

Chapter 1 – INTRODUCTION

by

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1.1 THE IMPORTANCE OF HEALTH RISK BEHAVIOURS IN MILITARY ORGANIZATIONS

How people behave powerfully influences their health [1]. Health risk behaviours are those actions that result in a higher risk of adverse health consequences, such as impaired well-being, burdensome symptoms, diagnosable diseases, and functional impairments. Both short-term consequences (e.g., death from a road traffic accident related to risky driving) and long-term consequences (e.g., lung cancer from smoking tobacco) are possible, and both are relevant to the individual and to their employer.

In military organizations, health problems related to health risk behaviours can pose threats to readiness, operational effectiveness, and force sustainability [2]. Health behaviours influence the use of health services (accounting for up to 25% of health care costs), and these are usually provided by or paid for by military organizations. As is true in the general population, military health care costs are growing at rates that significantly exceed inflation [3]. For these reasons alone, health risk behaviours are of interest to the military.

In addition, some aspects of military service, notably operational deployments, can adversely affect health risk behaviours, including tobacco use, risky drinking, and risky driving behaviour. The latter has been associated with an increased risk of death from road traffic accidents after return from deployment [4]. Thus, the military has a special obligation to do what it can to understand and mitigate this potential adverse effect of military service.

This brief introductory chapter will provide an overview of health risk behaviours in military organizations, focusing on:

- The effect of health risk behaviours upon health;
- The prevalence of health risk behaviours in military organizations;
- The effect of the health of military personnel upon readiness, operational effectiveness, and force sustainability;
- The effects of military deployments upon health and health risk behaviours; and
- The potential centrality of the psychology of risk to deployment-related health risk behaviours in military organizations.

1.2 THE EFFECT OF HEALTH RISK BEHAVIOURS UPON HEALTH

The influence of certain health risk behaviours on health is powerful. The most important health risk behaviours for developed countries include tobacco use, risky drinking, and risky driving behaviour [1];[5]. These behaviours affect the health of others in addition to the person engaging in the behaviour (e.g., second-hand smoke, death or injuries to others due to drink driving or speeding). The impacts of these behaviours on health status are briefly summarized below.

1.2.1 Tobacco Use

Tobacco has widespread negative effects on health, contributing heavily to morbidity and mortality from a broad range of illness, including cancer (including the lung, oral cavity and throat, oesophagus, and bladder),

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cardiovascular disease, and chronic obstructive pulmonary disease. The specific risks depend on the mode of administration (smoking, chewing, snuff, etc.) and the amount and duration of use, but as a whole, tobacco accounts for the largest single fraction of years of potential life lost among health risk behaviours in high-income countries [1]. Public health effects of second-hand smoke are also significant, with about a tenth of all tobacco-related deaths being attributed to second-hand smoke [1].

1.2.2 Risky Drinking

Most people who drink do so because they enjoy it, finding that it adds to the value of their social interactions. Moderate alcohol consumption also has benefits in terms of cardiovascular disease. However, drinking above certain limits (either per week or on a single occasion) is associated with a broad range of adverse health outcomes, including increased morbidity and mortality from injuries, suicide, psychosocial distress due to alcohol use disorders, liver disease, and certain cancers. In high-income countries, alcohol use is second only to smoking among purely behavioural risk factors in its effects on the overall burden of disease [1]. As with smoking, one person's drinking can affect the health of others, notably in the realm of alcohol-related road traffic accidents.

1.2.3 Risky Driving

Nearly all Road Traffic Accidents (RTAs) have a behavioural contribution: Drinking and driving, speeding, driving while sleep-deprived, failure to wear seatbelts or motorcycle helmets, driving under adverse weather conditions, and many other factors have been shown to increase the risk of accidents and related injuries and deaths [6]. RTA-related injuries are leading causes of death in the demographic group that forms the bulk of the military population, namely younger men. And again, one person's driving behaviour can affect the health of others.

1.3 THE PREVALENCE OF HEALTH RISK BEHAVIOURS IN MILITARY ORGANIZATIONS

The overall public health impact of a health risk behaviour depends on four key factors:

- The prevalence of the behaviour: The higher the fraction of the population that engages in a health risk behaviour, the greater its potential impact.
- The frequency/intensity of the behaviour: For example, smoking more cigarettes, smoking more frequently, and smoking for longer periods of time increase the risk for smoking-related health problems.
- The relative risk of adverse health outcomes occasioned by the behaviour: For example, the risk of a fatal road traffic accident increases dramatically in intoxicated drivers, whereas the risk of heart disease increases only modestly in smokers.
- The overall severity of the behaviour-related health outcomes.

1.3.1 Tobacco Use

The prevalence of tobacco use varies substantially from Nation to Nation, but all NATO Nations have substantial prevalence rates of tobacco use: Between a quarter and a half of the adult population are current users. As discussed in detail in a later chapter, tobacco use tends to be at least as prevalent in military personnel as in the source population.

1.3.2 High-Risk Drinking

Alcohol consumption and alcohol use patterns also vary from Nation to Nation, but again all NATO Nations have substantial prevalence rates of high-risk drinking. Weekly episodic heavy drinking (only one

pattern of high-risk drinking), for example, is reported by more than 10% of European adults. Rates tend to be higher in younger males, who of course form the bulk of the military population. In some Nations (notably the UK), rates among military personnel are higher than their general population counterparts.

1.3.3 Risky Driving

Risky driving behaviour is harder to quantify because it comprises a broad range of diverse behaviours. The most comparable statistics refer to seat belt use: In Europe, 24% of those seated in the front and 54% of those seated in the rear use seat belts [7]. Surveys indicate that a substantial fraction of adults report having driven after having had too much to drink. The high rates of arrests for drunk driving and the high rate of alcohol-related accidents also speak to the high prevalence of drinking and driving. Drinking and driving is particularly prevalent among younger men, who again form the bulk of the military population.

1.4 THE EFFECT OF THE HEALTH OF MILITARY PERSONNEL UPON READINESS, OPERATIONAL EFFECTIVENESS, AND FORCE SUSTAINABILITY

Health is a vital component of operational readiness and capability because it enables fighting forces to be “fit for purpose”. NATO’s modern military forces are increasingly streamlining their overall manpower in order to deploy them in an agile and rapid manner. Additionally, the nature and range of modern military deployments vary in terms of their context and remit (e.g., warfighting, peace support, peacekeeping and humanitarian relief operations). Furthermore, current operational tempo is taking its toll on available manpower, which affects retention figures and available manpower figures in those contributing forces [8]. Therefore, the remaining manpower must be maximised and fit for purpose. Thus, reductions in overall health due to a myriad of health-related factors will affect the overall sustainability of a force, which will ultimately affect its overall capability and effectiveness.

Operational health is essential to military personnel as it is a key enabler for human performance, which ultimately influences military capability, military performance, and operational effectiveness. This requirement is due in part to the future global security challenges facing NATO, and the need for flexible and adaptable Armed Forces to carry out expeditionary operations. The long-term and continued transformation of NATO Forces is to deliver a NATO Network-Enabled Capability (NEC) in order to produce strategic effects, which can only occur through the capability of people, thus requiring the appropriate levels of health.

Health risk behaviours are also important drivers of health care expenditures, which are of obvious interest to military and veterans’ organizations. As these escalate at rates that exceed overall cost inflation, resources that could be dedicated to recruitment, training, and equipment instead gets directed towards the delivery of health care. The US Secretary of Defense, Robert Gates, recently noted that the current rate of increase in military health care expenditures is “unsustainable” [3]. Health problems thus represent a double threat to force sustainability: They deplete the fighting force through medical attrition and they limit its capacities by constraining the availability of resources for those who remain.

1.5 THE INFLUENCE OF DEPLOYMENTS UPON HEALTH AND HEALTH BEHAVIOURS

It is known from years of research that military deployments produce effects upon physical, mental, and psychological health. These effects have been found in deployments that are both benign and intensive, and have been found across the spectrum of operational activity, i.e., warfighting, peace enforcement, peacekeeping and humanitarian relief. This suggests that military deployments, irrespective of location, intensity and remit, affect health-related issues, whether it is subjective perceptions or objective measures of health and health behaviours [2].

1.6 THE CENTRALITY OF THE PSYCHOLOGY OF RISK TO HEALTH RISK BEHAVIOURS IN MILITARY ORGANIZATIONS

There is one key psychological construct that is deeply embedded within military careers and military deployments...Risk. The construct of risk is assumed to be an important aspect of the military domain. The necessity to embrace risk can be viewed as the military's *raison d'être*. This can be summed up by the former head of the British Army, who stated that "soldiering is not a risk free business; it never can be"¹. In addition to this, formal doctrine acknowledges the part that risk plays in the military domain:

"Importantly, by its very nature, military activity is about confronting risk and managing it. It is emphatically never about avoiding risk; the military profession is not one for those who are risk averse." [9]

Risk is not just confined to health-related issues but is important throughout military activities, for example, leadership approaches to risk taking, strategic decision making at the operational level, and rapid decision making at the tactical level. Individual and group risk perception (and management) therefore involves assessment of the operational location, environment, and a plethora of contextual factors. Therefore, it can be seen that risk plays a central role in military performance, and as such, is a complex phenomena that can help to understand and explain behavioural, organisational and cultural indices in unique settings.

How individuals evaluate risks obviously has an influence on their decision to engage in health and other risk behaviours. While each behaviour has its own considerations when it comes to the way people evaluate the risks and benefits of engaging in it at a particular place and time, there are commonalities the individuals apply across behaviours. Strong evidence for this comes in the form of the observation that risk behaviours of all sorts are correlated with one another and share identifiable substrates in human psychology.

To the extent that the decision to engage in armed combat at great personal risk is largely a voluntary one in most NATO Nations, it is plausible that the psychological factors that underlie that decision may have also have an influence on the decision to engage in other risk behaviours, notably health risk behaviours. Finally, armed combat is a life altering experience that has the capacity to dramatically and permanently change one's worldview [10]. As such, it could have a plausible effect on psychological factors that facilitate (or inhibit) risk-taking behaviour.

1.7 PREVENTING AND CHANGING HEALTH RISK BEHAVIOURS

Individuals can modify their health risk behaviour on their own or in response to individual or environmental interventions. Preventing or changing health risk behaviours can be difficult. After all, people behave as they do because their behaviours meet certain needs and fit into their lives. That understood, a broad range of interventions at the level of the individual have been shown to facilitate changes in health behaviour. For example, taking certain medications facilitates smoking cessation, as does participation in formal smoking cessation programs. Even simple, brief advice from a physician can have a small but measurable influence on smoking cessation.

Health professionals tend to think of interventions applied to individual patients when they think of prevention or reduction of health risk behaviours. But environmental interventions are often far more effective: There is strong evidence that tobacco policy (taxes, availability, enforcement, etc.) has a powerful influence on tobacco use behaviour. Drink driving laws (and their aggressive enforcement) decrease alcohol-related traffic fatalities.

¹ General (retired) Sir Mike Jackson. BBC1 Remembrance Sunday: the Cenotaph, Sunday 11th November 2006.

Optimally effective health promotion efforts are facilitated by a rich understanding of the full range of factors (individual, social, and environmental) that drive health-related behaviours. Military organizations can offer services and educational programming to individuals that mitigate health risk behaviours. In addition, though, military organizations can take advantage of their unusual degree of control over the environment; this far exceeds that of a typical employer. For example, tobacco and alcohol are often sold in military commissaries and messes; the pricing and availability of these can have an effect on their use. Military personnel undergo mandatory periodic health evaluations by clinicians who are themselves employees of the organization, hence in a position to advance the organizations' health risk behaviour mitigation objectives. The military has its own newspapers, radio stations, and even television stations that can be used for public service announcements on health risk behaviours. Military police patrol military communities and hence are in a position to aggressively enforce traffic laws, including those surrounding drink driving. Thus, military organizations have an enviable degree of control over the environment and an enviable ability to coordinate individual and environmental interventions across the organization.

1.8 CONCLUSION

All of these efforts to effectively mitigate health risk behaviours hinge upon having a rich understanding which behaviours individuals engage in, which groups are at particular risk, and the factors that facilitate their initiation and persistence. Many of these factors have their substrate in the *psychology* of military personnel and their *physical and social environment*, to which the military contributes heavily. Thus, knowledge of military specific aspects of health risk behaviours (including their relationship to deployment) is essential for the development of effective policies, programs, and services.

The remainder of this report will first summarize the methods used in RTG's approach to identifying and prioritizing health risk behaviours for its work. It will then review data on tobacco use, risky drinking, and risky driving in military organizations, focusing in particular on the evidence of an association with deployments. Possible mechanisms by which deployment could affect each of these will be discussed. The conclusion will attempt to answer the important question: "How is it that deployment has a consistent deleterious effect on health risk behaviours?" Two possible explanations will be explored in depth, specifically mediation by distress or mental disorders or by changes in risk psychology related to the deployment. Finally, recommendations for research and public health practice will be offered.

1.9 REFERENCES

- [1] Lopez, A.D., Mathers, C.D., Ezzati, M., Jamison, D.T. and Murray, C.J. Global Burden of Disease and Risk Factors. New York: The World Bank and Oxford University Press; 2006.
- [2] Institute of Medicine. Protecting Those Who Serve: Strategies to Protect the Health of Deployed U.S. Forces. Washington, DC: National Academy Press; 2000.
- [3] Bumiller, E. and Shanker, T. Gates seeking to contain military health costs. New York Times 2010 November 28.
- [4] Gray, G.C. and Kang, H.K. Healthcare utilization and mortality among veterans of the Gulf War. *Philos Trans R Soc Lond B Biol Sci* 2006 April 29; 361(1468):553-69.
- [5] Murray, C.J. and Lopez, A.D. Global mortality, disability, and the contribution of risk factors: Global Burden of Disease Study. *Lancet* 1997 May 17; 349(9063):1436-42.
- [6] World report on road traffic injury prevention. Geneva: World Health Organization; 2004.

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- [7] European Transport Safety Council. Seat belt use: Why increase enforcement? European Transport Safety Council Web Site 2010 June 6.
- [8] Rona, R.J., Fear, N.T., Hull, L., Greenberg, N., Earnshaw, M. and Hotopf, M. et al. Mental health consequences of overstretch in the UK armed forces: first phase of a cohort study. *BMJ* 2007 September 22; 335(7620):603.
- [9] Ministry of Defence (UK). *British Defence Doctrine*. London: Ministry of Defence (UK); 2001.
- [10] Tedeschi, R.G. and McNally, R.J., Can we facilitate posttraumatic growth in combat veterans? *Am Psychol* 2011 January; 66(1):19-24.