

MEDICALLY UNEXPLAINED PHYSICAL SYMPTOMS IN A HUMAN PERFORMANCE PERSPECTIVE

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Abstract

The psychological symptoms of lacking concentration, losing short term memory, overwhelming fatigue and rapidly changing bodily pains may be captured by the expression of medically unexplained physical symptoms (MUPS). These symptoms sometimes occur after participation in intense military operations and may have some relations with the Post Traumatic Stress Disorder (PTSD) or the Traumatic Brain Injury (TBI). The symptoms surface before, during or after deployments and affect military performance and combat readiness. Some authors capture these syndromes as Post Deployment Syndromes (PDS). We prefer unexplained over unexplainable as unexplained defines the symptoms as not yet explained instead of impossible to explain at all. This preference meets the need for continuation of research efforts and raises the expectation that the symptoms will be explained on a certain moment in time.

The Netherlands Armed Forces deployed over 2000 military personnel to Cambodia in the early 1990's. Some of them returned with PTSD, others with TBI and others with MUPS. An exploratory team of the NATO Human Factors and Medicine Panel developed in June 2007 the terms of reference and technical activity proposal to study the relations between deployments, PTSD, TBI and MUPS and to recommend good practices for early diagnosis and treatment of MUPS.

As the military culture appears to be rather masculine, reporting physical symptoms seems to be easier and less career damaging than reporting psychological symptoms. This so-called somatisation distracts the focus on root causes, which lack of focus can explain the high proportion of unmet needs after deployments. The socio-economic aspects of MUPS, like benefits of attention, care, claims and compensation can also distract the focus on root causes. Therefore military health professionals need to be aware of the onset and development of medically unexplained physical symptoms and best practices for treatment.

Another aspect of MUPS is that these symptoms might not be appreciated by scientist or practitioners as a phenomenon which is unexplained and therefore out of their control. On the other hand we will note that what we really study, explain or understand is so little, as for instance the heart has its reasons, which the reason does not understand. This perspective raises the question how many psychological syndromes are really explained. For instance, is the Post Traumatic Stress Disorder really explained in its full context or is it for instance still missing the communication context in which PTSD blocks the communication between patients, practitioners and the parent society?

From a human performance perspective we will conclude that practitioners have to focus on prevention and treatment of MUPS, with or without a valid explanation, as prevention and treatment need first attention. Decreasing the number and intensity of symptoms deserves priority to maintain human performance and wellbeing. It is also recommended to address and prioritize each symptom individually in stead of using container-concepts like MUPS or PDS.

I.0 Introduction

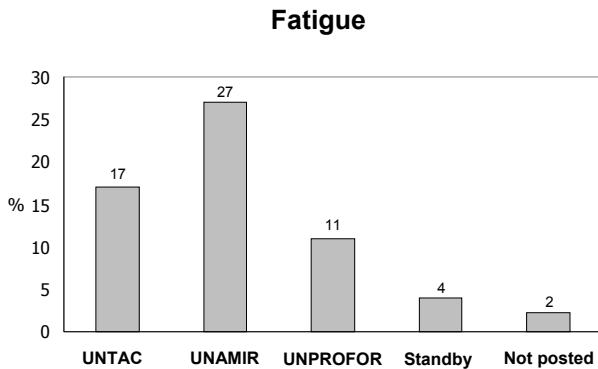
In 2004, the International Military Mental Health Conference convened in the Netherlands Veterans Institute in Doorn to address common issues in veterans care. Dr Maaïke De Vries presented her paper on her PhD thesis on the Post Deployment Syndrome. She wrote and we quote with her permission:

2.0 Post Deployment Syndrome in Dutch Cambodia Veterans by Maaïke De Vries

“In the early 1990s, around 2600 Netherlands service personnel were sent out in the United Nations Transitional Authority Cambodia (UNTAC). Shortly after their return, a number of them reported various physical symptoms. Because these service personnel believed that their employer was not listening to them, they formed themselves into a group of 27 activists. They were after widespread publicity and as a result of political pressure the complaints of these Cambodia veterans were at last investigated scientifically. These veterans all attributed their symptoms to the anti-malaria drug with the trademark Lariam. At the time of their posting the drug Lariam was surrounded by mystery: the instruction sheets had been removed from the

packs, eerie stories were going around about the drug and a number of service personnel even had tee-shirts printed with the message “It’s the Lariam that did it”. Another feature of the symptoms reported by these Cambodia veterans was that many of them seemed to be very similar to symptoms reported by American and British service personnel who had taken part in the first Gulf War.

A total of 1733 Cambodia veterans took part in an investigation to determine the nature, the extent and the possible causes of these symptoms. Four to five years after their return from Cambodia, 35% of the veterans that had been examined complained of memory loss, 28% complained of concentration problems and a quarter suffered from chronic fatigue. These figures are all based on self reported measures.



In accordance with the usual practice in scientific investigations, the symptoms were also assessed using a standard questionnaire. This revealed that 17% of the Cambodia veterans suffered extreme fatigue and related problems. The investigation also included four control groups. As you can see in the graph, service personnel sent out to Rwanda, Zaire and Burundi in the UNAMIR mission, also complained of chronic fatigue. However, it is possible that these figures are misleading. In the first place, it covered a relatively small group of just ninety individuals. Secondly, these individuals had returned much more recently than the Cambodia veterans. The fatigue results were also somewhat high for those service personnel that had returned from the UNPROFOR mission in Bosnia although that was normal for a group of service personnel that had been on standby for a posting to Rwanda and also for a group that had not been posted anywhere.

American Civil War

Irritable heart, Soldiers' heart, Da Costa syndrome

WW I

Effort syndrome, Shell shock, Neuro-circulatory

aesthesia, Trench neurosis, War neurosis

WW II

Combat fatigue, battle exhaustion, combat

neurosis

Vietnam War

Agent Orange syndrome, post-Vietnam syndrome,

combat stress, post-traumatic stress disorder

Gulf war syndrome**Bosnia syndrome****Post-Cambodia complaints**

Symptoms suffered by returning service personnel have been investigated since the times of the American Civil War. It is particularly noticeable that in every case new syndromes are found and given new names. You can see a list that is far from being exhaustive of the names of disorders reported as a result of both battlefield and peacekeeping missions. The different designations of the symptoms can be largely attributed to the then level of medical knowledge as well as to cultural factors.

In brief

Comparable disorders

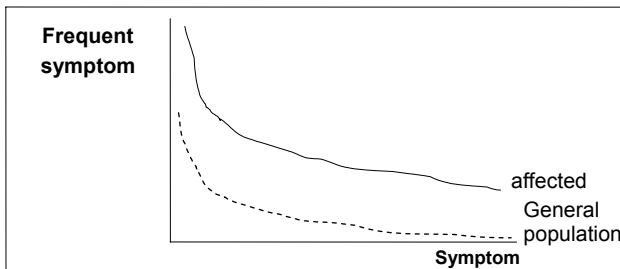
Comparable functional mechanisms

Similarities seem greater than differences

However, it is clear that these disorders can be characterised more by their similarities than by their differences. There is a striking similarity in the different disorders and the manner in which they are perceived to function. In order to demonstrate the lack of rationality in trying to name a new syndrome after every posting of a group of service personnel, it has been agreed that the term Post-Deployment Syndrome should be used. The terminology indicates that such symptoms often occur after a battlefield posting and it also postulates a legitimate basis for the symptoms themselves. There

is also room for lateral thinking with the Post-Deployment Syndrome, inasmuch that the symptoms reported by service personnel returning from an overseas posting can be compared with those experienced by civilians after disasters and major calamities. In other words, why create a new terminology for symptoms in servicemen when the same symptoms can also be found among civilians?

Health disorders after disasters



The same disorder profile as in the general (unaffected) population, disorders only in a significantly higher frequency range

So what sort of symptoms are we talking about? In brief, these are typical symptoms that are encountered quite regularly within any population, except that they occur much more frequently after military postings and domestic disasters. There is no question of any differences in the symptom profile that can point to a specific syndrome. In brief, these are normal symptoms that occur more often than normally as a response to out-of-the-ordinary experiences.

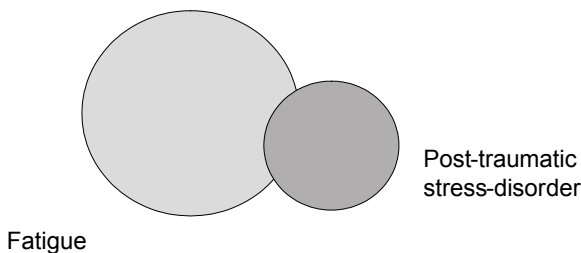
Health disorders: nature and frequency

- Post-traumatic stress
- Unexplained physical disorders, such as fatigue, chronic pain, mobility disorders
- Neuro-psychological disorders, such as lapses of concentration, memory loss
- Anxiety, depression

Extent: 20-50% after 1 year (Havenaar & Bromet 2002)

These symptoms are either post-traumatic stress reactions or physical symptoms. The physical symptoms have as yet no satisfactory medical explanation. Symptoms such as fatigue, chronic pain or mobility problems are often all categorised as unexplained physical phenomena. Neuro-psychological symptoms are also frequently encountered as a result of battle-zone postings, disasters and calamities. Individuals find that they are no longer able to concentrate or that they suffer from memory loss. Finally, anxiety and depression are also very common.. Scientific research has revealed that around 20% of all service personnel posted to overseas battle zones develop complaints of this type. Research carried out on the victims of disasters, that is to say representatives from the civil population, shows that between 20 and 50% of all victims still suffered seriously from the effects of the event one year later. In brief, symptoms occurring after military postings, disasters and calamities occur frequently. At the same time, it is clear that the majority of people will never experience such symptoms and will go through their entire lives unaffected in this way.

**PTSS and
unexplained physical symptoms
Limited overlap**



Symptoms occurring after military postings, disasters and calamities are often assumed to be solely due to traumatic events. Research conducted on the Cambodia veterans looked for a connection between post-traumatic stress disorder and unexplained physical symptoms. Only a small proportion of those service personnel who were suffering from severe fatigue symptoms satisfied the relevant criteria for the diagnosis of post-traumatic stress disorder. This leads to the conclusion that post-traumatic stress disorder is also an unsatisfactory explanation for the problems suffered by the Cambodia veterans. In other words, there is more to it than just trauma.

Factors that can prolong disorders



Bijlmer: men in white suits

- **Attributions**

Ideas that people have on causal relationships between individual factors and health disorders

- **Lack of care, understanding and respect**

To conclude this presentation, I would like to explain a number of things that are relevant for symptoms occurring as a result of military postings, disasters and calamities: Firstly, there are some factors that can prolong such symptoms. Attributions, that is to say, ideas that people have on the causal relationship between individual factors and health problems, are very important in the identification of such symptoms.

Cambodia veterans attribute their problems to Lariam. After the First Gulf War, an attempt was made to find an explanation for the symptoms reported by the Gulf War veterans, blaming among other things vaccinations, while the victims of the Bijlmer disaster feared that their problems were related to depleted uranium that might have been on board the doomed aircraft.

Proper, open and honest risk communication

Short-term:

- Preventing mass hysteria
- Preventing irrational anxieties
- Maintaining a feeling of control

Long-term:

- Preventing attributions
- Preventing mistrust of the authorities
- Preventing conspiracy theories

Another factor that is certainly relevant in the diagnosis and treatment of symptoms is the lack of attention, understanding and respect. Veterans and the victims of disasters deserve attention, understanding and respect, both for what they have been through and also for what they may yet develop, which could seriously affect what they do for the rest of their lives.

A second point concerns a good, clear and honest policy of risk communication. Greater clarity, honesty and openness on such matters as exposure to potentially hazardous substances, the side-effects of drugs and other potential risks, would have the effect of preventing much suffering. In the short term, an effective system of risk communication can help to prevent mass hysteria and irrational anxieties and strengthen the feeling of control.

In the long term, it can contribute to preventing attributions being made and to maintaining confidence in the government or the competent authorities. At the same time, it can also help to dispel conspiracy theories.

Health examinations

Preventing attributions and mistrust of the government and helping to dispel conspiracy theories

Provides insight into the state of health of an individual serviceman or an affected community

Contributes to the provision of care, understanding and respect for victims

A final point that I would make relates to the need for serious psycho-social research and by that I mean scientific research covering a number of measurements. The first measurement would preferably take place before an individual's posting followed by a number of further measurements after his return.

Thorough health examinations would also contribute to preventing unjust attributions and mistrust of the government and would also help to dispel conspiracy theories. In addition, health examinations can give a good insight into the health of an individual serviceman or of an affected community. If,

for example, the need and the demand for care can be clearly defined, the provision of this care will be much better and much easier to deliver. Moreover, health examinations can provide a positive contribution for the development of care, understanding and respect for service personnel posted to overseas battle zones and for the victims of disasters and calamities. That is certainly important, because as I said before, returning home from a war is certainly no picnic”.

In over-viewing this paper of Maaïke De Vries we note that different theaters of operations expose deployed personnel to different stressors. The jungle and heat of Cambodia made malaria prophylaxis necessary, so deployed personnel has used this prophylaxis for 6 months or more. Operations in the first Gulf War exposed deployed personnel to depleted uranium dust and the continuous need to be ready to take countermeasures against toxic warfare. Recent NATO operations in Afghanistan made long stay on high altitude necessary, which definitely impacts all human physical systems, with a great likelihood on symptoms like polyuria, heart rhythm changes and exhaustion. But from the first World War the very specific symptoms of disorientation resulted from ongoing artillery bombardments. Symptoms from all these operations can be captured by the phrase ‘Post Deployment Syndrome’ or PDS. However, we do not like to recommend the use of this phrase PDS, as it is blurring a sharp view on direct possible causes of the symptoms. As in a lot of mental health care it helps clients when therapists are very specific, not vague. This also brings us to our recommendation of not using PDS in military mental health care. We also criticize the specific word Syndrome, because this postulates relations between symptoms, which are not well defined or may not even exist at all. In the next paragraph we will discuss derailments like violence and suicide in the military. These behaviors do not specifically follow deployments, but can be part of typical characteristics of the military organization or military personnel.

3.0 Suicide among Dutch military Service Personnel and Dutch Veterans by Marten Meijer and Giel Algra

Derailments among veterans is sometimes mentioned in the mass media. This often concerns derailment of a violent nature. For example, in October 2002 an American Gulf War veteran shot and killed over 10 people in the Washington DC area over a period of several weeks. This excessive violence

was front-page news in the area for a good few weeks². Earlier that same year, after returning to the Fort Bragg army base from Afghanistan, several American soldiers murdered their wives and subsequently committed suicide. There are also incidences of violent behaviour, including suicide, among Dutch veterans. We will deal with some of these incidences further on in this paper. International systematic research among veterans in the United States, Norway and Canada shows that some groups of veterans are indeed at a higher risk of such types of dysfunction (Pollock et al, 1990, Hendin and Pollinger-Haas 1991, Kramer et al. 1992, Bullman and Kang 1994, Weisaeth 1994, Wong, 2001. Particularly in the Norwegian research, the fact that the relationship with the deployment in which they took part cannot always be established leaves scope for the alternative explanation that military personnel are in any case more at risk of such dysfunctions, for example because the armed forces attract more adventurous people, or even people of a violent disposition (Weisaeth, 1994, p. 128,³ Weisaeth, 1995, p.10).

In this chapter we formulate an answer to the question of the extent to which in particular young veterans and military personnel in active service are involved with derailments in terms of violent behaviour and suicide. First of all, we will describe some results on this subject from international research among veterans. From the aforementioned international research we can deduce that a small group of veterans encounters severe problems when trying to settle back into society and in calling for help in time. We will then present research data concerning the aftercare provided for Dutch military personnel from the Royal Netherlands Marine Corps who participated in the missions in Bosnia and Haiti in 1995 and 1996 and concerning the aftercare provided for veterans in general. Finally, we will provide information on sentences imposed on military personnel in active service and suicide among military personnel in active service. Bases upon this information, we will draw several conclusions and made recommendations for the further improvement of veterans care. In order to modify the negative connotations of derailments, we would like to point out that it only occurs among a very small group of veterans. In order to convincingly compensate for the negative image that may possibly be created, we would like to point out in advance that a much larger group of veterans attracts attention for exemplary behaviour. Not only were these people prepared to and capable of risking their lives for the common good during their active service, but they also

² The Sunday Times-Washington Times, 27 October 2002, p. 1: Sniper suspects' bid for attention helped investigators complete a puzzle.

³ Weisath, L. (1994): The UNIFIL study 1991–1992. Report part I, chapter X, Mortality in the UNIFIL Population Oslo, Norway, Headquarters Defence Command, The Joint Medical Service.

constitute a law-abiding and self-sacrificing group in today's society. This is left in no doubt whatsoever when one takes into account the many awards for gallantry and Royal honors bestowed on veterans. This excellence is also illustrated by the fact that a Second-World War veteran once rose to the highest office of prime minister, as well as the fact that a veteran from the Netherlands East Indies is the father of a minister in the current government.

According to the Dutch definition, veterans are military personnel who have been deployed in wartime conditions or comparable conditions, but who have left active service. Participants in crisis operations, non-article 5 crisis response operations or humanitarian operations, be they under the auspices of the United Nations (UN) or otherwise, are also expressly included in the above definition.

The Netherlands has many veterans as a consequence of the participation of Dutch military personnel in the Second World War, the police actions in the former Netherlands East Indies, the fight against infiltrations in the former Netherlands New Guinea and the war in Korea. Of these so-called 'old' veterans, over half a million were deployed in total, but their number has been undergoing a strong decline in recent years as a consequence of natural wastage. From 1978 to 1985, 8,000 young potential veterans were added to these numbers as a result of the deployment of Dutch military personnel in the United Nations Interim Force in Lebanon (UNIFIL). This development continued with the participation of mainly Dutch marines in UN operations in Northern Iraq and Cambodia. These operations were followed later by UN missions in the former Yugoslavia, Haiti, Angola and Rwanda, and involved participation by other Services of the armed forces of the Netherlands. The recent UN mission in Ethiopia and Eritrea was another marines occasion as far as the Dutch contribution was concerned. By participating in such operations and then leaving active service, the number of young veterans is undergoing a steady increase. Figure 1 shows how the numbers of old and young veterans have developed from 2000 onwards.

Figure 1 shows that by the end of 2006 the number of old veterans will have dropped from 140,000 to 81,000. The number of young veterans, which in 1990 consisted chiefly of some 8,000 UNIFIL veterans, is expected to increase to 44,000 in 2006. In 2002, the ratio between the numbers of old and young veterans was approximately 3 to 1. Up to 2003, approximately 75,000 of these veterans had registered with the Veterans Institute. 8,000 of these registered veterans belong to the group of young veterans. The group of young veterans is therefore strongly under-represented in the total complement of registered Dutch veterans (see figure 2).

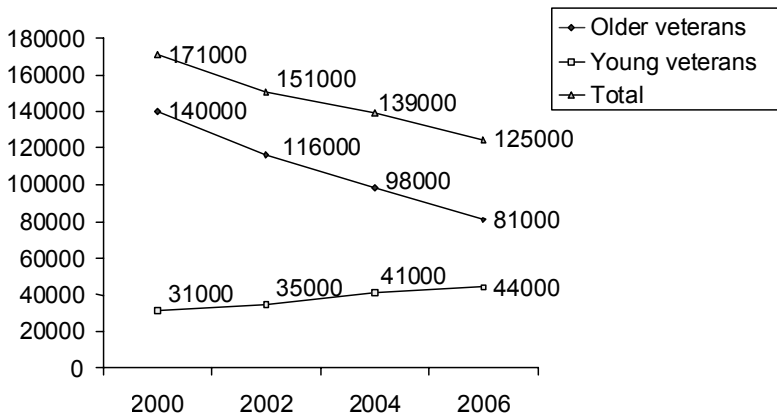


Figure 1. Estimated number of old veterans, number of young veterans and the total number of veterans from 2000 to 2006 inclusive. Source: Elements of a strategic long term plan by the Veterans Institute Foundation, 2003, p. 3.

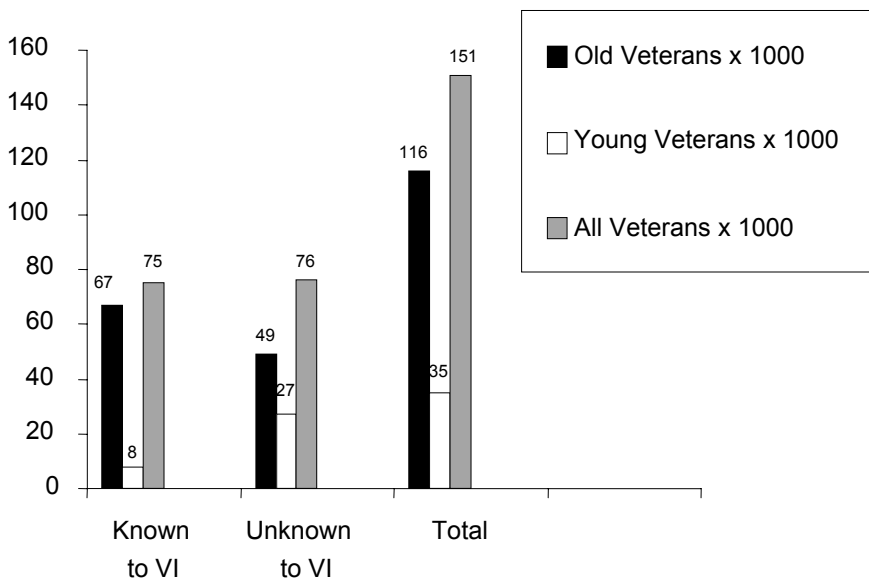


Figure 2. Estimated numbers of old veterans, number of young veterans and the total number of veterans in 2003, as well as numbers of veterans pass holders, known to the Veterans Institute. Source: Elements of a multi-year plan by the Veterans Institute Foundation, 2003, p.4.

Figure 2 shows that of the 151,000 veterans, only 75,000 had applied for a veterans pass in 2003. This is almost 50 percent. This percentage is somewhat higher among the old veterans, namely 58 percent. Only 23 percent of the young veterans has registered with the Veterans Institute. For research purposes, therefore, use often has to be made of information on Dutch military personnel in active service. However, with the passage of time, the representation of young veterans in the total veterans complement will grow, thus gradually decreasing the need for conducting research among military personnel in active service.

3.1 Research into dysfunction among veterans in the United States, Norway, Canada and the Netherlands

On the basis of mainly international research, some information is already available on violence and self-destructive behaviour among veterans. In the United States, for instance, the aftermath of the Vietnam war gave rise to a series of research projects among Vietnam veterans.

The United States ended its war in Vietnam in 1974. Over three million American military personnel had served there, in most cases for a year. Of these three million there were almost 58,000 fatalities, many more were wounded, an unknown number were missing in action and many were rendered permanently disabled as a consequence of physical injuries. In the subsequent years, an as yet unknown number died as a result of suicide. Particularly the latter fact resulted in abundant research, the results of which are inconsistent in part. We will discuss six research projects in chronological order, providing a number of critical comments for each one.

Pollock e.a. (1990)⁴ describe how the American media repeatedly report the number of suicides among Vietnam veterans as being in excess of 50,000. If this number were to be correct, the number of deaths as a result of suicide would almost exceed the total number of fatalities. However, extrapolating from a group of Vietnam veterans studied, they conclude that the number of suicides will ultimately not exceed 9,000. Yet the study makes it painfully clear how little systematic data is gathered on the subject of suicide among veterans. Despite all the veterans care in the US, too little attention is paid to this subject. The researchers also state that Vietnam veterans are 25% more likely to commit suicide than their contemporaries. Finally, they present some apparently conflicting data concerning suicide. Depression is generally the main cause of suicide. Depression is 2 to 3 times

⁴ Pollock, D.A. (1990) Estimating the number of suicides among Vietnam Veterans *American Journal of Psychiatry*, vol 147, no 6, pp. 772–776

more prevalent among women than among men. Nevertheless, the number of suicides among men is 3 times higher than among women. In our opinion, these paradoxical results can be explained if we take into consideration the fact that research into depression was conducted on the basis of questionnaires, in which women, in keeping with their sex-role stereotype⁵ of 'warmth and expressiveness', express their state of mind more ably than men. The sex-role stereotype of 'competency' among men would explain precisely why so many suicide attempts are successful, although such an analysis is somewhat cynical.

In their research into suicide among Vietnam veterans, **Hendin and Pollinger-Haas (1991)**⁶ conclude that the main reason for suicide is guilt, both about having survived whereas their brothers-in-arms were killed, and about having killed of prisoners-of-war or civilians. Having killed out of fear or anger has the most clear relationship with suicide. The shelling of villages regarded as hostile, in which there were also many civilian casualties, leads to guilt and suicide to a lesser extent. The researchers found that Vietnam veterans are 11 to 65% more likely to take their own lives than their contemporaries without war experiences. The information that guilt after having killed prisoners-of-war is the main predictor of suicide is strongly similar to findings from research conducted among Second World War veterans, albeit that the direct connection between guilt and suicide is made for the first time in this study. Without a doubt, the merit of this study is the fact that attention is paid expressly to guilt, which for mental health practitioners is often the key to diagnosing psychological trauma.

Kramer e.a. (1992)⁷ expand the subject of suicide among veterans by discussing risk-taking behaviours which leads mainly to motor vehicle accidents, shooting incidents or overdoses of alcohol or drugs. In addition to actual suicide, they also conduct research into thoughts about death and dying, one's own death and the way in which one will die. In figure 3 they show how often these thoughts occur among a group of Vietnam veterans in general, among an outreach group of Vietnam veterans who are not (yet) undergoing treatment, among a group of veterans undergoing psychological trauma treatment and among a group of non-veterans.

Figure 3 shows that the therapy group thinks about death, their own death and suicide the most. Remarkably, the study also shows that the outreach

⁵ Broverman, I. K. et al (1972): Sex-role stereotypes, a current appraisal. *Journal of Social Issues*, vol 28, pp. 59–78.

⁶ Hendin, H., Pollinger Haas, A. (1991): Suicide and guilt as manifestations of PTSD in Vietnam combat veterans. *American Journal of Psychiatry*, volume 148, no 5, pp. 586–591.

⁷ Kramer, T. L. et al (1992): The comorbidity of PTSD and suicidality in Vietnam veterans.

group has the most psychosocial problems, measured in terms of unemployment and divorce (see figure 4).

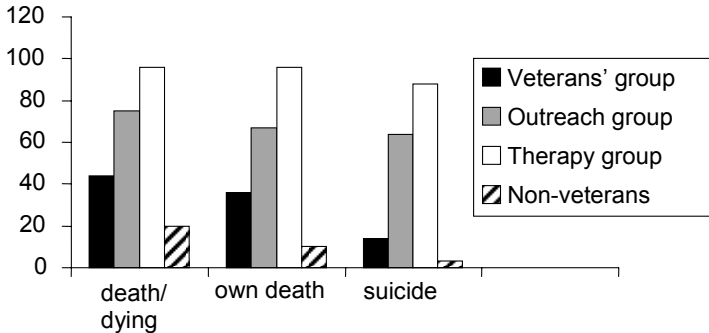


Figure 3. Thoughts of death and dying in general, one's own death and suicide, as measured in a general group of veterans, an outreach veterans group, a group of veterans in therapy and a group of comparable non-veterans. (Kramer et al. 1992).

The authors of this study provide no explanation for these differences in psychological and psychosocial problems per group, as these would appear to exist as illustrated in figure 4. This might be explained by the finding that a veteran needs psychosocial stability to enter a therapy program⁸. Unfortunately, there is no control group consisting of non-patients. Nevertheless, the two figures show clearly that the veterans in the therapy group and the outreach group suffer from severe psychological and psychosocial problems. In the meantime there have also been indications from the United Kingdom that in the group of British Gulf War veterans who are receiving professional help, the unemployment and divorce levels are lower than among veterans who are not yet undergoing therapy, but do have problems (Meijer and Jones, 2003). This could be explained by the fact that superiors or life partners stimulate the veterans to seek professional help. If there are no superiors or life partners as a consequence of unemployment or divorce then this stimulus to seek professional help is also absent, which could explain the above-mentioned differences between the outreach group and the therapy group.

⁸ Bernardy, N. et al. (2004): Predictors of dropout from group therapy for PTSD in Vietnam Veterans. New Orleans: 20th ISTSS poster session.

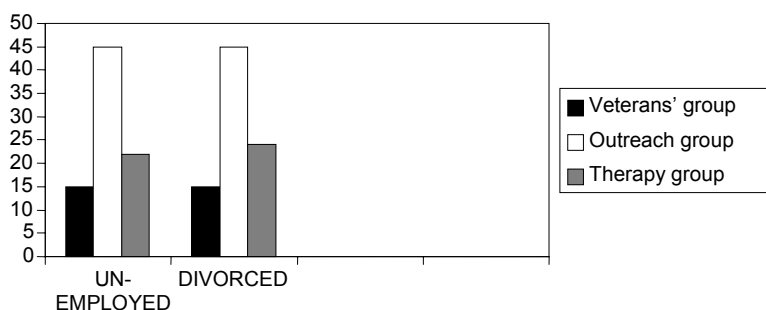


Figure 4. Percentages of divorced or unemployed individuals in a general group of veterans, an outreach group of veterans and a group of veterans in therapy for psychological trauma (Kramer et al. 1992).

In their study into suicide among Vietnam veterans, **Bullman and Kang (1994)**⁹ also look at violent causes of death such as motor vehicle accidents and drugs overdoses. They also make the connection between the PTSS symptoms of withdrawal and numbing and anomie, the literal absence of values and norms. This term has already been used by the sociologist Emile Durkheim¹⁰ as a rationale for suicide. He concludes that 'value inflation leads to anomie, and anomie to suicide'. Particularly among veterans from the United States Air Force who contributed to the dispersal of Agent Orange, the highly toxic herbicide, the likelihood of suicide is 4 to 6 times higher than among veterans who did not take part in this activity. Within the group of 'Agent Orange' veterans, the likelihood of veterans with PTSS suffering a violent death was 71% higher than that for veterans who had not been diagnosed with PTSS. Agent Orange veterans are registered as such with the Veterans Administration. Remarkably, the authors do not give an explanation for the differences they have identified. It is possible that feelings of guilt, as described by Hendin and Pollinger-Haas, could offer an explanation. Furthermore, another explanation could lie in the fact that the Agent Orange veterans were mainly air force personnel who often only worked together in units for a short time; this will be explained in further detail later on.

⁹ Bullman, T.A., Kang, H.K. (1994) PTSD and the risk of traumatic deaths among Vietnam veterans. *Journal of nervous and mental disease*, vol 18, p. 604–610.

¹⁰ Bullman, T.A., Kang, H.K. (1994) PTSD and the risk of traumatic deaths among Vietnam veterans. *Journal of nervous and mental disease*, vol 18, p. 604–610.

Weisaeth (1995)¹¹ has conducted research among approximately 15,000 Norwegian veterans who took part in the United Nations Interim Force in Lebanon, UNIFIL, in the period from 1978 up to and including 1991. On the basis of research into causes of death in this group, he concludes that violent causes of death, including suicide, occur more frequently among Norwegian UNIFIL veterans than natural causes of death. Among the Norwegian population of men in the same age group, it appears that natural causes of death occur more frequently than violent causes of death. Weisaeth explains these differences from deployment experiences, which have led to psychiatric problems among some of the deployed military personnel. An alternative explanation may be that ‘risk-takers’ are more likely to choose a military career, and thus increase the likelihood of a violent death for the entire military population, irrespective of any deployment experiences whatsoever. Comparison of this information on Norwegian UNIFIL veterans with information on the cause of death among Royal Netherlands Army and Royal Netherlands Military Police military personnel from the period 1988 – 1990 would appear to confirm this alternative explanation (see figure 5).

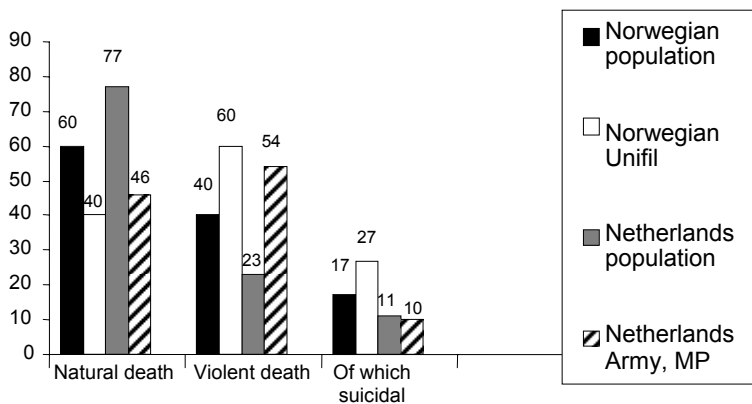


Figure 5. Percentages of natural causes of death and violent causes of death, including suicide, in the Norwegian male population, Norwegian UNIFIL veterans, the Dutch population and Dutch military personnel from the Royal Netherlands Army and Royal Netherlands Military Police in the period from 1988 up to and including 1990.

Figure 5 shows that the incidence of violent causes of death is higher among both Norwegian and Dutch military personnel than natural causes of death.

¹¹ Weisath, L. (1995): Die for Bosnia? *Marineblad*, vol. 104, no. 10, pp. 276–283.
Wong, A. et al. (2001): Are UN peacekeepers at risk for suicide? *Suicide and life-threatening behavior*, vol 31, no 1, pp. 103–112.

In the Norwegian and Dutch population this is precisely the other way round, with more people dying a natural death than a violent one. These facts would appear to confirm Weisaeth's alternative explanation of selection effects in the armed forces, particularly if we assume that in around 1990 the number of Dutch military personnel with deployment experiences was still relatively low. The differences in the incidence of suicide between the Norwegian and the Dutch population are also caused by national differences. In Norway, the annual average deaths per 100,000 men in the age group of 15 to 24 is 26, whereas in the same age group of Dutch men, an average of 11 die as a result of suicide each year¹². Further research, to include information on Dutch military personnel with deployment experience, could provide a definite answer to the question of how high the risk of suicide is in this group.

The psychological autopsy of the suicide of a Dutch peace mission veteran (see photo 1) shows that deployment experiences can indeed be related to a later suicide.



Photograph 1: During a UN mission in Cambodia, a marine of the Royal Netherlands Marine Corps dresses the wounds of a Cambodian mine accident victim. After two deployments to Cambodia and after leaving the marine corps, the marine committed suicide. Published with written permission of the veteran's mother.

¹² Hawton, K. et al. (1997): Relation between attempted suicide and suicide rates among young people in Europe. *Journal of epidemiology and community health*, vol 52, no. 3, pp. 191–194.

In this case, the marine had been deployed in a peace mission for two six-month periods within two years; his work in the field hospital meant that he had shocking experiences on an almost daily basis. For instance, at one time he had to deal with the victim of a mine accident, whose fall as a result of the explosion of the first mine detonated another mine. Beyond saving and with fatal, mutilating injuries, this victim died on the operating table shortly afterwards. The marine was unable to do anything, nor could he understand the dying victim's last words. Furthermore, the death of children, often also the victims of mine accidents, left an indelible impression. After his honorable discharge from active service, he was unable to suppress memories of these dramatic experiences. He often withdrew and had trouble sleeping because of nightmares and fears, with all the predictable consequences. This contributed to the fact that he kept breaking off intimate relationships with life partners after a relatively short time. He also had difficulty holding down a job for long. After having what appeared to be a promising new start, he still became overwhelmed by feelings of helplessness, and subsequently took his own life.

On the basis of research conducted among Canadian military personnel who have participated in peace operations, **Wong et al (2001)**¹³ conclude that these military personnel are not more likely to commit suicide than members of the average Canadian male population. In our opinion, they ignore the fact that Canadian military personnel are subject to stringent selection criteria, in terms of both physical and mental health. For this reason, the null hypothesis should be that Canadian military personnel are less likely to commit suicide than the average Canadian man, with the results of their research disproving this hypothesis, leading to the conclusion that participation in peace operations does indeed increase the likelihood of suicide. Unfortunately, their research ignores the aforementioned selection effect, referred to in the literature as the 'healthy worker effect'. Furthermore, in their research they conclude that Canadian Air Force personnel are more likely to commit suicide. They attribute this to the short time that air force personnel work in a unit, as they are transferred with great regularity and on an individual basis. The studies of suicide in the Canadian armed forces give the impression of risk-taking behaviour, taking part in as many peace operations as possible within the shortest time possible, so as to benefit from the attendant financial remuneration. Incidentally, this tentative analysis also requires further research on the basis of case studies.

¹³ Wong, A. et al. (2001): Are UN peacekeepers at risk for suicide? *Suicide and life-threatening behavior*, vol 31, no 1, pp. 103–112.

¹⁴ Wong, A. et al. (2001): Are UN peacekeepers at risk for suicide? *Suicide and life-threatening behavior*, vol 31, no 1, pp. 103–112.

We will conclude the analysis of dysfunction among foreign veterans with an example which shows that the problems military personnel have in coping with their experiences are not just things of the past, in spite of all the aftercare available to them (see box 1).

Box 1. Troubled soldiers keep quiet.

On 30 October 2002, the American newspaper USA Today published an article on its front page entitled ‘Troubled soldiers keep quiet’. The article describes how, after returning from Afghanistan, four soldiers from the 82nd Airborne Division and Special Forces killed their wives at the American army base, Fort Bragg, in North Carolina. Two of the men subsequently committed suicide. The analysis of possible problems which could have caused these events quoted from a report issued by the American army in 1994, which showed the incidence of domestic violence in military families to be three times as high as in non-military families. References were also made to the male organisational culture in the American armed forces, in which military personnel rarely seek professional help, if at all, and certainly not for psychiatric problems. Military personnel with personal troubles appear calm to the outside world, but sometimes keep up the pretence for far too long, which can be to the detriment of their partners and families.

In addition to the domestic violence referred to in box 1, there are also indications that violent behavior among American veterans in prisons is in any case more prevalent than among the American prison population as a whole (see figure 6).

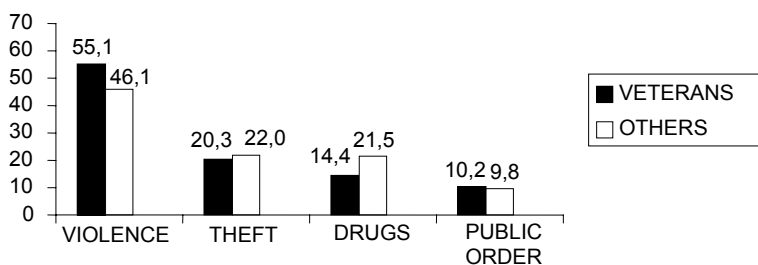


Figure 6. Ratio between veterans and non-veterans among inmates in American state penitentiaries, according to the nature of the crime. Source: Mumola, 2000¹⁵.

¹⁵ Mumola, C.J. (2000): Veterans in prison or jail. Bureau of Justice Statistics, January 2000, NCJ 178888. United States Department of Justice.

Figure 6 shows that more veterans are imprisoned for violent crimes than non-veterans. Furthermore, their prison sentences are an average of 50 months longer than those of non-veterans. This connects to the gravity of the crime committed. For other crimes, the differences between veterans and non-veterans are less marked.

The comment about the organizational culture in box 1 is supported by research in the British armed forces, which shows that over 70 percent of military personnel fail to report psychiatric problems for fear of losing the trust of their commanding officer or colleagues¹⁶. Conversely, this fear gives the colleagues and commanders in question the additional responsibility to take care of their colleagues and employees. Box 2 contains a summary of the recommendations given to commanders in the American marine corps in order to provide this special attention and care for their personnel.

Box 2. What a commander can do to provide attention and care¹⁷.

1. Solve problems at the earliest stage possible. Too many problems are ignored for too long, because people think 'it'll get better by itself.
2. Diagnose at an early stage when military personnel find themselves in high-risk situations such as serious debt, criminal sentences, relationship problems, or when they show symptoms of depression or addiction.
3. Bear in mind disappointments that people have to deal with, and give plenty time and attention to them.
4. Schedule times within training on an annual basis when people can talk openly about things, including personal matters.
5. Take into account groups of people who, because of the above, are more likely to exhibit self-destructive behaviour, and always call in professional help at an early stage.
6. Work with a buddy system, in which the buddies often catch the first signs, and stimulate them to pass on this information.
7. Emphasize the fact that it's ok to seek help. Leaders play an important role in diminishing the prejudices that still exist with regard to mental health care.
8. Use the spiritual welfare service and the defence social service to focus on the consequences of a suicide for surviving relatives, as well as for fellow soldiers from the unit.

¹⁶ Cawkill, P. A study into commanders' understanding of, and attitude to, stress and stress-related problems. *Paper presented at the 5th Military Mental Health Conference, 16–18 December 2002, Herford, Germany.*

¹⁷ Jones, D.E. (2000): Suicide prevention in the Marine Corps, a leader's guide. *Marine Corps Gazette, February 2000, pp. 16–20.*

A report by a peace mission veteran shows that the instructions given in box 2 are already implemented in practice by good commanders, who feel that this speaks for itself. He writes the following about his period of injury and recovery:

As a seriously-injured peace mission soldier, the attention I received from my colleagues, my battalion commander and my company commander did me a great deal of good. I was visited at home, when they had a brief stay in the Netherlands for Rest and Recuperation (R&R) leave, and afterwards too, and they sent me cards and kept in touch by telephone. Furthermore, after the deployment I was invited to attend the medal parade for the battalion, where I was awarded my insignia for wounded veterans¹⁸.

3.3 Further research into derailments of young veterans and military personnel

Research into derailments of young Dutch veterans has to date consisted largely of case studies. More epidemiological research is being prepared, but this still faces methodological problems, several of which will be described in the discussion with respect to the ‘pool of errors’. However, this does not detract in any way from the overwhelming suffering of the veterans and military personnel shown in the case studies, as illustrated in box 3.

Box 3. The violent and self-destructive behaviour of a peace mission veteran

“I didn’t come to terms with it at all, I just drowned it, literally and figuratively... I drank a lot of alcohol I got into fights when I was out..... until it occurred to me that things were really very bad. Then I started getting panic attacks on top of everything else...and then my wife said: “You really should get help, this isn’t right”. “Yeah, yeah, I will, I will”. But well, I didn’t seek help, because you want to handle it on your own....and that ended up in a suicide attempt... Well, I started a fire downstairs at home, and went upstairs and lay on the bed. Somehow, thank goodness, it didn’t work. Then I got picked up by the police... and the military police were there too... and then another ten or twenty days of questioning and God knows what else, all kinds of weird stuff...and then they said: things are not right with you. They put it down to Yugoslavia.

¹⁸ Meijer, M., De Vries, R (2004): (Trans.) *Injured, but not beaten*. A study of damage and recovery among Dutch veterans. Doorn: Veterans Institute, in preparation.

Then they threw me into the military penitentiary for nine months for arson and attempted manslaughter. Until my lawyer came up with PTSS and a lot of other weird terms. He said “You need help, and you’ll get the best kind of help in Utrecht”. Then I ended up in the military psychiatric hospital, nine months as an in-patient, and later one day a week. And now I can talk about it a little...” (Bosnia veteran in ‘Crazy’, documentary by Heddy Honigmann, 1999)¹⁹.

Box 3 shows that some young veterans can experience serious problems. The exact size of this group is very difficult to establish. This is made difficult in part by the fact that young veterans have not yet joined organisations, and are therefore difficult to research. Another contributory factor is that their psychiatric complaints are not easily identified. Certainly not by the veterans themselves, as their perception of their own behaviour is affected, but sometimes other people in their environment fail to recognise the symptoms too. Even civilian counselors do not always investigate the connection between physical, unexplained symptoms and deployment experiences. Violent behaviour by veterans can also be connected with deployment experiences. For instance, in October 2003 a Cambodia veteran shot and killed his ex-partner, his ex-mother and father-in-law and his ex-brother-in-law. A provisional analysis²⁰ shows that prior to his deployment, this veteran had already attracted attention because of a fascination for weapons. After honorable discharge from active service, he still had easy access to weapons, as he continued to work in a sports school and shooting school. After suffering dramatic bereavements within a short period of time – his relationship broke down, he lost his job, his honour and prestige as a weapons expert and was refused access to his home – the aforementioned easy access to firearms proved to be a lethal combination. It had already been shown that for a Kosovo veteran, the combination of almost permanent presence in a shooting school and constant suffering from vivid memories after a period of deployment proved fatal. He killed himself with a firearm at the shooting school²¹.

The case in box 3 also shows that violent behaviour, which is a manifestation of dysfunction, can result in a sentence. In the same way as the data

¹⁹ Hopman, B., Weerts, J.M.P. (2003): The wounded warrior as husband and father. Utrecht: Compilation of the experiences of peace mission veterans. Doorn: Veterans Institute.

²⁰ Karskens, A. (2003): (Trans.) Short circuit in Kerkrade. *Nieuwe Revu*, no. 46. 5–12 November 2003, pp. 28–32.

²¹ Schoeman, J.S. (2000): Veterans of ‘right’ and ‘wrong’ missions. *Militaire Spectator*, vol 169, no. 5, pp. 231–240.

on sentences in American prisons was given in figure 5, data on sentences imposed on Dutch military personnel could give an indication of the levels of violence in this group. In order to conduct such an investigation, in early 2003 the military judge from the District Court of Arnhem was contacted in early 2003. On the basis of data thus collected, it was possible to determine the types of crime for which military personnel are generally sentenced. Figure 8 shows the sentences among Dutch military personnel in the period from 1996 to 2003, divided according to the nature of the crime for which they were sentenced. In order to compare the Dutch data with the American data in figure 6, figure 9 shows the crimes for which the sentences were imposed, divided into public order offences, drugs, violence and theft.

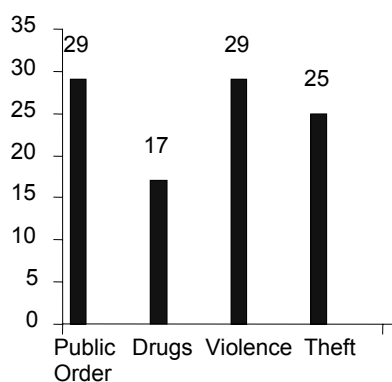


Figure 9. Sentences according to nature of crime, expressed in percentages of the total number of sentences in the period 1996–2003, excluding absence without permission.

Figure 9 shows that most sentences stem from violent offences. This concurs with analyses from the United States, which show that in state penitentiaries, veterans are sentenced more often for violent offences than for other offences.

It is possible that the mission of the armed forces, to commit mass force, is connected with this in a number of ways. Firstly, the armed forces could attract people with an interest in weapons and violence. This can be interpreted as self-selection of personnel. In addition, the selection upon intake can further increase the proportion of people with an interest in guns and violence; a selection effect. The violent behaviour identified can also be attributed to exposure to weapons and violence during training and deployments. In this respect, all three explanations could very well apply.

In order to acquire an estimation of groups with an increased risk of derailment, the information concerning sentencing has been divided into Services of the armed forces. Figure 10 shows the number of sentences per Service, standardised per 10,000 military personnel. The standardisation has corrected the difference in size between the Services.

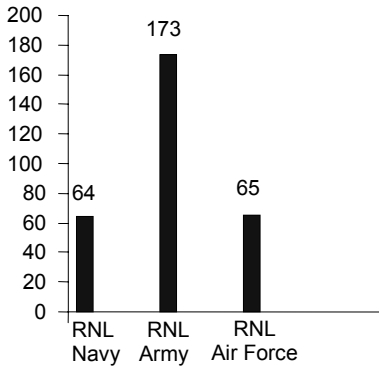


Figure 10. Sentences per Service, excluding the Royal Netherlands Military Police, per 10,000 military personnel per year over the period 1996–2003.

Figure 10 shows that per 10,000 military personnel, fewer sentences are imposed on Royal Netherlands Navy and Royal Netherlands Air Force personnel. The most sentences are imposed on military personnel from the Royal Netherlands Army. In order to identify the high-risk group more accurately, an analysis was subsequently conducted to establish which group within the Royal Netherlands Army receives the most sentences.

According to the annual information submitted to the House of Representatives in chapter X of the National Budget, the total personnel complement of the Royal Netherlands Army decreased in the period in question from 42,987 in 1996 to 30,557 in 2002. During this period, the number of military personnel decreased from 31,945 in 1996 to 21,942 in 2002. Of these, 12,685 had a fixed-term contract in 1997. In 2002 there were 11,636 military personnel with a fixed-term contract in service with the Royal Netherlands Army.

Figure 11 shows the number of sentences imposed on military personnel from the Royal Netherlands Army, divided into types of contract of the military personnel.

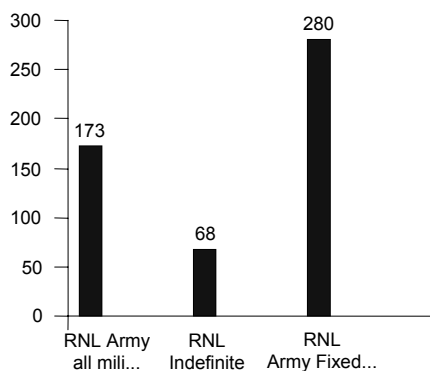


Figure 11. Numbers of sentences per 10,000 military personnel from the Royal Netherlands Army, divided into indefinite and fixed term contract over the period 1996–2003.

Figure 11 shows that in the Royal Netherlands Army, military personnel on a fixed-term contract are sentenced over four times as often as military personnel on indefinite contracts. This vast difference requires an explanation, which cannot only be sought in selection upon intake, but also in previous education, social position or prospects for the future. Incidentally, the high-risk profile of fixed-term contract military personnel was referred to in as early as 1995²². Further research should give a decisive explanation in this regard, which will enable policy to be developed for this high-risk group.

Another aspect of derailments among veterans is suicide among veterans. As mentioned earlier, a collection of systematic data on the subject of mortality among veterans is lacking for the Dutch situation. However, information is getting available for each Service of the armed forces on mortality among military personnel in active service. The analyses below relate to the two largest Services, namely the Royal Netherlands Navy and the Royal Netherlands Army.

²² Schoeman, J.S. (Trans.) *Motivated & Trainable... Armed Forces & Society*, June 1995, p. 5.

3.4 Results of research into mortality in the Royal Netherlands Navy

According to the annual information submitted to the House of Representatives in chapter X of the National Budget, the total military personnel complement of the Royal Netherlands Navy decreased from 14,071 in 1996 to 11,867 in 2002. In the period from 1995 up to and including 1999, 62 of these military personnel died, who were still in active service at the time of death. 41 died of natural causes such as illness. 21 died of non-natural causes, also referred to as violent causes of death. Of these 21, there were 2 cases of suicide. Over the average personnel complement in the period from 1995 to 1999, this is an annual incidence of 0.4. This is an annual incidence of 3.0 per 100,000 people. According to the Central Bureau of Statistics, in 1999 the annual incidence per 100,000 Dutch men aged from 15 to 55 inclusive was 16.1 suicides per annum. The annual incidence among Dutch women in the same age group is considerably lower, namely 8.2 per 100,000.²³ As the percentage of women in the total personnel complement of the Defence organisation is approximately 8.5 percent, the incidence in the comparable group must be set slightly lower. Nevertheless, the incidence of suicides among Royal Netherlands Navy military personnel is very low.

In order to give an accurate interpretation of the total mortality among Royal Netherlands Navy military personnel, it is possible to compare this data with data from the United States Navy²⁴. As the Marine Corps in the Netherlands forms an integral part of the Royal Netherlands Navy, but in the United States is an autonomous Service of the armed forces, the data on the Royal Netherlands Navy is broken down into the categories of fleet personnel and marines. Figure 12 shows the total mortality among Royal Netherlands Navy military personnel, the Dutch Marine Corps, the United States Navy and the United States Marine Corps. Furthermore, the total mortality per Service is broken down into natural causes of death and violent causes of death, with suicide given as a separate cause of death.

²³ Heeringen, C. van, Kerkhof, A.J.F.M. (2002): (Trans.) Treatment strategies in suicidality. Houten: Bohn Stafleu Van Loghum, p 6.

²⁴ Almond, M.D., Carlton, J., Bohnker, B.K. (2003): Navy and Marine Corps Active Duty Mortality Patterns for 1995 to 1999. *Military Medicine*, vol 168, no 1, pp. 32–39.

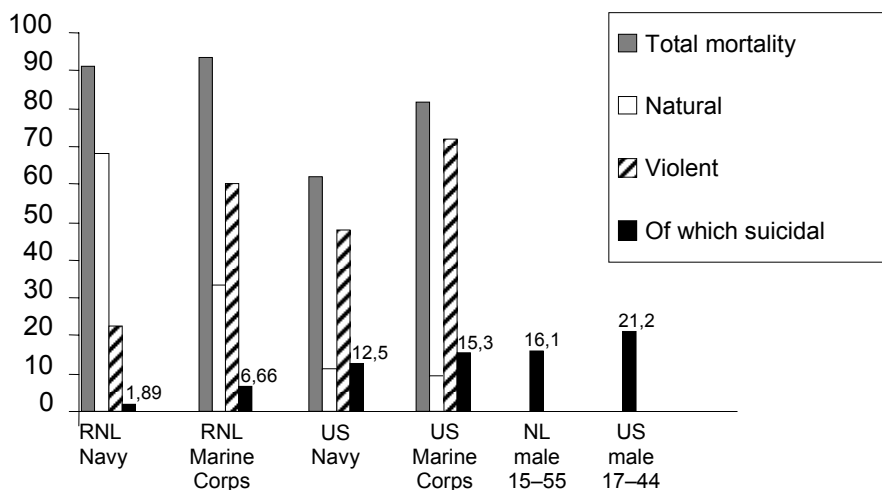


Figure 12. Mortality in total and according to cause among military personnel of the Royal Netherlands Navy, broken down into fleet and marines, the United States Navy²⁵, the United States Marine Corps²⁶, Dutch men²⁷ and American men²⁸, expressed in deaths per 100,000 per year over the period 1995–1999.

Figure 12 shows that the total mortality is the highest among the Dutch Marine Corps. This mortality is caused largely by violent causes of death, which include suicide. The incidence of suicide is much lower among Dutch men aged between 15 and 55. Among Dutch military personnel of the fleet, the total mortality is slightly lower than among Dutch marines. This mortality is determined mainly by natural causes of death. The total mortality in the United States Navy and the United States Marine Corps is considerably lower than among the Dutch navy and Dutch marines. This is probably caused by the ‘up or out’ personnel selection system. This system causes the

²⁵ Almond, M.D., Carlton, J., Bohnker, B.K. (2003): Navy and Marine Corps Active Duty Mortality Patterns for 1995 to 1999. *Military Medicine*, vol 168, no 1, p. 36.

²⁶ Almond, M.D., Carlton, J., Bohnker, B.K. (2003): Navy and Marine Corps Active Duty Mortality Patterns for 1995 to 1999. *Military Medicine*, vol 168, no 1, p. 36.

²⁷ Heeringen, C. van, Kerkhof, A.J.F.M. (2002): (Trans.) Treatment strategies in suicidality. Houten: Bohn Stafleu Van Loghum, p 6.

²⁸ Almond, M.D., Carlton, J., Bohnker, B.K. (2003): Navy and Marine Corps Active Duty Mortality Patterns for 1995 to 1999. *Military Medicine*, vol 168, no 1, p. 37.

average age of this category of the aforementioned American military personnel to be considerably lower than for the Dutch military personnel in question, with all of the obvious consequences for mortality. For the American military personnel, too, the incidence of suicide is below the national average. Additional policy is developed for young American marines, because the mortality rate for violent causes of death among is higher among them than the national average. The vast majority of these causes of death have no connection with the exercising of duties. Traffic accidents were the main cause of death among the American military personnel.

3.6 Results of research into mortality in the Royal Netherlands Army

According to the annual information submitted to the House of Representatives in chapter X of the National Budget, the total personnel complement of the Royal Netherlands Army decreased from 42,987 in 1996 to 30,557 in 2002. During this period, the number of military personnel decreased from 31,945 in 1996 to 21,942 in 2002. Of the regular military personnel, 12,685 had a fixed-term contract in 1997. In 2002 there were 11,636 military personnel with a fixed-term contract serving in the Royal Netherlands Army.

In the period from 1996 to 2002 inclusive, of all personnel in service with the Royal Netherlands Army, including civilian personnel, 335 persons died while in active service. 218 died as a result of illness, and 117 as a result of other, non-natural causes of death. Of the 117, there were 32 cases of suicide. Over the period from 1996 to 2002 this means an annual incidence of 4.6 suicides among the average personnel complement of the Royal Netherlands Army in that period. This is an annual incidence of 13.6 per 100,000 people. According to the Central Bureau of Statistics, in 1999 the annual incidence per 100,000 Dutch men aged from 15 to 55 inclusive was 16.1 suicides per annum. The annual incidence among Dutch women in the same age group is considerably lower, namely 8.2 per 100,000.²⁹ As the percentage of women in the total personnel complement amounts to approximately 8.5, the incidence in the control group should be set slightly lower, at approximately 15.4. Nevertheless, the statistics do not appear to be alarming.

These statistics are somewhat different among military personnel. During the period in question, there were 24 suicides among military personnel. The

²⁹ Heeringen, C. van, Kerkhof, A.J.F.M. (2002): (Trans.) Treatment strategies in suicidality. Houten: Bohn Stafleu Van Loghum, p 7.

annual incidence among them amounts to 14.1 per 100,000. This is slightly less than in the control group of Dutch men from the ages of 15 to 55 inclusive, but because a number of women make up the group of military personnel, the incidence in the control group must again be set lower, at approximately 15.4. Here, too, the situation does not appear to be alarming.

In the group of military personnel on fixed-term contracts, in the period in question 15 died as a result of suicide, which means 2.1 per annum in the average personnel complement of military personnel on fixed-term contracts. This means an annual incidence of 17.9 per 100,000. Military personnel in this group are granted honorable discharge at around 30 years of age. In the control group of Dutch men aged between 15 and 29 inclusive, the annual incidence is 11.3 per 100,000; for women in the same age group it is approximately 5 per 100,000. As female military personnel are included in the military personnel with fixed-term contracts, the incidence of suicide among the control group must be set slightly lower, at approximately 10.8. This shows that the incidence of suicide among military personnel on fixed-term contracts is 66% higher than in the control group of Dutch men and women of comparable age.

Figure 13 shows the mortality among military personnel of the Royal Netherlands Army, both among all military personnel and among military personnel on fixed-term contracts. The mortality is also divided into natural and violent causes of death, including suicide.

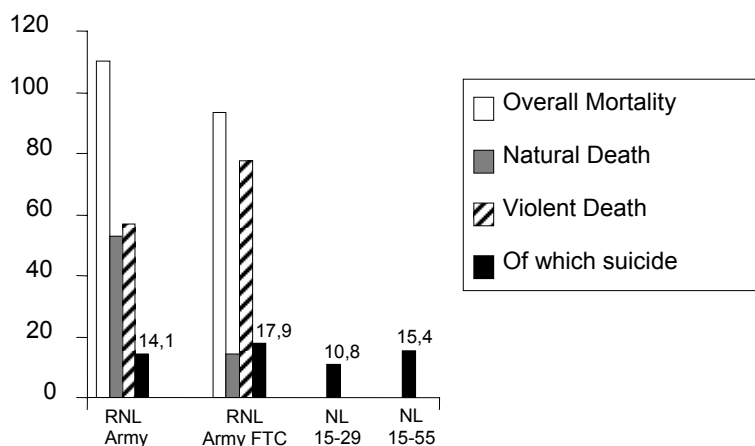


Figure 13. Mortality among military personnel in the Royal Netherlands Army according to cause of death and suicide among comparable groups of Dutch men and women per 100,000 per year in the period 1996–2002.

Figure 13 shows that in each group, the total mortality is made up of death by natural causes and violent causes of death. Suicide makes up a small part of the violent causes of death. The incidence of violent causes of death is much higher among military personnel on fixed-term contracts than natural causes of death. This difference is largely attributable to the younger age of the military personnel on fixed-term contracts. After all, the likelihood of death by natural causes increases with age. The reasons behind the aforementioned higher incidence of suicide in this group is as yet unknown. Differences exist in the selection requirements between personnel on fixed-term contracts and those on indefinite contracts. It is thus possible that the selection criteria for personnel on fixed-term contracts are less stringent than those for indefinite contractors. As a result, groups with a higher risk of suicide are less likely to be filtered out. For instance, there seems to be a higher incidence of criminal indiscretions in the past, broken homes and domestic (sexual) violence³⁰. It is also possible that this group is deployed more frequently, leading to an increase in the likelihood of problems in the acceptance of deployment experiences or in making the transition back to civilian society. Finally, fixed-term contractors have by definition less clarity in terms of career prospects than personnel on indefinite contracts. The lack of clear career prospects could serve to explain this higher incidence of suicide. For instance, this factor is also an explanation for the fact that suicide is more prevalent among the unemployed³¹ and in rural areas as opposed to urban areas³². Only further research can provide a definitive answer to the question as to which factors are responsible for the higher incidence of suicide among military personnel on fixed-term contracts in the Royal Netherlands Army.

³⁰ Schoeman, J.S. (Trans.) *Motivated & Trainable... Armed Forces & Society*, June 1995, p. 5.

³¹ Speijer, N. (1979): (Trans.) *The suicide issue*, p. 117. Deventer: Van Loghum Slaterus.

³² Clarke, S.C. Bannon, F.J., Denihan, A. (2003): *Suicide and religiosity- Masaryk's theory revisited*. *Journal of Social Psychiatry and Psychiatric Epidemiology*, vol 38, no. 9, pp. 502–506.

3.7 Discussion of the 'pool of errors'

The data obtained on sentences by the police court in might be affected by recent changes in military criminal law, that have resulted in fewer cases coming before the military police court. However, this does not affect the distribution of convictions among the Services of the armed forces. Furthermore, the nature of the offences for which convictions are imposed will not change substantially.

Furthermore, a waiting list of cases will result in bias, if a considerable length of time passes between the time at which the offence was committed and the date of the hearing. This causes bias mainly if the size of the waiting lists changes strongly during the measurement period. However, no evidence has been gathered to support this statement.

The statistics given above in respect of suicide among Royal Netherlands Navy and Royal Netherlands Army personnel must be interpreted with the usual caution. This caution is required because bias resulting from a 'pool of errors' easily occurs in the calculation of the incidence of suicide in groups. Eight important forms of bias are described below.

In the first place, bias occurs in cases when the research group comprises both men and women. The incidence of suicide among Dutch men is twice as high as for women. For an accurate comparison with norm statistics for men or women, the ratio of men to women in the research group must be calculated.

Secondly, bias occurs as a result of age differences in the research group and the norm group. Among Dutch men aged 15, the incidence of suicide is over three times lower than it is among men over the age of 75.

In the third place, bias occurs as a consequence of selection. Employment organisations generally make their selections according to the physical and mental health of the personnel they appoint. This is known as the 'healthy worker effect', as a result of which bias occurs in comparisons with the general Dutch population. Such bias can also occur if military personnel are subjected to different requirements than their civilian colleagues.

Fourthly, bias can occur as a result of the power of numbers. Accumulation of the number of suicides over a large number of years can yield impressive numbers. For instance, some time after the conclusion of a peace mission in which there were few fatal casualties, the number of suicides will be greater than the number of fatalities among military personnel during the mission. This can be illustrated by means of an example. If there are 2 fatal casualties during a Dutch mission in which 2,000 military personnel are deployed, after 10 years the number of cases of suicide will be higher than the number of fatalities during the mission. After all, in a population numbering 100,000 Dutch men, there are approximately 15 cases of suicide per year. For a group of 2,000 men, in a period of 10 years this equates to

$(2,000 \times 10)/100,000 = 0.2$ of 15, which equates to 3 cases of suicide. In 2002, British news headlines reported that more Falklands veterans had committed suicide than had been killed during the actual Falklands conflict. Wait long enough, and such a statement will certainly come true.

In the fifth place, bias occurs as a consequence of downsizing of personnel. The annual suicide rate in an organisation may be constant over a number of years, whereas the size of the personnel complement in the same period can drop drastically. This begs the question of whether in such cases there is genuinely an increase in the incidence of suicides. Consequently, it is necessary to determine the annual incidence per 100,000 persons.

In the sixth place, bias occurs as a consequence of uncertainty as to cause of death. Accidents, often one-vehicle traffic accidents, could actually be the victim's chosen way of ending his or her life. A panel of experts is often used in investigations in order to provide certainty in cases of doubt. Van Heeringen and Kerkhof (2002) focus a great deal of attention on the various forms of bias. Conversely, an apparent suicide can also be a means of concealing a murder. British newspapers reported a criminal investigation in 2002, instigated at the request of relatives of a British soldier after his death at the Princess Royal Barracks in Deepcut, Surrey, in September 2001. Initially the soldier was believed to have taken his own life, but this appeared not to be the case.

In the seventh place, it can be tempting to view information in terms of its statistical significance. A test such as this from the point of view of inferential statistics assumes a generalisation to a larger domain, or a comparison with an earlier period. However, in this case we are concerned with information from the entire period during which military personnel on fixed-term contracts are present in similar numbers. Consequently, the entire domain was analysed, and it would not be advisable to conduct such a test on statistical significance. This can also be illustrated by means of an other example. In October 2003 it appeared that of the 130,000 American military personnel in Iraq, over a period of 7 months there had been at least 13 cases of suicide. This is calculated as being over 17 suicides per 100,000 per annum, approximately 49% more than the annual incidence in the period from 1992 to 2001, which is 11.5 suicides per 100,000 per annum. Without any test of statistical significance, this was reason enough for the United States Department of Defense to deploy a team of doctors and mental health personnel to Iraq in order to investigate the situation further, and where possible prevent recurrences.

Finally, statistical analyses show the following: owing to the low numbers, the annual variance in suicides among fixed-term contract personnel is high. After averaging the extremes of 0 suicides in 1997 and 4 in 2000, using Student's *t* test the difference between this group and Dutch men in the age

group of 18 to 29 year-olds in the years from 1996 to 2002 is statistically significant ($t = 2.38$, $df = 6$, $p = 0.027$). These differences also appear to be statistically significant after analysis of the differences in causes of death between military personnel on fixed-term contracts and Dutch men aged between 18 and 29 using a chi-square test, these differences appear to be statistically significant (chi-square = 8.4, $df = 1$, $p = .005$). Table 1 shows the causes of death in both groups in the annual prevalence per 100,000, averaged over the period 1996–2002.

Table 1. Causes of death among Dutch men aged between 18 and 29 and Royal Netherlands Army military personnel on fixed-term contracts, expressed in numbers per 100,000 per year. Sources: Directr of Personnel RNL Army and Statistisch Jaarboek 2003 (Statistics Yearbook), p. 26 and p. 100.

GROUP/ CAUSE OF DEATH	Dutch men 18–29	RNLA fixed- term contractors	Total
Natural	35	14	49
Suicide	11	18	29
Total	46	32	78

Table 1 shows that considerably more Dutch men in the age group of 18–29 died from natural causes than in the group of Royal Netherlands Army military personnel on fixed-term contracts. A ‘healthy worker effect’ in terms of physical fitness evidently applies to the latter group. However, there are considerably more suicides among the men in this group than there are among the group of Dutch men aged between 18 and 29. The situation regarding mental health in this group of military personnel is clearly alarming. Further research must provide an answer regarding the significant differences between the two groups, after which it will be possible to develop preventive policy³³.

3.8 Conclusions and recommendations

As a consequence of the contributions by the Dutch armed forces to UN operations over the last decades, the number of young veterans is gradually increasing, a trend that is expected to continue into the future. As they have

³³ Presentation by LTCDR US Navy Elspeth Cameron Ritchie at the 19th Annual Conference of the International Society of Traumatic Stress Studies, Chicago, 1 November 2003.

free access to the psychosocial aftercare provided by the Defence organisation, it is important that they are also aware of the possibilities open to them at the Veterans Institute. These possibilities should be pointed out to them when they leave the Defence organisation. Another possibility would be for the Veterans Institute to develop special programmes for groups of young veterans.

For many years now, this need for aftercare by both older and young veterans has been met by the Association of Dutch Military War and Service Victims (BNMO), the BNMO Centre and the Foundation for Veterans Services. For the last three years, aftercare has also been provided by the Central Office of the Veterans Institute; this is appreciated highly by veterans.

Aftercare through reunions is given an even higher rating. The Veterans Institute is able to provide assistance in organising such reunions. The aftercare questionnaires following a deployment are less well received by military personnel, particularly the enlisted men. This may require modification of the questionnaire method used, and improvements could be made in reaching the target group of enlisted men, for instance by using much shorter questionnaires or conducting telephone or internet surveys. The Veterans Institute can also help in this regard.

Research conducted among American veterans shows that a considerable proportion of them end up with serious problems, which go hand-in-hand with serious forms of violence and, in some cases, with suicide.

On the basis of a number of studies on the subject of suicide, we conclude that feelings of guilt, PTSS and depression are significant predictors of suicide.

These feelings of guilt stem from having survived where brothers-in-arms have been killed, or about having killed prisoners-of-war, women, children or senior citizens. This begs the question of whether the frustration at having to stand by doing nothing, while hostilities and massacres continue, can lead to similar feelings of guilt. This requires further research. Moreover, the military organisational culture stands in the way of early recognition of these problems, even after leaving active service. This means that leaders in the armed forces, as well as counselors, should pay extra attention to these military personnel and veterans. The expertise of the Centre for Knowledge and Research of the Veterans Institute, as well as the counseling service of the Veterans Institute's Central Office can be used to this end.

Finally, Dutch research among military personnel in active service from the two largest Services yields the conclusion that, among the group of fixed term contract military personnel in the Royal Netherlands Army, violent behaviour and suicide are more prevalent than among other military personnel. The reasons for this come from self-selection or selection upon

intake, among others. Further research should give a decisive explanation in this matter and can also focus on comparable high-risk groups among veterans”.

In reviewing this paper of the 6th International Military Mental Health Conference by Marten Meijer and Gielt Algra the question raises if the behaviours of violence and suicide originate from deployments, or are more typical for the military population in general. Some kind of violence is liked by recruits who volunteer for the armed forces. Especially when the system of a conscripts force is abdicated and an all volunteer has to start, the chance that among these volunteers many recruits have some incline to the use of violence. This might also explain the specific risk group of fixed term contract personnel of the Royal Netherlands Army, which appeared to be at risk for the misuse of violence or for suicide. After abdicating compulsory military service in 1994, especially this part of the Netherlands Armed forces had to deal with replacing large numbers of conscripts by volunteers, probably also by lowering the selection thresholds for getting into the Netherlands armed forces. The navy and the army did not have that many conscripts, so getting the right numbers and quality in their volunteers was not too difficult. These examples show that violence and suicide among military personnel may be considered a bad result of deployment stress and high anger levels, but also can be a result of failing recruitment and selection. At the end of the day both violence and suicide may also be considered to be unexplained behaviours or symptoms, which have to be cured and prevented, with or without the ultimate explanation on hands.

In the last section of this paper we review the paper of Jacques Mylle and Eric De Soir, which they presented at the 6th International Military Mental Health Conference. We present their paper in order to demonstrate how communication skills in military personnel and their mental health practitioners can help to cure or prevent unexplained physical symptoms and can help to enhance human performance in military organizations.

4.0 Early Intervention in Veteran Care: A systemic approach to Reintegration by Jacques Mylle and Eric De Soir

Teaching the axioms of communications to soldiers and their significant others, prior-to, during, and after deployment seems to be essential in the prevention of marital and/or family problems.

In what follows the original definitions of the five axioms, literally taken from Watzlawick et al. (1967), will be printed in italics. We will try to explain in our own words what they really mean.

“One cannot not communicate” ...

Axiom 1: In an interpersonal context “one cannot not communicate” (p. 51). Every behaviour thus contains a message. Hence the paradoxical situation that a person who is not attempting to communicate will still communicate; non communication itself is a form of communication.

“You always speak double words”

Axiom 2: “Every communication has a content and relationship aspect such that the latter classifies the former and is therefore a metacommunication” (p. 54).

“Everyone has his own truth”

Axiom 3: This relates to punctuation phenomena and states that the nature of a relationship between two partners is determined by the manner in which they punctuate the communication between them.

“With or without words ...”

Axiom 4: “Human beings communicate both digitally and analogically. Digital language has a highly complex and powerful logical syntax but lacks adequate semantics in the field of relationship, while analogical language possesses the semantics but has no adequate syntax for unambiguous definition of the nature of relationships” (pp. 66–67)

“Who is the boss?”

Axiom 5: “All communicational interchanges are either symmetrical or complementary, depending on whether they are based on equality or difference” (p. 70)

This conceptual framework makes it possible to better understand the highly complicated communication processes, in particular those governing couples’ interaction within the context of “forced temporarily divorce” or long term deployment.

The impossibility of not communicating means that all interpersonal situations are communication situations, and that the very specific situations during the emotional stages of deployment need very specific coping skills before they can be understood as legitimate and normal by both partners of a

relationship (instead of giving them the idea that this only happens to them and that they are the only ones having marital or relational problems).

The differentiation between digital and analogical modes of communication is very important because analogical messages and definition of relationship exhibit a high degree of isomorphism. The ambiguity involved in the simultaneous exchange of messages concerning both the relationship itself and things outside the relationship leads to problems of interpretation and translation, which, if left un-clarified, lead to pathological interaction patterns.

The concept of punctuation allows the possibility of talking about the reciprocity of human relationships in a manner that is at once different from and more complex than that of the traditional stimulus-response model of behaviour. Partners of a relationship – certainly in the context of the tough challenge which a long term deployment is for a couple – should understand that their proper behaviour is both origin and consequence of the behaviour of their counterpart.

As Simon, Stierlin, & Wynne (1985) state: “*Punctuation refers to the structuring and organization by an observer of a continuous sequence of events and behaviours. Two partners, for example, perceive and organize their ongoing interaction into various sequences, and each subjectively perceives different patterns of cause and effect, or different structures of interaction. Depending on whether the interactive process between A and B is seen from the perspective of A or B, it may seem as if A is reacting to B, or as if B is reacting to A. According to one punctuation, a wife nags because her husband withdraws from her; according to the other, the husband withdraws from his wife because she is constantly nagging him. The manner in which an ongoing communication process and/or interaction sequence is punctuated determines the meaning attributed to it and how each person’s behaviour will be evaluated, that is, who is responsible or “guilty”, and how one describes to (re)act*”.³⁴

In our review of this paper of Jacques Mylle and Eric De Soir to the 6th International Military Mental Health Conference we note that applying the essentials of communication foster the process of reintegration after deployments. We add to that that these essentials of communication also foster the communication between deployed military personnel, their parent society and their military mental health professionals. By fostering this communication deployed personnel with unexplained physical symptoms might get better understood by their mental health professionals, who stay close by to prevent the existential loneliness or shame, which is strongly

³⁴ Simon, F.B., Stierlin, H., & Wynne, L.C. (1985). *The language of family therapy. A systemic vocabulary and sourcebook*. New York: Family Process Inc.

coupled to their unexplained medical symptoms. By a better understanding of what they have been through, it is also likely to find causes of their physical symptoms. In this perspective we can describe a disorder like the Post Traumatic Stress Disorder as a mere lack of understanding of the world of the deployment, which is not understood by the world of the parent society, which sends military personnel into deployments all over the globe. A better communication between deployed military personnel, their families and their parent society will contribute to explain their medically unexplained physical symptoms, as it helps to make both worlds meet.

5.0 Conclusions and recommendations

The concept of medically unexplained physical symptoms (MUPS) is a container concept, which includes a lot of physical symptoms of which the root causes are not yet known. However, as their root causes are not yet known, the evidence for the need for bringing them under one umbrella of MUPS is lacking also. Future research might show that MUPS have very different root causes and their good practices for diagnosis and treatment might be very different as well. Therefore it is recommended to diagnose and treat each symptom in MUPS on its own.

In the same line of reasoning the Post Deployment Syndrome is not specific enough to reveal the specific stressors of the specific theatre of operations. Even within one and the same theater of operations military personnel gets exposed to various levels and various sorts of stressors. Recent research³⁵ shows that these variations in stressors result in variations in symptoms also, giving evidence again for the dose-response relationship between stressors and strains of disorders like PTSD.

Therefore it is recommended not to use the container concept of PDS in good practices of military mental health care, as it is not specifying the typical stressors of the deployment. By the mere lack of a good analysis of the exposure to stressors in the battlefield the likelihood of finding root causes of MUPS is also decreasing.

The description of violence and suicide among personnel in the Netherlands Armed Forces revealed that elevated rates of violence or suicide only are reported in very specific groups in the Netherlands Armed forces. This description is cross sectional and not longitudinal, so scientific proof of causal relations was not possible. The possibility remains open that the described elevated rates of violence and suicide arise from lowering initial

³⁵ McGurk, D. Castro, C (2007) Presentation at the 10th International Military Mental Conference, TARTU, Estonia 25 September 2007.

selection criteria to adapt to the increased need for recruits to fill units, who were ready to send out for deployment to the former Yugoslavia in 1994. This is even more likely when we recall that compulsory service was abolished in the Netherlands in 1994, resulting in an urgent need for selecting voluntarily recruits in the first months after this abolition. Last but not least we recall that communicational skills of deployed personnel help them to cope with the homecoming and integration in their social systems in their parent societies. Gaining these skills even more might also help to make the transition from the theatre of operations to the parent society by describing the huge differences between these two worlds, especially by sharing the awesome or alienating aspects of the theatre of operations. Next to these communication skills, also bodily directed interventions like haptotherapy might encourage deployed personnel to start communicating about their deployment experiences, as observed by Vermetten et al³⁶.

³⁶ Vermetten, E. (2007) Presentation at the 10th International Military Mental Health Conference, TARTU, Estonia, 24 SEP 2007.