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## PREVENTIVE PROGRAMME AIMING COMPLEX LIFE-STYLE CHANGE

### *Abstract*

*Similarly to the civil preventive medicine, the most common public health problems in the military medicine sphere are cardiovascular diseases and the hazard factor behind them. In this article we present the Preventive Programme Aiming Complex Life-style Change of the Hungarian Defence Forces (HDF), which is providing an opportunity for the reduction of hazard factors along with decreasing frequency of cardiovascular diseases if put in practice. By presenting this model program that consist of two parts- screening tests and life-style programme- we aim to contribute in planning, organising and arranging public health programmes in practice.*

*A katonai preventív medicina számára – a civil megelőző orvostanhoz hasonlóan – a legjelentősebb népegészségügyi problémát a szív- és érrendszeri megbetegedések valamint a háttérükben meghúzódó kockázati tényezők jelentik. Cikkünkben a Magyar Honvédség Komplex Életmódváltást Megcélzó Prevenációs Modellprogramját mutatjuk be, melynek gyakorlati implementációjával lehetőség nyílik a betegség kockázati tényezőinek és ezzel együtt hosszú távon a kardiovaszkuláris betegségek gyakoriságának csökkentésére. A szűrővizsgálati és az életmódprogram részből álló modellprogram tervezésének és módszereinek bemutatásával célunk egy olyan útmutató nyújtása, mely alapul szolgálhat a gyakorlatban a népegészségügyi programok tervezése, szervezése, lebonyolítása során.*

**Keywords:** *cardiovascular prevention, hazard factor, Preventive Programme Aiming Complex Life-style Change ~ kardiovaszkuláris prevenció, kockázati faktor, Komplex Életmódváltást Megcélzó Prevenációs Modellprogram*

## INTRODUCTION

By the middle of the 20<sup>th</sup> century cardiovascular diseases that belong to the class of acute non-infectious diseases, came the first in the statistics on morbidity and mortality in most economically developed countries. Plenty epidemical research started to be carried on with the main goal to examine the emergence, common qualities and background factors of cardiovascular diseases.<sup>1</sup> (Kishegyi, 2004).

Concerning health status the personnel categories of HDF show a significantly more favourable image compared to the epidemiological data of the civil population, due to the well-organised aptitude and screening tests and the low average age.

The risk factors of chronic non-communicable diseases similarly to the civil population occur frequently among the personnel categories. Examining and influencing these risk factors in a positive way is very important in order to protect the health of personal ranks. Identifying risk factors, interdisciplinary surveying and decreasing the current risk factors are of high priority of the effective health promotion strategy. Planning and executing the program relies on the theoretical frame of public health data turnover that consists of three main stages: (1) situation analysis, (2) potential analysis and (3) efficiency analysis.<sup>2</sup> (Ádány, 2006).

Planning the program started with situation analysis, during which we characterized health status and the influencing factors concerning lifestyle, environment and genetics from the point of view of epidemiology. We applied the results of the yearly occupational health screening tests.<sup>3</sup> (Sótér, 2008).

In the phase of potential analysis the following progress was made: identifying and ranking of needs, analysing potentials connected to handling problems, strategic planning and defining health targets using the results from situation analysis and the problem conceptualization.

Efficiency analysis will only be relevant after the practical implementation of the programme. The goal of this phase is to conclude that how close we got in reaching the defined health aims. In the same time the efficiency analysis stands for a written feedback on situation analysis.

In the situation analysis phase we carried out the analysis of the health screening tests, focusing on risk factors of cardiovascular diseases. Following the classification of risk factors we observed the conformation of frequency of both the non-controllable factors (gender, age, genetics), and the controllable ones (smoking, high blood pressure, high levels of cholesterol, obesity, sedentary lifestyle, stress) as well. The results summarized:

1. Among the personnel categories the cardiovascular diseases have been holding the first place in the structure of morbidity for long years with 10-15% prevalence, most of the cases (70%) is caused by high blood-pressure;
2. 52% of the personnel categories had genetic predisposition concerning cardiovascular diseases (primary relations);
3. According to the BMI categories 30-40% of the personnel categories are obese, and 20% is overweight;
4. Prevalence of smoking has been approximately 30% for years;
5. Despite the strict rules of physical training and the yearly condition tests 25% of personnel categories is inactive physically;
6. The six months prevalence of psychosomatic symptoms caused by stress is relatively high (tiredness 11%, anxiety 9%, headache/low spirits/trouble sleeping 6%)

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1 Kishegyi, J. and Makara, P. (edt.): Principles of health promotion. Health promotion of basic international documents. National Institute for Health, Budapest, 2004. (in Hungarian)

2 Ádány, R. (edt.): Preventive medicine and public health sciences, Medicina, Budapest, 2006. (in Hungarian)

3 Sótér, A.: Health status of Hungarian Army, Military Science Review, Vol.1, No. 4, pp. 37-47. 2008. (in Hungarian)

As the first step of potential analysis we observed the intervention's possibilities concerning the prevention of cardiovascular diseases. After we define all health development targets that are summarized in Table 1.

PROBLEM	SOLUTION	HEALTH DEVELOPMENT TARGETS
Long procession, symptoms usually appear only after years or even decades.	Detecting of risk factors, identifying individuals with high risk factors but no symptoms, defining individual risk profiles with regular prospective screening tests.	Developing a screening methodology and system that is able to (1) define health status, (2) monitor the changes, (3) analyse risk factors in detail and (4) warn about the disease relying on the individual risk factors prediction.
Multicausal etiology (bio-psycho-social risk factors)	Holistic, complex and interdisciplinary approach. Assigned interventional areas: psych-education/mental hygiene, smoking, exercise, diet.	Diminishing or preferably eliminating risk factors by health progress interventions (lifestyle programmes).
A different combination of risk factors can occur between the background factors of certain diseases, which can vary in different cases.	Multiple-stage preventive programme, risk group strategy, combination of group and individual interventions.	Advisory on lifestyle, based on individual needs that can be kept by anyone. Advice, which participants can build in to their everyday lives without any difficulty for the sake of their own health and be able to apply for long term.

**Table 1.** Results of potential analysis in the context of problem-solving and health targets.

After the potential analysis the program started in teamwork. Meeting the demands of interdisciplinary requirements, all experts from their special field (health promotion specialists, psychologists, dieticians, and trainers) elaborated on the main goals, syllabus, tools for implementation and the necessary dealings to regulate the procedure.

In this article the structure of the model program, the main aims of particular blocks, the topics, the interventional tools and their methods are being presented.

## THE STRUCTURE OF THE MODEL PROGRAM AND ITS METHODS

According to the professional requirements<sup>4</sup> (Benkő, 2009) the program is divided into two parts: (1) screening tests and (2) lifestyle program. The lifestyle program consists of four blocks that are built on each other, and also are affected by each other. These are the following: psycho-education and mental hygiene block, anti-smoking block, exercise block and nutrition block. These blocks are defined by the possible risk factors with the main aim of developing health conscious behaviour and eliminating the possibly arising risk factors.

### Screening Tests

The *screening* questionnaire was constructed taking into account the results of our earlier investigations (illness statistics of the ranks, health behaviour and sociodemographic data) and methods of national and international screening databases and procedures concerning both the civil population and military ranks. The questionnaire is made up of two main parts. The first is filled by the person screened and contains questions on socio-demographic data, family history, lifestyle (smoking, alcohol consumption, sports, nutrition) and psychological questions (such as the Mental Endurance Coefficient test).

The second part is filled in by the medical personnel undertaking the screening, according to the tests carried out. The programme continues after the screening with evaluation of the results and explaining these to the person screened, who thus learns the data pertaining to his/her

<sup>4</sup>Benkő, Zs.: Health promotion methodological guide, Mozaik, Szeged, 2009. (in Hungarian)

health (results of physical investigations, labs, psychological tests and risk evaluation). The results of physical investigations reflect one's level of fitness.

If the results of screening tests implement a certain disease, further examinations need to be carried out, as well as assigning the patient to the appropriate special care. In the case of not detecting any change in health status, but it could be influenced positively by health-improvement interventions, we provide the opportunity to participate in the lifestyle program.

### **The lifestyle programme**

The *lifestyle programme* is a set of health-improvement interventions driven by individual risk profiles. Didactically, and according to the main risk factors, the programme consists of four blocks.

1. *Psycho-education and mental hygiene block:* Its aim is reducing psychosocial risk factors (stress, type A personality, lack of partner support, affective disorders). This block is recommended to personnel for whom a psychical risk is likely based on the psychological tests. Participants take further tests and receive psychological support (advice, relaxation, autogen training), according to individual needs.
2. *Anti-smoking block:* Its aim is to support giving up smoking. Participants are those smokers who are motivated in giving up. We carry out additional experiments (CO, spirometry, arteriograph) on these personnel and subject them to psychological testing. The programme has an individual focus and a complex approach, in which physiological support is through medication and psychological support is through mental hygiene advice and care.
3. *Physical exercise block:* Its aim is to reduce risks arising from a sedentary lifestyle. Similarly to the above, this block is for personnel who have risk factors for diseases caused by sedentary lifestyle. These are found by questions of physical exercise and somatometric indicators. Participants are subject to further tests, the results of which influence individual physical exercise programmes. Participants get specialist help to learn the exercises and receive personal physical exercise plans, but they also have the opportunity to take part in group activities appropriate to their personal endurance. Group activities include 4 different stages according to personal endurance and the goal to be accomplished: prevention-rehabilitation, weight holding-recreation, and the aerobic capacity's expansion.
4. *Nutrition block:* Its aim is the prevention of chronic non-communicable diseases caused by unhealthy diet. Participants are personnel who have risk factors for nutrition-related diseases according to the screening (nutrition items, somatometric indicators and lab results). They are given advice on healthy nutrition and personalised dietetic advice.

In case of most blocks concerning risk factors' further examinations, surveys and personal discussions help to develop programs, which are meeting the demands of personal needs, considering the possibilities of the given person to be able to execute and maintain the essential changes. To analyse the efficiency of interventional activity and monitor individual progress, we carry out follow-up examinations within defined time periods. The individual is provided access to the specialists in order to avoid any possibly arising problems.

Based on screening test results, according to their risk factors, besides the individual guidance, group discussions should also be provided for the participants. Individuals belonging to the same risk factor group can share experiences about their change of lifestyle and after analysing these; they can support and inspire the other members of the group. If the size of ranks involved in the program is high it is practical to start with forming the groups in the very beginning. By group formation there is a possibility to fix time frames that takes the participants' engagements and the individual meetings into consideration. Classifying individuals with

higher risk factors should be based on the risks of their most serious health problems. For participants affected by cumulative risk factors individual guidance is of high importance, as the accurate synchronizing of interventions in use to reach the optimal state of health is essential.<sup>5</sup> (Oláh, 2007).

We set up individual agendas for high risk factor persons, which is much more effective than group discussion. We provide consultation meetings to discuss the results of screening tests in detail and to talk about personalized preventive- program schedule. Besides education, these meetings serve the goal to give guidance and emotional support that may strengthen the faith in the need for lifestyle change, motivation and persistence. If required, mental hygiene care is also provided.

## **RESULTS, PRACTICAL IMPLEMENTATION**

Processing the results of the model program and the involved screening tests gave an opportunity to work out a hazard-orientated health preserving program, concerning either individuals or even bigger communities that can positively influence certain health-affecting factors. On the individual level the most important would be after filtering out risk factors, to take the patients to the troop unit medical care' and emphasise health promotion and health maintenance. The model program is carried out by specialists of the HDF Health Centre, and after the results have been analysed troop medical personnel, troop psychologists, and military trainers would also be involved to put the system into effect. Later, if the program proves to be successful, with the help of the acquired experiences and results the specialists taking part in the program should be provided with continuous trainings.

## **SUMMARY**

Maintaining the fighting abilities of its trained ranks, preserving the health of its personnel and forming a health-conscious behaviour is an important concern of the Hungarian Defence Forces (HDF), in fact it is essential to its readiness. The most common public health problem, namely the cardiovascular diseases and the risk factors that lead to it (smoking, obesity, lack of physical activity lifestyle) are of frequent occurrence among the ranks of the Hungarian Defence Forces.

In favour of evolving and developing a health conscious behaviour, an activity of health progress based on the public health cycle is needed, that would be able to decrease or abolish risk factors' effects. The program aiming complex lifestyle change that is in correspondence with the main ideas of health progress systems consists of two parts. First, the screening tests define the health conditions and reveal all risk factors that serve as a base for the second part, the lifestyle program. The psycho-education, anti-smoking, physical exercise and nutrition blocks apply interventional methods, which provide opportunity (individually and in groups as well) to participants of the programme to influence their behaviour in a positive health conscious way. In the course of the complex preventive program the specialists responsible for certain fields (doctors, psychologists, dietitians, trainers) by confirming each other's' work, can come to such results that are able to improve individuals' health in the long term. Sharing the experiences of the participants and providing training courses, gives possibility to apply the program later in practice as well.

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