

# The Relationship of Type A Personality, Sensation Seeking Trait with General Health among Firefighters in Tehran City

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Article info:

Received: 25 Jan. 2015

Accepted: 29 May 2015

## Keywords:

Firefighter, Type A personality, Sensation, health

## ABSTRACT

**Background:** One of the conditions affecting mental health is working condition which should be considered more. Work-related stress can impair mental health. Firefighting because of exposure to hazardous agents and risky activities is a stressful and hard job. This research was conducted to investigate the relationship of type A personality and sensation seeking trait with general health among firefighters in Tehran City.

**Methods:** The present research is a descriptive survey method. The study population comprised all firefighting staff of Tehran City in 2013-2014. A total of 150 firefighters were chosen by cluster sampling method. Three questionnaires were used in this study: Zuckerman's sensation seeking scale (1979), type A personality scale Lichtenstein (1989), and general health questionnaire (GHQ) (1979). The results of questionnaires were analyzed with the Pearson correlation and the multivariate stepwise regression. SPSS<sub>16</sub> software was used for data analysis.

**Results:** The findings of the current research indicated that there is a positive and significant relationship between type A personality ( $r=0.672$ ), sensation seeking ( $r=0.180$ ) and general health ( $P<0.05$ ). The mental health variable could be predict the intercept of both variables; Tape A personality and sensation seeking ( $\text{Reg}=24.202, P<0.0001$ ).

**Conclusion:** According to the results of the study, there is relationship between type A personality and sensation seeking with general health among Tehran firefighters who are susceptible to mental pressure.

## 1. Background

The safety is a situation in which the hazardous factors are controlled. Thus, the health of individuals and society is preserved. Safety is the prerequisite for maintaining and enhancing the health of society. Furthermore, it is considered as the most fundamental services of urban management authorities and one of the most important needs of citizens. In this regard, the

fire organization and the safety department of Tehran municipality are in charge in accordance with Part 14, Article 55 of municipal Act, passed by the National Assembly (1956).

Firefighters should act without delay and error in emergencies to protect individuals and the national capitals. Therefore, they must be well prepared for any situation (Mosavi et al. 2012). In this regard, people with proper personality and mental health must be chosen for this job. Mental health problems have existed since the origin

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of human being and nobody is immune to it. Fortunately, advances in mental health have discarded wrong thoughts and superstitions about mental illnesses. This new approach states that timely diagnosis of mental illnesses will reduce the risk of chronic diseases and associated complications (Milanifar 1999).

There are different definitions of mental health that each one is based on the cultural and social beliefs of the society. However, according to psychologists and psychiatrists, a person with mental health is an individual who has the equilibrium between behaviors and social issues. The experts of the World Health Organization consider mental health as “the capability of harmonious relationship with others, to change and modify personal and social environment, resolving conflicts, and personal interests in a logical, fair, and appropriate manner” (Mirzaee 2010). Also, not all personality theorists agree on single definition of personality. Therefore, personality is a unique pattern of characteristics and relatively permanent traits that gives both individuality and consistency to a person’s behavior (Gillani & Atif 2015). According to this definition, individuals with type A personality have more likely to encounter job problems because of their particular personality.

Many studies have been characterized Type A personality as the toxic and non-toxic features. The non-toxic features include the orientation to success and hard work, while and toxic characteristics are identified as impatience, irritability, and aggression. The toxic characteristics of Type A are part of its pattern. They play a critical role in increasing the risk of heart attack and associate with many symptoms of mental and psychosomatic disorders (Sarason & Sarason 2002).

Firefighting is suitable job for the people, who want considerable excitement and have interest in saving the life of others. The thrill-oriented and adventurous people enjoy this job’s unusual activities and experience, even if their lives are in danger (Howe 2008). Gomez (2008) indicated

that increasing self-awareness of thrill seeking traits might be part of the requirement for the firefighting service. According to the definition of Zuckerman, “sensation seeking is a trait to seek varied, novel, complex, and intense sensations and experiences, and willingness to take physical, social, legal, and financial risks for the sake of such experience” (Mahvi Shirazi 2005). Risk is a common part of everyday life, but thrill seekers think that risk taking has no negative impacts and thus tend to welcome more risk. In this regard, firefighting has been rated as the forth-riskiest occupation (Zuckerman 1994).

Hence, regarding the lack of studies on this topic and the importance of Fire department as a fundamental organization for the safety and relief system in any country, the present research investigated the relationship between type A personality and sensation seeking with general health among firefighters in Tehran, Iran.

## 2. Materials & Methods

The present research is a descriptive survey method. The study population comprised all Tehran firefighters in 2013-2014. A total of 150 firefighters were chosen randomly by cluster sampling method among the firemen groups from the different areas (north, south, east, and west) of Tehran City. To respect the rights of the participants, the purpose of the research was explained and the researcher emphasized on the voluntary participation and confidentiality of personal information. Finally, after obtaining the participants’ informed consent, they completed 3 self-reporting questionnaires.

In the current study, three questionnaires were used. First, there is Zuckerman’s sensation seeking scale, which is a short form of its 1979 original form. This scale includes the questions that investigate the tendency of the people to do hazardous activities. According to Zuckerman, sensation seeking has 4 main components including: 1) “Thrill

**Table 1.** The scores of general health, type A personality, and sensation seeking among firefighters.

Variable	Frequency	Range	Maximum	Minimum	Mean	Variance
General health	150	40.00	37.00	77.00	55.04	51.95
Physical symptom	150	25.00	9.00	34.00	22.96	30.99
Anxiety	150	9.00	7.00	16.00	8.98	7.14
Social function	150	21.00	7.00	28.00	16.35	17.53
Depression	150	11.00	7.00	18.00	7.74	3.42
Sensation seeking	150	10.00	14.00	24.00	17.16	4.42
Type A personality	150	12.19	8.75	20.94	13.20	6.05

**Table 2.** The correlation between general health and type A personality, sensation-seeking.

Criterion variable	Statistical index	Coefficient relationship	Sig.	Frequency
	Predictor variable			
General health	Type A personality	0.672	0.0001	150
	Sensation seeking	0.180	0.28	150

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and adventure seeking”, a desire to engage in endangered activities like skydiving or speed driving; 2) “Experience seeking”, a desire for getting excited through participating in activities which do not usually occur in life; 3) “Disinhibition”, i.e. Taking part in gambling and drinkers parties and running away from normal life style; 4) “Boredom susceptibility”, some people hardly tolerate uniformity (Taghavi 2002). This scale has 15 items and the score procedure follows the zero and one scoring. Kamkari used 3 methods of Spearman-Brown, Guttman split-half, and Cronbach  $\alpha$  to investigate the scale reliability; According to him, the reliability values obtained from these tests were 0.8, 7.75, and 0.0, respectively ( $P < 0.001$ ) (Bakhshayesh 2013).

Second, we used the general health scale for the mental health questionnaire (Goldenberg & Hiller) in this study. The items of this scale evaluate the mental state in the last month and emphasize on symptoms like abnormal sensations and thoughts. It has 4 subscales and each subscale consists of 7 items related to the presence of anxiety and insomnia (subscales A, items 1–7), severe depression (subscales B, 8–14), social dysfunction (subscales C, 15–21), and somatic symptoms (subscales D, 22–28) (Jahanbakhsh et al. 2013). Responses were rated on a 4-point Likert-type scale between 0 and 3. As a result, the minimum and the maximum score would be 0 and 28. In other words, the lower score indicates the highest level of mental health. The scale validity is 0.95 according to Goldenberg and Williams (1988). In addition, the internal consistency of the scale is 0.95 according to John (1985), estimated using the Cronbach  $\alpha$ . Shack (1987) computed the reliability coefficient for total scores of the whole scale and its subscales as 0.93, 0.86, 0.84, 0.68, and 0.77, respectively. The reliability coefficients in Persian version using the Cronbach  $\alpha$  for sub-

scales of somatic symptom, anxiety, social dysfunction, depression, and total mental health scale were 0.77, 0.77, 0.48, 0.85, and 0.90, respectively

Third, we used Type A personality scale Lichtenstein with 16 items to evaluate the behaviors pattern of type A people. The Framingham Type A test comprised 10 items. This scale investigates the factors such as job pressure, competent, and time pressure. The Cronbach  $\alpha$  coefficient was reported 0.70, and the internal consistency of this scale was at appropriate level (0.70) found in previous research (Azadmarzabadi & Gholami Fesharaki 2011). Since, some aspects of type A were not considered in the Framingham test, Lichtenstein et al. (1989) have added 6 items of Bortner Type A behavior scale. Responses were rated on a 5-point Likert-type scale, that were ranged from 1 (completely disagree) to 5 (completely agree). The total scores were computed upon these 16 items and it ranges from 16 (minimum Type A) to 80 (maximum Type A).

The obtained data were analyzed with the Pearson correlation and the multivariate stepwise regression by SPSS-16 software.

### 3. Results

Table 1 presents the descriptive statistics such as mean, standard deviation, and the other statistic indexes for all variables of the current study.

Table 2 shows that type A personality has a positive, significant relationship with general health ( $r=0.672$ ,  $P=0.0001$ ). Also, sensation seeking has positive significant with general health ( $r=0.18$ ,  $P=0.028$ ).

**Table 3.** Equation of regression line.

Model	B	$\beta$	T	SD	Sig.
Value	24.202		5.970	4.054	0.0001
Type A personality	1.934	0.660	10.791	0.179	0.0001
Sensation-seeking	0.309	0.090	1.475	0.210	0.142

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**Table 4.** The correlation between sensation-seeking, type A personality and general health.

Variable		Physical symptoms	Anxiety	Depression	Social function
Type A personality	Coefficient correlation	0.862	0.124	0.031	-0.020
	Sig.	0.0001	0.130	0.706	0.850
	Frequency	150	150	150	150
Sensation seeking	Coefficient correlation	0.196	-0.022	-0.122	0.111
	Sig.	0.0016	0.785	0.138	0.177
	Frequency	150	150	150	150

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According to Table 3, the intercept of both variables equals 24.202. Therefore, the variation equation of dependent variable can be written in the following form:

$$Mental\ health = 1.934 \times (Type\ A\ personality) + 24.202$$

Table 4 shows that there is a positive and significant relationship between physical symptoms and type A personality ( $r=0.862$ ,  $P<0.05$ ). In addition, It displays that there is a positive and significant relationship between physical symptoms and sensation seeking trait ( $r=0.196$ ,  $P<0.05$ ).

As shown in Table 4, the regression predictor of type A personality and sensation seeking is significant with the general health. According to Table 4, type A personality predicts significantly positive mental public compared to sensation seeking ( $r=0.448$ ). Sensation seeking has been omitted because it has the low coefficient correlation in comparison with type A personality. Therefore, type A personality has more influence than sensation-seeking.

#### 4. Discussion

The findings of the current research indicate that there is a positive and significant relationship between type A personality and sensation seeking with general health. Type A personality predicts general health better than sensation seeking and has more influence than sensation seeking. These findings are consistent with previous ones in this field. Some of them are as discussed here. Wagner et al. (2009) found that firefighters report higher levels of extraversion when compared with similar individu-

als from nonemergency service occupations. Marzabadi showed that there is a significant relationship between type A personality and mental health among official staff of an organization (Azadmarzabadi & Gholami Fesharaki 2011). In another research, Sharma et al. (2010) indicated that subscales of mental health correlates with type A personality. The researchers have pointed out that individuals with neurosis type personality have poor mental health and people with physical symptoms are classified more in this personality than common people. Ilies et al. (2002) conducted a study on 27 employees for 4 weeks, and found that the personality type influences mental health. Widiger and Seidlits (2002) demonstrated that personality trait plays a crucial role in creating, reducing, or eliminating disorder symptoms. McCrae and Costa (1986) concluded that personality traits could explain 50% variance of mental health. Hill and Smith illustrated that the extraversion has positive and significant relation with sensation seeking traits and type A behavior pattern. Hill et el. indicated that people who earn high score in personality trait and sensation seeking shows high-risk behaviors.

Additionally, the findings of current research indicated that there is a relationship only between physical symptom (subscales of general mental health) and sensation seeking and there is not relationship between anxiety and depression (subscale of general mental health) and sensation seeking. This finding is consistent with prior study including; Salters-Pedneault et al. (2010) revealed that compared to a normative sample, firefighters scored higher on excitement seeking, a facet of Extraversion.

**Table 5.** Multiple correlation coefficients of predictive variables of type A personality and sensation seeking with general health.

Variable predictors	r	r <sup>2</sup>	r coefficient	F	P	β	T	P
Type A personality	0.678	0.460	0.453	62.62	0.0001	0.660	10.791	0.001
Sensation-seeking						0.090	1.475	0.142
Type A personality	0.672	0.452	0.448	122.09	0.0001	0.672	11.050	0.001

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Comparisons with psychophysiological data from a non-rescuer sample suggest that the firefighter recruits exhibited higher heart rate and skin conductance (SC) levels (Salters-Pedneault et al 2010). Since that heart rate variability may index important organism functions associated with adaptability and health. Also, low heart rate variability (HRV) is associated with increased risk of all-cause mortality, and low HRV has been proposed as a marker for disease (Thayer et al. 2012).

On the other hand, Zuckerman et al. (1972) found that there is a significant relationship among subscales of mental health, type A personality, and sensation seeking (Zuckerman 1994). Also, the research findings of Gibson et al. (2009) and Scott-Parker et al. (2013) indicated that people with high-level sensation seeking demand stimulus and new excitement, which consequently endanger their general health. In addition, Scott-Parker et al. (2013) found that the relationships between anxiety, depression and sensation seeking are not significant. Argentero et al. (2008) concluded that the difference between sensation seeking and job field create problems for people who are not able to adapt themselves with invariable activities. Hence, it could be concluded that physical symptom act as an index of general health in firefighters and this system may in fact provide an index of the degree to which the brain's "integrative" system for adaptive regulation provides flexible control over the periphery and the capacity of the organism to effectively function in a complex environment (Thayer et al. 2012).

Based on these findings, type A personality and sensation seeking have significant relationship with mental health. People with type A personality endure more psychological pressure due to their unique features. The aim of the current study was to investigate the relationship between type A personality and sensation seeking with general health among firefighting in Tehran. Considering the sensation seeking among firefighters in Tehran, their job environment is a strong setting to express excitement. Sensation seeking is a tendency to pursue bizarre feelings and new experiences. However, the job circumstance of some careers such as firefighting cause mental and physical excitement too. In other words, continuous encounter with victims and unpredictable situations, the responsibility to save the life of human being, and sharp work create a challenge for mental health of firefighters. Also, people with this personality are susceptible to mental pressure which is related to physical symptoms subscale of mental health. In general, the mental health and subsequently, the appropriate balance of sensation seeking with stressor situations are the essential features in this job.

One of the limitations of this study is its low generalizability, as the study was limited to the firefighters in Tehran City. In addition, there was no appropriate psychological assessment for firefighters. Necessary trainings are suggested to enhance mental health level among firefighters and other stressful and hazardous careers. In addition, we recommend investigating the relationship of other personality types with mental health.

### Conflict of interests

The authors declared no conflict of interests.

### Acknowledgements

Authors greatly appreciate all firefighters participating in this research.

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