



# A Model of Noncommunicable Diseases Determinants in Iran; a Qualitative Study

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## ABSTRACT

**Aims** Non-communicable diseases have become an emerging pandemic globally with disproportionately higher rates in developing countries. This study aimed to design a representative model of non-communicable diseases determinants in Iran according to the viewpoint of experts.

**Participants & Methods** The statistical population of this qualitative study was experts and academic member informants, who were worked at Kashan, Esfahan and Tehran Universities of Medical Sciences in March to June 2016. 20 participants were selected through purposeful sampling method. Experts were asked to explain their opinion regarding to the most effective factors of non-communicable disease in developing countries.

**Findings** Social, environmental, and physiological factors, besides the life style are affecting factors on non-communicable diseases in developing countries.

**Conclusion** Social, environmental, and physiological factors, besides the life style are affecting factors on non-communicable diseases in developing countries.

**Keywords** Chronic Diseases; Developing Countries; Iran

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## Introduction

In recent years, non-communicable diseases (NCDs) such as cardiovascular diseases (CVD), diabetes, chronic obstructive pulmonary diseases (COPD) and cancers have become an emerging pandemic globally with disproportionately higher rates in developing countries [1]. The World Health Organization (WHO) estimates that by 2020, NCDs will account for 80 % of the global burden of disease, causing 7 out of every 10 deaths in developing countries, about half of them premature deaths under the age of 70 [2-5]. According to WHO, it is estimated that the global NCD will increase by 17% in the next 10 years, and in the African region by 27% [5]. Almost half of all deaths in Asia are now attributable to NCDs, accounting for 47% of global burden of disease [5]. Over 80% of cardiovascular and diabetes deaths, 90% of COPD deaths and two thirds of all cancer deaths occur in developing countries [6]. The transition from infectious diseases to NCDs in LMICs (low- and/or middle-income countries) has been driven by a number of factors, often indicative of economic development; a move from traditional foods to processed foods high in fat, salt and sugar, a decrease in physical activity with sedentary lifestyles, and change in cultural norms such as increasing numbers of women using tobacco [7]. The impact of globalization and urbanization in low and middle income countries has accelerated the growing burden of NCDs. However, governments in LMICs are not keeping pace with ever expanding needs for policies, legislation, services and infrastructure to prevent NCDs and poor people are the worst sufferers [8]. NCDs already disproportionately affect low- and middle-income countries where nearly three quarters of NCD deaths – 28 millions – occur [9].

To figure out the impact of NCDs on individuals and society, a comprehensive approach is needed that requires all sectors, including health, finance, foreign affairs, education, agriculture, planning and others to work together to reduce the risks associated with NCDs, as well as promote the interventions to prevent and control them [10]. In 2005, WHO re-emphasized the importance of non-communicable diseases as a neglected global health issue [11]. Non-communicable diseases—mainly cardiovascular disease,

cancer, chronic respiratory diseases, and diabetes—were estimated to cause more than 60% (35 million) of all deaths in 2005; more than 80% of these deaths occurred in low- and middle-income countries [12]. In Iran, the most burden of disease has been dedicated to non-communicable diseases; 45% for men and 33% for women. Overweight and obesity, arterial hypertension, lack of physical activity, addiction and

Hypercholesterolemia is 5 primary risk factors causing the highest share of disease [13]. Now non-communicable diseases are responsible for 53% of diseases and are expected as the most causative agent by 2020. Moreover, 60% of disease's causes, 73% of all deaths and 80% of deaths from non-communicable diseases are estimated to occur in developing countries. It is expected that Iran will also have a similar pattern with other developing countries. Counter and control of non-communicable diseases requires extensive intervention of all ministries and organizations inside and outside the health sector [14].

Given the importance and prevalence of non-communicable diseases in developing countries, this study aimed to design a representative model of non-communicable diseases determinants in Iran according to the viewpoint of experts about the subject area in developing countries.

## Participants & Methods

The statistical population of this qualitative study was experts and academic member informants, who worked at Kashan, Esfahan and Tehran Universities of Medical Sciences in March to June 2016. All participants must have had at least 5 years experience of health education. 20 participants were selected through purposeful sampling method. Two of informants were interviewed and 18 professionals participated in 3 focus group discussions (FGDs).

Experts were asked to explain their opinion regarding to the most effective factors of non-communicable diseases in developing countries. Discussions and interviews were well planned, the FGD environments were well suited and after interviews were completed the notes were checked with participants for completeness. Each interview took 40-60min and each FGD lasted about 90-

120min. All interviews and FGDs were recorded by MP3 player and then typed word by word. Before analysis all recorders were double-checked with the notes to assess the respondents' validity. In a thematic analysis, all of the notes were read several times and themes were given codes in order to make them as meaningful as possible. All notes were checked and confirmed with participants as well. In order to assess expert validation, interviews' contents were checked with two academic members in qualitative research and then combined. Ethical consideration such as keeping findings confidential and giving the choice to participants to withdraw the study at any time they want were conveyed to participants.

### Findings

All participants had PhD. Mean of their age was  $41.5 \pm 2.9$  years. 6 experts were working at Kashan, 8 at Esfahan and 8 at Tehran University of Medical Sciences.

In their opinion, the main contributed factors to non-communicable diseases were four general categories; social factors, environmental factors, life style, and physiological factors. These factors were reported as the most determinant of NCDs (Figure 1).

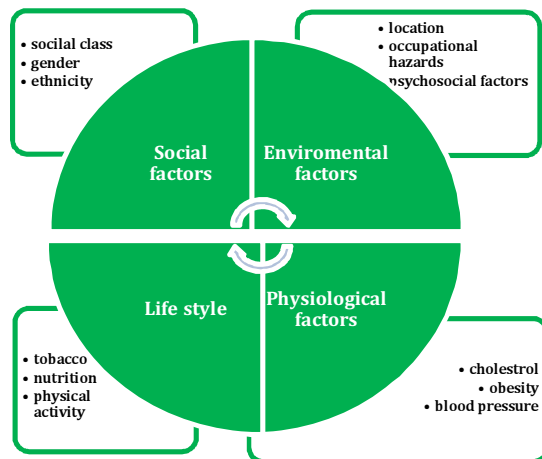


Figure 1) Model of determinants for chronic diseases

### Discussion

This study aimed to determine the affected factors of non-communicable diseases in developing countries and design a model for Iran. Since 2000, Singapore's Ministry of Health has set the goal of reducing border

major diseases leads to mortality. Emphasis program referred to the formation of a healthy society through programs of prevention and health promotion life. That conforms to the lifestyle elements in the present model.

In 2003, the Sweden, parliament passed a statement on the government's overall policies in relation to health. The overall objective of economic policy is well established the social positions that ensure a healthy life for all people. This corresponded with the social factors in our model.

National program of healthy living in Canada has been started since 2002. The strategy of this program was to improve health and reduce the gap efficiency of health. The original emphasis of the program is on healthy eating, physical activity and its relationship with weight. This result is compatible with the currents study's findings especially in section of life style [15].

In this study, smoking was one of the factors in developing countries. As in rich countries, the prevalence of smoking is higher among the poor people in low and middle income countries [3, 16].

Reports from the United States, estimate that the population-attributable risk of physical inactivity is responsible for 12% of type 2 diabetes and 22% of coronary heart disease. As well as significant shares of other poor health conditions, these reports confirm the findings of our study in which physical activity was determined as an affecting factor to prevent the non-communicable diseases [17-19].

Nutritionists must also adapt to this changing nutritional situation, which may result in apparently contradictory nutritional status findings within societies if not even within households [20-22]. Excess weight appears first among the affluent and then among low-income classes including young children and teenagers. The main causes are a nutrition transition to lipid-rich diets and, above all, reduced physical activity in city dwellers. Obesity and associated diseases could become major problems in the future since malnutrition during fetal development and early childhood are predisposing factors. Already overweight is creating an extra burden for countries where malnutrition and nutritional deficiencies are still observed in young children. Given the economic costs of

management of obesity-related diseases, surveillance and prevention programs are needed to stem the growth of this problem. Severe forms of growth retardation in children have declined but the majority suffers from mild and moderate forms of growth retardation. Developing countries of the region are in varying stages of developmental transition. Among the burgeoning middle classes in some of these countries, there are evidences of escalation of degenerative diseases such as diabetes and coronary heart disease. With increasing life expectancy, geriatric nutritional problems will demand increasing attention. More research is needed to identify a full range of prevention-focused, cost-effective interventions against non-communicable diseases in developing world. There is a clear need to focus health policies on the prevention of non-communicable diseases through primary health care services, the use of mass media for communication and education about healthy nutrition and lifestyle, and the adaptation of public policies. As obesity was determined as a factor influencing the non-communicable diseases, managing the obesity-related diseases, surveillance and prevention programs are needed to stem the growth of this problem.

### Conclusion

Social, environmental, and physiological factors, besides the life style are affecting factors on non-communicable diseases in developing countries.

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