

## Stabilisation mission in Iraq, the individual symptoms of PTSD and a comparison of the level of depression, anxiety and aggression among soldiers returning from the mission and soldiers that stayed in Poland

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### Summary

**Aims.** The aim of the survey was to establish whether PTSD is present among Polish soldiers returning from a one-year deployment to Iraq and an analysis of its individual symptoms.

**Methods.** Sixty soldiers were examined, including 30 who returned from the Iraqi mission and 30 who remained in Poland. Five analysing devices were used: IPSA, STAI, BDI, a PTSD questionnaire and a socio-demographical form.

**Results.** A significant number of soldiers experienced a traumatic event during the mission in Iraq. Although the Iraq deployment did not change the level of depression and anxiety among the two groups of soldiers, disproportions were found in the range of anger level intensity, which was significantly higher among soldiers who returned from Iraq.

**Conclusion.** Stabilisation mission and the experience of a traumatic event influenced the biological and psychological functioning patterns among soldiers who returned from Iraq. The manifestations of this were the strong emotional and physiological reactions that the soldiers experienced (nightmares, excessive sweating, increased heartbeat rate, stressful reactions in situations similar to the traumatic occurrence and intensified responses to them). However, contrary to the assumptions, it was not concluded that soldiers who returned from Iraq are suffering from PTSD. The indicated deficiencies can be accounted for in the complexity of the PTSD phenomenon.

PTSD / anxiety / depression / aggression

### INTRODUCTION

Poland's active participation in stabilizing missions has led to reflection on their psychological effects on the soldiers taking part in those missions. Military service is frequently connected with exposure to difficult and dangerous situations: the sight of battlefield casualties, immi-

nent death or an overwhelming sense of danger or hopelessness can significantly influence a soldier's psychological condition [1, 2].

The main aim of surveys was to determine whether Polish soldiers displayed PTSD symptoms a year after their Iraq deployment and identifying possible differences in general self-esteem among soldiers who returned from Iraq and their fellow soldiers who stayed in the country. Assuming that battlefield participation is connected with exposure to extreme situations, it was agreed that providing an answer to another question was also necessary: did a tour in Iraq result in higher levels of depression, anxiety and aggression levels between soldiers who

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were active participants in combat and those who stayed in Poland?

## RESOURCES AND METHOD

The surveys were performed in January 2006, one year after the soldiers returned from their tour in Iraq. The group included sixty soldiers. The experimental group involved thirty soldiers who took part in the mission and a control group was created from thirty regular soldiers stationed in Poland. The study analysed depression, anxiety and aggression levels and PTSD symptoms (such as conversion, avoidance and arousal) among the soldiers who served in Iraq. Six surveying implements were used: Aggression Syndrome Psychological Inventory (IPSA), State-Trait Anxiety Inventory (STAI), Beck Depression Inventory (BDI) and a properly-prepared PTSD surveying questionnaire and socio-demographic inquiry.

**The Psychological Inventory of Aggression Syndrome (I.P.S.A.)** designed by Z. B. Gaś is used to measure the level of aggressiveness in adults [3]. All statements contained herein have a strong discrimination power, so they can be used to effectively differentiate aggressive people from individuals with low aggression syndrome intensity. The inventory includes 10 scales, each of which consists of a few additional statements. The scales are marked using Roman numerals from I to XIII, as well as using K and O letters. The meaning of consecutive scales is provided below:

- scale I – emotional self-aggression – a person scoring high has a negative self-esteem, he or she has tendencies to self-humiliation and directs negative or hostile desires and thoughts towards oneself;
- scale II – physical self-aggression – a person scoring high on this scale uses physical aggression on oneself, harming oneself severely and has tendencies for suicidal attempts;
- scale III – hostility to the environment – it is used to describe an individual having hostile desires or thoughts towards other people;
- scale IV – unaware aggressive tendencies – a person scoring high on this scale has strong tendencies to manifest behaviours that are seemingly non-aggressive;

- scale V – displaced aggression – understood as an displacement of the aim of the aggressive behaviour, resulting in attacking inanimate objects instead of human beings, such as door slamming;
- scale VI – indirect aggression – understood as aggression that is not expressed directly, but used to attack a particular person, for example by ridiculing, gossiping or criticizing him or her
- scale VII – verbal aggression – indicates tendencies to express negative feelings and behaviours both by complaining and making excuses, as well as screaming or starting rows;
- scale VIII – physical aggression – a person scoring high has tendencies to undertake activities using physical violence, for example: kicking, punching;
- the K scale – the control over aggressive behaviour: an individual scoring high here can control one's tendencies to behave aggressively and can tame one's hostile impulses
- the O scale – tendency for retaliation – high scores indicate tendencies to revenge for experienced harm or failures. The interpretation of the I.P.S.A. is carried out on three levels. The starting point is the general level of aggression – the "WO". The next step is to characterize the aggression syndrome. The last phase is to define the dominant direction of the aggression, where S (the self-aggression indicator) is the sum of the raw results of the I and II scales, U (the hidden aggression indicator) is the sum of raw results of the III and IV scales, and Z (the external aggression indicator) is the sum of raw results of the V, VI, VII and VIII scales.

### Beck Depression Inventory – BDI

This is a part of the most commonly-used self-assessment scales and reflects the degree of the depression symptoms. The American psychiatrist A.T Beck is the author of the scale which was published for the first time in 1961. The Polish standardization was published by T. Parnowski and W. Jernajczyk in 1977 [4].

The inventory has been widely appreciated as a reliable and accurate tool used to evaluate the mental state of patients suffering from depression. The scale includes 21 items, which are as-

sessed according to the intensity of symptoms within a range from 0 to 3. The patient chooses one answer that characterizes his state in a particular period of time most accurately (within the last month, week, day). The average result concerning the depression intensity is measured by summing up points from consecutive items. The evaluation system used in the self-evaluation method is as follows: 0-9 points: lack of depression symptoms, 10-19: low depression symptoms, 20-25: average level of depression symptoms; above 25: severe depression symptoms.

**State-Trait Anxiety Inventory- STAI** created by American psychologists - C.D. Spielberger, R.L. Gorsuch and R.E. Lushene, adopted by J. Strelau, T. Tysarczyk, K. Wrześniewski [5, 6]. It is one of the first questionnaires making it possible to measure two types of anxiety simultaneously: the anxiety understood as a temporal state, affected by a particular situation and the anxiety being a relatively fixed phenomenon (feature) of an individual. It is the self-description method, consisting of two separate scales, including 20 items. One of the scales (x-1) is used to measure anxiety understood as a state, and the second one (x-2), to measure anxiety understood as a feature. The surveyed person must choose only one answer from 20 short sentences, showing which one of them describes his or her subjective feelings in the most accurate manner. The raw results in the case of each of scales can vary from 20 points (a low level of anxiety) to 80 points (a high level of anxiety). The STAI questionnaire has been proven to be a reliable measurement method. The accuracy indicators for the x-1 and the x-2 scales, measured using the Cronbach's alpha covariate are equal to 0.90 and 0.88 respectively.

**The Post-Traumatic Stress Disorder survey questionnaire** was properly prepared based on the PTSD definition presented in DSM-IV [7]. The questionnaire included questions about which reactions and feelings (at the same time PTSD diagnostic criteria) occurred in a given individual after an experienced traumatic event (the respondents answered Yes or No). The key PTSD criterion in the DSM-IV classification is the experience of a traumatic event, understood as an occurrence involving a threat to life or a seri-

ous injury to the body or the physical integrity of self or others, with simultaneously experienced intense fear, a sense of helplessness and horror. Besides exposure to a traumatic stressor (A), the PTSD diagnostic criteria include 17 symptoms, belonging to three groups of symptom categories, concerning re-experiencing of the trauma (B), persistent avoidance of all stimuli reminiscent of the trauma (C) and persistent symptoms of psychophysiological arousal (D). An important element was the introduction into the definition of the duration of symptoms criterion – a diagnosis of PTSD can be made when the duration of symptoms is longer than one month (E) as well as when impairment in social, occupational, or other important areas of functioning is noticeable (F). The set of PTSD symptoms is treated as the model of reactions which can occur as a result of the experienced trauma. For this reason, not all symptoms of individual criteria must occur with the same intensity in individuals diagnosed with PTSD. For the A symptom group, at least two symptoms must exist, for the B group at least one, the C group – at least three, the D group – at least two.

#### Socio-demographic survey

The survey allowed both research groups to be compared in terms of socio-demographic variables. It consisted of six closed questions. The respondent always marked one answer. The survey questions concerned such issues as age, education, marital status, offspring, information on confrontation with a traumatic event during childhood/ early youth, date of return from Iraq.

**Student's t-test** was used for analysis of the data.

#### RESULTS

The mean levels of surveyed depression and anxiety indicators are not significantly different according to statistical data. It may lead to the conclusion that the Iraq deployment did not lead to a significant increase in those symptoms. The results are in some way surprising, concerning earlier surveys on war-related stress which in-

indicated that the main disorders recognized in military veterans were depression and anxiety states [8, 9].

The current analysis found that the average depression level in both examined groups was low. The average experimental group's results ( $x=3.96$ ) and the control group ( $x=2.66$ ) did not differ significantly, as evidenced by the  $t(1.58)=1.3$ ;  $p<0.19$  values. The average anxiety level as a state was slightly higher in the Iraqi soldiers' group ( $x=40$ ), compared to the control group ( $x=39.93$ ). However, this result does not differentiate both groups to a significant degree  $t(1.58)=1.34$ ;  $p<0.186$ . The results are similar concerning anxiety as a feature; in this case, the average anxiety level was slightly higher in the experimental group ( $x=38.76$ ) with respect to soldiers serving in Poland ( $x=36.93$ ), but this difference is not statistically significant  $t(1.58)=0.84$ ;  $p<0.402$ .

In turn, according to expectations, the aggression surveys found higher aggression levels in soldiers who were deployed to serve in Iraq. Other current studies have found a strong relationship between PTSD symptoms and high aggression levels [10]. There are eleven statistically important differences between the two groups. The most significant is connected with external aggression. Only three indicators were proven to be irrelevant: emotional self-aggression, psychological self-aggression and the self-aggression indicator. The results are presented in Tab.1.

The development of post-traumatic stress disorder symptoms is connected with various elements. Using multiple surveys to assess victims of traumatic events, it was found that the risk of symptoms developing increases in people who

experienced their initial trauma in early childhood [11, 12]. Consequently, it seems reasonable to examine whether soldiers who experienced a traumatic event during their early childhood or adolescence were more likely to develop PTSD, compared with soldiers who had not experienced such events. In the clinic group, the largest amount of people (56.7%) declared a lack of any traumatic event during early childhood/adolescence. A slightly lower percentage (36.7%) admitted to experiencing only one such event. Merely 6.7 % of respondents declared experiencing multiple traumatic events.

Another analysed factor was to check the significance level of post-traumatic symptoms, such as: conversion, avoidance and arousal, using a PTSD survey questionnaire based on DSM IV. The results show that during the Iraq mission, six of the thirty soldiers didn't experience any traumatic event. However, the results indicate that a significant number of soldiers taking part in the mission in Iraq experienced events that were connected with highly stressful conditions. Soldiers who declared a lack of participation in any traumatic event during their mission in Iraq were excluded for surveys, as this is one of the most important factors of the diagnostics criteria of PTSD surveying. The majority of the surveyed soldiers (75%) experienced one traumatic event. A smaller percentage (25%) declared experiencing more than one event of such kind.

The occurrence level of the first group of symptoms was surveyed. It included recurrence and its individual symptoms, which become visible after confrontation with a traumatic event (see Tab. 2).

**Table 1.** Depression, anxiety and aggression levels

Clinical coefficients	Group	N	Mean	Standard deviation	Mean standard error	Significance level
Depression	Exp.	30	3.96	4.61	0.84	0.19
	Contr.	30	2.66	2.92	0.53	
Anxiety as a state	Exp.	30	40.00	9.86	1.8	0.18
	Contr.	30	39.93	7.73	1.41	
Anxiety as a trait	Exp.	30	38.76	8.96	1.63	0.40
	Contr.	30	36.93	7.83	1.43	
WO: General aggression level	Exp.	30	56.70	24.27	4.43	0.00
	Contr.	30	28.56	16.24	2.96	

**Table 2.** Intensification of re-occurring symptoms

		Frequency	Percentage	Valid percentage	Accumulated percentage
<b>B1 – bad memories</b>	<b>N</b>	12	50	50	50
	<b>T</b>	12	50	50	100.0
<b>B2 – nightmares</b>	<b>N</b>	8	33.3	33.3	33.3
	<b>T</b>	16	66.7	66.7	100.0
<b>B3 – vivid memories</b>	<b>N</b>	23	95.8	95.8	95.8
	<b>T</b>	1	4.2	4.2	100.0
<b>B4 – stress, anxiety</b>	<b>N</b>	9	37.5	37.5	37.5
	<b>T</b>	15	62.5	62.5	100.0
<b>B5 – physiological reactions</b>	<b>N</b>	7	29.2	29.2	29.2
	<b>T</b>	17	70.8	70.8	100.0
<b>Total</b>		24	100.0	100.0	

The majority (70.8%) of soldiers who experienced traumatic events had some physiological reactions diagnosed, such as increased sweating and hand shaking. 66.7 % of the surveyed soldiers declared the presence of reoccurring stressful dreams after the traumatic event. Stress and anxiety (62.5%) were ranked third. Half of the surveyed soldiers also declared the reoccurrence of bad memories. A small number of soldiers (4.2%) declared a re-experiencing of the traumatic event in the form of hallucinations or illusions.

The evaluation of the frequency of the second group symptoms is presented below. These symptoms involve avoidance and its individual symptoms (See Tab. 3).

75% of the surveyed soldiers declared avoiding conversations and war memories and 62.5 % places, people and activities connected with avoiding the traumatic event. Significantly less, (16.7 %) evaluated their future in a pessimistic manner and 8.3 % declared an inability to experience love or positive feelings. The same numbers of soldiers have problems with recalling details concerning the traumatic event. 8.3 % of soldiers find themselves unable to be involved in issues that seemed important before the traumatic event while only 4.2% felt alienated.

Among the soldiers who experienced traumatic event(s), the third group of symptoms (arousal) was examined (See Tab. 4 – next page).

**Table 3.** Intensification of avoidance symptoms

		Frequency	Percentage	Valid percentage	Accumulated percentage
<b>C1 – conversations, thoughts etc.</b>	<b>N</b>	6	25.0	25.0	25.0
	<b>T</b>	18	75.0	75.0	100.0
<b>C2 – places, people, activities</b>	<b>N</b>	9	37.5	37.5	37.5
	<b>T</b>	15	62.5	62.5	100.0
<b>C3 – lack of memories</b>	<b>N</b>	22	91.7	91.7	91.7
	<b>T</b>	2	8.3	8.3	100.0
<b>C4 – loss of interests</b>	<b>N</b>	22	91.7	91.7	91.7
	<b>T</b>	2	8.3	8.3	100.0
<b>C5 – alienation</b>	<b>N</b>	23	95.8	95.8	95.8
	<b>T</b>	1	4.2	4.2	100.0

*table continued on next page*

C6 – limited affection range	N	22	91.7	91.7	91.7
	T	2	8.3	8.3	100.0
C7 – pessimism	N	20	83.3	83.3	83.3
	T	4	16.7	16.7	100.0
Total		24	100.0	100.0	

**Table 4.** Intensification of arousal symptoms

		Frequency	Percentage	Valid percentage	Accumulated percentage
D1 – sleep disorders	N	11	45.8	45.8	45.8
	T	3	54.2	54.2	100.0
D2 – anger outbursts	N	16	66.7	66.7	66.7
	T	8	33.3	33.3	100.0
D3 – concentration difficulties	N	16	66.7	66.7	66.7
	T	8	33.3	33.3	100.0
D4 – increased vigilance	N	8	33.3	33.3	33.3
	T	16	66.7	66.7	100.0
D5 – reflex indicative	N	6	25.0	25.0	25.0
	T	18	75.0	75.0	100.0
Total		24	100.0	100.0	

The largest surveyed percentage (75%) tended to react vividly to unexpected noise, movement or touch, compared to before their Iraq deployment. A significant percentage (66.7%) of soldiers declared increased vigilance and 54.2% experienced sleep disorders. Irritation and anger outbursts were found in 33.3 % of soldiers. The same number admitted concentration problems. Those results correspond with surveys concerning combat trauma results [13, 14].

The presence of a traumatic event is a PTSD diagnostic criterion [15]. The descriptions of the above-mentioned three groups of symptoms occurring after traumatic event and its duration (should be longer than 1 month) are also significant indicators. It is essential that diagnostic criteria include the duration of symptoms; otherwise, some of the surveyed soldiers, who react naturally to traumatic events, would be diagnosed as having post-traumatic stress disorder. The survey shows that more than half of the respondents (54.2 %) had shorter symptoms. Only some of the surveyed soldiers (45.8%) were found to have PTSD symptoms lasting longer.

To diagnose post-traumatic stress, another requirement must be fulfilled. Symptoms must cause distress in a surveyed person, which then interferes with various aspects of life (professional, social, etc.) The presence of such symptoms was also surveyed in soldiers, who took part in the mission in Iraq. Only three out of twenty-one soldiers (12.5 %) declared having some problems in those aspects of life.

## DISCUSSION

The data suggest that a large number of soldiers were spectators or participants in traumatic events. Even though almost every of them reacted strongly to those situations, none of the soldiers met a particular criterion that would predispose him to being diagnosed with PTSD. In contrast to the hardships of the everyday life, traumatic events can cause significantly negative reactions. The characteristics of the phenomenon have been well-depicted by surveys, showing that a soldier's reaction to a threat is a complex set of reactions, including activities of both their

bodies (sweating, trembling), and their minds (recurring memories, high arousal levels). The surveys found that many of soldiers manifested some of the symptoms of PTSD. Half of the respondents declared having reoccurring nightmares and memories after the traumatic event. Those diagnosed had increased physiological reactions (sweating, hand shaking), reoccurring nightmares and anxiety, which are considered natural reactions after any traumatic event. The collected data correspond fully with data in the literature [16, 17]. According to Horowitz [18], reoccurring memories, which are connected with experienced extremely stressful situations, can be caused by conscious or unconscious information processing performed by the soldiers. That information stays out of the consciousness in an active, ripe form unless it is fully assimilated and processed. It is very probable that the persistent discrepancy between new information and the previous findings, as well as reoccurring images of dramatic events, cause a strong, emotional response in soldiers, which is manifested in the form of anxiety and physiological reactions.

It may also be concluded that the avoidance symptom is an attempt to tame and control the emotions experienced by the surveyed soldiers. In cases where the information processing was too painful, soldiers tend to avoid conversations and war period memories that were directly connected with the traumatic event. On the one hand, this mechanism may seem profitable at first glance. However, avoiding the problem for a long time avoids confronting it and will only displace the information processing by delaying it. In this way, we can explain the reoccurring bad memories, stressful images, sleep disorders and increased arousal in surveyed soldiers. Memories were repeatedly returning because the information processing must have reached its final stage.

Moreover, the results show that the majority of surveyed soldiers who experienced a traumatic event reacted more emotionally to any unexpected noise, touch or movements than they had reacted before the stressful situation. What is more, a significant number of respondents were more sensitive to unexpected sounds, which may suggest that self-protection systems are in a state of constant vigilance, in case the traumatic event will occur again. On the basis of

the survey it was not possible to confirm the assumption that experiencing trauma during early childhood or adolescence leads to the possibility of higher PTSD development when one experiences a traumatic event again in his adult life.

Experiences from First and Second World War, the Vietnam War and modern warfare operations show that war-related stress is the source of soldiers' mental disorders [19, 20, 21]. Combat veterans' responses range from feeling of fear and hopelessness to anger outbursts and aggression. Those symptoms are frequently connected with depression and anxiety [22, 23, 24, 25, 26]. Aggression surveys were proven to be consistent with previous expectations. Aggression was higher in soldiers deployed to serve in Iraq (eleven statistically significant disproportions between both groups were discovered). It is highly possible that specific war conditions, life and health threats lead to increased aggression levels. Moreover, aggression is caused by natural chemical substances, such as adrenaline [27]. This is mainly because a person's body is strongly aroused after experiencing a traumatic event and while experiencing a sense of threat it wants to provide adequate protection. It produces substances which are helpful in protection, which can be seen in using physical force (hitting someone or releasing emotions by hitting inanimate objects, for example) or verbal aggression (ridiculing someone, for example).

As the Polish National Security Ministry has confirmed, during the first year of the mission in Iraq many soldiers found it impossible to adapt to the situation in which they were in. Ninety of them were diagnosed with PTSD [28]. The mission's difficult and demanding conditions led to numerous disorders, for example, in the form of depressive and anxiousness states [29].

The results of the present surveys may be quite surprising, compared to earlier examinations concerning war-related stress. The data indicate that the soldiers' deployment to Iraq did not differentiate them according to their depression or anxiety, in either the experimental or control groups. It is possible that coming back home and meeting with their families helped to rebuild security and decrease post-traumatic stress disorder development. Surveys also show that social support plays a very significant role in protection against negative stress effects [30].

These results may be caused by the extensive military training to prepare for the mission. Proper instruction and necessary education plays a very important role. Surveys have proven that a respondent's knowledge of the possibility of intensive injury, the length of recovery and the duration of an individual disorder's symptoms supports faster and more stable recovery after traumatic events than if they are not equipped with proper knowledge about their condition [31].

Another possible explanation of the results described above may be connected with many researchers' findings that traumatic experiences can lead to positive outcomes – a person who recovers from a trauma can become stronger and richer, both psychologically and spiritually, for example [32, 33, 34]. Such changes may be manifested in a variety of different ways, for example, by attaching more importance and value to one's own life, creating relationships full of intensity and warmth, increased sense of personal strength and a richer spiritual life. Unreliable examination results may be caused by a lack of willingness to report about their disorders and psychological problems [35].

The nature and temporality of surveys may have also influenced the results. Individual indicators were measured after returning from Iraq, so it is not known how much they influenced the measured features. Such results may be the starting point for formulating new hypotheses to be verified in future surveys.

## CONCLUSIONS

Soldiers who returned from Iraq manifested some of the symptoms of PTSD.

Soldiers who returned from Iraq were characterized by higher levels of aggression than the soldiers who stayed in Poland.

Iraq deployment didn't differentiate depression and anxiety levels between the experimental and control groups of soldiers.

Traumatic event confrontation in the period of early childhood/ adolescence did not influence PTSD development in soldiers who experienced a traumatic event again in Iraq.

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