

## ORIGINAL ARTICLE

# Prevalence of sickness and traumatic profile in the population of Stabilization Forces soldiers and Iraqi civilians treated in the Polish Field Hospital in Iraq

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## ABSTRACT

The aim of this study is to present the prevalence of diseases and injuries as seen on the example of Stabilization Forces soldiers and Iraqi civilians treated in the Polish Field Hospital in Iraq (according to the NATO procedures). The epidemiological analysis was based on the medical documentation of the patients treated between October 2003 and March 2004. The highest incidence of diseases and injuries was observed in the age groups under 25 years. The military personnel made up 71.8%, and civilians 28.2% of patients studied. Privates were the biggest group of treated soldiers. The predominant nationality treated in the analyzed period were Polish soldiers (49.1%), and secondly Iraqi civilians (23.7%). The results clearly showed that among the treated population ( $n = 287$ ) the traumatic profile was dominating (51.6%). The main reasons for treatment were non-battle (12.8%) and battle injuries (11.2%). Acute gastrointestinal disorders (7.9%) and acute stress disorder (7.2%) were also a common problem. Contagious, parasitic and sexually transmitted diseases caused no epidemiological threat in the analyzed period.

**Keywords:** *diseases, injuries, combat disorders, Iraq.*

## INTRODUCTION

Military service in a combat zone is burdened by a number of risk factors which can bring to high prevalence of non-battle and battle injuries. The most frequent traumas caused by war operations, car or sport accidents are cutting wounds, contusions, gunshot/shrapnel wounds, and dislocations/sprains of joints.<sup>1,2,3</sup> On the other hand, military service in the hot climate in connection with warfare and the low sanitary conditions of the region is related to raised incidence of many pathological conditions. A high sickness rate of gastrointestinal tract diseases is visible and acute gastrointestinal disorders represent the commonest pattern.<sup>4,5</sup> Another health problem, often developing among the soldiers of military missions is stress related to the realization of mandatory

tasks. The most frequent psychiatric disorders common to the members of the missions are combat stress and adaptation disorders.<sup>6,7,8</sup> Serving in the tropical and subtropical areas can cause high morbidity of upper and lower respiratory tract diseases, especially among representatives of the moderate climate, who have problems with readjustment and do not comply with the basic rules of prophylaxis in the hot environment.<sup>3</sup>

The aim of this article is to analyse the prevalence of diseases and injuries in the Multinational Division Central South (MND CS) in Iraq on the example of Stabilization Forces soldiers and Iraqi civilians treated in the Polish Field Hospital in the Karbala Province. The author of this article served in Iraq as a medical officer of MND CS, in the Field Hospital mentioned above.

## MATERIAL & METHODS

The epidemiological analysis of diseases and injuries among soldiers of Stabilization Forces and Iraqi civilians treated in the Field Hospital MND CS in Iraq was based on the hospital records of the patients from the Internal and Surgical Ward, and transient patients treated during medical evacuations (according to the NATO procedures). The medical documentations came from 287 patients of various nationalities treated from October 2003 to March 2004. The examined population was selected from over 8 thousand soldiers serving in MND CS and Iraqi civilians, mainly from the Karbala Province.

The 30-bed Polish Field Hospital in Karbala was 2+ medical evacuation level for soldiers of Stabilization Forces in Iraq, and it also provided Iraqi civilians with the humanitarian assistance. The basic tasks of the medical unit were medical care in urgent situations, stationary treatment of wounded and ill soldiers, to whom the return to service was considered (to 7 days), ambulatory treatment within internal medicine, general and casualty surgery, in other fields of medicine (ophthalmological, dermatological, psychiatrist & psychological service, dental care, laboratory and X-ray diagnostic), preparation for further evacuation, and MEDEVAC (Medical Evacuation) duty. The Field Hospital in Karbala consisted of the sick call (admission room, dermatology/ophthalmology/internal medicine/psychiatry/surgery/psychology office, X-ray department, morgue), the surgical team (surgical theatre for 2 surgical tables and intensive care unit for 4 beds),

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internal and surgical ward (20 beds), isolation ward (6 beds), laboratory, dental clinic, evacuation team, psychological team, and pharmacy.

The retrospective examination of the patients was complete, this means every patient of the Field Hospital in the study period was subjected to an epidemiological assessment. This research describes the incidence of diseases and injuries according to age, rank, and nationality, and assesses the pattern of diseases and traumas among the examined population.

## RESULTS

In total 287 soldiers of the Stabilization Forces and Iraqi civilians were treated in the Field Hospital MND CS from October 2003 to March 2004. The highest number of patients, treated in the study period, occurred in December 2003 and March 2004, which was related to the massive casualties as a result of the terrorist attacks in Karbala.

According to our results, 219 patients were treated in the internal and surgical ward and 68 patients were cured during medical evacuation to higher level. Among treated patients 273 were men (95%) and 14 women (5%). Based on the age, the highest incidence of diseases and injuries occurred in the population under the age of 25 (Figure 1).

Among the patients treated in the Polish Field Hospital, the military personnel made up 71.8% and civilians 28.2%. Privates were the most extensive group of soldiers treated in the analyzed period (Figure 2).

The dominant nationality treated in the Field Hospital in the analyzed period were Polish soldiers due to their prevalent service in MND CS (Figure 3).

In total 304 cases of diseases and traumas were reported in the population of 287 patients treated in the Field Hospital MND CS. Traumatic profile was dominating, whereas contagious, parasitic, and sexually transmitted diseases caused no epidemiological problem in the period of the study (Figure 4).

The principal reasons of the patients' treatment were non battle

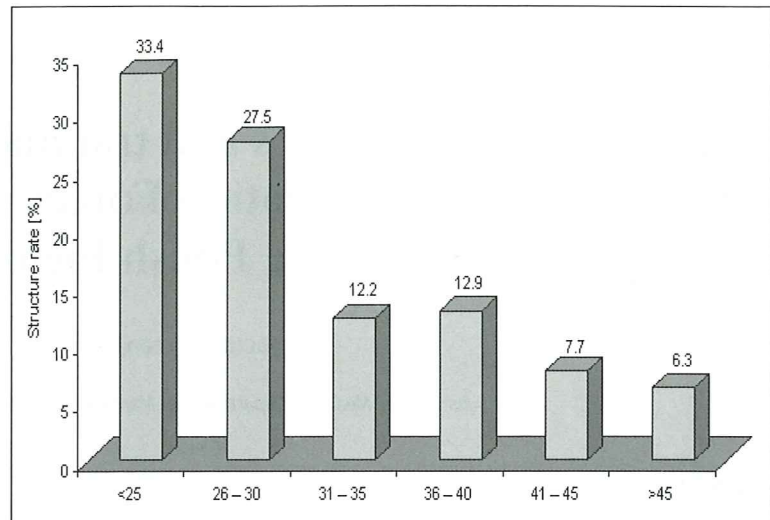


Figure 1. The examined population treated in the Field Hospital MND CS in Iraq from October 2003 to March 2004 according to age (n = 287). Source: MND CS. Own studies.

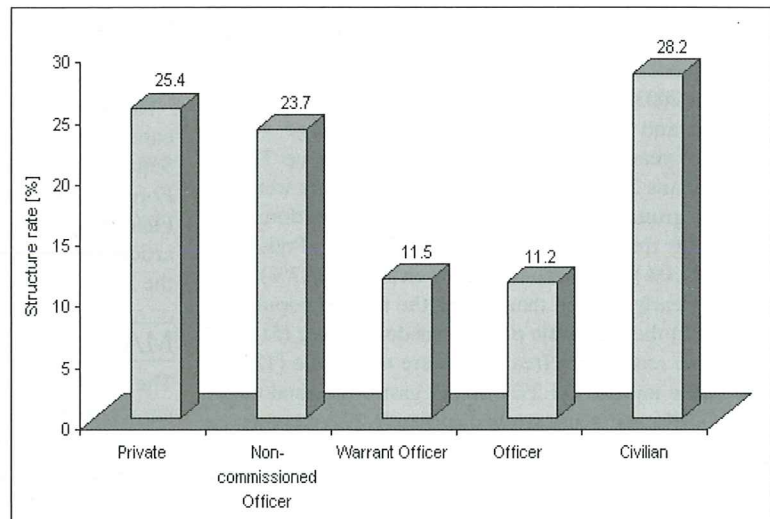


Figure 2. The examined population treated in the Field Hospital MND CS in Iraq from October 2003 to March 2004 according to rank (n = 287). Source: MND CS. Own studies.

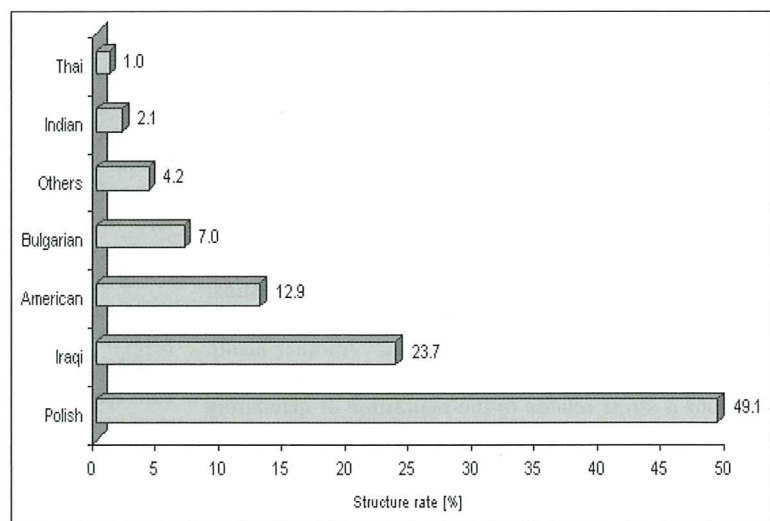


Figure 3. The examined population treated in the Field Hospital MND CS in Iraq from October 2003 to March 2004 according to nationality (n = 287). Source: MND CS. Own studies.



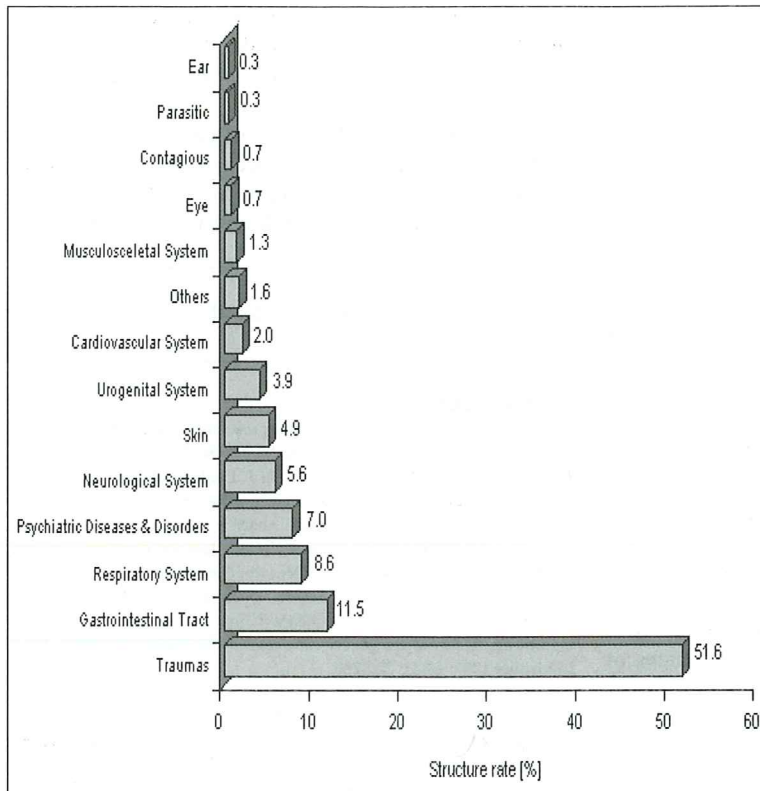


Figure 4. The incidence of diseases and traumas in the population of soldiers and civilians treated in the Field Hospital MND CS in Iraq from October 2003 to March 2004 (n = 304). Source: MND CS. Own studies.

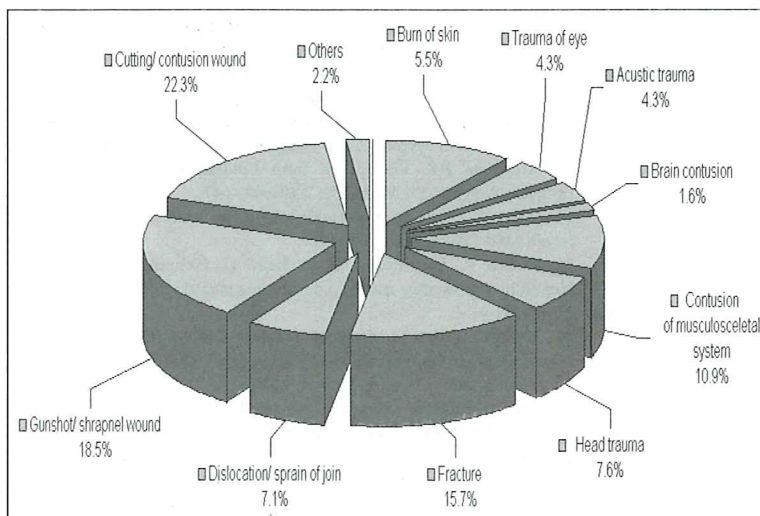


Figure 5. Trauma structure in the examined population treated in the Field Hospital MND CS in Iraq from October 2003 to March 2004 (n = 184). Source: MND CS. Own studies.

Table 1. Structure and location of battle injuries in the examined population treated in the Field Hospital MND CS in Iraq from October 2003 to March 2004 (n = 34)

Location	Gunshot wound	Shrapnel wound
Upper limb	3 (21.4%)	7 (35%)
Lower limb	5 (35.7%)	6 (30%)
Chest and Abdomen	4 (28.6%)	4 (20%)
Head	2 (14.3%)	3 (15%)

Source: MND CS. Own studies

injuries (cutting wounds, contusions) – 12.8%, and battle injuries (gunshot/shrapnel wounds) – 11.2%. Acute gastrointestinal disorders (nausea, vomiting, diarrhea; 50% confirmed cases were caused by Escherichia coli) – 7.9%, and acute stress disorder – 7.2% were also common.

The traumatic profile in the examined population looked as follows in figure 5 and Table 1.

## DISCUSSION

The areas of military operations concentrated in the hot climate warfare zone are distinctive. The combat missions performed among cultural and religious differences of the local population, and low sanitary and epidemiological standards of the region, connected with austere climatic conditions (especially for representatives of moderate climate) can lead to physical and mental diseases and disorders.<sup>4,7,8,9</sup> The fulfillment of mandatory tasks by the military personnel depend on appropriately qualified candidates for specific posts. The majority of candidates are young men at the age of 20-30 years. Based on a military rank, the highest incidence of diseases and traumas occurred among privates and non-commissioned officers, which was a direct image of outweighing number of participating enlisted soldiers compared to the officers.<sup>3</sup>

The military service members in the combat zone are exposed to an increased number of injuries. Among them non-battle and battle wounds are prevailing. During warfare the most common injuries, in the military mission areas, are gunshot wounds (from firearms, mainly AK 47 Kalashnikov), and shrapnel wounds (from shells and antipersonnel mines).<sup>10</sup> In every conflict that the United States had been involved in, 20% of all hospital admissions were combat injuries. The other 80% included diseases and non-battle injuries.<sup>11</sup> Aside from traumas related directly to the warfare, another essential group, in the Middle East and in the Northern Africa especially, are injuries arising from car accidents. Most drivers of this region ignore or have limited knowledge of traffic regulations.<sup>3</sup> Generally, the

leading causes of non battle injury deaths are motor vehicle crashes, drug overdoses, suffocations (which includes suicide by hanging), falls, drownings and fire. There are also firearm deaths during peace time. Homicide is a primary cause of death among the population of young, whereas among the older men it is primarily suicide.<sup>12</sup>

During the highest escalation of Israeli invasion of Lebanon in the summer of 1982 primary health problems were not traumas, but diarrheas and upper respiratory infections.<sup>13</sup> Among the military personnel of the UN mission in Lebanon, gastrointestinal tract diseases made up 18.43%, and respiratory system diseases 10.37% of all health problems hospitalized between 1993 and 2000.<sup>3</sup> Acute gastrointestinal disorders (nausea, vomiting, diarrhea) are common in the hot climate. The most nagging health problem of 40-50% soldiers in the military missions are bacterial, viral and protozoal diarrheas.<sup>14,15</sup> Diarrheas have had an important impact on military operations throughout the history. Appropriate example was an epidemic of diarrhea in Kuwait and Iraq during Operation Desert Shield, with attack rates of 10% per week on the force strength in some units of the Coalition Forces, with 50% of all troops affected. In general, the estimates of diarrheas in travelers to the developing world range from 20 to 55%.<sup>16</sup> The most common causative agents are enterotoxigenic strains of *Escherichia coli*. These particular bacteria are responsible for 40 to 50% of all cases, and result in a self limited, non-invasive watery diarrhea (3 to 5 days). The invasive diarrhea can be caused by *Shigella* (5 to 15% of cases), *Salmonella* (5 to 10%), and *Campylobacter* (5%). The Protozoal diarrhea due to *Giardia intestinalis*, may occur in 2 to 5%. *Entamoeba histolytica* is responsible for only 1% of cases, but can cause a severe dysenteric picture.<sup>16</sup> In 20-30% percent the acute gastrointestinal disorders are cases of unknown etiology (negative microbiological examination).<sup>17,18</sup>

A military mission is a form of combat task where soldiers are subjected to the loss of health or life. Due to the warfare environment, psychiatric disorders among military personnel are common. From April 2003 to January 2004 more than 10 thousand American troops were medically evacuated from Iraq to the United States, among them almost 400 were routed because of mental health problems. According to the Army's count, at least 24 suicides of U.S. soldiers were noticed in Iraq and Kuwait between April 2003 and March 2004. That number is not exact because the circumstances of some other deaths are still in doubt.<sup>19</sup> Nearly 500 thousands of the 3.14 million men and women who served in the Vietnam theater are currently suffering from the post-traumatic stress disorder (PTSD) and nearly 1 million have had PTSD at some point of their lives.<sup>20</sup> The medical and psychiatric nomenclature of reactions to the war experiences change, but the reactions themselves are remarkably similar. The veterans of the World War I suffered from shell shock, in the World War II and the Korean conflict the symptoms were

known as war neuroses, and the Vietnam veterans experienced post-traumatic stress disorder. In current theater of operations soldiers suffer from combat stress syndrome.<sup>21</sup>

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