

Hospitalizations of U.S. military personnel deployed to Afghanistan for Operation Enduring Freedom

Leczenie szpitalne żołnierzy amerykańskich pełniących służbę w Afganistanie w ramach operacji Enduring Freedom

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Abstract. Aim: The article presents the results of own research on the incidence of diseases and injuries in the populations of men and women serving in the U.S. Forces and deployed to Afghanistan as members of Operation Enduring Freedom. Material and methods: The retrospective analysis was based on medical records of American patients (171 females and 1,414 males) who were hospitalized in the Combat Support Hospital (CSH, level 3) in Bagram Airfield (BAF) from July 2002 to September 2005. 66,000 U.S. military personnel had been engaged in the military operation conducted in Afghanistan within the studied period. The CSH in BAF was the main facility providing hospital treatment and ensuring medical evacuation of the Americans outside the theater of operations. The analysis was carried out on the basis of structure rate and intensity rate per 1,000 persons. Results: The conducted study demonstrated that the most common health problems among the U.S. female military personnel hospitalized in the CSH in Bagram were gastrointestinal diseases, mental disorders, neurological diseases, and non-battle injuries. The disease profile observed among male patients treated in the same place at the same time was dominated by injuries (battle and non-battle), gastrointestinal diseases and mental disorders.

Key words: Afghanistan, morbidity, U.S. Forces

Streszczenie. Cel: W pracy przedstawiono wyniki badań własnych, dotyczących występowania chorób i obrażeń ciała wśród kobiet i mężczyzn pełniących służbę w U.S. Forces na terenie Afganistanu w ramach operacji Enduring Freedom. Materiał i metody: Przeprowadzona analiza retrospektywna została oparta na dokumentacji medycznej 171 pacjentek i 1414 pacjentów narodowości amerykańskiej hospitalizowanych w Combat Support Hospital (CSH, level 3) w Bagram Airfield (BAF) w okresie 07.2002–09.2005. W operacji wojskowej w Afganistanie brało wówczas udział 66 000 żołnierzy U.S. Forces, dla których CSH w BAF był głównym ośrodkiem leczenia szpitalnego i ewakuacji medycznej poza teatr działań. Analizę wykonano w oparciu o wskaźnik struktury oraz wskaźnik natężenia w przeliczeniu na 1000 osób. Wyniki: Badania wykazały, że najczęstszym problemem zdrowotnym personelu żeńskiego U.S. Forces hospitalizowanego w CSH w Bagram były choroby układu pokarmowego, zaburzenia psychiczne, choroby układu nerwowego oraz urazy niebojowe. Wśród mężczyzn leczonych w tym samym miejscu i czasie dominował profil urazowy (urazy niebojowe i bojowe), choroby układu pokarmowego i zaburzenia psychiczne.

Słowa kluczowe: Afganistan, U.S. Forces, zachorowalność

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Introduction

Military personnel engaged in present-day military operations carried out in the Middle East and Central Asia are

constantly at risk of a terrorist or criminal attack. Virtually each day there are attacks on patrols and convoys with the use of improvised explosive devices (IEDs), rebels set up ambushes with the use of small arms or shell military

bases. As a result of the attacks soldiers sustain multi-organ injuries, shrapnel or gunshot wounds. Another serious threat for soldiers deployed to Afghanistan, a country where the largest number of international troops have been stationing, are landmines and unexploded ordnance – the remnants of past conflicts. Soldiers serving in coalition forces run a high risk of sustaining non-battle injuries, e.g. sports traumas or injuries suffered in traffic accidents while performing mandated tasks. Increased incidence of both battle and non-battle injuries significantly reduces combat readiness of troops. The traumatic profile also dominates in the population of soldiers hospitalized in the combat zone. Medical support of coalition forces relocated to Afghanistan is consistent with the multi-level organizational structure of the health services supporting the U.S. Forces. A Combat Support Hospital represents the highest, i.e. level 3 of medical evacuation in Afghanistan. It admits patients from Forward Surgical Teams (FST, level 2), which in turn admit the sick and wounded from a Battalion Aid Station (BAS, level 1) or according to indications straight from the battlefield [1].

Tasks and organizational structure of the Combat Support Hospital

The Combat Support Hospital (CSH) represents a medical facility tasked with further stabilization of life functions; it also provides specialist treatment (full range or according to indications) for patients evacuated from the FST inside the zone of operations. Patients who cannot be returned to duty within 7 days are transferred to level 4 of medical evacuation established outside the theater of operations (medical facilities in American bases located in Europe and in the Middle East). The CSH is a 248-bed medical facility which can be divided into 2 independent hospital companies: a 164-bed and an 84-bed unit. The CSH is capable of providing general, orthopedic, thoracic, vascular, urologic and gynecologic surgery. The CSH has extensive laboratory capabilities: X-ray, ultrasound scan, CT scan, blood bank, physiotherapy. The 84-bed medical company employs 168 medical staff, and is equipped with 2 operating rooms, 24 intensive care unit beds, and 60 hospital beds. The 164-bed medical company employs 253 medical staff, and is equipped with 4 operating rooms, 24 intensive care unit beds and 140 hospital beds. Battlefield surgery performed in Afghanistan is primarily based on *damage control* and it does not include a full-range medical treatment of a patient. Forward Surgical Teams operate on damaged liver, intestines, disinfect wounds, and stop hemorrhage (the time limit spent on a surgical patient does not exceed 2 hours). Following this time, a wounded soldier is to be evacuated to a Combat Support Hospital. Wounded soldiers subjected to medical evacuation are often transported in the middle of an operation, unconscious, ventilated or with

an open abdomen and towels inside. The CSH, where the average length of a hospital stay is 3 days, does not have the capability to carry out all surgical procedures. The most complicated cases are transferred to a level 4 medical facility, outside the combat zone. Within the first several months of *Operation Iraqi Freedom* the average evacuation time of an American soldier from a battlefield to the US (Walter Reed Army Medical Center in Washington – a level 5 facility, i.e. the highest level of medical evacuation in the U.S. Forces) was 8 days. At present, the evacuation time, which plays a decisive role in a therapeutic process, does not exceed 4 days (for comparison, in Vietnam it was 45 days) [2].

Aim

The aim of this study is to analyze prevalence of diseases and injuries among male and female personnel serving in the U.S. Forces in the territory of Afghanistan as members of Operation Enduring Freedom who had been hospitalized at level 3 of medical evacuation in the Combat Support Hospital in Bagram Airfield, the largest American military base in Central Asia.

Material and methods

The retrospective analysis was conducted on the basis of medical records of 1,585 American military personnel, 171 females and 1,414 males, serving in the U.S. Forces who were hospitalized in the Combat Support Hospital (CSH, level 3) in Bagram Airfield (BAF) from July 2002 to September 2005. The number of the U.S. Forces personnel engaged in the military operation conducted in Afghanistan within the given period amounted to 66,000 people. The CSH in BAF was the main medical facility providing hospital treatment and ensuring medical evacuation of the U.S. personnel outside the theater of operations. Female personnel accounted for approximately 10% of the American troops' strength. The analysis was carried out on the basis of structure rate and intensity rate per 1,000 persons. The analysis of medical data obtained from the American service personnel was carried out by consent of the Head of Health Services supporting Operation Enduring Freedom in Afghanistan (Combined Joint Task Force-76 Surgeon, Commander 249th U.S. Army General Hospital, Bagram Airfield). The study population was of accidental composition (no selection). The data, which have been collected, were then presented in the form of figures and tables. The most common diseases and injuries were analyzed in line with the ICD-9-CM classification: respiratory, circulatory, gastrointestinal, musculoskeletal, skin, neurological, genitourinary, eye, ear, contagious and parasitic diseases, mental disorders, injuries, dental diseases and

Table 1. Prevalence of diseases and injuries among American females serving in the U.S. Forces (n = 6,000), hospitalized from July 2002 to September 2005 (n = 171)**Tabela 1. Występowanie chorób i obrażeń ciała wśród Amerykanek pełniących służbę w U.S. Forces (n = 6 000), leczonych szpitalnie w okresie 07.2002–09.2005 (n = 171)**

Diseases and injuries	American females hospital treatment (number of patients n = 171)		
	Number of cases	Structure rate [%]	Intensity rate (per 1,000 persons)
gastrointestinal	58	33.9	9.7
psychiatric	26	15.2	4.3
neurological	19	11.1	3.2
non-battle injuries	16	9.3	2.7
genitourinary	9	5.3	1.5
dental	9	5.3	1.5
respiratory	8	4.7	1.3
skin	7	4.1	1.2
other	7	4.1	1.2
heat injuries	5	2.9	0.8
musculoskeletal	4	2.3	0.7
cardiovascular	1	0.6	0.2
contagious	1	0.6	0.2
eye	1	0.6	0.2
total	171	100.0	28.5

Source: Enduring Freedom. Own studies

fevers of unknown origin. Detailed diagnoses of particular disease entities were analyzed in compliance with the same classification. The basis for calculating the intensity rate was the number of hospital admissions according to diagnosed diseases or injuries used as a numerator, and the total number of patients treated throughout the given period used as a denominator (n = 6,000 female personnel of the U.S. Forces; n = 60,000 male personnel of the U.S. Forces) multiplied by the coefficient $C = 10^k$ (k = 0,1,2,3..., in the statistical analysis k = 3). The intensity rate was used to calculate the incidence of diseases and injuries per 1,000 persons in the study population. STATISTICA PL software was used to calculate the final scores.

Results

The study demonstrated that the most common health problems in the population of 171 female personnel of the U.S. Forces hospitalized in the Combat Support Hospital in BAF in the period July 2002 – September 2005 were gastrointestinal diseases (33.9%, 9.7/1,000 persons), mental disorders (15.2%, 4.3/1,000 persons), neurological diseases (11.1%, 3.2/1,000 persons) as well as non-battle injuries (9.3%, 2.7/1,000 persons; Table 1).

Gastrointestinal diseases (58 cases) included acute gastroenteritis 40, appendicitis 5, cholelithiasis/cholecystitis 3, gastritis 3, constipation 3, other 4. Mental disorders (26 cases) included acute stress disorder (ASD) 17, adaptation disorders 4, drug abuse 2, posttraumatic stress disorder (PTSD) 1, bulimia 1, bipolar disorder 1. Neurological diseases (19 cases) included back pain 8, headache 4, syncope 4, other 3. The traumatic profile was dominated by non-battle injuries (16 cases) including fracture 4, contused/lacerated wound 4, contusion/sprain/dislocation 4, electric shock 2, other 2. Female personnel hospitalized within the given period were also analyzed in terms of age and rank. The most commonly treated female patients were non-commissioned officers (NCOs) (71.9%), aged <25 (55.6%). The analysis of the disease profile in the male population demonstrated that the most common health problems of the 1,414 soldiers of the U.S. Forces hospitalized in the Combat Support Hospital in BAF from July 2002 to September 2005 were gastrointestinal diseases (20.5%, 4.8/1,000 persons), non-battle injuries (16.6%, 3.9/1,000 persons), battle injuries (13.1%, 3.1/1,000 persons) and mental disorders (11.5%, 2.7/1,000 persons; Table 2).

Gastrointestinal diseases (290 cases) included acute gastroenteritis 163, appendicitis 41, inguinal hernia 34,

Table 2. Prevalence of diseases and injuries among American males serving in the U.S. Forces (n = 60,000), hospitalized from July 2002 to September 2005 (n = 1,414)

Tabela 2. Występowanie chorób i obrażeń ciała wśród Amerykanów pełniących służbę w U.S. Forces (n = 60 000), leczonych szpitalnie w okresie 07.2002–09.2005 (n = 1 414)

Diseases and injuries	American males hospital treatment (number of patients n = 1,414)		
	Number of cases	Structure rate [%]	Intensity rate (per 1,000 persons)
gastrointestinal	290	20.5	4.8
non-battle injuries	236	16.6	3.9
battle injuries	185	13.1	3.1
psychiatric	162	11.5	2.7
neurological	104	7.4	1.7
cardiovascular	83	5.9	1.4
skin	70	4.9	1.2
genitourinary	62	4.4	1.0
respiratory	59	4.2	0.9
dental	49	3.4	0.8
musculoskeletal	28	2.0	0.5
contagious & parasitic	23	1.6	0.4
heat injuries	21	1.5	0.4
fevers of unknown origin	17	1.2	0.3
other	15	1.1	0.3
eye	10	0.7	0.2
total	1,414	100.0	23.6

Source: Enduring Freedom. Own studies

Table 3. Prevalence of non-battle injuries among American males serving in the U.S. Forces (n = 60,000), hospitalized from July 2002 to September 2005 (n = 236)

Tabela 3. Występowanie urazów niebojowych wśród Amerykanów pełniących służbę w U.S. Forces (n = 60 000), leczonych szpitalnie w okresie 07.2002–09.2005 (n = 236)

Non-battle injuries	American males hospital treatment (number of patients n = 236)		
	Number of cases	Structure rate [%]	Intensity rate (per 1,000 persons)
fracture	65	27.5	1.08
contusion of musculoskeletal system	34	14.4	0.57
sprain/dislocation	28	11.9	0.47
contused/lacerated/other wound	25	10.6	0.42
craniocerebral trauma	17	7.2	0.28
scorpio/spider bite	13	5.5	0.22
eye trauma	12	5.1	0.20
burn	11	4.7	0.18
multiorgan trauma	5	2.1	0.08
chemical poisoning	3	1.3	0.05
other	23	9.7	0.38
total	236	100.0	3.93

Source: Enduring Freedom. Own studies

Table 4. Prevalence of battle injuries among American males serving in the U.S. Forces (n = 60,000), hospitalized from July 2002 to September 2005 (n = 185)**Tabela 4. Występowanie urazów bojowych wśród Amerykanów pełniących służbę w U.S. Forces (n = 60 000), leczonych szpitalnie w okresie 07.2002–09.2005 (n = 185)**

Battle injuries	American males hospital treatment (number of patients n = 185)		
	Number of cases	Structure rate [%]	Intensity rate (per 1,000 persons)
shrapnel wound	67	36.2	1.12
gunshot wound	64	34.6	1.07
post-traumatic amputation of the lower extremity/foot	13	7.0	0.21
fracture	12	6.5	0.20
post-traumatic amputation of the upper extremity/hand	6	3.2	0.10
burn	6	3.2	0.10
contusion of musculoskeletal system	4	2.2	0.07
eye trauma	4	2.2	0.07
multiorgan trauma	3	1.6	0.05
craniocerebral trauma	2	1.1	0.03
contused/lacerated wound	2	1.1	0.03
other	2	1.1	0.03
total	185	100.0	3.08

Source: Enduring Freedom. Own studies

Table 5. Location of shrapnel and gunshot wounds among American males serving in the U.S. Forces hospitalized from July 2002 to September 2005 (n = 131)**Tabela 5. Lokalizacja ran odłamkowych i postrzałowych wśród Amerykanów pełniących służbę w U.S. Forces leczonych szpitalnie w okresie 07.2002–09.2005 (n = 131)**

Type of injury	Upper extremity	Lower extremity	Trunk/ pelvis/ spine	Head	Neck	Total
shrapnel wounds	12	34	8	9	4	67
gunshot wounds	13	28	18	5	–	64

Source: Enduring Freedom. Own studies

gastritis 8, peptic ulcer 7, diverticulitis 6, cholelithiasis/cholecystitis 5, constipation 3, other 26. The diagnosed mental disorders (162 cases) included ASD 97, neurosis 45, drug abuse 7, adaptation disorders 6, bipolar disorder 3, PTSD 2, reactive psychosis 2. The traumatic profile included both non-battle (Table 3) and battle injuries (Table 4). Male personnel hospitalized within the given period were also analyzed in terms of age and rank. The most commonly treated male patients were NCOs (73.5%), aged <25 (41.2%).

Gunshot and shrapnel wounds, mainly of the lower extremities, accounted for 70% of all battle injuries (Table

5) treated within the given period. Shrapnel wounds (67 cases) and post-traumatic amputations of the lower extremity/foot were usually the result of landmine explosions (31 incidents), artillery shells/ mortar/ RPG explosions (27 incidents) or IED explosions (22 incidents).

The most common disease entities treated on an inpatient basis in the Combat Support Hospital in BAF in the period July 2002 – September 2005 were acute gastroenteritis and acute stress disorder (ASD) among women (Figure 1), and acute gastroenteritis, shrapnel and gunshot wounds as well as ASD among men (Figure 2).

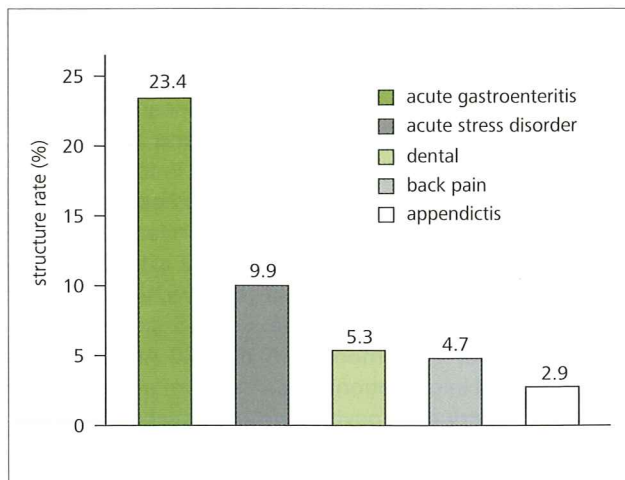


Figure 1. The most common disease entities among American females serving in the U.S. Forces (n = 6,000), hospitalized from July 2002 to September 2005 (n = 171)

Source: Enduring Freedom. Own studies

Rycina 1. Najczęstsze jednostki chorobowe wśród Amerykanek pełniących służbę w U.S. Forces (n = 6 000), leczonych szpitalnie w okresie 07.2002–09.2005 (n = 171)

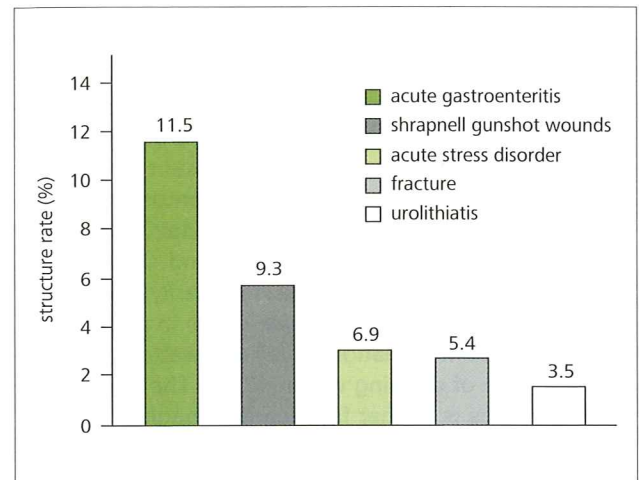


Figure 2. The most common disease entities among American males serving in the U.S. Forces (n = 60,000), hospitalized from July 2002 to September 2005 (n = 1,414)

Source: Enduring Freedom. Own studies

Rycina 2. Najczęstsze jednostki chorobowe wśród Amerykanów pełniących służbę w U.S. Forces (n = 60 000), leczonych szpitalnie w okresie 07.2002–09.2005 (n = 1 414)

Discussion

Military personnel serving on stabilization missions carried out in the Middle East and Central Asia are exposed to a number of environmental factors which determine the occurrence of a wide range of diseases and injuries. The most common health problems reported among service personnel relocated to the theater of operations are battle and non-battle injuries, mental disorders and gastrointestinal diseases [3]. Military personnel taking part in present-day military operations run a particularly high risk of death or health damage resulting from battle injuries. The areas, where coalition troops have been deployed, are at risk from criminal and terrorist attacks. Virtually every day brings bombings, ambushes with the use of IED or shelling of military bases from mortars or rocket launchers. Landmines and unexploded ordnance, the remnants of the past wars, pose an additional threat for the personnel deployed to Afghanistan. Over 75% of all battle injuries sustained in combat over the last several decades relate to extremities [4]. On the one hand, this results from the protection of the head and trunk (helmet, anti-shrapnel/ bullet-proof vest), on the other hand it is connected with the type of weapons used (shrapnel wounds caused by booby-traps, grenades, bombs or mortar shells as well as gunshot wounds from small arms) [5]. The own research conducted in the population of patients hospitalized due to battle injuries in the Medical Support Group (level 2+) of the Multinational Division Central-South in Iraq from October 2003 to June 2004 demonstrated that injuries to lower extremities, including

gunshot wounds (46%), fragment wounds (42%) and fractures (39%), dominated the traumatic profile [6]. It has been estimated that shrapnel wounds, which frequently coexist with fractures (in 1/3 of all cases), extended soft tissue injury and wound infection, amount to 2/3 of all battle injuries sustained in the contemporary battlefield [7]. The use of IEDs creates the highest risk of sustaining a shrapnel wound. Another effect of bomb or IEDs explosions are skin burns, which represent 5% of all battle injuries reported among soldiers evacuated from the operations *Iraqi* and *Enduring Freedom* for medical reasons [8]. Non-battle injuries represent the second element (following battle injuries) of the traumatic profile reported in the population of soldiers engaged in military operations. During the Vietnam War they represented the major cause of all sanitary losses suffered by the U.S. Forces [9]. During the operation *Desert Storm* non-battle injuries resulted in 81% of all deaths and 25% of all hospitalizations; 34% of the deaths were due to road accidents and 26% due to aircraft accidents [10]. Research conducted by Sanders et al. among American troops involved in operations *Iraqi* and *Enduring Freedom* in the period 2003–2004 demonstrated the occurrence of non-battle injuries in 34.7% of the study group, of which 77% required medical assistance [11]. Despite advanced technology employed by coalition forces, non-battle injuries are still commonplace and they frequently reduce combat readiness of the troops. The number of non-battle injuries might be even higher than quoted in official statistics, because the reports are often based on medical records concerning evacuation and

hospitalization of patients, whereas a large number of non-battle injuries are treated on an outpatient basis at levels 1 and 2 of medical evacuation. The most common causes of such traumas are sports injuries (workout, sporting competitions, gym) and traffic accidents [12]. Diseases of the digestive system represent yet another group of health problems which are commonly reported among military personnel involved in stabilization missions conducted in the Middle East and Central Asia. The occurrence of such diseases is primarily determined by a low level of hygiene and sanitation in the areas of deployment, contamination of soil and water and improper treatment of drinking water [13,14]. The occurrence of the diseases is further facilitated by neglect of military personnel to comply with recommendations regarding the rules of personal hygiene as well as food and feeding hygiene [15]. Typically, military personnel relocated to areas of operations represent a population of immigrants coming from countries of high hygienic standards. Thus, a sudden change of environmental conditions results in their increased sensitivity to local pathogens. This gives rise to gastrointestinal disorders which typically occur within the first several weeks after arrival at a new post [6]. The own research carried out in the population of the American military personnel deployed to the Multi-National Division Center South (MND SC) in Iraq in the period 2003–2004 demonstrated the highest prevalence of the gastrointestinal diseases (36.8%), among which acute gastroenteritis, with its typical symptoms (nausea, vomiting, diarrhea) lasting on average 1–3 days, was predominant. The incidence rate was the highest in the course of the first month after being relocated to a combat zone in the Middle East [16]. The most commonly identified pathogen causing acute diarrhea treated in the Polish Field Hospital in the MND CS in Iraq in the period October 2003 – March 2004 was enterotoxigenic *Escherichia coli*, (bacteriologically confirmed in over 50% of all cases) [6]. Another group of health problems diagnosed in the population of soldiers relocated to a zone of operations are mental disorders. Statistics indicate that a certain number of soldiers executing mandated tasks in extreme conditions are incapable of adapting to such a difficult situation and therefore must be evacuated to their home country for medical reasons. The effects of the experienced mental trauma (a strong or a dramatic event caused either by a brief incident or a long-lasting experience) may manifest themselves in the form of temporary or long-lasting psychiatric disorders such as ASD (*acute stress disorder*) or PTSD (*posttraumatic stress disorder*) [1]. Mental disorders may occur in military personnel who had suffered serious battle injuries as well as in those soldiers who had not been physically injured, however, they had experienced a life-threatening situation. Psychiatric disorders have been reported among combat troops as well as among military

personnel supporting combat activities [17]. Currently, psychiatric disorders account for 10% of all medical evacuations of the U.S. Forces personnel from operational areas in Iraq and Afghanistan [18]. American soldiers returning from overseas service in Iraq and Afghanistan, who had experienced a traumatic event in the theater of operations, are eligible for specialist medical assistance provided by military health centers supervised by the Department of Veterans Affairs for 2 years after being home-bound. They are diagnosed for psychiatric and/or psychosocial disorders. In the period 30 September 2001 – 30 September 2005 more than 103,000 American soldiers involved in operations *Iraqi Freedom* and *Enduring Freedom* underwent a psychiatric and psychological examination. Over 25% of the studied population demonstrated clinical symptoms of psychiatric disorders and 31% exhibited symptoms of psychosocial disorders requiring psychological intervention. Pathological changes were most commonly observed in soldiers aged 18–24 [19]. Recent studies conducted among the U.S. Forces veterans who have participated in military operations revealed that older soldiers (>45 years old) are less likely to suffer from psychiatric problems. Reports on the occurrence of psychiatric disorders among British troops participating in the operation *Iraqi Freedom* issued by British medical services are also worth mentioning. In 2003, 2,009 British soldiers were medically evacuated from Iraq, 10% of the evacuations were due to psychiatric diagnoses. 37% of the evacuated soldiers had reported psychiatric disorders before being relocated to the area of operations. Interestingly, as much as 72.4% of the military personnel evacuated due to mental disorders were not directly engaged in combat (technical personnel, drivers), merely 27.6% of the evacuated were members of combat units. The main reasons for the manifestation of mental disorders were environmental factors – 38.5% (hot climate, armed conflict, alienation), isolation from friends and family – 35%, pathological relations in the military community – 7.7%. Merely 3.4% of the disorders were the result of a psychological trauma suffered in combat. All of the British personnel evacuated from Iraq were diagnosed in clinical centers in the UK. Adaptation disorders were diagnosed in 50.8% of the examined cases, ASD in 6.9% of the cases, 30.2% of patients were not diagnosed with any psychiatric health problem as earlier symptoms had disappeared [20]. The percentage of military personnel who had experienced a traumatic incident in active combat has been systematically decreasing over the last decades. Whereas during WW1 as much as 73.4% of soldiers were directly engaged in combat, during WW2 – it was 52% and during the operation *Desert Storm* – it was only 19.8% [21]. However, all troops carrying out tasks in a war zone still suffer significant sanitary losses due to mental disorders.

Conclusions

The traumatic profile observed among men was clearly different from the structure and intensity rate of injuries entities diagnosed among women. Female personnel was hospitalized due to non-battle injuries only (9.3%, 2.7/1,000 persons), whereas male personnel treated in the same place and time suffered from both non-battle (16.6%, 3.9/1,000 persons) and battle (13.1%, 3.1/1,000 persons) injuries. Injuries of both types accounted for nearly 1/3 of all health problems occurring in men within the analyzed period. The most common illnesses in both populations were gastrointestinal diseases (women 9.7/1,000 persons vs. men 4.8/1,000 persons) and mental disorders (women 4.3/1,000 persons vs. men 2.7/1,000 persons).

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