



**RISK FACTORS OF NON-COMMUNICABLE DISEASES
IN TURKEY: A SHORT REVIEW**

Esra Sevimli*, Duygu Deniz**, Tuğçe Nuriye Ünlü***

* Lecturer, Istanbul Arel University, Turkey
esrasevimli@arel.edu.tr, orcid.org/0000-0001-7119-0882

** Lecturer, Istanbul Arel University, Turkey
duygudeniz@arel.edu.tr, orcid.org/0000-0001-5754-9916

*** Lecturer, Istanbul Biruni University, Turkey
tugcesanci@gmail.com, orcid.org/0000-0003-1406-6433

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Abstract

Non-communicable diseases (NCDs) have been rapidly increasing globally, negatively affecting countries' health systems and economies. In the world, NCDs are considered as one of the most important reasons of disability, death and inequality. Therefore, new models need to be developed in the field of health in order to minimize and manage the risk factors of NCDs. The risk factors of NCDs can be successfully combated by developing both national and international policies and strategies. As in the rest of the world, NCDs' prevalence and risk factors are increasing in Turkey. This review aims to give information about the NCDs in Turkey and explain the risk factors that cause these diseases as well as making recommendations.

Keywords: Health Systems, Health Policies, Non-communicable Diseases

Introduction

Non-communicable diseases (NCDs) are diseases which last for a long time and progress slowly. The most common types of NCDs are cancers, cardiovascular diseases, diabetes and chronic respiratory diseases (WHO, 2011). The number of deaths caused by NCDs are higher than the sum of all other causes of death. NCDs cause more than 40 million people's death yearly. NCDs account for 70% of the global deaths. They are therefore among the world's biggest causes of death. About 85% of deaths caused by NCD appear in countries with low- and middle-income. Furthermore, more than 9 million of all deaths which are linked to NCD take place before the age of 60. NCDs are considered to be affecting women and men almost equally across the world (WHO, 2013; Allen and Feigl, 2017).

Although there are many factors of risk in the progression of NCDs, the most crucial risk factors are physical inactivity, tobacco and alcohol use; and unhealthy nutrition. Moreover, NCDs can be largely prevented and controlled with effective interventions addressing these risk factors (WHO, 2013; WHO, 1998).

NCDs cannot only be considered as a health problem, but also a developmental problem. NCDs expose a lot of people to high-cost expenses for treatment. Therefore, they place a heavy economic burden on both countries' health systems and individuals (Maimela et al. 2018).

The risk factors of NCDs can be successfully combated by developing both national and international policies and strategies (WHO, 2015). The prevalence of NCDs and risk factors are increasing in Turkey as in the rest of the world (Republic of Turkey Ministry of Health, 2017).

The rates of NCD-induced death in Turkey are likely to the rates in other countries in the WHO European Region (Republic of Turkey Ministry of Health, 2017). This review aims to give information about the non-communicable diseases in Turkey, and explain the risk factors that cause these diseases as well as making recommendations.

1. Background

1.1 Non-Communicable Diseases

NCDs are also known as chronic diseases and they are long-lasting. They are the result of a combination of physiological, genetic, behavioral and environmental factors. NCDs cause the death of more than 40 million people every year, which is 70% of the deaths globally. Every year, approximately 15 million people who are between the ages of 30-69 die at the initial stages

due to NDSs (WHO, 2013; WHO, 2014). Poverty is fairly closely related to the non-communicable diseases, and they mostly affect people living in countries with low- and middle-income. It is anticipated that the effects of NCDs are to continue to grow as more impacts appear in the low- and middle-income countries (WHO, 2014; Maimela et al. 2018).

Among the most common NCD types, cancers, chronic respiratory diseases, cardiovascular diseases (CVD) and diabetes can be counted. 80% of all death cases in relation to NCDs are caused by these diseases. CVDs are the most common cause of NCD deaths. In the world, there are about 17.9 million people who lose their lives due to CVD every year. This is followed by cancers which cause the death of 9 million people per year, respiratory diseases cause the death of 3.9 million people and diabetes cause the death of 1.6 million people (WHO, 2013).

1.2 Risk Factors

1.2.1. Modifiable Behavioral Risk Factors: Tobacco and alcohol use, unhealthy nutrition and physical inactivity are the most important factors (GBD, 2016; WHO, 2013).

- Global tobacco use results in killing about 6 million people a year. This number can rise to 7.5 million, accounting for 10% of all deaths by 2020.
- 3.3 million people lose their lives every year due to harmful alcohol use. If cancer is included, diseases associated with NCD account for more than half of the deaths caused by alcohol use.
- 4.1 million people die every year because of salt and sodium consumption.
- Every year 1.6 million people lose their lives due to inadequate physical activity.

1.2.2.

1.2.2. Metabolic Risk Factors: There are four main metabolic risk factors increasing the risk of non-communicable diseases. These are (WHO, 2013):

- Hypertension
- Obesity
- Hyperglycemia
- Hyperlipidemia

The highest global metabolic risk factor can be regarded as hypertension (19% of global deaths) which is followed by excess weight, obesity, and hyperglycemia. Lack of healthy diets and physical activity can manifest themselves in humans as hypertension, hyperglycemia,

hyperlipidemia, and obesity. All of these can be seen as risk factors that can result in cardiovascular diseases. There was a tenfold increase regarding childhood and adolescent obesity in the last forty years. According to WHO data, approximately 1.5 billion adults who were aged 20 and older happened to be obese due to malnutrition in 2008 while approximately 43 million children who were under the age of 5 were obese in 2010 (WHO, 2013).

A decrease by three-quarters is expected in heart diseases, and it is also predicted that type 2 diabetes and 40% of cancers can be prevented provided that the NCDs' major risk factors are controlled (WHO, 2018a).

NCDs are globally regarded as the most crucial public health problem in the 21st century. Poverty is closely related to NCDs. It is predicted that the dramatic increase of NCDs will delay attempts to reduce poverty in countries with low-income since they increase household costs which are associated with health care particularly. The excessive costs of NCDs, which often require long and expensive treatment, push millions into poverty every year (WHO, 2013; Nugent, 2016).

WHO published the *Global Action Plan for the Prevention and Control of NCDs* in the year of 2013 so that it can intervene in the NCD burden globally. According to this plan, important global targets have been set for reducing NCD-induced premature deaths by 25% by 2025 (WHO, 2013).

Individuals with low socio-economic status are more likely to be subjected to the risk factors that initiate the development of NCDs. In addition, because they have limited access to health care, people in this group get sick and lose their lives faster than people in higher social positions. Also, countries whose health insurance coverage is insufficient are unlikely to have universal access to basic NCD interventions (Ezzatil et al. 2018).

NCDs have a negative impact on national health systems and economies. The negative effects are further increasing, and health expenditures are challenging individuals and families in low- and middle-income countries. The important way to control NCDs is to develop effective interventions to reduce the risk factors related to these diseases (Maimela et al. 2018; Knight et al. 2019).

The risk factors of NCDs can be successfully combated by developing both national and international policies and strategies. It is important to follow the development, trends and risks of

NCDs in order to guide policies and priorities. The government and other stakeholders should cooperate to decrease the effects of NCDs on people and the society. A comprehensive approach covering all sectors, particularly health, finance, transportation, education, agriculture etc. and encouraging preventive interventions is needed. Overcoming risk factors will not only save lives but also provide a major boost for economic development of countries (Bartlett, 2018; Maimela et al. 2018, Deniz et al. 2021).

Investing in the management of NCDs is critical for countries. The management of NCDs provides access to the detection, screening and treatment of diseases and palliative care for people in need. At the same time, management of NCDs also requires an integrated approach to patient, family and community as lifelong active participants. Management of NCDs should also be regulated according to people's strengths and difficulties in managing their care. Successful NCD management can take place with a primary care approach in order to be able to detect early and treat in time. Such managements provide excellent investments in a country's economy. If diseases diagnosed early are brought under control by primary care services, the need for more expensive treatments will decrease. NCD management interventions are necessary to reach the global target of decreasing the premature death risks of non-communicable diseases by 25% by 2025 and having a one-third decrease in the number of premature deaths which non-communicable diseases cause by 2030 (WHO, 2013; Maimela et al. 2018; Knight et al. 2019; Ali et al. 2015)

1.3.Risk Factors Of Non-Communicable Diseases In Turkey

The problem of non-communicable diseases is very crucial in Turkey. According to WHO statistics, 407,300 (218,600 men and 188,700 women) out of 455,000 deaths in Turkey in 2016 were as a result of NCDs. Cardiovascular diseases (34%), cancer (23 percent), other NCDs (21 Percent), chronic respiratory diseases (7%), injuries (6%), diabetes (5%) and communicable, maternal, perinatal and nutritional conditions (4%) are the most common reasons of deaths in Turkey (WHO, 2018b).

It is expected that 86% of total deaths in Turkey are as a result of NCDs. According to WHO statistics from 2016, the risk of premature death due to NCDs between the ages of 30 and 70 is 16%. This rate is 22% for males and 11% for females. In 2016, the premature death rate from the four main NCDs was 303 in 100,000 (WHO, 2018b).

There are many risk factors that can cause NCDs in Turkey. The most frequent ones (Republic of Turkey Ministry of Health, 2017; Republic of Turkey Ministry of Health, 2011):

- Harmful alcohol use
- Physical inactivity
- Salt and sodium consumption
- Tobacco use
- High blood pressure
- Obesity

Policies, strategies and action plans are carried out in order to prevent and take NCDs under control in Turkey. Examples include health warning campaigns, media advertising, promotion and sponsorship bans, and smoke-free area policies. Efforts to reduce unhealthy nutrition include salt and sodium policies, saturated fatty acid and trans-fat policies, and restrictions on marketing to children. An awareness campaign was launched in Turkey about public education and physical activity. However, drug treatment conditions or counseling services have not been provided yet to prevent heart attacks and paralysis (WHO, 2017; Republic of Turkey Ministry of Health, 2017).

The study titled “*National Household Health Survey in Turkey: Prevalence of Noncommunicable Disease Risk Factors*” was conducted in Turkey using the chronic disease surveillance approach of WHO (STEPwise) in 2017. According to the study (Republic of Turkey Ministry of Health, 2017):

Use of Tobacco Products

- 31.5% of the total 6053 participants from Turkey aged 15 and over still smoked tobacco products. Smoking of tobacco products in males was higher than in females. (respectively; 43.4% and 19.7%).
- 31.6% of the participants including 43.6% of the males and 19.7% of the females still used tobacco products.
- 3 out of 10 people who were using tobacco products at that time had tried to stop using tobacco products in the last 12 months.

Alcohol Use

- 8% of the participants including 13.1% of the males and 3% of the females used alcohol.

- One out of the twenty current alcohol users consumed a lot of alcohol on a periodical basis.
- More than four out of every five participants (83.6%) had never consumed alcohol in their lives while 4.3% had never consumed alcohol in the past 12 months even though they had previously consumed alcohol.

Physical Activity

- 4 out of every 10 adults did insufficient physical activities.
- 43.6% of the population were not considered to meet the WHO's recommendations in terms of physical activity for health (33.1% of the males, 53.9% of the females).
- The mean daily physical activity time in Turkey was calculated as 30.0 minutes. The total time spent on physical activity by males (51.4 minutes) is higher than the time spent by females (17.1 minutes).
- 81.3% of the participants including 70.1% of the males and 92.2% of the females did not engage in effective physical activity.
- 40.5% of the research group received counseling or training from health workers on one or more issues related to wellness in the last twelve months (38.1% of the males, 42.9% of the females).

Obesity

- Two out of three people were overweight ($BMI \geq 25$ kg/m²).
- 3 out of every 10 people (28.8%) were obese ($BMI \geq 30$ kg/m²) and obesity was found to be 1.6 times greater in females (35.9%) than males (21.6%).

Nutrition

- 87.8% of the participants including 87.8% of the males and 87.9% of the females consumed less than five portions of fruit and vegetables daily.
- The average daily salt consumption was 9.9 grams with males consuming 11.0 g and females consuming 8.7 g.

Cancer Screening

- 5 out of every 10 women between the ages of 30 and 65 had a cervical smear test at one time.
- 6 out of every 10 women between the ages of 40 and 69 had a mammogram at one time.
- 1 out of every 10 adults between the ages of 50 and 70 had a colonoscopy in the last 10 years.

High Blood Pressure

- Three out of every 10 people had hypertension.
- 27.7% of the participants including 26.1% of the males and 29.3% of the females had high blood pressure.

Hyperglycemia

- 11.1% of the participants including 10.6% of the males and 11.5% of the females had high blood sugar.

Awareness

- More males knew two or more negative health effects of NCD risk factors when compared to females in general.
- More than half (51.2%) of the population had three or more risk factors for non-communicable diseases, which increased in proportion to age. The study found that only 1.3% of the population had none of the 5 risk factors for non-communicable diseases.

2. Conclusions and Recommendations

Around the world, the prevalence of NCDs are worried about and this causes many countries to try finding ways to avoid NCDs through public policies of nations which help avoid NCDs requiring the participation of various sectors. Thus, strategies for community interventions are implemented and maintained in a coordinated manner in order to avoid and take the appraised factors of risk under control and to provide a healthy life from childhood on. At the same time, NCDs require keeping an eye on risk factors based on samples representing the population regularly (WHO, 2013; Hunter and Reddy, 2013).

Death rates from NCDs are increasing rapidly in Turkey as in the whole world. Looking at the results obtained from the study titled “National Household Health Survey in Turkey: Prevalence of Noncommunicable Disease Risk Factors” conducted in 2017, more than half of the population in Turkey has at least three risk factors for non-communicable diseases and they

increase in proportion to age. The study found that only 1.3% of the population had none of the 5 risk factors for non-communicable diseases (Republic of Turkey Ministry of Health, 2017). Unless NCDs are brought under control in Turkey, death rates due to these diseases will gradually rise and continue to consume a significant portion of health resources.

Effective NCD management requires an integrated approach that addresses individuals, families and the society as people participating actively lifelong. At the same time, effective interventions are needed to control the development of diseases and reduce the risk to have complications. Examples of these interventions include the following (WHO, 2013; Republic of Turkey Ministry of Health, 2017);

- Primary protections for eliminating causes of disease such as tobacco use control, promoting physical activity, reducing alcohol use, promoting healthy eating etc.,
- Secondary protections such as development of early diagnostic strategies to prevent cancer, early detection of the disease etc.,
- Tertiary protections such as keeping the disease under control, ensuring the continuity of health care, increasing the life quality of the patient by providing rehabilitative services when necessary, and providing counselling services etc.,
- Monitoring patients at appropriate intervals as NCD treatment lasts a lifetime.

Studies show that NCD prevention and early interventions will make the highest difference in rates of NCD. Evidence-based and pragmatic guidelines need to be developed to standardize these interventions and test their value. Furthermore, the specialist workforce required in this process should also be taken into account.

Health policies should be developed and implemented continually at both national and international levels in order to realize the problems, know the necessity for interventions, improve interventions appropriately, to decrease the burden of the disease and to underline health inequalities, and to be able to monitor the success of the goals.

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