

## THE ROLE OF PSYCHOLOGICAL INTERVENTIONS FOR TREATING ANXIETY AND DEPRESSION

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**Abstract:** *Goal:* The present study investigates the efficiency of a psychological intervention for firefighters who show symptoms of depression and anxiety. What motivates this study is the fact that the psychologist within the inspectorates for emergency situations must not only evaluate and monitor firefighters' psychological evolution, but also to intervene in a preventive or therapeutic way.

*Methods and instruments:* Out of the firefighters we evaluated periodically, we selected 19 individuals who showed higher level of depression and anxiety symptoms, in order to include them in a psychological intervention program. The intervention targeted cognitive aspects: positive reformulation of experiences, emotional aspects: awareness and acceptance of intense emotions and a behavioral aspect: development of new or improved coping strategies. The intervention comprised of six meetings. Pre-intervention and post-intervention psychological assessment was done with Hamilton Depression Scale and Hamilton Anxiety Scale.

*Results:* The scores for depression and anxiety symptoms, for the entire lot, were significantly lower post-intervention than those pre-intervention, showing a decrease in the intensity of symptoms. Yet, 4 of the 19 subjects showed stagnation or an increase of scores, indicating no improvement of symptoms.

*Conclusions:* The short intervention we proposed had positive outcomes in most cases, 79% of participants showed significant decrease in symptoms. In the cases where the intervention showed no improvements we intend to continue it with the consent of participants.

**Key words:** firefighter, critical incident, depression, anxiety, psychological intervention, Hamilton Depression Scale, Hamilton Anxiety Scale

### **Introduction**

The firefighters who work within the inspectorates for emergency situations are frequently and constantly exposed due to the nature of their activities to high stressing situations also known as critical incidents. A critical

incident represents a highly stressing event which can significantly disturb the physical and psychological function and wellbeing. The critical incident is a stimulus which can trigger a physical and psychological crisis [1].

The response to critical incidents and to any other stressful situation is determined by objective features of the situation, by individual's subjective perception and interpretation of the situation, by the state of physical health and psychological wellbeing, by the coping mechanisms, by a series of psycho-individual factors such as emotional stability and responsiveness, self esteem, perceived self-efficacy, sense of coherence, locus of control, but also by several psycho-social factors which include the socio-economical context in which rescue activities are performed, the institutional response to the certain event, mass-media representation of the event, etc. [2, 3, 4].

The stress generated by critical incidents induces changes both at a physiological and somatic level, as well as at a psychological and behavioral level. At physiological level, one can show cardiac dysfunctions, neurological and endocrine dysfunctions, myalgia, somatovisceral dysfunctions [3]. At psychological level one can show sensorial and perceptive dysfunctions, cognitive, emotional and affective dysfunctions and, in some severe cases, even psychotic decompensations. These dysfunctions can be reversible or irreversible. A common disorder among individuals frequently and constantly exposed to critical incidents is post-traumatic stress disorder [4].

Physical symptoms include: shivers, thirst, fatigue, nausea, faint or tendency to faint, vertigo, vomiting, headaches, myalgia, spurts of high blood pressure, chest pains, accelerated heartbeat rhythm, muscular tremor. Generally they can be described as high physiological responsiveness. At cognitive level one can show: confusion, uncertainty, denial, hyper-vigilance, concentration problems, time and space disorientation, decrease in decision making. At an emotional and affective level, the most frequent symptoms refer to: anxiety, self blaming, panic, agitation, irritability, impulsivity, depression, anger, fear, suicidal thoughts, inadequate emotional responses (either regarding the intensity or the nature of expressed emotions), hyper or hypo-emotionality. And at behavioral level one can find: social withdrawal, antisocial behaviors, abuse of alcohol and substances, psychogenic flight, impairment in family and marital relationship [4].

In this study we start from an actual situation that we are used to encounter in the daily work as a psychologist within the firefighter department. The firefighters are frequently and constantly exposed to critical incidents. Events perceived as critical incident by the firefighters include: self injury, risk of losing one's own life, injury or death of a fellow firefighter, intervention upon victims in death agony, mostly if these victims are children, taking part in interventions in which the victims are firefighters' relatives or acquaintances. These all have a major impact on firefighters' physical health

and psychological wellbeing. Although, due to their basic technical training, the negative response to such events can be lowered in comparison with common population, it can not be eliminated. Thus, the psychologist's role in this context is to monitor periodically the psychological state of the firefighters but also to intervene precisely through defusing and debriefing or more largely through a psychological intervention with more profound therapeutic valence.

The defusing represents a volunteer, short, individual meeting, in complete privacy that aims mainly to defuse the psychological and physical tension of the firefighters. It has to take place short time after the incident, recommended at 4 hours but not later than 12 hours and does not have to be too formal, actually it is recommended to be as least formal as possible [4]. The defusing is focused on the awareness and acceptance of one's own feeling as normal and on the adaptive or non-adaptive role of action taken post-event.

The debriefing is a more formal meeting, run within the group that took part in the incident, at an interval of about 24 – 72 hours and it focuses on different coping ways [4].

Research in the field of clinical and health psychology show that most recommended types of psychological interventions regarding the firefighters are the short-term ones, focused on problems and solutions [4, 5].

The firefighter activity is characterized by a strong male stereotype [6] which significantly cumbers the psychological counselor's activity due to the fact that a direct approach towards emotional and affective experiences could be perceived like imposing an alien model thus triggering resistance or avoidance of the counseling process. An approach focused on behavioral aspects, on more practical features like actions, decisions is far more recommended.

Male individuals have greater difficulties in speaking open about feelings, emotions and affective states. Avoiding emotions and feelings is explainable but does not represent a functional coping mechanism. Such a confrontation process requires conscious effort and involvement on the side of the client. McFarlane [7] shows that avoidance is a weak coping mechanism and is a factor which makes more probable the development of post-traumatic stress. A research on stress response in females in comparison with that of the males [8] points that females tend to initiate social interactions under stress, while males tend to isolate themselves, to reduce social interactions and to focus on solutions. The authors of the research state that these differences in stress response have to do with cumulative action of oxytocin, female reproductive hormones and endogenous opioid mechanisms, thus favoring females' pro-social behaviors, while in males' case, testosterone seems to block oxytocin's effects and activate the adrenergic system, thus favoring a flight or fight response.

### **Methods and instruments**

The study was run on a lot of 19 firefighters that showed some anxiety and depression symptoms. All subjects are males, aged between 27 and 42. The age average is 29 years while the standard deviation is 3.77 years. Experience as a firefighter ranges between 6 and 10 years, with a average of 6.42 years and a standard deviation of 0.96 years. Subjects were selected from the entire firefighter personnel periodically assessed according to specific work safety and health norms that apply within the inspectorates for emergency situations from Romania, on the basis of higher scores on Hamilton Depression Scale and Hamilton Anxiety Scale. The selection of subjects took in account the scores that could be consider of clinical significance at least at one of the two scales used.

The 19 subjects' lot has undergone a psychological intervention which aimed to reduce the intensity of anxiety and depression symptoms. The intervention focused on following aspect: a) awareness of one's own intense emotions and feelings experienced after a critical incident; b) emotional unblocking and confronting with the intense experiences triggered by the critical incident; c) investigating and acknowledging the negative consequences of one's own inadequate response and coping strategy to stressful events in the professional and personal life (marital, family, social relationships); d) positive reformulation of highly stressful experiences; e) replacing the less functional coping strategies, focused on emotion relief, with more functional ones, focused on problems and solutions. The intervention comprised of six meetings with each of the 19 subjects, respecting each subject's privacy. Five of the six meetings focused on one of the five aspect mentioned above and the sixth one consisted of a summarization, a feedback and a chance to re-evaluate the subject's depression and anxiety symptoms.

The Hamilton Depression Scale is comprised of 17 items of which, 10 items score on a five steps scale, from 0 to 4, while the rest of 7 items score on a three steps scale, from 0 to 2. Minimum score is 0 and maximum score is 52. Total scores lower than 7 indicate absence of clinical depression. Scores between 7 and 17 indicated a mild depression. Scores ranged between 18 and 24 indicate a moderate depression while scores equal or above 25 point to a severe depression.

The Hamilton Anxiety Scale consists of 14 items, scored on a five steps scale, from 0 to 4. Maximum score is 56. Scores above 20 show the presence of clinical intensity anxiety.

### **Results**

Data were centralized and processed with the statistical software SPSS for Windows 10.

The scores on the depression scale, at the pre-intervention assessment, ranged between 7 and 9, with an average of 7.84 and a standard deviation of 0.69. On the anxiety rating scale, pre-intervention, subject scored between 9 and 17 with an average score of 11 and a standard deviation of 2. Thus, subjects show a mild depression and precisely this was the reason to select them into the intervention lot. The intensity of the anxiety symptoms is not of clinical level, but as they are associated with the mild depression symptoms, taken together it could represent a risk factor for developing more severe emotional, cognitive and behavioral dysfunctions later.

At the end of the intervention another psychological assessment of depressive and anxiety symptoms was done. Results on the anxiety scale show an average score of 9.26 with a standard deviation of 1.97 and individual scores ranging between 6 and 13. On the depression scale, scores range between 4 and 9, with an average score of 6.42 and a standard deviation of 1.39. We notice a drop in the average scores both for anxiety as well as for depression.

Comparing scores at pre-intervention and post-interventions, with the paired sample t test, turned the following results. We must mention that for both rating scales as well as for both assessments, the distribution was a normal one. For the anxiety scale, we obtained  $t(18) = 3.511$  at  $p = 0.002$ , and for depression we obtained  $t(18) = 5.524$  at  $p < 0.001$ . The magnitude of the differences in scores revealed by the r coefficient [9] shows the following figures: 0.637 for anxiety and 0.793 for depression.

### **Discussions**

We notice that the t values, for anxiety as well as for depression are statistically significant at p values lower than 0.05 thus allowing us to state that anxiety and depression levels dropped significantly as a result of the psychological intervention. Therefore we can say that our intervention achieved its goals, that of improving the firefighters' emotional wellbeing as shown by the decrease of anxiety and depression symptoms. In the case of anxiety, the intervention explains 64% of the score variance from pre-intervention to post-intervention, while in the case of depression the percentage of variance explained by the intervention is as high as 79. Thus, the five step intervention we proposed seems to yield positive outcomes at a emotional and psychological wellbeing.

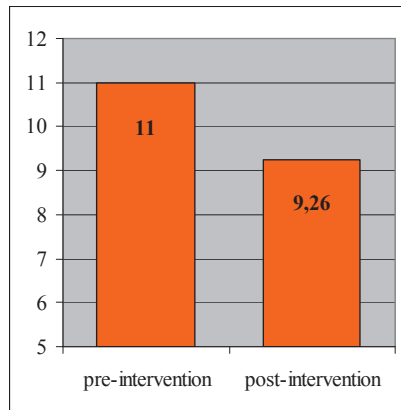


Figure 1. Average scores at the anxiety scale

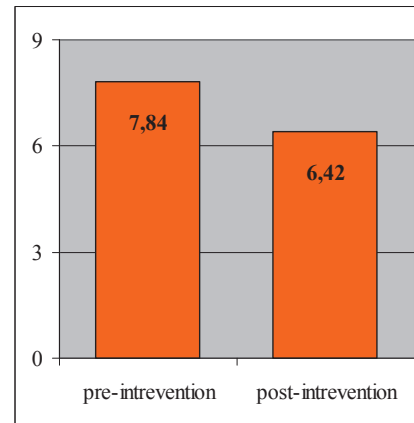


Figure 2. Average scores on the depression scale

Analyzing the post-interventions scores, for each of the 19 subjects we notice that 16 subjects show lower scores for depression; 2 subjects show the same score while the remaining subject shows an increase from 8 to 9, thus not a dramatic increase. As for anxiety, 15 subjects show lower scores post-intervention, 1 subject scored identically post and pre-intervention while 3 subjects show an increase in scores post-intervention.

In the case of the subjects where scores increased or stayed level as well as for anxiety and depression, we intend to continue the intervention as to improve subjects' emotional and psychological wellbeing as to identify probable causes which hindered the success of the intervention. We mention that during the intervention the 19 firefighters continued to take part in interventions if needed.

Also, in order to identify new strategies of intervention we consider necessary to investigate some other psychological variables which could influence firefighters' responses to stress as a consequence of frequent and constant exposure to critical incidents. Such variables are: self-esteem, perceived stress, post-traumatic stress growth, perceived self-efficacy, robustness, optimism, sense of coherence, tendency towards developing somatic symptoms as well as rational versus irrational beliefs [2]. It is highly probable that in certain cases in which the emotional blockage of firefighters is related with the belief that conceiving the existence of distress due to frequent and constant exposure to critical incidents might lead to negative responses from the superiors and fellow firefighters, our approach focused on awareness and acceptance of one's own experiences might not work to well. Thus, we consider changing the focus of the intervention towards functional

coping strategies or alternative activities through which firefighters might experience positive emotions and feelings, such as hobbies. [10].

### **Conclusions**

Our study shows that a short-term psychological intervention, centered on explicit goals, on problems and solutions, on positive reformulation of experiences without neglecting awareness and acceptance of the client's intense emotional responses in highly stressing situations and also these reactions' consequences on individual's, his family and peers' physical and psychological wellbeing can lead to a significantly improvement of anxiety and depression symptoms. Yet, there are individuals for which our intervention does not work. Therefore we must strive to improve our approach by looking for the causes of the intervention failure as well as trying to find other psychological variables that could enable us to improve the psychological intervention process. The diversity of therapeutic approaches and that of therapeutic methods available at the present allow us to develop improved therapeutic interventions.

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