



سلطنة عمان
وزارة الصحة
Sultanate of Oman
Ministry of Health



World Health
Organization



2017



EXECUTIVE SUMMARY

Oman National Non-Communicable Diseases & their Risk Factors Survey

Centre of Studies and Research

Directorate General of Planning & Studies

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Foreword

This summary presents the findings of the Oman National Non-Communicable Diseases (NCD) and their Risk Factors Survey (STEPS). The survey is the largest nationally representative NCD survey to collect comprehensive information on risk factors for NCDs.



The Sultanate of Oman is experiencing an epidemiological transition from communicable to non-communicable diseases. NCDs are a major public health concern with significant social and economic implications in terms of health care-needs, lost productivity and premature death. NCDs are thus a serious setback to our attainment of social, health and economic targets if no proper interventions are put in place. This executive summary provides the very essential information to inform policy geared towards halting and reversing this burden of non-communicable diseases.

The survey gives a brief of the burden of NCD in Oman. It includes indicators on NCD risk factors, among adults age 18 years and above, which will serve as an evidence base to strengthen NCD prevention and control initiatives in the country. It will also serve as a reliable and valid reference source for policymakers, stakeholders, public health professionals, and others concerned with NCD control in Oman.

The hard work and determination of the central and field teams in each governorate additionally allowed this vital activity to run smoothly to completion. We owe each of them our sincere appreciation. The Ministry of Health is also grateful to the World Health Organization (WHO) for the technical assistance.

The survey results demonstrate the big challenge that NCDs present to our nation and serves as a call to action for all the multi-sectoral stakeholders to partner with the Ministry of Health towards halting and reversing the burden of NCDs.

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Introduction

Non-communicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors. NCDs kill 41 million people each year, equivalent to 71% of all deaths globally. Each year, 15 million people die from a NCD between the ages of 30 and 69 years; over 85% of these "premature" deaths occur in low- and middle-income countries.

The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes. Cardiovascular diseases account for most NCD deaths (17.9 million people annually), followed by cancers (9.0 million), respiratory diseases (3.9 million), and diabetes (1.6 million). These 4 groups of diseases account for over 80% of all premature NCD deaths.

Modifiable behavioural risk factors, such as tobacco use, physical inactivity, unhealthy diet and the harmful use of alcohol, all increase the risk of NCDs. Metabolic risk factors contribute to four key metabolic changes that increase the risk of NCDs and these are raised blood pressure, overweight/obesity, raised blood glucose levels and high levels of fat in the blood. In terms of attributable deaths, the leading metabolic risk factor globally is elevated blood pressure , followed by overweight/obesity and raised blood glucose.

In Oman, NCDs are estimated to account for 72% of all deaths according to Oman Country profile WHO 2018. An alarming 36% of all deaths are caused due to cardiovascular diseases, with 11% due to cancers, 8% due to diabetes, 2% due to chronic respiratory diseases, 18% due to injuries, 10% due to communicable & maternal conditions, and 15% due to other NCDs. 18% of these deaths occur amongst people between the ages of 30 and 70 years. This means that nearly one of every five adult dies from NCDs before they should.

According to Oman World Health Survey 2008, a majority of Omani adults had insufficient intake of fruits and vegetables, 40% were physically inactive and 1 in 7 Omani men used tobacco. More than 40% of Omanis had hypertension and 12% had been diagnosed with diabetes.

Detection, screening and treatment of NCDs, as well as palliative care, are key components of the response to NCDs.

The Aim

The aim of the survey was to establish an NCD surveillance platform that collects base-line indicators on determinants of NCD and their risk factors for policy and planning purposes.

The Objectives

General objectives

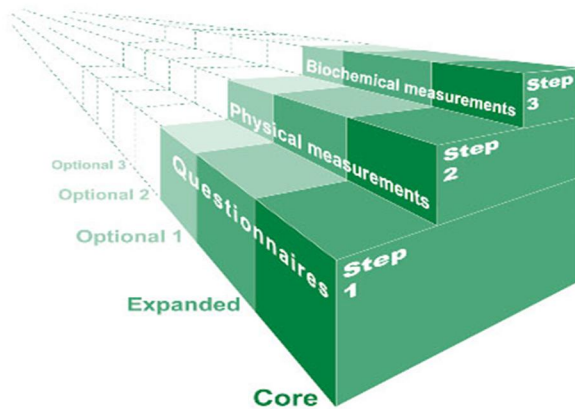
- To provide evidence-based up-to-date, extensive and reliable base-line data on the major preventable NCDs and their behavioural and biological risk factors in the Sultanate of Oman.
- To provide an approach and structure, for establishing an efficient surveillance system to collect data on the prevalence and known risk factors of NCDs, for planning, implementation and evaluation as well as preventive and curative interventions and doing research on NCDs and their risk factors.

Specific objectives

- a) To determine the prevalence and determinants for the four major behavioural risk factors of NCDs in Oman: tobacco use, unhealthy diet, physical inactivity, and alcohol use.
- b) To determine the prevalence and determinants for the four key biological risk factors of NCDs in Oman: overweight and obesity, raised blood pressure, raised blood glucose and abnormal blood lipids.
- c) To investigate potential links and association patterns between different risk factors and determinants of health (governorates, gender, age etc.)

Methodology

The STEPS survey of NCD risk factors in Sultanate of Oman was carried out from February 2017 to May 2017. This community based national survey, covering a representative sample of the population of the Sultanate of Oman from **all 11 governorates** used the World Health Organization (WHO)-developed STEPS approach for chronic NCD disease surveillance. The STEPS tool was designed to cover three different levels or STEPS of risk factor assessment:



Step 1 consisted of demographic information, tobacco use (Expanded module), history of NCDs and risk factors, history of cervical cancer screening, and lifestyle advice.

Step 2 consisted of physical measurements having core items of blood pressure, height and weight, waist measurements, and visual acuity.

Step 3 consisted of biochemical measurements having core items of blood glucose, blood lipids and urinary sodium (Spot and 24 hour), potassium, and creatinine.

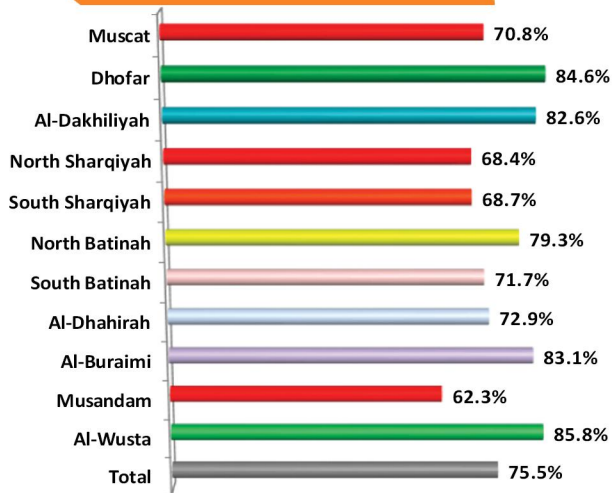
Sample and Target Population

A total of 9053 households were selected (Omani and non-Omani) and one adult was selected from each household randomly.

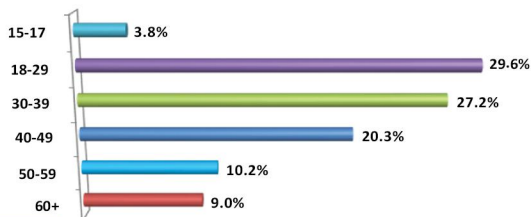
- The sample was designed to be multi-stage stratified random sampling according to geographical distribution.
- Cluster sampling (based on the 2010 census blocks) was used and symmetric equal number of blocks were chosen in each governorate.
- 823 households were chosen from each governorate with one adult being selected from each household randomly.
- The target age group was 18 years or older.

Demographic Characteristics

Response rate by Governorates



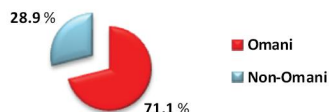
Age group



Sex



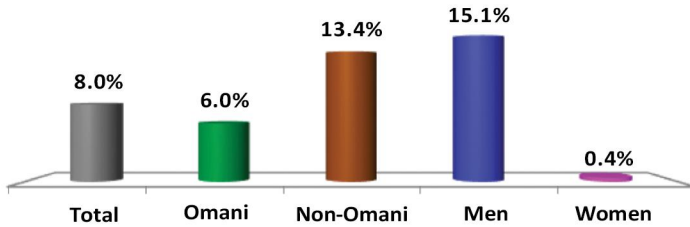
Nationality



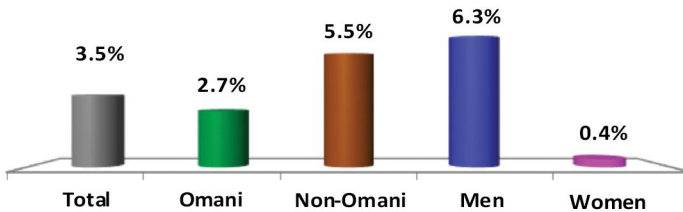
Modifiable Behavioural Risk Factors

1 Tobacco use

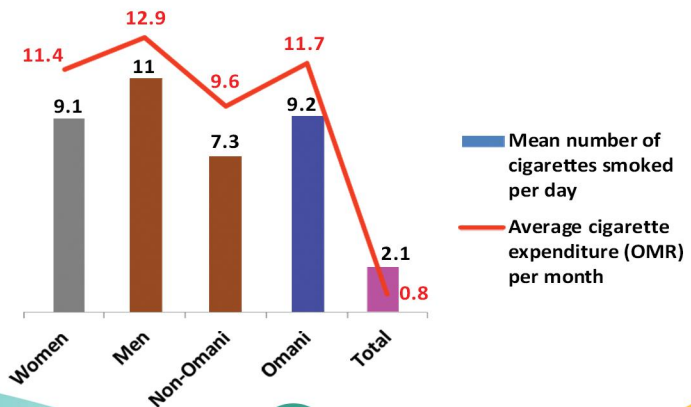
1-1 Current tobacco smoker (Daily/non daily)



1-2 Former smoker

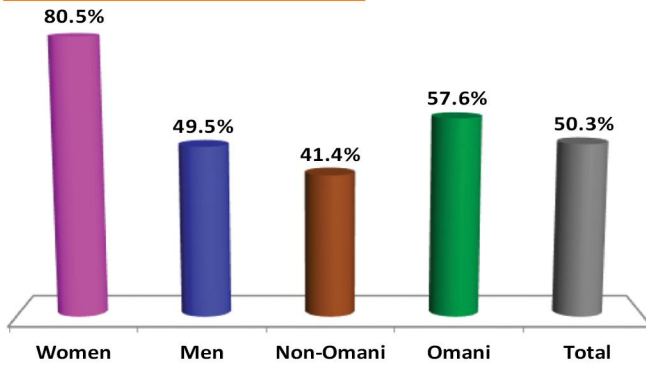


1-3 Daily mean number of cigarettes expenditure (OMR) per month



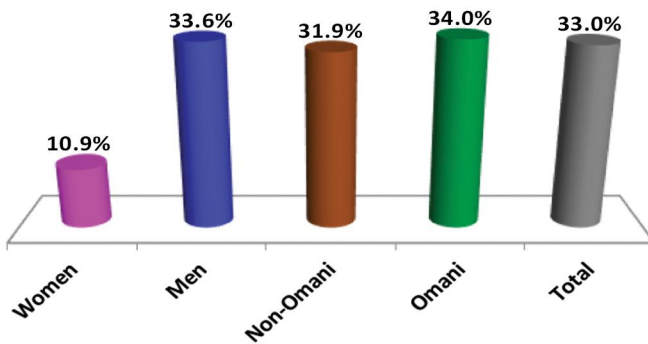
1-4

Current smokers who have tried to stop smoking



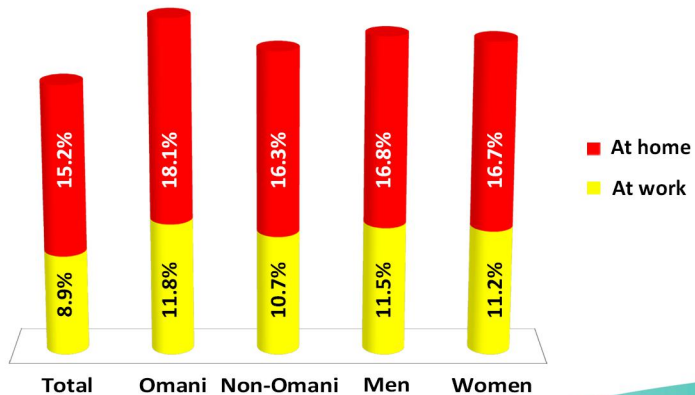
1-5

Current smokers who have been advised by doctor to stop smoking



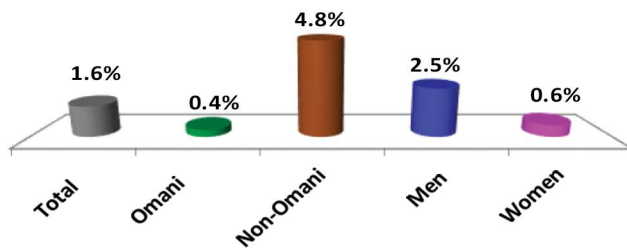
1-6

Exposure to second-hand smoke



2 Alcohol Consumption

2-1 Alcohol use in the past 30 days

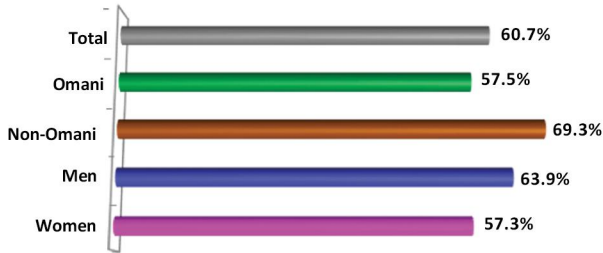


3 Diet

3-1 Mean number of fruits and/or vegetables consumed per day

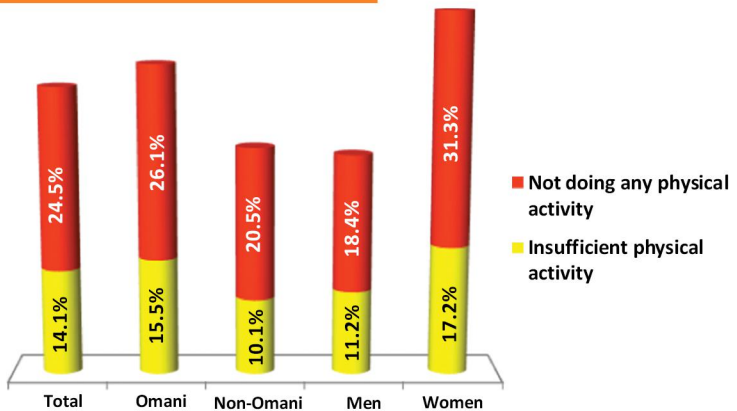


3-2 Respondents eating Less than five servings of fruit and/or vegetables on an average per day



4 Physical Inactivity

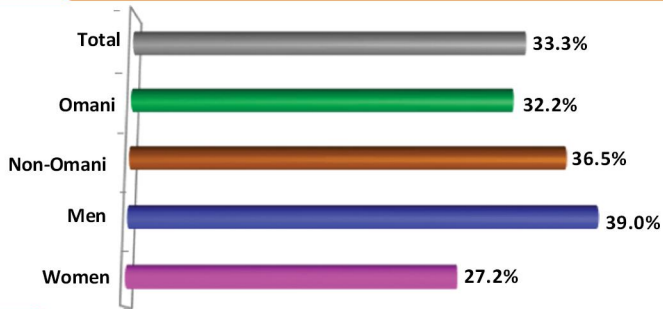
4-1 Insufficient physical activity



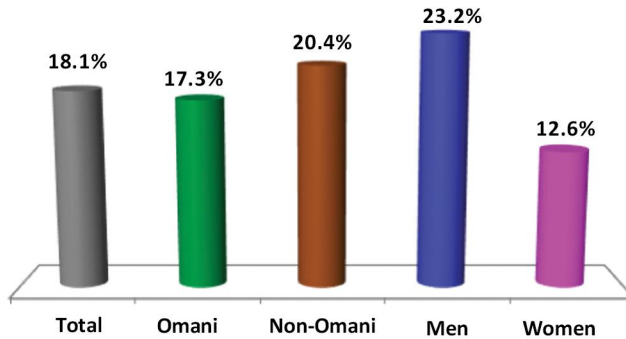
Metabolic Risk Factors

1 Raised Blood Pressure

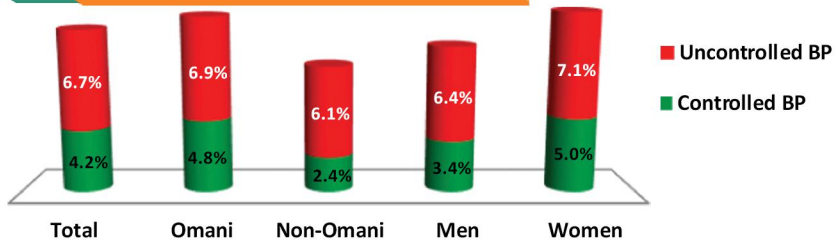
1-1 Respondents with raised blood pressure (SBP \geq 140 and/or DBP \geq 90 mmHg OR currently on meds)



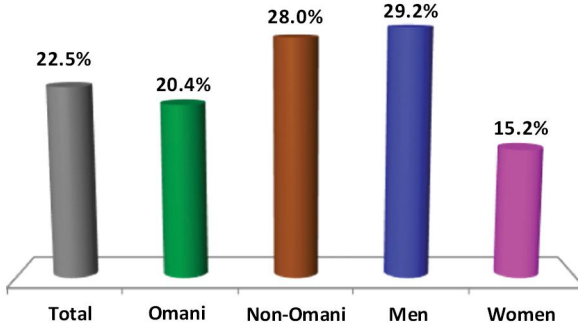
1-2 New cases of raised blood pressure (SBP \geq 140 and/or DBP \geq 90 mmHg)



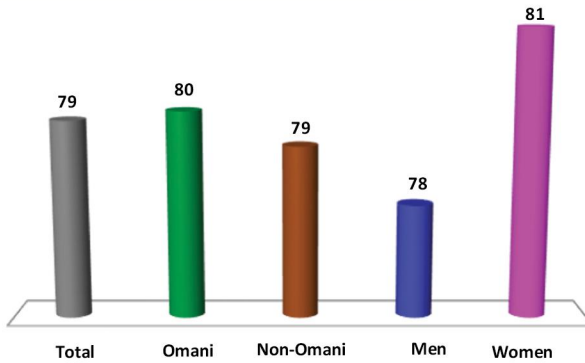
1-3 Raised Blood Pressure control status



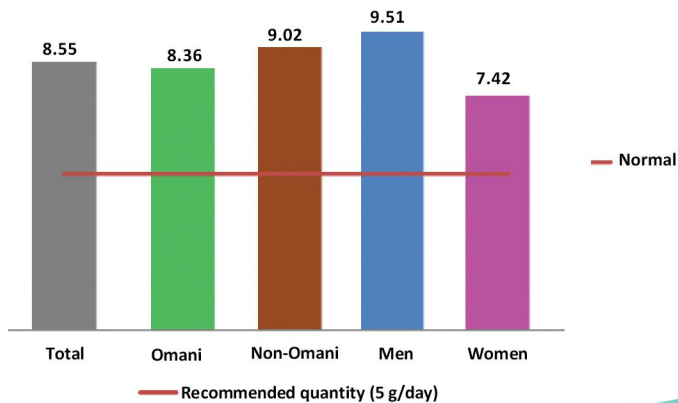
1-4 Respondents not on medication and SBP \geq 140 and/or DBP \geq 90 mmHg



1-5 Mean heart rate (beats per minute)

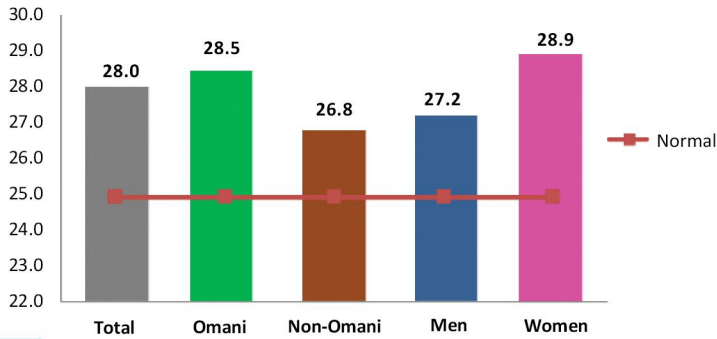


1-6 Mean salt intake (g/day)

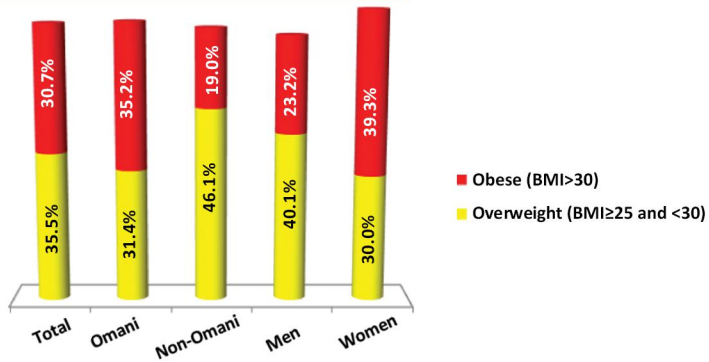


2 Overweight and Obesity

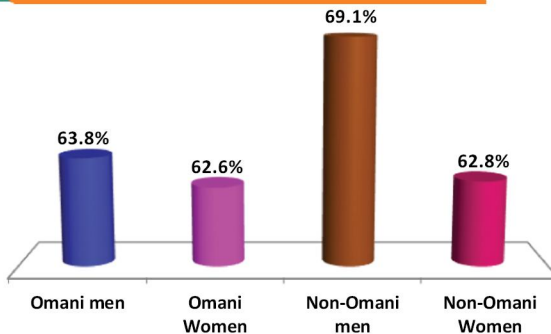
2-1 Mean BMI (kg/m²)



2-3 Percentage of overweight or obese



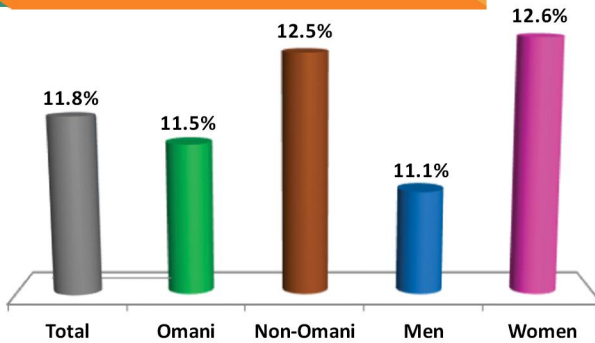
2-3 Central Obesity (Waist to Hip Ratio)



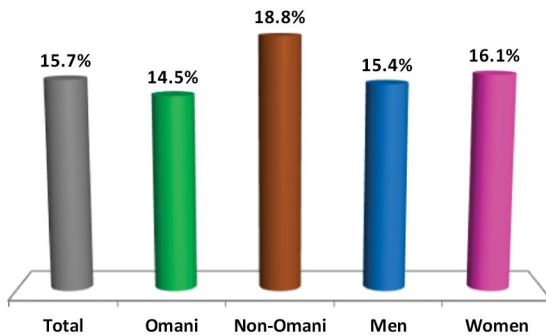
3

Raised Glucose level

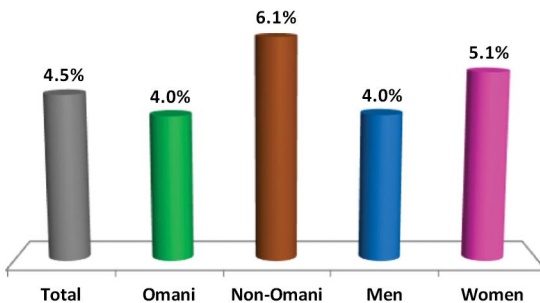
3-1 Persons with impaired fasting glucose (≥ 6.1 mmol/L and < 7.0 mmol/L)



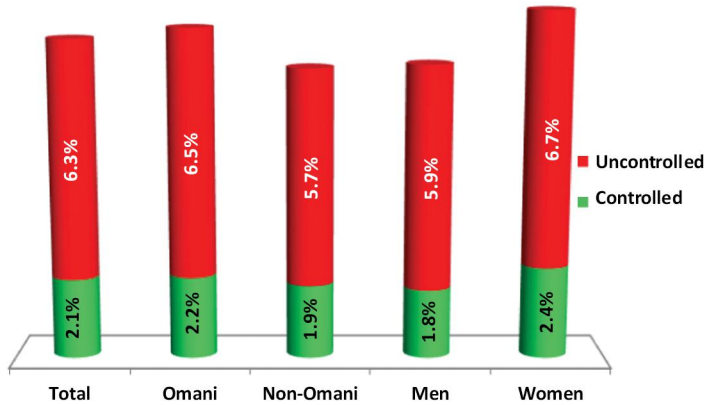
3-2 Persons with raised fasting glucose (≥ 7.0 mmol/L or on medication)



3-3 New cases of raised blood glucose (≥ 7.0 mmol/L)

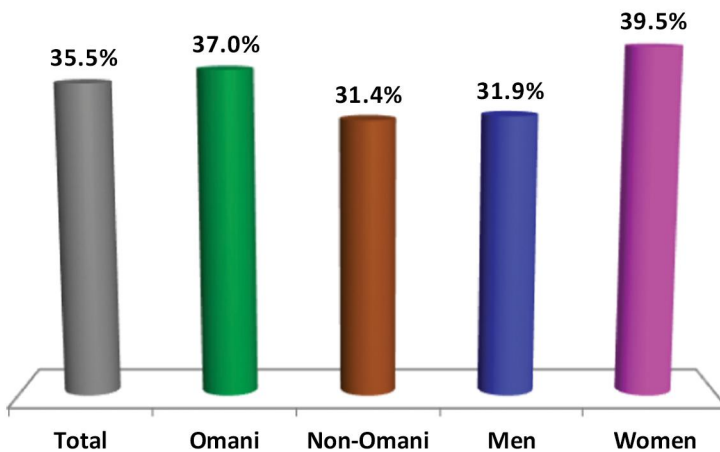


3-4 Control status of Diabetes



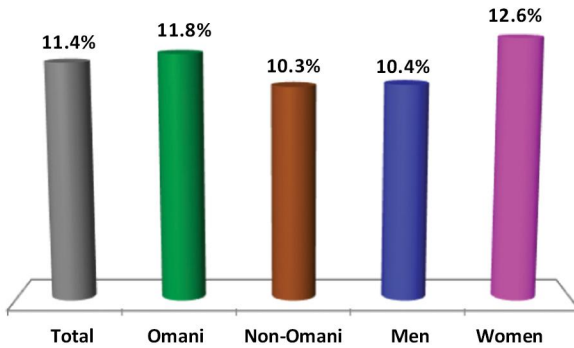
4 Raised Blood Cholesterol

4-1 Raised total cholesterol ≥ 5.0 mmol/L or currently on medication for raised cholesterol



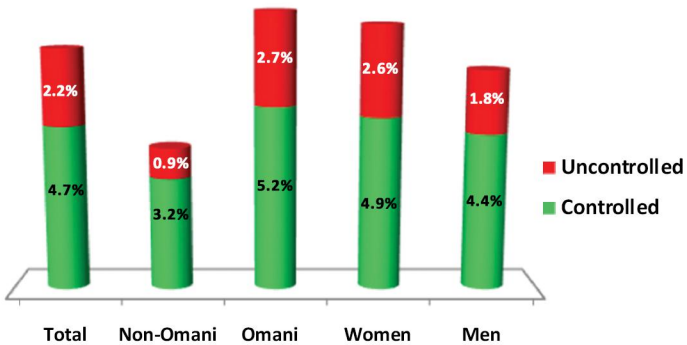
4-2

New cases of raised total cholesterol

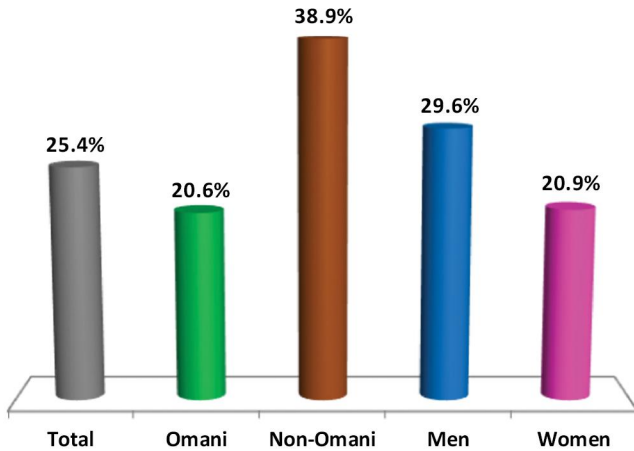


4-3

Control status of raised total cholesterol

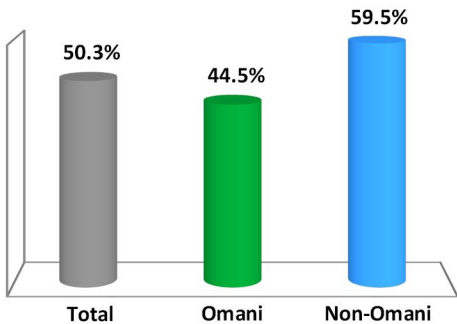


4-4 Respondents with fasting triglycerides ≥ 1.7 mmol/L

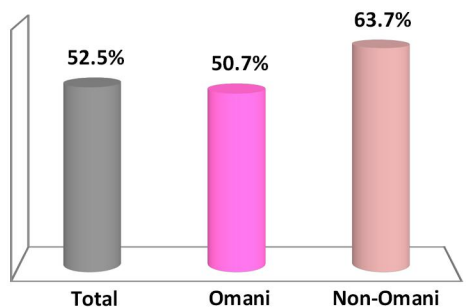


4-5 Respondents with HDL lower than recommended value

Men with HDL < 1.03 mmol/L

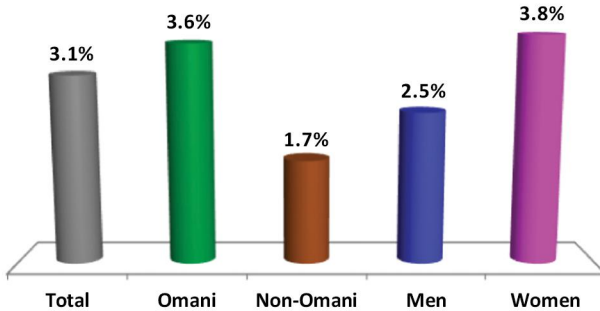


Women with HDL < 1.29 mmol/L

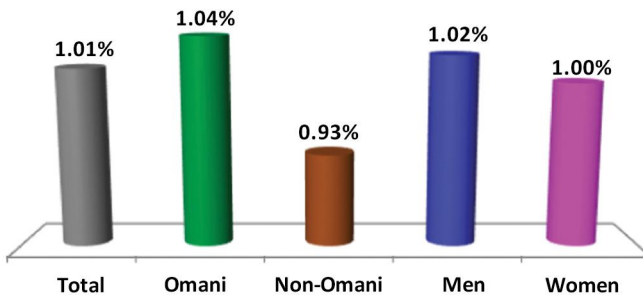


Self Reporting (History of Chronic Diseases - NCDs)

History of Asthma



History of Cardiovascular Diseases

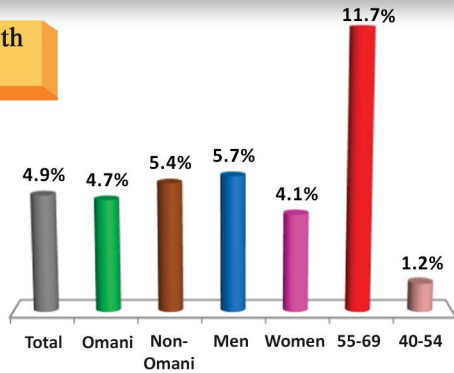


History of Cervical Cancer Screening for women



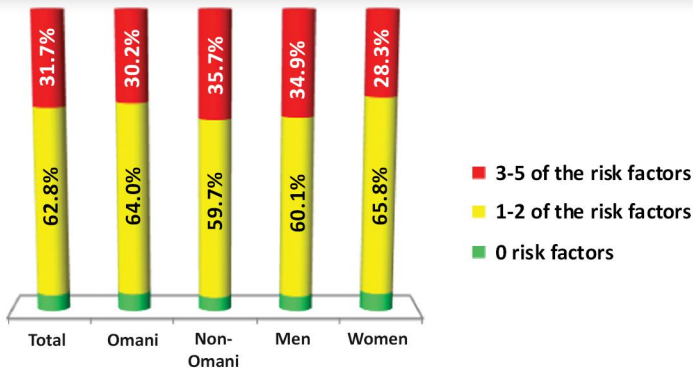
Cardiovascular Diseases (CVD) Risk

Percentage aged 40-69 years with a 10-year CVD risk $\geq 30\%$ *

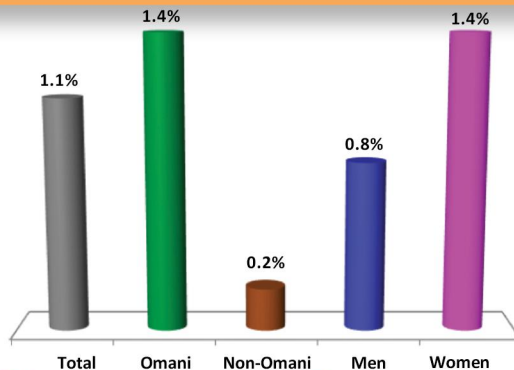


*A 10-year CVD risk of $\geq 30\%$ is defined according to age, sex, blood pressure, smoking status (current smokers OR those who quit smoking less than 1 year before the assessment), total cholesterol, and diabetes (previously diagnosed OR a fasting plasma glucose concentration >7.0 mmol/l)

Summary of Combined Risk Factors



Prevalence of Blindness



Risk Factors by Governorates

Modifiable Risk Factors (behavioural risk factors)

Governorate	Insufficient physical activity		Current tobacco smoking		Less than 5 servings of fruits/vegetables		Harmful use of alcohol	
	Omani	Non-Omani	Omani	Non-Omani	Omani	Non-Omani	Omani	Non-Omani
Muscat	28.7%	26.0%	7.0%	11.8%	61.2%	68.7%	0.8%	8.1%
Dhofar	49.5%	54.9%	18.0%	11.5%	74.7%	62.9%		2.1%
Al-Dakhiliyah	62.2%	35.8%	0.8%	13.4%	82.3%	80.3%	0.3%	1.9%
North Sharqiyah	20.9%	8.3%	0.4%	14.8%	66.4%	100.0%	0.1%	
South Sharqiyah	63.3%	26.5%	4.9%	27.9%	38.6%	60.5%		
North Batinah	57.9%	42.9%	4.8%	26.9%	39.8%	48.3%	0.5%	
South Batinah	24.8%	24.8%	2.2%	10.3%	47.2%	65.4%	0.7%	
Al-Dhahirah	19.9%	24.3%	2.5%	17.5%	38.5%	84.6%		2.2%
Al-Buraimi	39.4%	13.8%	5.5%	20.3%	71.3%	93.3%		0.5%
Musandam	39.4%	19.7%	7.4%	17.1%	76.8%	70.1%		0.7%
Al-Wusta	84.3%	86.0%	3.4%	10.4%	92.3%	75.5%		
Total	41.6%	30.6%	6.3%	14.2%	57.5%	69.3%	0.4%	4.8%

Non-modifiable Risk Factors (metabolic risk factors)

Governorate	High BP (SBP≥140 and/or DBP≥90 mmHg)		Diabetes (glucose ≥7.0 mmol/L)		Total cholesterol (≥5.0 mmol/L)		Obesity (BMI≥30 KG/m ²)	
	Omani	Non-Omani	Omani	Non-Omani	Omani	Non-Omani	Omani	Non-Omani
Muscat	40.8%	38.9%	13.7%	18.2%	39.6%	32.7%	34.6%	16.5%
Dhofar	24.3%	29.3%	10.8%	22.0%	36.9%	31.3%	45.4%	25.8%
Al-Dakhiliya	29.9%	30.6%	15.9%	15.9%	38.0%	38.5%	27.7%	23.0%
North Sharqiyah	36.3%	25.9%	13.9%	13.0%	39.1%	8.7%	3.3%	37.0%
South Sharqiyah	32.9%	34.9%	18.5%	15.7%	3.0%	14.0%	38.9%	12.8%
North Batinah	31.3%	28.3%	14.5%	15.0%	31.8%	21.9%	32.6%	13.7%
South Batinah	23.3%	38.3%	11.3%	7.9%	32.1%	41.4%	31.2%	13.0%
Al-Dhahirah	32.7%	31.4%	20.5%	17.2%	36.7%	40.3%	26.7%	15.1%
Al-Buraimi	38.2%	36.7%	21.55	28.2%	34.4%	20.9%	33.1%	10.7%
Musandam	35.1%	49.1%	13.5%	21.5%	39.0%	33.3%	45.2%	48.4%
Al-Wusta	25.1%	19.7%	18.1%	5.3%	65.6%	58.9%	32.4%	17.6%
Total	32.2%	36.5%	14.5%	18.8%	37.0%	31.4%	35.2%	19.0%

Conclusions and Recommendations

The Oman National Non-Communicable Diseases and their Risk Factors Survey (STEPS) is the largest nationally representative survey to collect comprehensive information on risk factors for NCDs, in the Sultanate of Oman. It provides essential information on Key NCD indicators by age group, sex and governorates. The results of the survey are useful in informing public health policy and the following recommendations are proposed:

1. There is a need to prioritize NCD prevention and control at both national and governorate level with multi-sectoral governmental as well as societal support as it is an emerging threat to health, social and economic development.
2. Sustained public awareness campaigns and interventions to reduce the modifiable risk factors for NCDs: tobacco use, unhealthy diet, physical inactivity, exposure to tobacco smoke, and alcohol use.
3. Build the capacity of the health workforce while ensuring the availability, access, affordability and quality of safe, efficacious medicines and basic technologies for screening, diagnosis, treatment and monitoring of common NCDs such as hypertension and diabetes at primary health care.
4. Streamline the health information systems to guarantee reliable, timely, complete and quality data for evidence-based practice and decision making in NCD prevention and control.
5. Promote wellness clinics in all facilities to encourage early detection and screening of NCDs such as diabetes, cervical cancer, hypertension and others as well as serve as sources of information for prevention and health promotion.
6. Strengthen the implementation of the Framework Convention on Tobacco Control by enforcing the provisions of the Tobacco Control Act at both the national and country level.
7. Strengthen implementation of the Oman's National policy for Diet, Physical activity and Health and ensure continuous engagement with the agricultural sector to promote healthy diets and eating habits.
8. Introduction of legislations on production, packaging and responsible marketing of food and drinks to reduce consumption of unhealthy foods.
9. Implement the physical activity tool kit in the country to encourage adoption of active lifestyles and to reduce sedentary lifestyles.
10. Integrate NCD indicators in national health surveys to supplement the data collected for proper planning and projection of NCD prevention and control.