

## ORIGINAL PAPER

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**Anxiety among Israeli soldiers during the Gulf War**

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**Abstract** The impact of stress was investigated among Israeli soldiers during the Gulf War. The study included 40 healthy young adults in active service. Their scores on the Hamilton Anxiety Rating Scale were evaluated during the first week of the war. Our subjects were divided into two equal sub-groups (N=20); combatants and auxiliary personnel. Higher levels of anxiety were found among the combatants. Factor analysis revealed three differing factors: arousal symptoms, numbing and distraction. We discuss the possible explanations for these differences.

**Key words** War · Soldiers · Anxiety · Israel · Gulf War

**Introduction**

In all the wars that the State of Israel participated in no serious threat to large urban communities was eminent and civilian casualties were rare. The Gulf War presented a novel situation in which the Israeli army was a passive participant while the home front was the focus of missile attacks (Levy 1994). Numerous studies have been published following the Gulf War. Among civilians these studies can be broadly divided into several categories. Studies focusing on biological variables such as cortisol and growth hormone levels (Weizman 1994) or incidence of myocardial infarction (Meisel 1991). Coping and attachment styles were investigated (Mikulincer 1993, Zeidner 1992, Zeidner 1993.) as well as defense mechanisms (Nevo 1994).

Other authors dealt with the classification and type of stress reactions (Lobel 1993, Levinson 1994, Gal 1994.).

Research with particular emphasis on soldiers' reactions to the Gulf War has not been extensive. McDuff and Johnson (1992) described the characteristics and classification of army stress casualties. Wynd and colleagues (1992) compared anxiety levels of army reserve and civilian nurses. In Israel two major studies investigated the impact of the Gulf War on soldiers. The first study reported on the experience of the central clinic of the Israeli Defense Forces (Kaplan 1992). The second study reviewed the reactivation and the emergence of post-traumatic-stress reactions among Israeli soldiers (Kaplan 1992).

The management of acute stress reactions among soldiers is widely researched (Hausman 1967, Jones 1975). However, the role of anxiety during the early stages of combat exposure received less attention. The present study was designed to characterize anxiety symptomatology among two groups of young soldiers in the field during active military duty at the time of the Gulf War.

**Subjects and Methods****Subjects**

Forty soldiers aged 18–21 years (mean  $20.1 \pm 0.7$ ) participated in the study. All were on active duty in the Israeli Defense Forces (IDF) during the Gulf War. All subjects were males. The unit in which they served was randomly chosen for study. The unit studied was part of the IDF's air-defense system.

Subjects were sub-grouped into two equal groups (N=20) according to their role within the unit. One sub-group was composed of combatants while the other was of auxiliary soldiers (e. g. drivers, mechanics, etc.).

As in all active combatfield units, all subjects were screened prior to their enlistment for physical and mental disorders. Only subjects with adequate physical and psychological profiles are placed in units with operative requirements such as the one investigated in the present study.

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## Methods

The study focused on the evaluation of anxiety. Anxiety was rated with the use of the Hamilton Anxiety Rating Scale (HAS) (Hamilton 1959). Informed consent was obtained from all participants.

The HAS was completed on days 3 or 4 of the first week of the Gulf War. All subjects were interviewed by a senior psychiatrist (Y.B. or A.R.). The scale was completed following the interview (lasting 30–45 min).

Statistical analysis was performed using mean and standard deviation for each of the 14 items of the HAS and for the averaged total anxiety score (the sum of items scores divided by 14). Inter-group comparison was carried out using the unpaired-paired student t-test. Factor analysis was used to identify discrete symptom factors. “P” values of less than 0.01; eigenvalues higher than 1.0 and item-factor correlations higher than 0.7 were all considered statistically significant, or explaining the variance for one of the factors.

## Results

The total mean HAS score (N=40) was:  $2.05 \pm 0.6$  during the first week of the Gulf War. We used the following five-

Figure 1

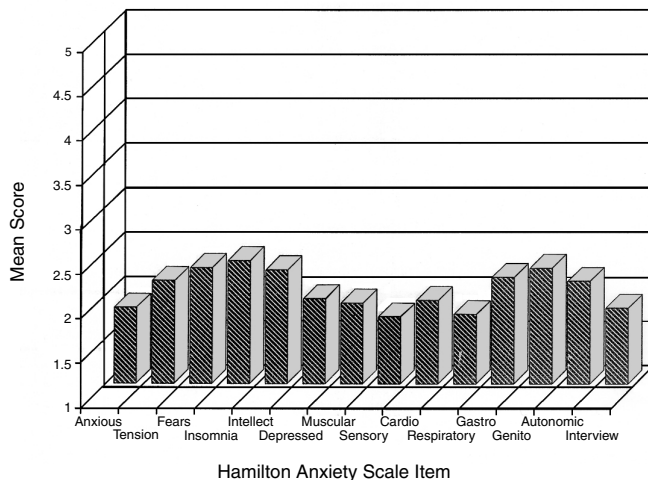
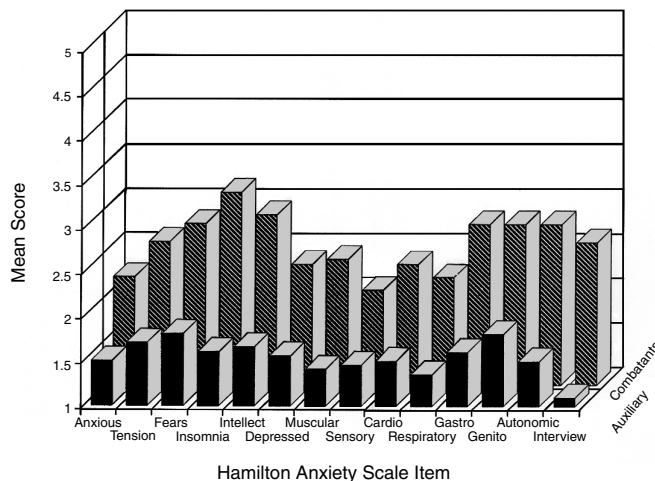


Figure 2



point scale for item severity grading: 1-none; 2-mild; 3-moderate; 4-severe; 5-grossly disabling. The mean score for each item is presented for the whole group in Fig. 1.

Fig. 2 presents comparison between combatants and auxiliary soldiers discrete HAS item mean scores.

Using the unpaired student t-test for the two sub-groups (N=20) only the “sensory-somatic” item did not differ between groups. All other 13 items differed significantly (d. f. =38;  $p < 0.000-0.0038$ ). See Table 1.

A factor analysis with varimax rotation of the 14 items yielded three factors (eigenvalues  $> 1.0$ ) that explained 63.9% of the variance. Commonalties were estimated by eight iterations of the process. The four items (tension, fears, insomnia and autonomic system) loaded highly (loading  $> 0.70$ ) on the first factor (43.1% of explained variance), the two items (respiratory system and gastro-intestinal system) loaded highly ( $> 0.70$ ) on the second fac-

**Table 1** Summary statistics for Hamilton Anxiety Scores

HAS items	Soldiers				
	Combatants (N = 20)		Auxiliary (N = 20)		T
	M	SD	M	SD	
Anxious Mood	2.20	0.62	1.50	0.61	3.62*
Tension	2.60	0.59	1.70	0.73	4.26*
Fears	2.80	0.95	1.80	0.89	3.42*
Insomnia	3.15	0.67	1.60	0.75	6.87*
Intellect	2.90	1.07	1.65	0.74	4.28*
Depressed Mood	2.35	0.81	1.55	0.83	3.09*
Somatic general – muscular	2.40	1.05	1.40	0.75	3.47*
Somatic general – sensory	2.05	0.95	1.45	0.61	2.39*
Cardiovascular system	2.35	0.93	1.50	0.61	3.41*
Respiratory system	2.20	0.83	1.35	0.49	3.93*
Gastro-intestinal system	2.80	0.95	1.60	0.60	4.77*
Genito-urinary system	2.80	1.01	1.80	0.83	3.42*
Autonomic system	2.80	0.83	1.50	0.76	5.15*
Behaviour at Interview	2.60	0.68	1.10	0.31	8.98*
Mean HAS (averaged total)	2.57	0.30	1.54	0.32	10.56*

note \* $p < 0.001$

**Table 2** Factor analysis of the Hamilton Anxiety Scale

Anxiety Symptoms	Loading on Factors
Factor 1: arousal (43.1% of variance)	
Tension	0.712
Fears	0.743
Insomnia	0.785
Autonomic system	0.807
Factor 2: distraction (11.8% of variance)	
Respiratory system	0.806
Gastro-intestinal system	0.836
Factor 3: numbing (8.9% of variance)	
Depressed mood	0.805
Somatic general-muscular	0.751

tor (11.8%), and the two items (depressed mood and somatic general-muscular) loaded highly ( $> 0.70$ ) on the third factor (8.9%). See Table 2.

For purposes of discussion the following factors were titled: a) "arousal": items included: insomnia, tension, fears and autonomic system, b) "distraction": respiratory system and gastro-intestinal system, c) "numbing": depressed mood and somatic general-muscular.

## Discussion

Psychological distress due to repeated missile attacks resulted in increasing anxiety levels among the Israeli populace under threat (Levy 1994, Zeidner 1993). McGrath (1970) has described various forms of stress impinging on the organism, such as threat to life, to physical integrity, to self-esteem and to one's social status. Individual differences in coping with a major threat such as the Gulf War have been reported (Lobel 1993). The main difference in coping was the focus on active versus passive coping strategies (Zeidner 1992), or on demographic variable such as gender or age (Ben-Zur 1991).

The present study was designed to examine anxiety symptoms among young adults during active army duty at the time of the Gulf War. We felt that focusing on soldiers as the research subjects in a war in which the civilian population is threatened and the army is passive will help highlight anxiety in this special setting of "reversed" roles. Studies focusing on the effects of the "reversed" roles among the civilian population in Israel have been published (Levy 1994, Lavee 1993).

We aimed at identifying anxiety patterns among two different groups of soldiers serving in the same unit, and so under similar threatening conditions.

One of the significant findings in the present study was the difference between combatants versus auxiliary soldiers' anxiety severity rating. Combatants were evaluated as suffering from more severe anxiety on 13/14 HAS items as well as on the averaged HAS total ( $p < 0.01$ ). Combatants suffered "mild" to "moderate" anxiety during the first week of the war while auxiliary soldiers were scored as suffering from "no" to "mild" anxiety levels. Two explanations for the inter-group differences may be put forward:

a) "training": the combatants' group is socialized into its future role in the army from enlistment onwards. They are required to complete a rigorous basic training course and to go on to more advanced combat training courses, usually lasting a significant part of their compulsory service – before placement in the field unit. The auxiliary personnel, on the other hand, undergo a short basic training and then disperse to their specific task-oriented skills acquirement (driving school, cooking course, etc.) It is likely that self-esteem differs significantly among young soldiers. Placement in an auxiliary role entails cynicism and humorous barbs from combatants. The higher self-esteem of combatants was deflated during the Gulf War where a passive role was the rule. The training and role identification instilled in combatants did not find an appropriate outlet.

More so the special setting of the Gulf War placed combatants and auxiliary personnel in a common group awaiting news from the homefront. The discrepancy between the self-esteem earned through training and the requirement to assume a "bystander" position could have contributed to the observed anxiety level;

b) "coping": the Gulf War required passivity from the IDF in general and from combatants in particular. Zeidner (1993) explored coping styles among 600 Israelis during the Gulf War. He found that active coping tactics were widely used while emotion-focused coping was positively related to anxiety. In line with these findings, in our study combatants were barred from employing active-coping tactics (fighting), while the auxiliary soldiers continued in their assigned daily routine. The strategic as well as the political evaluation by the IDF during the first week of the war was that Israel would not be involved in active combat. These evaluations were directly transmitted to all field units by their active commanders. Thus, inhibition of active-coping could have aroused anxiety among combatants. Placement within either a combatant or an auxiliary role within army units is influenced by several factors: physical status, education, personality features, and prediction of adjustment to army life. As pointed out by Gal (1986), one of the main features that differentiate between combatant and auxiliary status is history of flexible adjustment to life events and particularly to hierarchical systems (e.g., high school, employment, etc.). This is farther emphasized by the findings published after the Gulf War, demonstrating that elevated levels of distress were associated in a large group of Israeli soldiers with low level of perceived self-efficacy (Solomon et al. 1991). In our study, the differences in personality are probably indirectly reflected in the differentiation between the two groups studied. However, we have not focused on this particular variable due to the complexity of evaluating personality structure within the limited time frame for the completion of this study.

An additional significant finding in this series of subjects was the emergence of three separate symptom factors (See Table 2). Hamilton (1959), in his original description of the HAS, found that a bipolar factor divides anxiety symptoms into two groups: "the first contains psychic symptoms contrasted with a group of somatic". Ben-Zur (1991) examined the relationship between anxiety and bodily symptoms in 500 Israeli residents during the Gulf War. A positive relationship was found between anxiety and eating habits, insomnia or fatigue. Characterization of US army stress casualties during the war (McDuff 1992) demonstrated several types of stress reaction with the most common being: aggression (18.7%), depression (11.6%), anxiety (11%), and somatization (8.4%). Our factor analysis yielded three factors: arousal, distraction, and numbing. Arousal, composed of insomnia, tension, fears, and autonomic-system, is closely related to the original description of psychic symptoms described by Hamilton (1959). It may also be viewed as resembling the aggression type of reaction diagnosed by McDuff (1992). Distraction, composed of respiratory and gastro-intestinal systems, resem-

bles both Hamilton's somatic factor (1959) and McDuff's somatization reaction (1992). We titled this factor "distraction" because it represents shifting of focus from the cognitive appraisal of the threat to bodily sensations. Numbing, composed of depressed mood and somatic general-muscular, may be related to McDuff's (1992) depressive reaction.

The present study has several drawbacks; males only were evaluated, sub-groups were not matched for education, social background or pre-existing stress, the anxiety was assessed only in one time period and use was made only of one measuring instrument. Nevertheless the significant differences in anxiety between the sub-groups and the emerging symptom factors call for further studies investigating the symptomatology of anxiety in soldiers during war with particular emphasis on roles.

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