

# DOES THE BALKAN SYNDROME EXIST? – THE BELGIAN EXPERIENCE

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Belgian soldiers have participated in Crisis Response Operations since the early nineties. The first deployments took place in the Balkans. These real life operations led to health problems that looked quite similar to experiences in other Task Forces sent abroad but the pattern did not fit into any disease diagnostic. Hence, new descriptive labels were invented; e.g. the “Cambodia syndrome” in the Netherlands’ troops, or the “Gulf war syndrome” among British and American soldiers. Therefore, this “new illness” – as a result of the Balkan deployment – was named the “Balkan syndrome”.

After much criticism, among others, that the higher command was hiding information about the health condition of the deployed soldiers, the Belgian Medical Service started to record all symptoms/complaints of soldiers (designated to deployments) before, during and after deployment, as reported in their personal medical file. These reported complaints were put in a large database using the International Classification of Primary Care (ICPC-2) to encode those complaints. The database contains data of 4521 soldiers.

In this presentation we will first pay attention to aspects of nosography in general and secondly to the clinical epidemiology of the observed complaints in particular. Given that no consistent clinical image appeared, the conclusion is that there is no syndrome (in the strict sense) and thus that the “Balkan syndrome” does not exist.

## Introduction

It is probably trivial to say that mankind has always tried to explain frightening phenomena he observed or the distressing experiences he went through. If he is not able to link it to real causes in the short run, then he will turn to a more descriptive label. This is, among others, typically the case for stress related experiences of soldiers in an operational context. For example, Myers (1870) used the term “soldier’s heart” to label cardiac asthenia and neurocirculatory disturbances observed in British soldiers in India, Oppenheim (1892) introduced the concept “war neurosis” and Myers (1915, 1940) came up with the notion of “shell shock”. All these labels are referring to

biomedical causes. During and after World War II, “combat fatigue” was the first label used to refer to psychological causes. Similar reactions following deployment in Vietnam were labeled “post Vietnam syndrome”. Since then, the conglomerate of behavioral dysfunctions and impairments have often been labeled by lay-people according to the region of deployment; e.g. “Gulf war syndrome” among the American soldiers deployed in the Gulf in the early nineties or “Balkan syndrome” among the Belgian soldiers deployed in the mid-nineties. Of course, this labeling does not establish a link between cause and effect, and, certainly does not provide a scientific explanation. For example, some people believed that the symptoms of the Balkan syndrome were caused by pollution, among others by depleted uranium.

The aim is, by far, not to deny the existence of a problem experienced by deployed soldiers but the phenomenon does raise a number of scientific questions in the field of nosology.

Indeed, a first question is whether there is a pattern in the symptoms shown that makes it into a syndrome. If not, is the concept of Medically Unexplained Physical Symptoms (MUPS) a useful notion?

Therefore, in the following, we will first look into these questions at a theoretical level, and in a second part at an empirical level, by analyzing the prevalence of symptoms reported c.q. observed in a large sample of Belgian soldiers deployed in the Balkans.

## Concepts

Three notions express different things in relation to health issues. First, *illness* refers to the way behavioral dysfunctions or disabilities are experienced by the subject; as an overall expression people may report that they feel ill. Second, *dysfunction* or *disability* refers to the fact that people no longer meet certain behavioral, social, or professional standards. Third, people are suffering from a *disease* c.q. a *disorder* when they satisfy the following five conditions, described in a nosological taxonomy like the International Classification of Diseases (ICD) edited by the World Health Organization (WHO) or the Diagnostic and Statistical Manual for mental disorders (DSM), edited by the American Psychiatric Association (APA).

First, the set of symptoms shown has to form a *syndrome*; i.e. there must be a link between symptoms or between clusters of symptoms or a certain pattern must be present in this set. For example, one can suffer from a Post Traumatic Stress Disorder (PTSD) according to the DSM-IV on condition that one has experienced a confrontation with death (criterion A), shows at least one symptom of re-experiencing the event (criterion B), at least three symptoms of avoidance behavior and/or numbing (criterion C) and at least

two symptoms of hyper-arousal (criterion D); moreover these symptoms have to persist during at least one month (criterion E) and cause a significant impairment in one or more areas of functioning (among others professional, social, ...) (criterion F). Second, the pathogenesis has to be known; i.e. the causes must be scientifically established. PTSD, for example, finds its origin in deep anxiety. Third, the etiology is known; i.e. the link between the cause and the consequences in terms of symptoms. In the case of PTSD, some triggers lead, by mere association, to re-experiencing the event, which causes hyper-arousal. The fact that these remembrances are painful leads to avoidance behavior and, in the long run, to numbing. Fourth, it is possible to formulate a prognosis; i.e. how the disease c.q. the disorder will evolve over time. If PTSD is not treated, the subjects' health gets worse. And fifth, methods for cure or at least for care do exist. PTSD can, for example, be treated with Eye Movement Desensitization and Reprocessing (EMDR).

### **Is MUPS an issue?**

The importance of a positive diagnosis can hardly be underestimated. It gives the person a medical position: he becomes a patient. This position implies a number of advantages; the person does not have to feel guilty nor ashamed for his dysfunction. Furthermore, it is socially accepted that patients are set free of a number of obligations. He can choose from a number of options for care and cure. Depending on who is responsible for his disease c.q. disorder, he can file a claim for compensation and/or rehabilitation. And finally, there may be some secondary gains such as receiving more attention or compassion.

We will not enter here into the discussion about the categorical or dimensional character of diseases c.q. disorders – i.e. people do suffer from a disease c.q. a disorder or they do not. When the five conditions are satisfied versus they have it “a little bit” or “a lot” (Geoffrey Rose, cited in Smith, 2002).

Our central question is: what are the consequences of a negative diagnosis despite the impairment caused by an undefined set of symptoms?

By definition, MUPS do not form a syndrome but just consist of a set of symptoms of which the common characteristic is to be medically unexplained (so far). Hence, there is no pathogenesis available and, a fortiori, neither an etiology nor a prognosis. Furthermore, MUPS are “diagnosed” per exclusionem and methods for treatment vary from trial-and-error to effect based.

Thus, with respect to the operational fitness of the soldier, MUPS leave the soldier with questions about himself, and the leader with questions about the readiness of his unit. MUPS also raise a number of managerial questions for Defence as an organization, for its medical support and mental health needs.

The fact that no positive diagnosis is possible, makes that soldiers with MUPS suffer from something unknown, which may induce anxiety or lead to false idiosyncratic labeling. The latter may be reinforced by the media, as it was the case with the Balkan syndrome. Most MUPS are not testable complaints; so the issue becomes a question of believers – people truly suffer from something – versus non believers – people are faking for the secondary gains. In the latter case, soldiers may be stigmatized, “qualified” as softies or lame ducks. In the same vein, MUPS create a feeling of failure because the victims cannot meet their leaders’ and comrades’ expectations nor perform as well as they could before. In the end, they are at risk of being subject to learned helplessness and just resign, testifying a motivational and emotional deficit of becoming victim of secondary complaints like depression.

## **The Balkan syndrome or MUPS in the Belgian Armed Forces**

The Belgian Armed Forces have participated in Crisis Response Operations, particularly in Peace Support Operations, since the early nineties in the Balkans. Task forces have been deployed, among others, in Croatia and Bosnia, and still are in Kosovo. There is no need to say that this kind of operations differs in many respects from the training situations in the cold war era. Leaders were at once confronted with a number of problems they had never met before, including a number of health complaints. The prevalence and variety of these complaints is paradoxical to the fact that the task forces were composed of selected healthy and well-trained soldiers. Quite soon, Defence was blamed for ignoring the problem, for not taking any action in favor of the victims and for not taking preventive measures for the upcoming rotations.

In the late nineties, the Medical Service started a large scale study<sup>1</sup>, first retrospectively and later on prospectively. In the retrospective phase, the medical records of all soldiers deployed in the Balkans were examined. In the second phase, soldiers’ complaints were recorded in their medical files before, during and after deployment.

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<sup>1</sup> We thank the Medical Service, especially Med Major Etienne Degrave, for having made the database available.

Given that MUPS are considered to be a medical issue, the International Classification for Primary Care version 2 (ICPC-2) was used. ICPC is a bi-axial system. One axis contains 17 chapters, referring to different classes of complaints; e.g. B= blood, P= psychological, Z= social. The second axis is divided into seven components, each containing a number of items; e.g. the first component lists *symptoms and complaints* and the seventh one lists a number of *diseases*. Table 1 gives an overview of the ICPC axes.

**Table 1.** The axes of the ICPC

Chapters	Components
A: General & unspecified	01–29: <i>symptoms &amp; complaints</i>
B: Blood	(variable number per chapter)
D: Digestive	30–49: diagnostic & preventive
F: Eye (focal sight)	procedures
H: Ear (Hearing)	50–59: treatment procedures &
K: Circulatory	medication
L: Musculoskeletal (Locomotion)	60–61: test results
N: Neurological	62: administrative
P: Psychological	63–69: referrals & reasons for encounter
R: Respiratory	70–99: <i>diseases</i>
S: Skin	
T: Endocrine, metabolic, ...(Thyroid)	<b>Standard for the first component of</b>
U: Urological	<b>each chapter</b>
W: Pregnancy, child bearing,	01: pain
...(Woman)	26: fear of cancer
X: Female genital (X-chromosome)	27: fear of another disease
Y: Male genital (Y-chromosome)	28: limited functioning
Z: Social problems	29: other symptoms & complaints (rag
	bag)

The database contains 4521 records in total. The sample is nearly exclusively male. Nearly all soldiers belong to the Army, and predominantly to combat troops or to combat support troops.

Each record is binary encoded; i.e. “0” for absence of a given symptom and “1” for presence.

Furthermore, each symptom appears three times in the database (before, during and after) but for statistical purposes a new single univocal variable has been created by converting the three digit binary code into a decimal number, according to the following formula  $(0/1).2^2 + (0/1).2^1 + (0/1).2^0$ . The resulting codes are shown in Table 2.

**Table 2.** Converting the symptoms before, during and after into a single code

BDA		Meaning
0 0 0	0	–
0 0 1	1	after
0 1 0	2	during
1 0 0	4	before
0 1 1	3	during & after
1 0 1	5	before & after
1 1 0	6	before & during
1 1 1	7	before, during and after

It should be noticed that the codes 4, 5, 6 and 7 are of no relevance for the study at hand because they refer to symptoms pre-existing to the deployment and are thus not MUPS attributable to the deployment.

About 31.5 % of the soldiers suffered from Tiredness and/or Weakness at some moment; thus also even before deployment which suggests that expectancies about the deployment play a role. This symptom category shows the highest prevalence not only within chapter A, but throughout all chapters. About 3% suffered from tiredness/weakness after the deployment only, while some 5% did during as well as after. A negligible number (0.2%) complained only during the mission.

It is noteworthy that about 3% of the soldiers have been diagnosed to be victim of a trauma NOS (not otherwise specified) during the mission.

Among the digestive complaints (chapter D), abdominal complaints in general appear with 3.3% and diarrhea as a specific complaint with nearly 6%.

About 1.1% suffered from visual disturbances during and after the mission although they did not before. Among the musculo-skeletal complaints (chapter L), low back pain is the most typical symptom with 8.3%. For about two thirds of them, the problem arose during the deployment and persisted after the mission, but for the remaining third, problems started only after having returned home. In the second place, come neck complaints with 2%. At the neurological level (chapter N), headaches appear to be the most frequent complaint. In total, some 12% suffered from headaches, although two thirds contended to suffer from it after the deployment only. In contrast, over and above the headaches, only 2% has been diagnosed with migraine.

As opposed to the typical bio-physiological complaints, from which at most two symptom categories are worth mentioning (in terms of frequency), chapter P shows six categories of psychological symptoms. Nearly 11% suffered from sleep disturbances, 7.8% from memory disturbances. Some 5.5% showed acute stress reactions and 4.2% felt depressed. As in the former cases, for about two thirds, the complaints arose only after they

returned home from deployment. 3% reported they felt anxious, nervous or tense and 2.7 % was irritable or felt angry. For nearly all of them, the symptoms showed up after the mission. Among the respiratory symptoms, 3.6% of cough complaints appeared (but more or less equally split over during and after) and some 2.4 % of throat complaints. Except for 2.3% of infections of the upper respiratory ways, almost no other respiratory diseases were reported. 5.9% complained about skin pain or tenderness and some 2.3% of pruritus; about half of these complaints started after the mission.

With respect to endocrinal, metabolic and nutritional symptoms, 1.7% reported a weight loss, for 3 out of 4 soldiers this loss appeared after the deployment.

Table 3 summarizes the frequencies at the level of the chapters as a function of the time axis.

**Table 3.** Frequency (%) of complaints per chapter

<b>CHAPTER</b>	<b>None (0)</b>	<b>After (1)</b>	<b>During (2)</b>	<b>During+after (3)</b>
<b>A</b>	64.3	23.9	4.6	5.5
<b>B</b>	99.6	0.2	0.0	0.0
<b>D</b>	87.7	4.2	3.6	2.0
<b>F</b>	97.8	0.9	0.5	0.5
<b>H</b>	98.9	0.4	0.1	0.2
<b>K</b>	98.3	1.0	0.3	0.1
<b>L</b>	79.1	5.7	3.8	5.4
<b>N</b>	83.9	8.6	2.7	3.7
<b>P</b>	74.5	13.5	4.2	4.2
<b>R</b>	89.3	2.6	3.8	2.6
<b>S</b>	78.3	4.8	3.2	3.0
<b>T</b>	96.9	1.9	0.7	0.3
<b>U</b>	99.1	4.2	0.2	0.1
<b>W X Y</b>	–	–	–	–
<b>Z</b>	96.6	1.0	1.7	

A hierarchical classes analysis (De Boeck & Rosenberg, 1988) by means of the HICLASS program (De Boeck, Van Damme & Van Mechelen, 1992) did not reveal any pattern in terms of chapters nor in terms of symptoms; i.e. there are no groups of subjects who suffer from particular a (sub)set of symptoms.

## Discussion and conclusions

A lot of symptoms did appear in the target group with very low frequencies. Only a few showed a prevalence higher than 2%. Taken together they constitute a sufficient proof that MUPS do exist in an operational context.

Moreover, problems seem to appear more frequently after the deployment (2/3) than during (1/3). This phenomenon may be linked to the predominantly problem-focused coping style of soldiers who try to hide their problems in the masculine environment the army is or it may be the result of a non-heard claim for recognition for what they went through, once back home.

Even if some symptoms are quite common, no patterns of symptoms could be detected in some groups of soldiers. Hence the Balkan syndrome, defined in the narrow sense, does not exist.

The fact that a high number of deployed soldiers formulated at least one or a few complaints is a sufficient reason to take the bull by the horns and thus to take MUPS seriously.

Given that the human being is a bio-psycho-socio-spiritual entity and given the interactions between these domains of functioning, a multi-disciplinary approach to MUPS is indicated.

Given that by definition MUPS cannot be explained at the medical level, maybe they are (at least partly) psychologically explainable through theories or models about learning, motivation, emotions, stress and/or cultural differences. And thus, perhaps, MUPS are PEPS (Psychologically Explainable Physical Symptoms).

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