

Disease Prevention with an Emphasis on the Lifestyle of Military Personnel According to the Social Determinants of Health

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Abstract

In recent years, the association between social factors and individuals' health status has been paid special attention to by health system researchers and policy makers. According to the WHO conceptual framework of Social Determinants of Health (SDH), lifestyle is one of the intermediary factors affecting the individuals' health and disease and is related to their individual, social and spiritual dimensions. Many of the health complications associated with lifestyle can be prevented or delayed using strategies for health promotion and prevention of disease. Preventing diseases affected by lifestyle and promoting physical and mental health requires knowledge of how life situations endanger people's health. Efforts made to improve health by enabling people to change their lifestyles should be in line with both the individual changes and social and living conditions changes which are effective in lifestyle. This review study has aimed to identify the dimensions of lifestyle, as one of the social determinants affecting health, and their role in the health and disease outcomes of the military personnel according to the World Health Organization framework.

Keywords: Prevention, Lifestyle, Social Determinants of Health, Military Personnel

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1. Introduction

Health is a dynamic concept that its scope and dimensions are increasing day by day so that the World Health Organization definition of health has also been expanded into physical, mental, social and spiritual dimensions. The dimensions and determinants of health have interaction with each other and the social dimension of health has preventive effects on both physical and mental dimensions. Social conditions, by themselves or through their effects on each other, severely affect the health status and can cause inequality and inequity in the individuals' health status. Factors such as heredity, lifestyle, environmental factors, socio-economic status, education, employment and working conditions, food security, health care, housing, social exclusion, culture, religion, and social safety nets have significant effects on health and its outcomes, including quality of life (Figure 1). These factors are called social determinants of health (SDH) which affect the community health and diseases (1-5).

Today, the concept of health has been tied to the social determinants, and many physical and mental diseases have strong associations with social factors (6-8). Lifestyle changes have led to changes in disease patterns and factors threatening health. Water, soil, air and food pollution, uncontrolled industrial development, environmental degradation, unfair distribution of wealth and exclusive

resources, poverty and low social status, discrimination, illiteracy, unemployment, lack of psychological support and social insecurity, addiction and substance abuse, immobility or decreased physical activity, destruction of human values, increased violence and libertinism, increased unsafe sexual relationships, stress, unsafe working environments, man-made accidents and natural disasters, production and development of chemicals in everyday life, malnutrition, increased non-communicable diseases, etc. are serious threats to the health and cause new and unknown diseases to be appeared (9). Identification of determinants, designing preventive interventions, development of knowledge, and management of health-related issues in social life are not practically possible without paying special attention to the social determinants of health and emphasizing the models and interventions derived from them (10).

The success in a prevention program depends on various factors, including awareness of the causes of diseases, the ways of their transmission, identifying risk factors and people at risk, availability of preventive, early detection or treatment measures of diseases, appropriate organization for implementing these measures for related individuals or groups, and continuous evaluation and development of methods employed (11). The full knowledge of the natural history of the diseases is desirable but not essential for



determining the preventive measures. Often, removal or deletion of a main factor can be enough to prevent a disease. It is always necessary for health systems to determine the appropriate interventions for preventing diseases. In fact, the most important factors affecting the health of communities are social determinants. The evidence clearly demonstrates that health follows a social norm: better health is associated with higher socio-economic status (11-13).

Social determinants specify the behavior and health outcomes. Providing effective health interventions requires community-based approaches such as the social determinants of health approach (14). Because the inequalities of people's living and working conditions are preventable, trying to understand the mechanisms of the influence of social determinants on health has been emphasized to address the health inequalities at the global level. Lee (2005) believes that the health interventions of countries which have aimed at coping with the diseases and saving lives have failed and have been unable to reduce inequalities and inequities. On the other hand, the effects of social determinants on the human health are far more than the effects of health care and health system performance. Therefore, understanding the importance of these determinants by policymakers plays an important role in increasing the equity (15-17). World Health Organization (WHO) established the Commission on Social Determinants of Health (CSDH) in 2005 (8). CSDH presented the social determinants and their effects associations with health in a conceptual framework for the action of Member States which was finalized in 2008 (Figure 2) (18). This framework provides guidance for policymakers, so that they can prevent inequalities in health using this framework and paying attention to the social determinants of health. CSDH focuses more on the roots of factors threatening health than any other efforts in the field of global health (19).

Under this approach to the concept of health, health-related factors and interventions are out of the range of individual behavior and specialized health care and expand into a wide range of socio-economic life of people such as living and working conditions, social protection, education, etc (20).

According to the conceptual framework, the following determinants or key factors affect health:

1. Social, economic and political contextual factors, including governance, political institutions and economic processes, culture, and social system performance.
2. Structural factors, including education, income, gender, ethnicity, and employment status which lead to the creation of social and economic inequalities and ultimately constitute a person's social class.

3. The middle part or intermediary factors indicating that the structural factors do not affect health directly. They influence health by intermediary factors.

These factors effect each other and ultimately have an effect on health (Figure 2) (21).

Based on this framework, lifestyle is an intermediary determinant which affects individuals' health in many ways (22). According to the WHO report, more than 70% of chronic diseases, as well as five major chronic diseases, including obesity, cardiovascular diseases, diabetes, cancer and osteoporosis, are associated with lifestyles (23-25). Adler, one of the pioneers of lifestyle definition, believes that every person has his or her own lifestyle that can be more or less the same as other lifestyles. Lifestyle is developed in every person's life and during childhood through his or her inner creative power, and not merely based on heredity (26). Lifestyle is the most important factor that everyone adjusts his or her life accordingly. Also, lifestyle is the collection of ideas, plans and habitual patterns of behavior, desires, and the explanation of social or personal conditions which determines specific types of individuals' responses and reactions (27). Mahdavi (2008), quoting from Mackie (1969), has defined lifestyle as "a pattern of shared values and beliefs of a group or community appearing as a common behavior" and, in many cases, is synonymous with culture (28). In addition, the amount of individuals' personal and social successes in the life can be determined through their lifestyle assessment (29).

A healthy lifestyle is one of the necessities of human life in all societies. It is said that a healthy lifestyle is the way a person chooses to be less affected by the non-communicable diseases. The importance of having a healthy lifestyle is to the extent that today, a new branch of medical sciences called "Lifestyle Medicine" has been created which is used for the prevention and control of diseases. Preventing diseases affected by lifestyle and promoting physical and mental health requires knowledge of how life situations endanger people's health (30).

The World Health Organization believes that many risk factors for mortality can be counteracted by modifying lifestyle. Therefore, one of the goals of the World Health Organization by 2020 is promoting the healthy lifestyle in communities. Accordingly, countries are required to pay particular attention to the strategies that are effective in individual and social lives and to reduce the factors that lead to unhealthy lifestyles (24, 31).

The World Health Organization definition of lifestyle offers a broad understanding of the determinants of healthy lifestyles. According to the WHO definition (1998), a healthy lifestyle is based on the defined patterns of behavior determined through a person's interactions among individual characteristics, social interactions, and economic and environmental conditions. This definition

implies that behavioral patterns are continuously modified in response to the changing social and environmental conditions. Based on this definition, efforts made to improve health by enabling people to change their lifestyles should be in line with both the individual changes and the social and living condition changes which are effective in the lifestyle (24, 26). Generally, it can be concluded that lifestyle includes issues which are associated with the individual, social, and spiritual dimensions of human life. These issues, which have effects

on lifestyle, are the insights (perceptions and beliefs) and attitudes (values, desires and preferences) which are subjective or internal behavior, and the external behavior (both conscious and non-conscious), physical behavior, social positions and assets that are objective, and the heredity and environmental issues (26). Known indicators of lifestyle include physical activities, leisure time, sleep and wakefulness, social relationships, family relationships, spirituality, tranquility, safety and nutrition each of which are considered as a major way of people's life (24, 27).

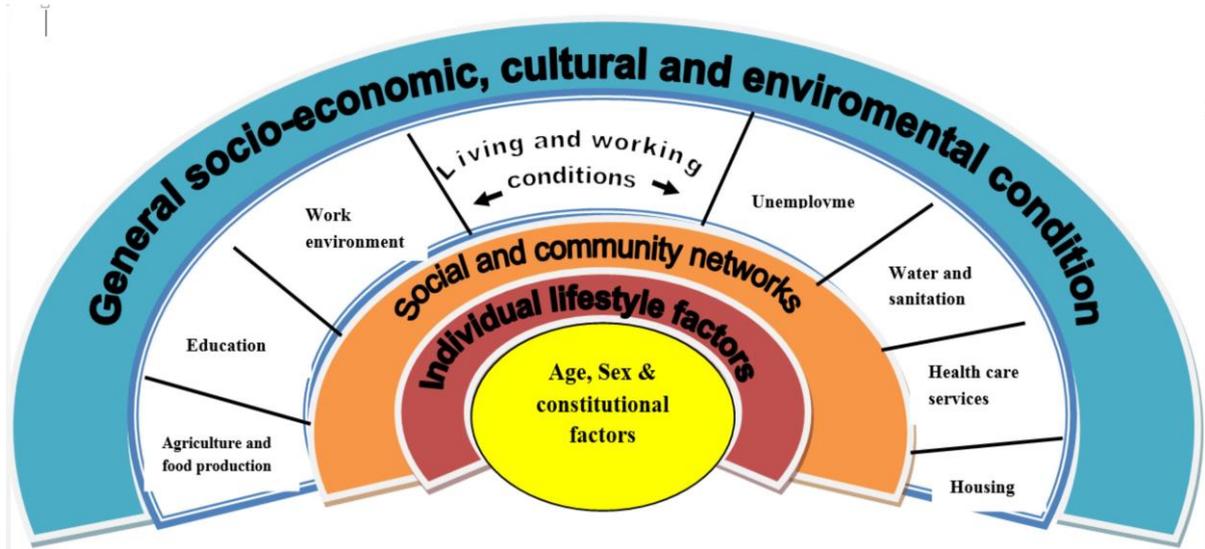


Figure 1. Dahlgren & Whitehead's Model of the Social Determinants of Health (2)

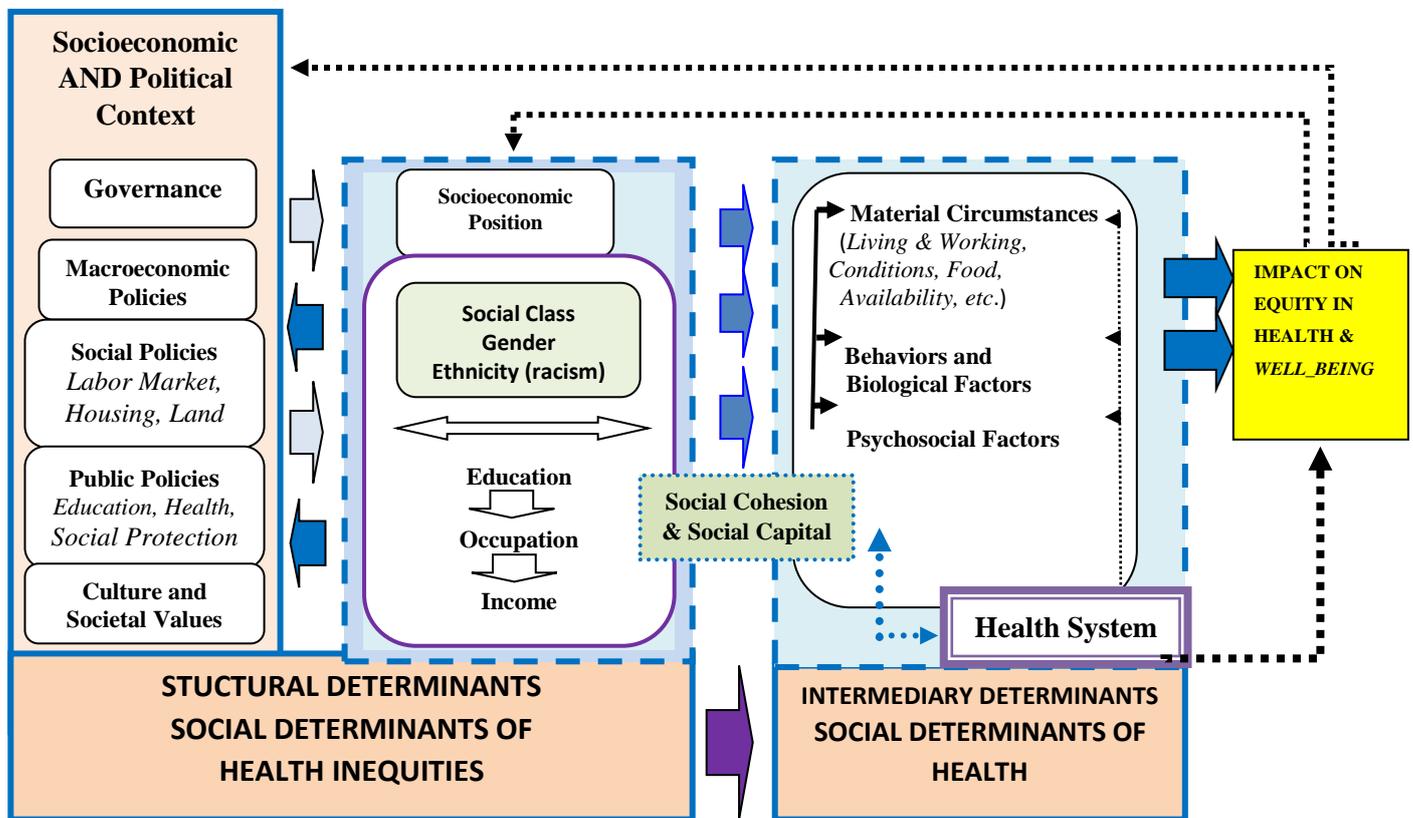


Figure 2. Final Form of the CSDH Conceptual Framework (18)

The explanation of lifestyle without considering the effects of culture, habits of the population, geographic location and economic status of the community would not be possible.

Mahmoodi and colleagues (2013) have introduced seven dimensions of lifestyle in a study. These dimensions are based on the WHO framework of social determinants of health, including nutrition, physical activity, self-care, unhealthy behaviors, social relationships, stress, and occupational lifestyle (32).

Military personnel are considered as a population with specific characteristics and their health has always been paid great attention in different countries (33). Determinants of health in the military personnel include individual factors such as physical fitness, physical activity and body mass index and psychosocial factors such as job stress and pressure, the organization of military duties and specific social conditions (34). Military organizations have employees with different social positions, different needs, numerous appeals and different behaviors. Failure to respond to these requests and needs can cause the employees' disappointment and unusual reactions. Some adverse reactions may be related to religious and political activities, child rearing, job satisfaction, social behavior, and even normal behavior such as time spent at work, work absenteeism, delays, and negligence at work (30).

The results of several studies which have been conducted in Iran indicate the effects of social determinants on human health (17, 35-38). A review of these studies shows the diversity, multiplicity and breadth of these studies scope and the development of scientific research in this field. These studies not only have resulted in the enhancement of knowledge about, insight into and attitude towards the social and cultural backgrounds of diseases and the role and relative importance of specific causal factors in the promotion of public health, but also have provided strong bases for designing, developing and evaluating the prevention of disease strategies and models. Despite the progress in the dimensions, scopes and socio-cultural backgrounds of the community health made by several studies, it seems that there is a big gap between what the studies recommend for the prevention of diseases and social empowerment of community members in health and what the executives do in practice (39). Also, in spite of the great effect of lifestyle on the prevention of diseases and injuries, few studies have been conducted in the military personnel. Therefore, this review study aimed to identify the dimensions of lifestyle, as one of the social determinants affecting health, and their role in the health and disease outcomes of the military personnel according to the World Health Organization framework. These dimensions were as follows:

- Nutrition
- Physical activity and fitness
- Mental health and stress management
- Self-care
- Individual high-risk behaviors
- Social relationships
- Occupational health

1.1. Nutrition:

It is said that nutrition is one of the dimensions of lifestyle and that dietary behavior plays an important role for a healthy lifestyle choice. Proper and appropriate nutrition is a critical factor in providing health of any individual, family and community. Experience shows that people with healthy nutrition become infected later, and recover faster in case of infections (24). A suitable diet is essential for promoting health and well-being. Malnutrition caused by lack of nutrients can result in diseases, and overeating is also a form of malnutrition which can cause cardiovascular diseases, diabetes, cancers, obesity and dental problems (22, 40). Extensive research in the past two decades indicates the scientists' emphasis on the importance of proper nutrition in maintaining health and preventing diseases. There is no doubt that nutrition has a close association with every person's mental and physical health and sufficient intake of nutrients can preserve the individual's health and increase his or her efficiency (41). Proper nutrition plays an important role in the physical and mental readiness of the military personnel. Because of the tasks and missions assigned to the military personnel, they should always be joyful and in good health and have a physical fitness. Achieving these goals is not possible without having proper nutrition in terms of quantity, quality and health. The results of studies have shown that proper nutrition in the military personnel can increase muscular strength and endurance, enhance the defensive readiness and martial spirit, prevent the physical injuries, help to control weight and increases the power to deal with stress (42).

Several factors affect military personnel' nutritional needs and dietary behavior, including gender, age, level of activity, geographic and climatic conditions, types of tasks and missions, and economic and cultural factors which should be paid attention in their military food rations and daily food plan. In advanced armies, nutrition and its role in health and effectiveness of the armed personnel has been paid particular attention and special food and dietary programs are designed and implemented for them. For example, in the US army, these tasks are the responsibility of the Committee of Military Nutrition Research. This committee, also, implements special training programs for the families of military personnel (23, 43).

Another term that is used in the field of nutrition is food insecurity which is lack of access to sufficient amounts of healthy and nutritious food in order to have normal growth and development and an active lifestyle for everyone. In other words, lack of food security indicates a wide range of phenomena such as short-term starvation, instability in food supplies, etc (32). Considering the supply of micronutrients has an important role in the nutrition of the military personnel. Therefore, several studies have been conducted on the micronutrients in the armed personnel of different countries. Their results have shown that the most common micronutrient deficiency is related to vitamins, especially riboflavin (44).

The results of studies conducted in the Iranian military personnel have demonstrated that there is a direct relationship between the dietary pattern and their mental health and that the sufficient intake of various nutrients can be effective in reducing mental health problems, including anxiety and depression (41). The results of studies conducted by military research centers in various countries show that nutritional requirements of military personnel in the normal and operating conditions and in the various geographic and climatic conditions are different and also their nutritional requirements increase in cold and the high altitude conditions (43, 45).

Important indicators of the military personnel' nutrition are obesity, hypertension, diabetes, high blood cholesterol and the Body Mass Index (BMI). One of the complications of inappropriate lifestyles and poor nutrition is overweight and obesity which may lead to many diseases and of course the military personnel are no exception. According to the report of the World Health Organization, approximately 85% of diabetes, 21% of cardiovascular diseases and 42-48% of cancers are associated with overweight and obesity and these are growing in developing countries such as Iran (24). Poor nutrition and lifestyle-related chronic diseases are the causes of death and disability in most countries of the Mediterranean region which 54% of its population is under 25 years of age (24, 46).

The results of a study on the military personnel indicates an increase in the incidence of diseases such as obesity, diabetes, hypertension, myocardial infarction, gastrointestinal diseases, etc. because of the factors associated with the nutritional style (47). Economic factors, commanders and military personnel' inadequate knowledge of the fundamentals of proper nutrition, old and worn-out equipment and nutritional properties, improper methods of processing and cooking food, employees' poor dietary habits, and lack of attention to the military personnel' tastes and nutritional cultures are some reasons for poor nutritional styles in the armed personnel (23, 48).

1.2. Physical activity and fitness:

One of the other dimensions of lifestyle is exercise and mobility. According to the World Health Organization definition, physical activity refers to any movement of skeletal muscles which consumes energy. Physical activities are categorized into three groups: light physical activities such as walking, moderate physical activities such as leisure time and exercise, and strenuous exercise such as jogging and volleyball (24, 26). Exercise and physical activity and subsequently physical fitness, as low-cost and accessible tools, are one of the factors which play an important role in the prevention and treatment of chronic diseases and mental disorders as well as improving mental and physical health. One of the factors determining the efficiency and performance of military personnel is the promotion of their physical fitness. One of the priorities of the military personnel, whether in time of peace or in time of war, is to be in a good physical shape. The physical fitness of the military personnel includes the ability of continuous and skillful execution of motion, the ability to return to the initial state after making a great effort, the desire to complete the predetermined tasks, becoming a specialist in military skills, and increasing confidence in dealing with difficult situations. Working and living in areas with limited facilities such as mountains, plains and forests and doing heavy and long-term physical activities are just a few of the conditions of which military personnel face during their careers. Therefore, paying attention to the military personnel' physical fitness is necessary and inevitable (49).

The results of studies show that high level of physical fitness, especially cardio-respiratory endurance, and the ability to perform long-term exercises have major effects on maintaining individuals' physical and mental health. Also, the military personnel should have optimal physical and martial readiness in learning military skills (50-51). Physical fitness has two main components, health-related and skill-related components, each of which have several indicators (Table 1) (49).

Table 1. The indicators of the physical fitness components

Health-related Components	Skill-related components
• Body composition	• Agility
• Cardiovascular readiness	• Balance
• Flexibility	• Coordination
• Muscular endurance	• Power
• Muscular strength	• Speed
	• Speed of response

Creating and maintaining a good level of the indicators of the health-related components of physical fitness such as cardiovascular endurance, muscular strength and endurance, body composition and flexibility are effective in reducing the risks of heart diseases, obesity and mental disorders, especially depression and anxiety, as well as enhancing the quality of life, even in the elderly. Sport has been considered as a positive factor in increasing the sense of well-being, self-esteem, self-efficacy, and high performance and social adjustment. Researchers have proved the effects of physical fitness, sports and their indicators such as flexibility on the military personnel's physical and mental health (50). The results of studies have indicated that regular exercise has an important role in improving the cardiopulmonary fitness and, on the other hand, useful outcomes of exercise will be lost by inactivity (51).

Sedentary lifestyle is associated with some disorders such as cardiovascular diseases, low ability to cope with stress, increasing risks of depression, low productivity at work and more absenteeism from work (50). The effects of transportation, as a social factor affecting health, can be considered as a factor affecting the health status by increasing the use of motor vehicles, and accidents, which are the cause of death and disabilities (22, 31). Physical fitness helps to promote physical and mental health and, most importantly, plays a vital role in preventing related diseases. It also provides good opportunities for improving the armed personnel' quality of life and their physical, mental and social health.

1.3. Mental health and stress management:

Mental health is defined as a welfare state in which everyone can identify his or her capabilities, overcome the normal stresses of life, work efficacy and productively, as well as participating in the community. Depression, personality disorders, behavioral disorders, violence, drug addiction and suicide are amongst the common problems in most countries which are related to issues such as social isolation, poor life qualities and high death rates. The results of studies have shown that the prevalence of psychiatric disorders such as depression, anxiety, etc. are higher in unemployment conditions, low income, low education, stressful working conditions, gender discrimination, and unhealthy lifestyles (22, 24, 27).

Military occupations, different missions especially war conditions, psychological warfare, and enemy propaganda campaigns increase the risks of mental diseases in the military personnel and disrupt their lives. Mental diseases and disorders are one of the main causes of losing manpower in war and peace. On the other hand, failure in performing military duties may lead to the loss of many lives. Increasing the awareness of factors such as harsh

military environments and requirements of war, which cause tension in the armed personnel, is essential (52-54).

Stress plays an important role in human health and life, and one of the dimensions of lifestyle is the methods of coping with stress. In today's world, people are born, grown, and interacted in environments which normally have various forms of stress. This is the reason why it can be said that stress is a common problem of human lives (24, 54). The cause of many accidents, illnesses, premature deaths, suicides, dissatisfaction and tensions is attributed to stress. Stress is an inevitable consequence of our relationship with the constantly changing environment to which we have to cope with (55). Stress is the physical, mental and emotional reactions which are experienced as a result of the individual's life needs and changes. Positive stress can be a motivator, however, when a person fails to respond to the changes and demands of life, negative stresses are created (56). The results of studies have revealed that there is a positive association between the occurrence of negative stress and the onset of depression. Despite the strong association between stress and depression, only about 20 to 50 percent of people who experience severe stress suffer from depression. Between 50 to 80 percent of people do not suffer from depression or other psychological disorders (57). Also, the results of studies have indicated that stress has significant associations with poor nutrition, inadequate physical activities, cardiovascular diseases, musculoskeletal diseases, hypertension and other related diseases (44, 50). Stress and the methods of coping with stress are two important components in health and disease. The main sources of stress in our society are social and economic pressures and interpersonal relationships in life. Response to stress depends on the culture, family, heredity and life experiences. The stressors are divided into three major categories:

- The psychosocial stressors such as exposure to a new or uncontrolled environment, and adverse events such as divorce, death of spouse, cultural pressures, economic poverty, etc.
- The physiological stressors which disrupt the cardiovascular homeostasis such as bleeding, exercise, exposure to heat, insomnia, etc.
- The pathogenic stressors which have a strong physical stimulus and a mental component such as electric shock, inactivity, injuries such as lacerations, etc (24, 26).

Among the stresses which people are facing, job stress is of particular importance (58). Career changes such as organizational changes, changes in the salary and wages, job promotions, decreasing or increasing manpower, and social changes are topics which put pressure on the person and cause his or her confusion, worry, anxiety and stress.

Evidence in this area shows that these stresses have effects on physical health, mental health, quantity and quality of performance, reduced productivity, job dissatisfaction, turnover, delays, employee absenteeism, etc(59). Military jobs are one of the jobs that are associated with high levels of stress. Due to the special sensitivities and risks in these centers and jobs, as well as the need for maintaining military personnel' physical and mental fitness, the reasons for stress and mental pressures in the military environments are higher than those in other environments (54). Military personnel are faced with more job issues because of their special professional missions, and have more psychological problems compared to other workforces. The stresses which are related to job, the complex missions, rigid regulations, and the risk of injuries, disabilities, captivity and even death are some issues that are likely to be much higher in military jobs (52). The military job stress has major and significant effects on the family and the organization. Clinical findings show that the stress of everyday life can gradually affect the activities of different body systems such as the immune system, and can weaken or disrupt them (26). Based on the results of recent studies, increasing the quality of employees' working life can result in their lower stress. The use of working schedules, open communication, and employees' participation in job decision makings are some ways of improving quality and reducing stress in organizations (56). In addition, results of studies in the field of military psychology show that military environments are an important stressor in the military personnel, and the environmental and demographic variables have greater effects on the military personnel' stress. Moreover, the regional problems or problems related to the geographical and climatic conditions are the major causes of stress in the military personnel (53-54).

Therefore, military personnel, according to their working environment, are faced with various stressors. Obviously, these people are also affected by other stressors related to the economic, social and cultural factors, physical environment, their families, etc. In order to prevent the related physical, mental and social diseases and injuries, people working in these type of environments need to learn the skills of stress management.

1.4. Self-care:

Self-care, as one of the lifestyle dimensions, is a deliberate action to protect and promote health provided by individuals, families and communities. The World Health Organization defines self-care as a key strategy for improving health care and preventing diseases (60). The results of various studies introduces self-care as the most important form of primary care in both developed and

developing countries. About 65 to 85 percent of all health care is provided by the person himself/herself or by his/her family, without the participation of professionals. In fact, the care and therapy provided by physicians is only the peak of care or the "iceberg". This shows that self-care is an integral part of all levels of primary and specialized health care and, therefore, facilitating the process of self-care can improve the social, economic and health status of the entire population (61). Dorothea Orem defines self-care as follows: "Self-care is conscious, learned and targeted actions and activities provided by the individuals in order to sustain life and provide, maintain and improve the individuals and their family's health" (62). Self-care includes learned, conscious and purposeful actions provided by individuals to maintain health, meet social and psychological needs, prevent diseases or accidents, provide care for illnesses and chronic conditions, as well as to maintain health and recover after acute diseases or hospital discharge. It also includes care for children, family, friends, neighbors and the local community (63). The ability to provide self-care varies based on the social determinants and health conditions. Self-care techniques are affected by the interaction between various factors, including psychosocial, economic, cultural and environmental factors and should be continuously considered throughout life, from birth to old ages (26).

Self-care includes health promotion, lifestyle modification, disease prevention, symptom assessment, health maintenance, disease treatment and rehabilitation (64). Comprehensive health promotion and self-care programs are effective in reducing diseases and mortalities and improving quality of life. Self-care is closely related to the development and use of two individual factors which are important determinants of health: the health-related performance and the individuals' skills for adapting to the environment. Supporting self-care has some consequences, including the improvement of health and quality of life, the increases in the patients' satisfaction, and the reductions in health costs. Also, most care needed for people with chronic diseases is self-care (65).

The results of studies have indicated the importance of the preventing role of education and its effect on the community health promotion. The theory has received considerable attention in recent years, emphasizes that lifestyle is the basis for communities social and economic development (66). The individual's knowledge and education level is the other important factor influencing the health status. Education affects the individuals' health and welfare through equipping people with the knowledge and skills necessary to solve the problems, and helps people to gain control over their life situations. Cardiovascular diseases, diabetes, diarrheal diseases, behavioral disorders, accidents and injuries are some

diseases associated with this determinant (22, 31). The results of a study on the military personnel have confirmed the effectiveness of education and training in improving their lifestyles (25). The use of health care by the military personnel, which is one of the dimensions of self-care, should be considered in the prevention of diseases and injuries.

1.5. Individual high-risk behaviors:

"Behavior" is a term used to describe certain actions and activities a person performs and has a close relationship with biological issues. The behavior, also, has effects on the burden of diseases. For example, smoking (the behavior) can affect the increases in the pulmonary diseases (biological issue). Morbidity and mortality closely associates with the selection of behaviors such as eating habits, exercise, smoking and stress. Although the cost of interventions to change behavior is very low, the treatment of diseases associated with behavior, such as cancer, can be costly. Right or wrong behavior is a part of culture. Habits, customs and traditions are the factors affecting the behavior in any society. In order to prepare people to get ready for understanding and acting in a proper way, and also to maintain health and avoid diseases, it is required to change wrong behaviors (31). Many factors lead to unhealthy behaviors, such as socio-economic deprivation, stress, depression, low self-esteem, and low social support.

Smoking, alcohol consumption and drug use are some unhealthy behaviors in lifestyles (24, 26). According to the World Health Organization report, smoking is annually responsible for three million deaths worldwide and it is predicted that by 2025, deaths caused by smoking will increase up to 10 million people. Smoking reduces life expectancy by as much as 3 to 8 years and plays a major role in creating poverty in low-income countries. Smoking increases the risk of musculoskeletal injuries due to the impaired blood supply, the decrease in the bone health and the behavior changes such as risky behaviors (67). Cigarette smoke contains over 40 hazardous chemicals which nicotine is the most important one. This chemical causes changes in blood pressure, heart rate, impaired oxygen consumption, cardiac and peripheral vascular irritability, increased blood viscosity and hyperlipidemia. High prevalence of nicotine dependence, about 20%, has become one of the most common psychiatric disorders. Smoking affects not only the consumers but also their families, friends, colleagues and even unborn babies (22, 31).

Military personnel are at risk for various diseases because of their collective life, missions away from home and risky behavior. Some of the high-risk behaviors which have been studied in the military population are smoking, drug abuse, the use of common tools, tattooing, surgery and sexual contacts (67). Most of the general risk factors

for human health, such as smoking and stress, sometimes even have higher rates in the military personnel compared to those in the civilians (59).

Cultural determinants largely affect the health of individuals and communities, so that one of the major obstacles and challenges in the health promotion are cultural problems and barriers and unsafe behaviors, which are originated from the false beliefs, customs and cultural opinions of communities. Smoking, risky behavior, lack of attention to personal hygiene and health, addiction, lack of attention to safety in work environments, fatal road accidents, eating fast foods, lack of patients' timely referral for treatment, self-medication, disregard for medical recommendations, providing inaccurate information to related centers, etc. are some examples of individuals' behavior and beliefs which not only have lead to the reduction in public health but have also have allocated a substantial proportion of health budget and the capabilities and potential of health centers to themselves and have postponed achieving health goals (22, 31).

1.6. Social relationships:

Establishing social relationships, as one of humans' innate and basic needs, is both the aim and the means of satisfying other needs. Weber believed that social relationships were the communication and interdependence of human beings and their behavior orientation (26). Scientists have paid much attention to the association between social relationships and health. Perhaps the social dimension of health is the most complex and controversial dimension of health. Most sociologists consider social isolation or low integration as a factor which results in the reduction in health and, more importantly, increases the risks of premature death. Under these conditions, the people's learning, attendance at training sessions, access to the services and citizenship activities will be decreased. The longer the people live in these conditions, the more they will be at risk of diseases. Poverty and social isolation can also increase the risk of divorce, disability, diseases, addiction and social exclusion (22).

Having social support and good social relationships have significant effects on health. Social support helps to achieve real and emotional needs of individuals. Belonging to a social network of a community makes people feel loved, friendship, respect and value. This has a strong protective effect on health. In addition, supportive relationships may cause more healthy behaviors. Separation and social isolation have significant associations with increased rates of premature death and lower chances of survival. Depression, suicide, personality disorders, behavioral disorders, violence, and social isolation are resulted from social relationships (27, 52, 56).

Larson (1996) defines social health as the person's report of the quality of his or her relationships with other people, relatives and social groups of which he is a member. He believes that the social health scale assesses a part of the individuals' health and includes those individuals' internal responses, including feeling, thinking and behavior, which indicate the person's satisfaction or dissatisfaction from his or her life and social environment (68). Keyes (2004) believes that health studies have been conducted using biological samples and have put more emphasis on the private health dimension, however, the people are inside the social structures and relationships (69).

Quality of life and individual performance cannot be evaluated without considering the social norms and criteria, and good performance in life is something more than mental health and also includes social tasks and challenges. The main social health indicators include the following:

- Active participation in social life and acceptance of responsibility;
- Understanding the individuals' own rights and obligations as a citizen;
- Understanding others' rights and obligations and respecting their rights;
- Respecting the environment and trying to preserve it;
- Understanding cultural and social values;
- Avoiding violence, having patience and dealing with others.

Social health is one of the most basic norms and criteria of any society's social welfare. In fact, social health is associated with the mental, personal and social health and according to the Keyes' theory; five factors should be considered as the most important indicators of individuals and families' social health in every community. These factors include social inclusion, acceptance, having contribution, prosperity and social cohesion (22, 69).

Due to their stressful conditions, military personnel will be at high risks of diseases and mental health problems when facing the absence of social support. Therefore, countries have paid considerable attention to all the dimensions of health, especially the social dimensions of it and also the supportive family system in order to provide and maintain the military forces' readiness. For example, America's Army has designed the Comprehensive Soldier and Family Fitness (CSF2) program for a continuous assessment of its armed forces (70).

Social support is one of the most effective methods to reduce mental and psychological distress, including depression or anxiety during stressful periods. This kind of support has several advantages in physical health, including coping with diseases such as coronary artery diseases, diabetes, cardiopulmonary diseases, arthritis and cancers, and can accelerate recovery periods and reduce

the risk of diseases, as well as the risk of mortalities resulted from serious illnesses (22, 54, 71).

1.7. Occupational health:

Workplaces are one of the most important social determinants of health. Whatever happens in workplaces has an important role in the individuals' health. Also, work and employment conditions play a pivotal role in organizing individuals' social and economic lives (32). Muscular contractions have strong associations with the physical work demands, psychosocial environment, and the individuals' structure of personality. These contractions will lead to the increased pressure on the joints. In addition, increases in the pressure of work time and in the process of individuals' understanding of work tasks can result in an increase in musculoskeletal injuries (72).

Job insecurity anxiety is one of the most important determinants of health. This determinant has a significant effect on the rate of anxiety disorders and depression, as well as cardiovascular diseases and their risk factors. It should be noted that specifically having a job does not always guarantee physical and mental health, and the quality of work is also of special importance. Creating fair employment and working conditions and doing appropriate work activities, which are proportionate for employees' dignity, are precious from both the perspective of economic development and the perspective of equity in health. Job security increases health, well-being and job satisfaction. Employees' control over their work, management methods and social relationships in workplaces also play an important role in health (22, 32).

The U.S. Safety and Health Occupational Institute has defined occupational health as follows: "Promotion and maintenance of highest degree of all aspects of well-being of workers of all occupations, the prevention amongst workers of departures from health caused by their working conditions, the protection of workers in their employment from risks resulting from factors adverse to health, placing and maintenance of the workers in an occupational environment adapted to his/her physiological capabilities and to summarize the adaptation the work to his/her job". Occupational health does not simply mean to deal with and monitor the negative effects of occupational exposures on human health, but it also has a broader meaning. Accordingly, occupational health achieves optimal success when providing employees' health in public and occupational health dimensions. Actually, one of its major components is creating a safe and healthy working environment for the employees. In other words, it is necessary to modify the workplace conditions according to the employees' inherent characteristics such as gender, anatomical, anthropometric, physiological and pathological characteristics. Occupational health indicators include:

- General health indicators, including the absence of diseases, satisfaction from medical conditions, the knowledge and skills related to health, physical and cardiovascular fitness.
- Occupational health indicators, including lack of job-related diseases, lack of diseases resulted from the job, lack of diseases aggravated by the job, lack of occupational accidents for employees, the use of theoretical and practical training related to occupational health, the ability to work in conditions required for a particular job in terms of physical dimensions, aerobic capacity, and lack of medical bans.
- Workplace health indicators, including the optimal and standard limits of job pollutants, adequate safety equipment and systems, appropriate warning signs, proper tools and equipment in terms of ergonomic principles, appropriate first aid equipment, suitable engineering systems such as ventilation, lighting, heating and so on, visual training facilities in workplaces such as brochures, banners, etc, engineering protection if necessary such as insulation, insulation, ventilation, appropriate design for tools and equipment, proper functioning and timely repair of equipment and devices, the use of proper personal protective equipment such as clothes, masks, respirators, helmet, glasses and cooling vest if necessary, fitting the demographic, anatomical, physiological and pathological characteristics with the workplace conditions (73).

If there is no fitness between the military forces and their workplaces and work environments, their performance often becomes impaired and deficient. Among these environments, the most important ones which have been studied on by military researches are cold environments, hot environments, climate change, emergency conditions, heights, and acoustic environments. From the perspective of occupational health, spatial patterns of work, time patterns of work, direct exposure to potentially harmful occupational factors readiness condition, the importance of national, international and security of military occupations, patterns and standards for occupational exposure to the environmental and military risk factors (non-industrial factors), unpredictability of tasks and so on are some of the characteristics of working in armed force workplaces which should be considered in relation to the occupational health, safety and health (72).

2. Conclusions

Individual lifestyle has an important role in health, increases or decreases chronic diseases and quality of life. All the different dimensions of lifestyle have associations with culture and socio-economic conditions which are difficult to deal with. As many health problems of

individuals' are preventable and changeable, it is said that several health complications associated with lifestyle can be prevented or delayed using strategies for health promotion. This is twice as much important in the health of the military personnel. The benefits of adopting to a healthy lifestyle includes increasing the quality and length of life, decreasing health care costs, and increasing productivity due to reduced sickness and absence from work. Many risk factors, which are among the most common causes of death, can be coped with by modifying lifestyles. Therefore, one of the goals of the military health system should be the promotion of a healthy lifestyle in the military personnel's nutrition, physical activity and fitness, mental health and stress management, self-care, individual high-risk behavior, social relationships, and occupational health. This fact indicates the importance of paying special attention to the social factors affecting the health of military personnel, training and empowering people in the dimensions of lifestyle.

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