor	Dispatchers		Ambulance drivers		Doctors		Nurses		F	sig.
	mean	standard deviation	mean	standard deviation	mean	standard deviation	mean	standard deviation		
Anxiety	0,4267	0,29	0,2493	0,19	0,3202	0,25	0,3348	0,21	10,552	0,000
Anger	0,3922	0,28	0,2293	0,24	0,3180	0,28	0,3253	0,28	6,960	0,000
Depression	0,3470	0,22	0,2457	0,18	0,3017	0,23	0,3042	0,18	5,086	0,002
Timidity	0,4720	0,26	0,3908	0,23	0,3448	0,26	0,4586	0,25	4,786	0,003
Neuroticism	0,4016	0,16	0,2886	0,12	0,3140	0,17	0,3544	0,14	11,633	0,000

There were no significant differences among professional groups regarding their sensation seeking levels, but all time perspective scales produced significant differences among dispatchers, ambulance drivers, doctors and nurses. Doctors' scores were significantly lower than other groups for negative past perspective, while the dispatcher group scored highest on positive past scale and the ambulance drivers group had the lowest scores on present hedonistic and future scales. (See Table 2.)

Table 2. Differences among ambulance professional groups regarding time perspective scales

Factor	Dispatchers		Ambulance drivers		Doctors		Nurses		F	sig.
	mean	standard deviation	mean	standard deviation	mean	standard deviation	mean	standard deviation		
Negative past	2,93	0,76	2,77	0,66	2,46	0,69	2,76	0,68	4,666	0,003
Positive past	3,88	0,52	3,51	0,50	3,59	0,52	3,71	0,53	9,078	<0,01
Present hedonistic	3,24	0,50	2,93	0,51	3,01	0,55	3,17	0,59	7,646	<0,01
Present fatalistic	2,6	0,66	2,54	0,61	2,3	0,65	2,55	0,64	2,788	0,040
Future	3,46	0,37	3,30	0,47	3,56	0,45	3,45	0,43	6,111	<0,01

### 3.2. Personality and performance

The analysis of the differences between top performance employees and the low level ones revealed significant differences for the following personality subscales: modesty ( $t(204)=2,28$   $p<0,05$ ), sympathy ( $t(204)=2,53$   $p<0,05$ ) and imagination ( $t(204)=2,19$   $p<0,05$ ). The high-level performance group has significantly lower mean of scores for all three subscales.

No significant differences were observed between performance-based groups regarding time perspective and sensation seeking. Yet, when similar analysis was conducted on each professional group separately, there were significant differences between high-level and low-level performance nurses regarding their scores to the future time perspective scale. ( $t(91)=2,15$   $p<0,05$ )

The high level performance dispatchers group showed significant differences from the low level performance group of the same category regarding their scores to the following personality scales and subscales: conscientiousness ( $t(24)=2,22$   $p<0,05$ ), self efficacy ( $t(24)=3,83$   $p<0,01$ ) and achievement-striving ( $t(24)=2,26$   $p<0,05$ ). High-level performance dispatchers group achieved higher scores in all three personality factors mentioned above. Most significant results were registered for the nurses group. High-performance nurses scored significantly higher in sympathy ( $t(95)=2,60$   $p<0,05$ ), orderliness ( $t(95)=2,18$   $p<0,05$ ), dutifulness ( $t(92)=2,03$   $p<0,05$ ), self-discipline ( $t(24)=2,22$   $p<0,05$ ), cautiousness ( $t(87)=2,36$   $p<0,05$ ), conscientiousness ( $t(95)=2,73$   $p<0,01$ ) and imagination ( $t(95)=2,46$   $p<0,05$ ).

#### 4. Discussion

The results revealed a series of significant personality differences among professional groups of ambulance workers, which suggests that treating them as one homogenous category may not be the best approach. The different professional roles that ambulance workers play in assisting patients seem to be linked to different personality traits. For example, dispatchers' high levels of neuroticism may be connected to their inability to assist the patients to a stable situation. For them, most of the crises remain unresolved. On the other hand, doctors' intellectual openness may prove to be extremely valuable for their need to come up with unusual solutions in emergency situations, since they are the decision makers regarding the emergency interventions. Thus, different personality profiles for different professional categories could be the most productive way of describing ambulance personnel for both recruiting and training processes.

The second series of research results support this idea since the differences between high-level and low-level performance groups are significant only for dispatchers and nurses, the ones that communicate the most with patients. It is their performance that seems to be mostly influenced by their personality traits. Further research is needed in order to investigate whether the personality factors studied by now could be used as predictors for professional performance in the ambulance services field. An alternate performance evaluation measure, involving patients feed-back could prove enlightening for future studies.

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