Federated States of Micronesia (Pohnpei)

NCD Risk Factors STEPS REPORT

World Health Organization
Western Pacific Region

Federated States of Micronesia (Pohnpei) NCD Risk Factors STEPS REPORT

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Acknowledgements

The Federated States of Micronesia (Pohnpei) NCD Risk Factors STEPS Report (referred as "the Report") is a record of a combined effort of several organizations and individuals. We would like to acknowledge each organization and everyone's contributions, dedication and determination in making the survey done and report finalized.

The Report is a collaborative effort between the FSM Department of Health and Social Affairs, World Health Organization, Pohnpei State Department of Health Services, Micronesia Human Resource Development Center, the Fiji School of Medicine and the Centre for Physical Activity and Health, University of Sydney.

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LIST OF ABBREVIATIONS

BMI	Body Mass Index
BP	Blood Pressure
CHD	Coronary Heart Disease
CI	Confidence Interval
CVD	Cardiovascular Diseases
DBP	Diastolic Blood Pressure
DM	Diabetes Mellitus
FBS	Fasting Blood Sugar
FSM	Federated States of Micronesia
HTN	Hypertension
MET	Metabolic equivalent
mg/dL	Milligrams per decilitre (unit of blood chemistry values)
mmHg	Millimetres of mercury (unit of blood pressure measurement)
mmol/L	Millimoles per litre (unit for blood chemistry values)
NCD	Noncommunicable diseases
PICs	Pacific island countries and areas
SBP	Systolic Blood Pressure
WHO	World Health Organization

FOREWORD

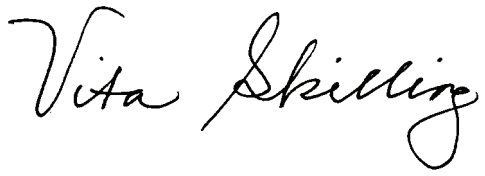
The global trend shows that almost every country has experienced a dramatic increase in chronic or lifestyle diseases that lead to death – attributable to change in lifestyles and the surrounding environment – referred to many as noncommunicable diseases (NCDs). In order to address this growing problem effectively and efficiently, we must have accurate information regarding the risk factors that contribute to the development of NCDs. A "risk factor" refers to any characteristic or exposure that increases a person's likelihood of developing a NCD. These risk factors include smoking, alcohol use, physical inactivity, obesity, high blood pressure, a raised level of blood glucose or cholesterol, and an unbalanced diet. The World Health Organization (WHO) has been tracking this development. However, each country needs to establish its own capacity in order to conduct population risk surveillance over time for countries' own planning of program activities and services.

I am pleased that the WHO has assisted the Federated States of Micronesia (FSM) to build our national capacity in population risk factors survey and analysis. This report is the result of the work carried out between the WHO and FSM for the first time on the WHO STEPS survey in Pohnpei State. The findings suggest actions for implementation of policy in NCD control and prevention, supportive physical environment and infrastructure, and improved health care services. The FSM (Pohnpei) STEPS survey was specifically designed to assess the prevalence of the common NCDs and risk factors in our population. The information from this survey provides an important platform for the development and implementation of strategic plans and programs to address the growing epidemic of NCDs in FSM (Pohnpei). Furthermore, the implementation of this important survey provides a firm foundation for an ongoing surveillance for NCDs and their various risk factors.

The WHO STEPS survey in the FSM would not have been possible without the vision and leadership of my predecessors, the Honorable Nena S. Nena, the late Drs. Jefferson Benjamin and Eliuel K. Pretrick. Their determination in ensuring that FSM was not left out in the first countries to carry out the survey with WHO's support has been realized. Last but certainly not the least, I would like to thank all the staff of this department, the Pohnpei State Department of Health, and our

partners such as Micronesia Human Resource Development Center in Pohnpei, the Fiji School of Medicine for completing the first ever population risk factors survey, AusAID and WHO for the financial support. This report is dedicated to the hard work and commitment evidenced from the inception to the completion of the NCD Risk Factors STEPS survey in FSM (Pohnpei).

I hope that the findings and recommendations in this report will guide our actions for improving health for all.



Dr Vita A. Skilling
Secretary
Department of Health and Social Affairs
Federated States of Micronesia

The World Health Organization (WHO) is honoured to be a critical part of the collaborative efforts between the Federated States of Micronesia (FSM) Department of Health and Social Affairs and Pohnpei State Department of Health Services; Micronesia Human Resource Development Center; the Fiji School of Medicine; Centre for Physical Activity and Health, University of Sydney; Australian Agency for International Development and the U.S. Center for Disease Control and Prevention.

Noncommunicable Diseases (NCDs) are the leading causes of death, accounting for approximately 75% of deaths annually in Pacific island countries and areas. Therefore, high priority has been given to NCD prevention, control and surveillance by Pacific island health ministers. The WHO STEPwise Approach to Surveillance of Risk Factors for NCDs (STEPS) is the WHO recommended surveillance tool for chronic disease risk factors and chronic disease-specific morbidity and mortality. To date, 105 countries and territories throughout the world utilize WHO STEPS. The publication of the “Federated States of Micronesia (Pohnpei) NCD Risk Factors STEPS Report” marks a milestone as it provides the scientific data that will assist the national and state governments in addressing the escalating issue of NCDs.

Determining the frequency of STEPS risk factors is a sequential process, starting with gathering information on key risk factors in a representative sample of the population using interviews and questionnaires, obtaining simple physical measurements, and collecting blood samples for biochemical assessment. The baseline data provided by NCD STEPS will ensure that the right emphasis is placed on the risk factors that need to be addressed in the efforts to prevent and control obesity, high blood pressure, diabetes and physical inactivity.

Pacific island countries and areas can use STEPS results not only for monitoring national trends, but also for making comparisons between and among countries that can be useful in judging a country's overall performance in reducing the risk factors. The approach encourages the collection of useful information by adopting standard methodology to detect trends in age and sex groups.

WHO, through its offices in Suva, Manila and Geneva is proud to collaborate with the FSM Department of Health and Social Affairs in publishing this first FSM STEPS report.

Some of the important results of this report include the following:

- 25.5% of the population smoked tobacco daily.
- 26.9% of population chewed betel nuts daily, among them, men (39.2%) were significantly higher than women (14.4%).
- 35.1% of men drank an average of 5 or more standard drinks per day in the past week.
- 68.9% of the population consumed sakau (kava).
- 81.8% of the population consumed less than five combined servings of fruit and vegetables per day.
- 64.3% of the population was with low level of physical activity.
- 73.1% of the population was overweight, 42.6% was obese.
- 32.1% of the population was diabetic.

WHO has developed “the summary of combined risk factors”, selecting five common and critical risk factors for NCDs: current daily smokers, overweight (BMI≥25kg/m^2), raised blood pressure (SBP≥140 and/or DBP≥90 mmHg or currently on medication for raised blood pressure), less than 5 servings of fruit and vegetables per day and low level of physical activity (<600 METminutes per week). According to this comprehensive assessment, only 1.0% of the whole population in Pohnpei, FSM was of low risk to NCDs, compared with 56.7% of the population at high risk. More attention is required for those aged 25 to 44 years with 52.6% classified at high risk for NCDs.

These results clearly document that NCDs are a major problem in Pohnpei, FSM. Future priorities need to be given to aggressive intervention projects to prevent and control key noncommunicable diseases, including diabetes, cardiovascular diseases, cancer, and their risk factors including smoking, unhealthy diet, physical inactivity and excessive consumption of alcohol. Diabetes control could be an entry point for NCD control and prevention.

Dr Chen Ken
World Health Organization Representative in the South Pacific

EXECUTIVE SUMMARY

The Federated States of Micronesia (FSM) (Pohnpei) NCD STEPS survey was a population-based cross-sectional survey of key chronic diseases and their risk factors among Pohnpeian adults aged 25-64 years. The survey was conducted in November-December 2002 using the WHO STEPwise surveillance methodology and questionnaire. The primary objectives were:

- To document the prevalence and magnitude of key noncommunicable diseases (NCDs) in Pohnpei
- To document the prevalence of major modifiable risk factors for NCDs including smoking, alcohol consumption, poor diet, physical inactivity, overweight and obesity, hypertension, raised blood glucose and cholesterol
- To compare NCDs and their risk factors across different strata of age and gender.

Data were obtained from 1638 participants (78% response rate) using probability proportion to size cluster sampling methodology.

Behavioral risk factors

The overall prevalence of current smokers was 31.6%. The percentage who currently smoked daily was 25.5% with a gender difference of 34.8% of men and 16.1% of women. The prevalence of smokeless tobacco use was 11.4%: 22.4% of men and 3.0% of women. The mean age at which smoking started was 18.2 years.

Approximately 29.9% of those surveyed reported they currently chewed betel nuts: 43.5% of men and 16.0% of women. For both genders, the highest proportions of betel nut chewers were in the youngest age group 25-34 years (men: 67.0%; women: 28.0%), declining thereafter with increasing age. Among the surveyed population, 26.9% were daily users of betel nuts. Men reported a significantly higher proportion of daily betel nut chewing than women, 39.2% and 14.4%, respectively.

The overall prevalence of current alcohol drinkers (defined as those who have consumed alcohol in the past 12 months) was 28.7% with a substantial gender difference of 47.5% of men and 9.9% of women being classified as current drinkers. There were higher proportions of male than female drinkers in all age groups. Among current drinkers, 35.1% of men drank on average 5 or more standard drinks per day in the past week. Among female current drinkers, 24.8% drank an average of 4 or more standard drinks per day. The majority (68.9%) of those surveyed reported having ever tried sakau (kava): 78.7% of men and 58.9% of women.

The mean number of servings of fruits eaten per day was 1.4 for men and 1.6 for women. The mean number of servings of vegetables eaten per day was 2.0 for both men and women. The overall prevalence of those consuming less than 5 combined servings of fruit and vegetables per day was 81.8%.

The overall proportion of the study population classified as being physically inactive or with low levels of physical activity, that is with less than 600 METminutes of physical activity per week, was 64.3%: 55.7% of men and 73.5% of women. The total physical activity performed across all settings averaged 105.0 minutes/day for men and 47.8 minutes/day for women. Both men and women performed most of their daily physical activity from transportation activities (e.g. walking). Transportation activities comprised 52.1% of total physical activity for men and 72.3% of total physical activity for women. Physical activity undertaken as part of leisure time was very low (8.6% of total physical activity for men and 4.6% of total physical activity for women).

Physical risk factors

The overall proportion of those classified as overweight (BMI ≥25kg/m^2) was 73.1%, with 42.6% (BMI ≥30kg/m^2) being obese. Among women, 82.7% were classified as overweight with 55.8% being obese. Among men, 63.9% were classified as overweight with 30.0% being obese. The proportion of

the study population with body mass index within a normal range was only 25.7%: 16.2% of women and 34.8% of men.

Mean waist circumferences for men and women were 91.5 cm and 95.2 cm, respectively. Women in all age groups had mean waist circumference values exceeding ≥80 cm, a cut-off value for women that is considered to increase their risk of cardiovascular disease.

The overall prevalence of raised blood pressure (defined as having SBP ≥140 mmHg and/or DBP ≥90 mmHg or on medication for raised blood pressure) was 21.2%: 26.8% of men and 15.6% of women. The mean resting systolic and diastolic blood pressure was 128.9/77.1 mmHg in men and 117.9/72.6 mmHg in women. For both genders, resting blood pressure increased with increasing age.

Biochemical risk factors

Using the fasting plasma venous cut-off points of glucose, overall prevalence of diabetes among adults aged 25-64 years in Pohnpei was 32.1%, with a higher rate among women (37.1%) as compared to men (26.4%).

The overall mean total cholesterol level was 199.9 mg/dl, with similar levels between men and women (200.1 mg/dl for men and 199.6 mg/dl for women). Overall, 46.6% of the study population was classified to be at high risk of coronary heart disease, with total cholesterol levels ≥200 mg/dl or ≥5.2 mmol/l. The prevalence for men was 48.4% and for women was 44.8%.

Combined risk factors

For this survey, the study population was classified into three NCD risk categories: high (with 3-5 risk factors), moderate (with 1-2 risk factors) or low risk (with no risk factor). The five common and critical risk factors for NCDs included in this calculation were current daily smokers, overweight (BMI ≥ 25 kg/ m^2), raised blood pressure (SBP ≥140 and/or DBP≥90 mmHg or currently on medication), consuming less than five combined servings of fruit and vegetables per day, and low level of physical activity (<600 METminutes per week).

Using this classification, only 1.0% of the study population was at low risk of NCDs, compared with 42.3% at moderate risk and 56.7% at high risk. Among 25-44 year-olds, the percentage with a raised risk for NCDs (with 3-5 risk factors) is already high (52.6%).

Conclusion

The FSM (Pohnpei) STEPS survey represents an important data source that can set Pohnpei on a new path to a healthy future. The survey has provided clear evidence that chronic diseases and related risk factors are at very high levels in Pohnpei. These data are critical for setting priorities, directing strategies and resources to those most in need of prevention programs. To this end, the following initiatives are recommended as a high priority in Pohnpei:

Addressing policy, organizational and environmental factors

- Increase resources to implement the WHO Framework Convention on Tobacco Control.
- Increase local production and improve availability of fruit and vegetables.
- Develop policies both at the state and national levels on importation of healthy foods.
- Develop policies to improve physical environments that are physical activity-friendly.
- Establish sustainable funding structure to support NCD strategy implementation and monitoring.
- Establish supportive governmental organization and health infrastructure for NCD prevention.
- Increase the capacity of the healthcare system to identify, monitor, and treat individuals with hypertension.

- Increase the capacity of the healthcare system to identify, monitor, and treat individuals with diabetes.
- Increase the capacity of the healthcare system to provide primary health care and lifestyle counseling for NCD prevention.

Addressing NCD risk factors

- Comprehensive anti-smoking campaigns to reduce smoking rates across all age groups and in both genders, particularly targeting the younger age groups to prevent smoking uptake.
- Comprehensive smoking cessation programs to reduce smoking rates across all age groups in both genders.
- Increase public awareness regarding the adverse effects of betel nut chewing on oral diseases, such as mouth cancer.
- Comprehensive health promotion campaigns to reduce alcohol consumption, particularly targeting binge drinking among men.
- Comprehensive health promotion efforts to highlight the benefits of fruit and vegetable consumption across all age groups and in both genders; including programs to increase consumption of healthy food.
- Increase public awareness regarding the adverse effects of excessive consumption of high-fat, high-salt, and high-sugar foods.
- Increase public awareness of regular monitoring and screening of blood pressure and blood sugar level.
- Develop specific programs to encourage increased moderate-intensity physical activity and promote lifelong physical activity in all age groups, with a focus on women.
- Implement state- and nation-wide diabetes education program, including coordinated print and electronic media strategies and providing public information.
- Develop capacity of the healthcare system to use diabetes prevention and control as an entry point for promoting smoking cessation, reducing unhealthy diet and excessive alcohol consumption, and promoting physical activity in both clinical and general populations.
- Public health programs to emphasize reduction in the prevalence of the five common and critical risk factors for NCDs, including current daily smoking, being overweight or obese, having raised blood pressure, eating less than five combined servings of fruit and vegetables per day, and having a low level of physical activity.

Establishing and maintaining coalitions and partnerships

- Build coalitions, networks and partnerships with a common agenda and vision for NCD prevention and control.
- Develop a coalition work program in advocacy and action for preventing and controlling NCD risk factors, such as coalitions between private, government and NGO sectors in tobacco control, and improving food and nutrition and physical activity.
- Work with partners to strengthen secondary prevention and clinical treatment of the key NCDs.

Maintaining quality surveillance and public health information

- Secure strong leadership and commitments at the highest level to maintain a systematic framework of STEPS data collection (e.g. workforce, infrastructure and financial capacity) on an ongoing basis that will include repeated STEPS surveys.
- Increase the coverage of the STEPS surveillance to include other states of FSM (Chuuk, Kosrae, and Yap).

1. INTRODUCTION

1.1 Background Information and Rationale

The major challenge to health services and economic development in many low and middle-income countries today is the unprecedented rise in noncommunicable diseases (NCDs)[1]. These diseases include cardiovascular conditions such as heart disease and stroke, Type 2 diabetes, some cancers, and chronic respiratory conditions. The burden of NCDs affects all levels of society, all nationalities and people of all ages. The NCD conditions are acknowledged as contributing to a large burden of death and disability in the Western Pacific Region[2].

It is acknowledged that appropriate, timely and valid surveillance of NCDs and their risk factors are needed by countries to support the planning, implementation and evaluation of public health prevention initiatives to address the growing burden of NCDs. In addition, surveillance is an essential public health tool for setting quantifiable goals and targets, for guiding policy development, and for appropriate allocation of public health resources. With a comprehensive and timely surveillance system, countries will increase their capability to effectively respond to emerging disease trends.

To this end, WHO is working with Pacific island countries and areas (PICs) by implementing the WHO STEPwise approach to surveillance of risk factors for NCDs (STEPS) – a surveillance framework for documenting population-level NCDs and their physical and behavioral risk factors[3]. The distinctive feature of the STEPwise approach is the measurement of different levels of risk factors: health risk behavior (e.g. tobacco use, alcohol consumption, fruit and vegetable consumption, physical activity), physical measurement (e.g. height, weight, waist, blood pressure), and biochemical level (fasting blood cholesterol and blood sugar level). The data are collected using self-report and objective methods. Countries have the option of implementing the core measures only or adding additional items depending on local relevance and resource availability. Globally and regionally, the underlying principle of the WHO STEPwise approach is to generate between-country comparable data. Countries can also use the information to examine within-country trends over time.

To ensure comparability, countries are provided with a STEPwise package of standardized methodology, questionnaire, and technical materials to support the planning and data collection activities[3].

1.2 The National Context

1.2.1 Geography

The Federated States of Micronesia (FSM) is an island nation of 607 islands (only 65 are inhabited) located just north of the equator and approximately 4000 kilometers southwest of Hawaii. The islands are grouped into four states of FSM: Pohnpei, Chuuk, Yap and Kosrae covering a land area of 700 km^2. However, the population of the four island states is spread across more than 2.5 million km^2 of the Western Central Pacific Ocean. Consequently, the provision of basic infrastructure and health services to the various community islands are expensive and difficult. While half of the FSM population lives in the State of Chuuk, Pohnpei is the most developed and westernized state and is home to the national government.

1.2.2 Population

Most of the 107,862 (July 2007 estimate) inhabitants of FSM are Micronesians. From the FSM census 2000, 48.8% are Chuukese, 24.2% Pohnpeian, 6.2% Kosraean, 9.7% Yapese and 11.1% others. English is the official and common language but other official vernaculars are also spoken: Pohnpeian, Kosraen, Yapese, Chuukese, Ulithian, Woleaian, Nukuoro and Kapingamarangi. Outside the urban areas these local languages are widely spoken. The main religion is Roman Catholic,

followed by Protestant. Other religious groups include the Latter-Day Saints, Seventh-Day Adventist, Assemblies of God, Jehovah's Witnesses, and the Baha'i Faith.

Population growth rate in FSM is at more than 3% per annum, although this rate is offset by an out-migration of about 2% per annum. Most of those who migrate out of FSM move to the US as part of the compact agreement which allows FSM citizens to enter the US freely and maintain residence for education or employment purposes. Typical of many PICs, FSM has a young population structure, with the 15-24 year age group expected to account for 50% of the population increase in the next decade. In FSM the most populous State is Chuuk, followed by Pohnpei, Yap and Kosrae[4].

1.2.3 Government and Culture

FSM is a stable sovereign nation with a Compact of Free Association with the United States of America (USA). Under this association, FSM is given access to limited US social services and funding grants. The country is governed by the 1979 constitution, which guarantees basic standards of human rights similar to the US Bill of Rights. The Constitution also has a provision protecting traditional rights and leadership which continue to have an important role in the FSM society and culture.

There are no formal political parties in FSM. The Congress of the FSM is unicameral (equal representation for all four states) with fourteen senators elected by popular vote. Four senators, each representing a state, serve 4-year terms; the remaining ten senators serve 2-year terms. The Congress elects the President and Vice President from among the four state-based senators to serve 4-year terms.

The cultural and social structure of FSM is built around the household which usually consists of extended families. Communities throughout FSM are made up of large matrilineal clan groups. Traditional systems of government, such as the Council of Pilung in Yap and the Nahmwarki Political System in Pohnpei, continue to play an important role in the FSM society.

1.2.4 Economy

FSM geographical remoteness coupled with limited natural resources pose substantial challenges to sustainable economic development. The primary sources of income are subsistence farming (mainly breadfruit, banana, coconut, citrus, taro and yam), selling of fishing licenses and the internet domain name (.fm). Historically, FSM has been heavily reliant on US aid and other external assistance. The 20-year compact agreement with the US (signed in 2003) provides another important source of income for the country. The US dollar is the primary national currency.

1.2.5 Health Status and Health Infrastructure

The average life expectancy in FSM is 70.35 years. However, FSM's health profile on some indicators is still typical of a low to middle-income country, with a relatively high infant mortality rate of 28.15 deaths per 1,000 live births. The combined effects of modernization and globalization in recent years have significantly impacted on the lifestyle and dietary habits of the people of FSM[5]. As such the adoption of unhealthy practices such as consumption of foods high in fat and salt and low in nutritional values has been acknowledged as contributing to the mortality and morbidity associated with NCDs in the country [6]. A 1994 epidemiological study of all adults (20 years or older, n=2188) living in the State of Kosrae found 88% of adults aged 20 years or older to be overweight (BMI ≥25kg/m2), 59% obese (BMI ≥30 kg/m2) and 24% extremely obese (BMI >35kg/m) [7]. The study also found 24% of adults had diabetes (fasting blood sugar ≥126 mg/dl or 2-hour oral glucose tolerance test ≥ 200). This study highlighted that chronic diseases and risk factors such as obesity were already a pressing health problem in FSM a decade earlier. To date no other comprehensive population-based results have been issued (or published) from other states of FSM.

FSM has a 3-tier health care system provided at the national, state and municipal level. Policy directions are provided by the national government while each state is responsible for coordinating and implementing its own health care system. Each state has one public hospital which provides

primary and secondary care services. In the outer islands or remote villages, state-run health dispensaries or clinics are staffed by health assistants and supervised by the local mayors. These dispensaries diagnose and treat common illnesses and refer advance cases to the state hospitals.

1.3 Developing WHO STEPS in FSM (Pohnpei)

Accurate and current data on major NCDs and their risk factors are very limited in many PICs. To the best of our knowledge the latest epidemiological study of NCD risk factors was undertaken in the State of Kosrae in 1994 [7]. The dearth of current information in this area has meant that government's ability to address the rising tide of NCD epidemic is significantly hindered. In recognition of this gap in knowledge, the government of FSM in 2002 agreed to implement the WHO STEPS survey in Pohnpei under the auspices of the Department of Health and Social Affairs.

2. OBJECTIVES

The overall aim of the FSM (Pohnpei) STEPS survey was to document the prevalence of key NCDs and their associated risk factors. The data collected will provide the government with baseline information for health services planning and will inform the development of an integrated strategy on NCD prevention and control. The survey data will also be used to plan and evaluate health promotion and disease preventive programs.

The specific objectives of the survey were to:

- Document the prevalence and magnitude of key NCDs among adults aged 25-64 years
- Document the prevalence of major modifiable risk factors for NCDs including smoking, alcohol consumption, poor diet, physical inactivity, obesity, hypertension, raised blood glucose and cholesterol
- Compare NCDs and their risk factors across different strata of age and gender.

3. METHODOLOGY

3.1 Survey Structure

The STEPS survey involved a sequential three-step process as noted in Figure 1. The key premise is that the same core standardized questions are used in all participating countries. This approach allows countries to use information for examining within-country trends, but also for between-country comparisons. However, countries can add more questions or measurements depending on local needs.

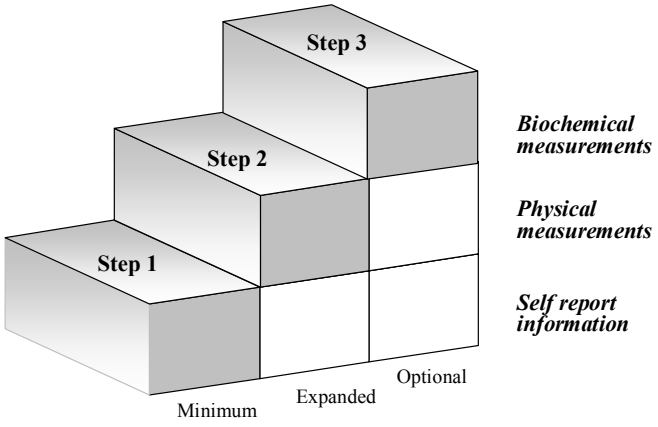


Figure 1 The WHO STEPwise approach to surveillance of NCDs

The FSM (Pohnpei) survey structure followed the three STEPS as follows:

Step 1: A questionnaire-based (interview) survey on selected health risk behaviours (smoking, betel nut chewing, alcohol consumption, kava (sakau) drinking, fruit and vegetable consumption, and physical inactivity).

Step 2: Physiological measures of blood pressure, height, weight, and waist circumference.

Step 3: Biochemical measures of fasting blood glucose and total cholesterol.

3.2 Sample size

To detect prevalence rates as high as 20% with a confidence interval of ±2%, and differences in the prevalence of NCDs and their risk factors between age/sex groups with confidence intervals of approximately ±10%, it was calculated that a sample size of 1650 participants was required. Assuming approximately 80% participation the target recruitment of study participants was 1650 /0.8 = 2063. As such, a total of 70 participants per cluster (70 / cluster X 30 clusters = 2100 participants) were targeted. Of these, approximately one third were invited to participate in biochemical tests (STEP 3).

3.3 Survey Sampling Methodology

The FSM (Pohnpei) STEPS survey was a population-based cross-sectional survey of 25-64 year olds in the State of Pohnpei. The survey used a multi-staged cluster sampling design. Based on the FSM 2000 Census, the population of Pohnpei was divided into 115 sections called enumeration districts (EDs). The sampling frame therefore consisted of the 115 EDs. Thirty EDs were randomly selected using probability proportional to ED size (PPS) (see Figure 2). The selected EDs are listed in Table 1. For selected EDs, households were randomly selected until a target of 70 in the 25-64 year age group was reached. If a selected ED had a small population, then residents in an adjacent ED were sampled, once the chosen ED had been surveyed for all adults in the target population of 25 to 64 years old.

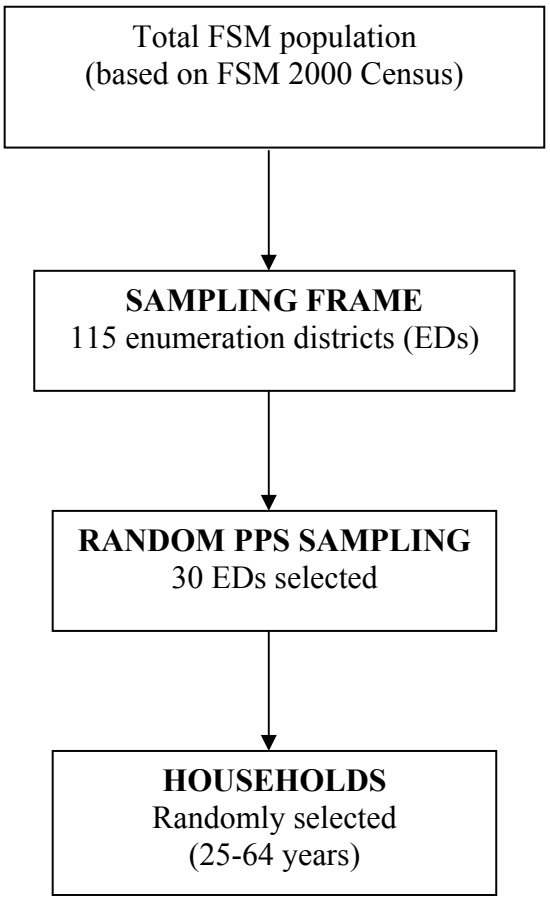


Figure 2 Survey sampling methodology

Table A Selected enumeration districts (based on FSM 2000 Census)

Municipality	ED	Total Population	Estimated Population aged 25 to 64	Target Number to be enrolled for NCD-STEPS
Madolenihmw	ED49 - Kepira	323	113	70
	ED53 - Lehiak	483	169	70
	ED58 - Alokapw	815	285	70
	ED59 - Lehdau	383	134	70
	ED63 - Lukop	392	137	70
		2396	838	350
Uh	ED118 - Awak powe	231	81	70
	ED122 - Rohi	111	39	70
	ED125 - Awak pah	524	183	70
		866	303	210
Nett	ED70 - Dolonier	119	42	70
	ED74 - Dolonier/PICS	144	50	70
	ED79 - Dolonier	194	68	70
	ED84 - Kamar	366	128	70
	ED67 - Deketik	70	24	70
		893	312	350
Sokehs	ED96 Paies	319	111	70
	ED99 Kipar	313	109	70
	ED106 Ipwal	124	43	70
	ED105 Roie	404	141	70
	ED110 Kepin	356	124	70
	ED113 Palikir	288	101	70
		1804	629	420
Kitti	ED04 - Dioan	429	150	70
	ED07 - Pwudoih	274	96	70
	ED10 - Diadi	273	95	70
	ED13 - Einpein pah	361	126	70
	ED16 - Soamwoai	276	96	70
	ED18 - Oaloapoal	546	191	70
		2159	754	420
Kolonia	ED26 – Pohnrakeid/Ninsei	141	49	70
	ED32 - Likinkel	256	89	70
	ED36 - Mabuchi	314	110	70
	ED41 - Nankoto	254	89	70
	ED45 - Deweneu	274	96	70
		1239	433	350
TOTAL		9357	3269	2100

3.4 Data Collection Procedures

The survey was conducted from 14 November through 18 December 2002. The data collection schedule was as follows:

14 - 19 Nov:	Data collection in Kolonia
20 - 26 Nov:	Data collection in Sokehs
27 Nov - 2 Dec:	Data collection in Nett
3 - 5 Dec:	Data collection in Uh
6 - 11 Dec:	Data collection in Madolenihmw
12 - 18 Dec:	Data collection in Kitti

In each municipality:

- The field staff approached selected households and invited one individual who was at home and aged 25-64 years to participate in the survey.
- Following informed consent, the field staff conducted face-to-face interviews in the participant's household (STEP 1).
- The field staff worked through appointment schedules and fasting instructions for each person.
- In the following day, survey participants completed STEPS 2-3 at the designated survey centre.

The survey venue set up is outlined in Figure 3.

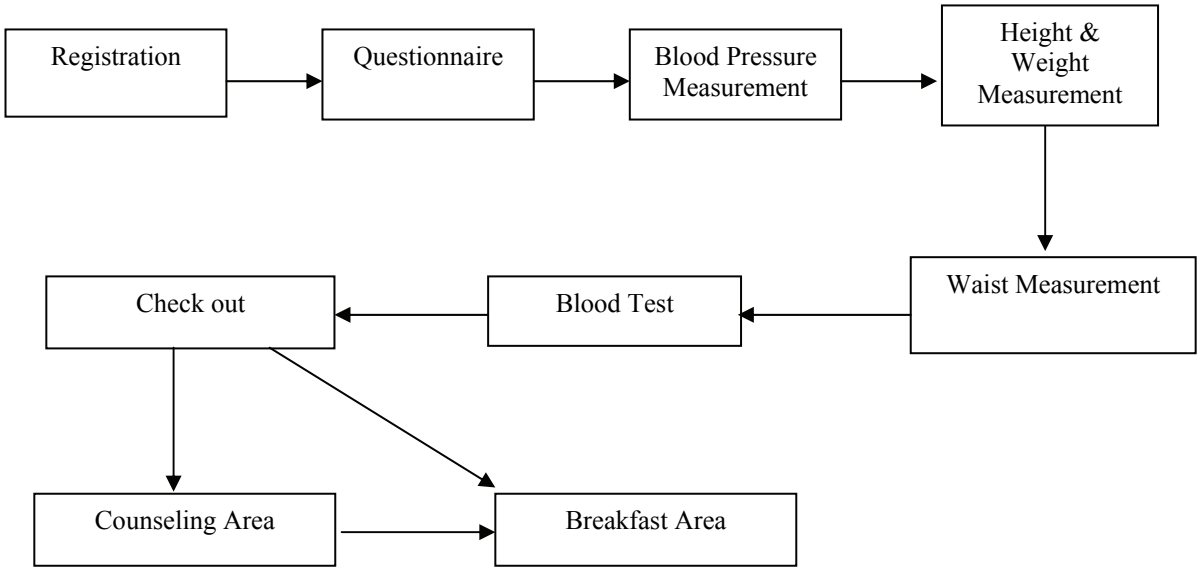


Figure 3 Sequence of data collection and stations at the survey base

3.5 Data Collection Process

3.5.1 Registration of Participants

At the registration station, survey personnel:

- Confirmed consent of the participant to be involved in the survey.
- Ensured that participants understood all STEPS involved in the survey.
- Obtained participant date of birth and confirmed that they were within the target age group.
- Confirmed fasting status of the participant.
- Directed the participant to the appropriate station depending on the fasting status of the participant.

3.5.2 Step 1 - Behavioral Risk Factors

All participants took part in a face-to-face structured interview which asked questions on smoking, alcohol consumption, fruit and vegetable consumption, and physical inactivity. The core behavioral risk factor questions were based on the WHO STEPwise Approach to Risk Factor Surveillance standard questionnaire. A copy of the questionnaire used in the FSM (Pohnpei) STEP Survey is reproduced in Appendix 1 of this report.

Interviews were conducted in either English or the local vernacular depending upon the wishes of the participant. A standardized script translated from the English version of the questionnaire was used when interviews were conducted in the local vernacular. Where appropriate, interviewers used show cards (for standard drinks, fruits and vegetables, physical activity) to enhance questionnaire comprehension.

All interviews were conducted in the participants' home one day before STEPS 2 and 3 measurements. With the completion of STEP 1, the interviewer instructed the participant on fasting protocol for the next day data collection involving the physical and biochemical measurements.

3.5.3 Step 2 - Physical Measurements

Physical measurements of height, weight, waist circumference and blood pressure were conducted after registration. Selected survey personnel were trained in conducting these measurements and followed standard STEPwise protocols.

Height was measured once using the Seca Leicester Height Measure to the nearest whole centimeter. Weight was measured once using the Siltec PS500L to the nearest 0.1 kg. At the beginning and end of each day of data collection the instrument was calibrated against standard weights. Participants were measured without shoes and wearing only light clothing. Waist circumference was measured once using the Figure Finder constant tension tape and recorded to the nearest 0.1 cm. Waist circumference was not measured in pregnant female participants.

The OMRON M4 Digital Automatic Blood Pressure Monitor was used to measure blood pressure (BP) and heart rates. Resting (sitting without talking) BP was measured first followed by two more measurements taken with one minute intervals. The third reading was recorded as the blood pressure reading for that participant and used in the analysis.

A manual sphygmomanometer was used to measure blood pressure in the following situations:

- If the OMRON was not functioning
- If the OMRON display showed multiple errors.
- To cross check the OMRON readings in various clinical states such as irregular pulse, peripheral circulatory disturbance, and extreme hypertension/hypotension.

3.5.4 STEP 3 – Biochemical Measurements

The biochemical measures in the FSM (Pohnpei) survey include fasting blood glucose and total cholesterol. Participants were instructed to fast from 10:00pm the previous night until 7:00am the following morning when their blood samples were collected. Whole blood samples were collected into separate Vacutainer collection tubes for blood lipid and blood sugar level analysis. Venous whole blood samples were assayed in Pohnpei within 2 hours of collection.

After completion of these biochemical measurements, participants were directed towards the check-out station.

3.5.5 Check-out Station

All completed questionnaires were collected and checked for completeness by survey personnel at this station. All participants were provided specific health advice along with literature and pamphlets about diabetes, heart diseases, hypertension, obesity and diet, alcohol, physical activity and tobacco smoking. Participants who were identified during the measurements as being at high risk were referred for further examination and follow-up in the hospital.

After completion of counseling, participants were directed towards the refreshment station.

3.6 Data Management and Analyses

3.6.1 Data Entry

At the end of each day of data collection, staff checked the questionnaires for completeness and accuracy. The checked questionnaires were then handed to data entry personnel. Double data entry of questionnaires was carried out on computers that had EpiInfo™ software for double data entry application installed.

3.6.2 Data Weighting and Analysis

The survey sample was weighted to the 2000 FSM Census of the Pohnpeian population aged 25 to 64 years. This weighting adjusted for certain age/sex stratum being either over- or under-represented in the survey data. For categorical variables, frequency distributions were calculated using weighted complex sample frequencies. For continuous variables, weighted complex sample means were computed. Weighted frequency estimates and weighted means were reported with 95% confidence intervals by 10-year age groups and gender. These computations were performed using EpiInfo's complex sample table function.

The WHO Office in Geneva, supported by WHO Office in Suva, conducted final data weighting, cleaning and analysis. WHO Office in Suva completed the whole Data Book. Data analyses were performed using the EpiInfo 2002 – Version 3.5.1.

4. RESULTS

4.1 Characteristics of Survey Population

The study targeted 2100 adults aged 25-64 year olds in the State of Pohnpei. A total of 1638 individuals participated in the survey (response rate of 78%).

Table 1 summarizes the age and gender distribution of the survey sample. Of those who participated in the survey, women were over-represented: 60.8% of women and 39.2% of men. Across all age groups, women were more likely than men to take part in the survey. Overall, the survey population was over-represented in the 25-34 and 35-44 year age groups, while the 55-64 year age group was under-represented.

Table 1 Demographic description of study population

Age Group (years)	Men		Women		Both Sexes	
	n	% of age group	n	% of age group	n	% of total
25-34	176	35.4	321	64.6	497	30.3
35-44	187	37.4	313	62.6	500	30.5
45-54	184	42.7	247	57.3	431	26.3
55-64	95	45.2	115	54.8	210	12.8
25-64	642	39.2	996	60.8	1638	100.0

Table 2 summarizes the mean years of education of the survey respondents. The mean years of education across both genders were similar, with 9.4 years for men and 8.6 years for women. For women, the oldest age group (55-64 years) had the lowest mean years of education (6.6 years), while the youngest age group (25-34 years) reported the highest mean years of education (9.7 years). The mean years of education for men ranged from 9.1 to 9.7 years across all age groups.

Table 2 Mean number of years of education by gender and age group

Age Group (years)	Men		Women		Both Sexes	
	n	Mean	n	Mean	n	Mean
25-34	163	9.7	299	9.7	462	9.7
35-44	177	9.2	298	8.8	475	8.9
45-54	169	9.5	227	7.8	396	8.5
55-64	88	9.1	103	6.6	191	7.8
25-64	597	9.4	927	8.6	1524	8.9

4.2 Tobacco Use and Betel Nuts Chewing

To assess prevalence of tobacco use participants were asked if they currently smoke tobacco products. Responses were categorized into the following smoking status:

- Current smokers – those who had smoked any tobacco product (such as cigarettes, cigars or rolled tobacco) in the past 12 months.
- Daily smokers – those who smoke any tobacco product every day.
- Non-daily smokers – those current smokers who do not smoke on a daily basis but less frequently.

Table 3 shows that the 31.6% of the surveyed population were current smokers. A significant gender difference was observed with a greater proportion of men (42.0% ±4.0) than women (21.0% ±3.7) being current smokers. This gender difference was observed for those aged 25-54 years, but there was no significant gender difference in the 55-64 year age group, with 20.2% (±11.1) of men and 24.6% (±8.2) of women being current smokers. For men, the highest proportion of current smokers was in the 35-44 year age group (52.5%) and for women the highest proportion was in the 45-54 year age (25.3%).

Table 3 Percentage of current smokers in the study population

Age Group (years)	Men			Women			Both Sexes		
	n	% Current smoker	95% CI	n	% Current smoker	95% CI	n	% Current smoker	95% CI
25-34	175	38.9	9.6	315	16.8	5.5	490	27.7	4.3
35-44	183	52.5	5.2	312	22.4	4.0	495	37.7	3.7
45-54	183	41.5	7.6	245	25.3	5.2	428	33.8	5.3
55-64	94	20.2	11.1	114	24.6	8.2	208	22.4	7.7
25-64	635	42.0	4.0	986	21.0	3.7	1621	31.6	2.2

Among male current smokers, 34.8% were daily smokers. The survey indicated that in the age group 35-44 years, a significant proportion of men (46.4% ± 5.5) was already smoking daily compared to the younger cohort of 25-34 years (28.0% ± 7.5). The proportion of daily smokers peaked at 35-44 years, decreasing thereafter with a substantial drop occurring in age 55-64 years (16.0% ± 8.8) (Table 4).

Table 4 Current smoking status among men in the study population by age group

Age Group (years)	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	175	28.0	7.5	10.9	5.6	61.1	9.6
35-44	183	46.4	5.5	6.0	3.3	47.5	5.2
45-54	183	37.7	6.9	3.8	2.7	58.5	7.6
55-64	94	16.0	8.8	4.3	4.0	79.8	11.1
25-64	**635**	34.8	3.7	7.2	2.5	58.0	4.0

Among female current smokers, 16.1% were daily smokers, with the highest proportion being within the 45-54 year age group (18.4%) (Table 5). The percentage of daily smoking increased with increasing age and reduced slightly in the oldest age group (55-64 years). However, there was no significant difference between any of the age groups in the proportions of daily smokers.

Table 5 Current smoking status among women in the study population by age group

Age Group (years)	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	315	13.3	4.3	3.5	3.0	83.2	5.5
35-44	312	17.6	3.7	4.8	2.5	77.6	4.0
45-54	245	18.4	4.2	6.9	3.7	74.7	5.2
55-64	114	17.5	6.2	7.0	6.3	75.4	8.2
25-64	**986**	16.1	3.0	4.9	1.4	79.0	3.7

Table 6 summarizes the prevalence of smoking status for both men and women combined. Overall, 25.5% of the survey population was daily smokers. The lowest proportion of daily smokers was in the 55-64 year age group (16.8% ±5.4) but this proportion did not differ significantly from that observed in the 25-34 year age group (20.5% ± 3.0). The highest proportion of daily smokers was noted in the 35-44 year age group (32.3%).

Table 6 Current smoking status among both sexes in the study population by age group

Age Group (years)	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	490	20.5	3.0	7.1	3.3	72.3	4.3
35-44	495	32.3	3.9	5.4	2.0	62.3	3.7
45-54	428	28.5	4.9	5.3	2.1	66.2	5.3
55-64	208	16.8	5.4	5.7	4.7	77.6	7.7
25-64	1621	25.5	2.1	6.1	1.4	68.4	2.2

For all current smokers, the mean age of starting smoking for men was 17.3 years (±0.6), significantly lower than women (20.2 years ±0.9). This pattern was observed in all age groups, with the exception of age 25-34 years where there was no significant difference between genders in the mean age of starting smoking. Among women, age at which smoking first commenced generally decreased with decreasing age, that is, the youngest cohort (18.3 years ±1.4) tended to start smoking earlier than the oldest cohort (24.0 years ±3.7). However, among men there was no significant difference in the mean age of starting smoking across age groups (Table 7).

Table 7 Mean age started smoking among current daily smokers

Age Group (years)	Men			Women			Both Sexes		
	n	Mean age	95% CI	n	Mean age	95% CI	n	Mean age	95% CI
25-34	48	17.4	1.1	40	18.3	1.4	88	17.7	0.9
35-44	83	17.2	0.7	54	20.0	1.4	137	17.9	0.7
45-54	59	17.7	1.1	41	21.6	1.9	100	19.0	1.1
55-64	14	16.8	1.4	20	24.0	3.7	34	20.7	2.8
25-64	204	17.3	0.6	155	20.2	0.9	359	18.2	0.5

Among daily smokers, the mean number of years of smoking was 21.5 years (±0.9). There was no significant gender difference in the duration of smoking, with male smokers smoking for a mean of 22.0 years (± 1.2), and women current daily smokers smoking for 20.4 years (± 1.7) (Table 8). It is important to note that due to the small numbers of responders in the 55-64 year age group estimates based on these numbers may be unreliable.

Table 8 Mean number of years of smoking among current daily smokers

Age Group (years)	Men			Women			Both Sexes		
	n	Mean duration	95% CI	n	Mean duration	95% CI	n	Mean duration	95% CI
25-34	48	12.6	1.2	40	11.8	1.7	88	12.3	1.1
35-44	83	22.4	1.1	54	19.4	1.5	137	21.6	0.9
45-54	59	31.2	1.2	41	27.2	2.3	100	29.9	1.2
55-64	14	41.6	1.8	20	34.8	4.0	34	37.8	2.8
25-64	204	22.0	1.2	155	20.4	1.7	359	21.5	0.9

Table 9 shows that among current daily smokers, the majority of men (90.3%) and women (85.3%) smoked manufactured cigarettes. Smokeless tobacco was used by 11.4% of smokers with the percentage of men consuming smokeless tobacco being substantially higher (22.4% ±5.0) than women users (3.0% ±1.2) (Table 10). Additionally, users of manufactured cigarettes were more common in the 25-34 and 35-44 year age groups.

Table 9 Percentage of current daily smokers who smoke manufactured cigarettes

Age Group (years)	Men			Women			Both Sexes		
	n	% Manu-factured cigarette smoker	95% CI	n	% Manu-factured cigarette smoker	95% CI	n	% Manu-factured cigarette smoker	95% CI
25-34	49	89.8	10.2	42	88.1	10.8	91	89.2	9.5
35-44	85	92.9	5.7	55	89.1	8.0	140	91.9	4.8
45-54	69	85.5	10.5	45	75.6	14.7	114	82.5	9.3
55-64	15	93.3	13.8	20	85.0	15.5	35	88.9	10.6
25-64	218	90.3	5.7	162	85.3	8.0	380	88.7	5.5

Table 10 Percentage of current smokeless tobacco users by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	% Current users	95% CI	n	% Current users	95% CI	n	% Current users	95% CI
25-34	77	49.4	12.2	209	5.7	2.9	286	22.8	5.9
35-44	121	24.0	8.1	270	2.6	2.0	391	12.0	4.0
45-54	132	4.5	3.4	229	1.3	1.5	361	2.8	1.8
55-64	88	----	----	114	----	----	202	----	----
25-64	418	22.4	5.0	822	3.0	1.2	1240	11.4	2.5

Tables 11-16 present the information on betel nut chewing among Pohnpeian adults. Approximately 29.9% of those surveyed reported chewing betel nuts, with significantly more men (43.5% ±5.9) than women (16.0% ±3.0) currently chewing betel nuts (Table 11). For both genders, the highest proportions of betel nut chewers were in the youngest age group, 25-34 years (men: 67.0%; women: 28.0%), declining thereafter with increasing age.

Tables 12-14 summarize the prevalence of betel nut chewing habit for men, women and combined. Overall, 26.9% of the surveyed population was daily betel nut users. The highest proportion of daily betel nut chewers was in the 25-34 year age group (44.0%) (Table 14). Men reported a significantly higher proportion of daily betel nut chewing than women, 39.2 % (±5.9) and 14.4% (±3.1), respectively (Tables 12 and 13).

Among the current betel nut chewers, the mean number of nuts chewed at any one time was 1.3, with no significant difference between men and women (Table 15). However, the small numbers in the survey may result in unreliable estimates and a cautious interpretation of these data is required. On average, Pohnpeians chewed betel nuts 14 times per day, with no significant gender difference between men and women (men: 15.2 ±2.1 times and women: 10.7 ±2.5 times, respectively) (Table 16).

Table 11 Percentage of current betel nut chewers in the study population

Age Group (years)	Men			Women			Both Sexes		
	n	% Current chewer	95% CI	N	% Current chewer	95% CI	n	% Current chewer	95% CI
25-34	176	67.0	6.8	321	28.0	5.2	497	47.1	4.4
35-44	187	40.1	8.3	313	11.8	3.6	500	26.4	5.2
45-54	184	23.9	6.7	247	6.9	4.1	431	15.8	4.6
55-64	95	7.4	5.6	115	----	----	210	3.6	2.7
25-64	642	43.5	5.9	996	16.0	3.0	1638	29.9	3.7

Table 12 Current betel nut chewing status among men in the study population by age group

Age Group (years)	n	Current betel nut chewer				% Does not chew	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	176	61.9	8.1	5.1	3.5	33.0	6.8
35-44	187	34.2	7.4	5.9	3.6	59.9	8.3
45-54	184	22.3	6.8	1.6	1.9	76.1	6.7
55-64	95	6.3	5.5	1.1	2.1	92.6	5.6
25-64	642	39.2	5.9	4.2	1.7	56.5	5.9

Table 13 Current betel nut chewing status among women in the study population by age group

Age Group (years)	n	Current betel nut chewer				% Does not chew	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	321	26.8	5.5	1.2	1.2	72.0	5.2
35-44	313	9.3	3.5	2.6	2.3	88.2	3.6
45-54	247	5.3	2.8	1.6	1.9	93.1	4.1
55-64	115	----	----	----	----	100.0	----
25-64	996	14.4	3.1	1.6	0.9	84.0	3.0

Table 14 Current betel nut chewing status among both sexes in the study population by age group

Age Group (years)	n	Current betel nut chewer				% Does not chew	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	497	44.0	5.4	3.1	2.0	52.9	4.4
35-44	500	22.1	4.9	4.3	2.3	73.6	5.2
45-54	431	14.2	4.3	1.6	1.6	84.2	4.6
55-64	210	3.1	2.7	0.5	1.0	96.4	2.7
25-64	1638	26.9	3.9	2.9	1.1	70.1	3.7

Table 15 Mean number of betel nuts chewed at one time among current daily betel nut chewers

Age Group (years)	**Men**			**Women**			**Both Sexes**		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	105	1.3	0.1	80	1.4	0.1	185	1.3	0.1
35-44	59	1.4	0.2	27	1.4	0.3	86	1.4	0.2
45-54	38	1.5	0.3	12	1.3	0.4	50	1.5	0.2
55-64	6	1.0	----	----	----	----	6	1.0	----
25-64	208	1.3	0.1	119	1.4	0.1	327	1.3	0.1

Table 16 Mean number of times per day betel nuts are chewed among current daily betel nut chewers

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	108	14.4	2.2	82	9.7	2.5	190	13.0	1.8
35-44	59	15.2	3.8	27	14.2	5.0	86	15.0	3.1
45-54	40	18.9	4.5	13	11.7	4.2	53	17.6	3.6
55-64	5	16.8	10.8	----	----	----	5	16.8	10.8
25-64	212	15.2	2.1	122	10.7	2.5	334	14.0	1.8

4.3 Alcohol and Kava Consumption

To assess alcohol consumption patterns and prevalence, respondents were asked if they ever consumed alcohol, and if so, the frequency and quantity of alcohol they consumed. In this survey, current drinkers were defined as those who had consumed an alcoholic drink in the past 12 months.

Tables 17-19 summarize the prevalence of 12-month alcohol consumption among men, women and both, respectively. In the previous 12 months 28.7% (±3.4) of those surveyed had consumed alcohol (Table 19). There was a significant gender difference with 47.5% (±4.5) of men and 9.9% (±2.6) of women having consumed alcohol in the past 12 months (Tables 17 and 18). All age groups showed significant differences between men and women, with the proportions more than doubled among men compared to women. Table 17 and 18 also show that the highest proportion of drinking was in the 25-34 year age group for men (60.6%) and women (13.2%). For both genders, the prevalence of 12-month drinking decreased with increasing age, with the lowest proportion of those in the oldest age group having consumed alcohol in the past 12 months as compared to the highest proportion in the youngest age group.

Table 17 Percentage of alcohol consumption among men during the past 12 months by age group

Age Group (years)	n	% Drank in last 12 months	95% CI	% Abstainer	95% CI
25-34	170	60.6	7.3	39.4	7.3
35-44	186	50.5	7.0	49.5	7.0
45-54	181	33.1	10.1	66.9	10.1
55-64	94	19.1	7.5	80.9	7.5
25-64	631	47.5	4.5	52.5	4.5

Table 18 Percentage of alcohol consumption among women during the past 12 months by age group

Age Group (years)	n	% Drank in last 12 months	95% CI	% Abstainer	95% CI
25-34	317	13.2	5.1	86.8	5.1
35-44	312	8.7	3.5	91.3	3.5
45-54	246	7.7	3.1	92.3	3.1
55-64	112	4.5	3.5	95.5	3.5
25-64	987	9.9	2.6	90.1	2.6

Table 19 Percentage of alcohol consumption among both sexes during the past 12 months by age group

Age Group (years)	n	% Drank in last 12 months	95% CI	% Abstainer	95% CI
25-34	487	36.1	5.4	63.9	5.4
35-44	498	30.2	5.4	69.8	5.4
45-54	427	20.9	5.8	79.1	5.8
55-64	206	11.7	4.1	88.3	4.1
25-64	1618	28.7	3.4	71.3	3.4

Among male current drinkers, 46.4% (±7.0) reported drinking 6 or more standard drinks on average per drinking day (Table 20). The highest proportion that drank 6 or more standard drinks on average per day was in the 25-34 age group (48.5% ± 9.0), but this proportion did not differ significantly from other age groups. That is, the proportions of those drinking 6 or more standard drinks on average per drinking day remained relatively stable across all age groups. Among female current drinkers, the majority of drinkers (60.5% ±11.3) consumed only 1 drink on average per drinking day. About 6.6% (±5.1) reported drinking 4-5 standard drinks on average per day, followed by 18.2% who drank 6 or more drinks on average per day (Table 21). For the total population of current drinkers, 41.7% consumed 6 or more standard drinks on average per drinking day, followed by 27.2% of current drinkers who drank 1 standard drink on average per day (Table 22). Again, it is important to remember that due to the small numbers in some of the age groups (Tables 20, 21 and 22) estimates based on these numbers may be unreliable.

Table 20 Number of drinks per day among men who are current drinkers by age group

Age Group (years)	n	% 1 drink	95% CI	% 2-3 drinks	95% CI	% 4-5 drinks	95% CI	% 6+ drinks	95% CI	Mean #of standard drinks	95% CI
25-34	101	19.8	7.2	20.8	7.0	10.9	5.3	48.5	9.0	8.0	1.6
35-44	91	18.7	8.9	27.5	9.2	9.9	4.5	44.0	11.2	6.1	1.4
45-54	54	24.1	13.6	25.9	14.4	3.7	4.5	46.3	15.5	6.7	1.6
55-64	18	33.3	22.5	22.2	29.5	----	----	44.4	27.2	3.9	1.5
25-64	264	20.5	6.2	23.9	5.8	9.1	3.1	46.4	7.0	7.0	1.0

Table 21 Number of drinks per day among women who are current drinkers by age group

Age Group (years)	n	% 1 drink	95% CI	% 2-3 drinks	95% CI	% 4-5 drinks	95% CI	% 6+ drinks	95% CI	Mean #of standard drinks	95% CI
25-34	40	57.5	16.8	20.0	14.5	7.5	8.0	15.0	10.4	2.7	0.9
35-44	26	61.5	22.8	11.5	12.8	----	----	26.9	20.6	4.3	2.7
45-54	17	58.8	20.1	5.9	12.1	17.6	18.7	17.6	17.2	4.2	3.4
55-64	4	100.0	----	----	----	----	----	----	----	1.0	----
25-64	87	60.5	11.3	14.8	9.0	6.6	5.1	18.2	8.7	3.3	1.0

Table 22 Number of drinks per day among both sexes who are current drinkers by age group

Age Group (years)	n	% 1 drink	95% CI	% 2-3 drinks	95% CI	% 4-5 drinks	95% CI	% 6+ drinks	95% CI	Mean # of standard drinks	95% CI
25-34	141	26.8	6.8	20.6	6.2	10.3	4.7	42.3	8.0	7.0	1.3
35-44	117	24.6	8.6	25.3	7.8	8.5	3.9	41.6	9.9	5.8	1.2
45-54	71	30.2	12.1	22.4	12.3	6.2	4.5	41.2	12.6	6.3	1.2
55-64	22	44.0	22.6	18.7	25.9	----	----	37.3	22.6	3.5	1.3
25-64	351	27.2	5.3	22.4	4.9	8.7	3.0	41.7	6.1	6.4	0.9

Tables 23 and 24 summarize the prevalence and mean age consumption of sakau (kava) among Pohnpeian adults. Overall, the majority (68.9% ±6.5) of those surveyed reported having ever tried sakau. There was a significant gender difference with 78.7% (±5.5) of men and 58.9% (±7.6) of women having tried sakau. The mean age of started drinking for men was 21.2 years (±1.0), significantly lower than women (24.9 years ±0.8) (Table 24).

Table 23 Percentage of the study population who have ever tried Sakau (Kava)

Age Group (years)	Men			Women			Both Sexes		
	n	% Ever Tried Kava	95% CI	n	% Ever Tried Kava	95% CI	n	% Ever Tried Kava	95% CI
25-34	176	80.7	7.4	321	63.9	8.2	497	72.1	6.7
35-44	187	82.9	7.6	313	56.9	9.1	500	70.2	7.3
45-54	184	77.7	7.9	247	57.1	10.3	431	67.9	8.1
55-64	95	58.9	13.5	115	49.6	14.0	210	54.2	11.3
25-64	642	78.7	5.5	996	58.9	7.6	1638	68.9	6.5

Table 24 Mean age started drinking Sakau (Kava)

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	138	19.4	1.0	202	22.2	0.7	340	20.7	0.7
35-44	154	21.3	1.2	175	25.8	0.9	329	23.0	0.8
45-54	142	22.5	2.0	136	28.1	1.7	278	24.7	1.6
55-64	56	26.7	3.8	56	29.0	2.8	112	27.7	2.5
25-64	490	21.2	1.0	569	24.9	0.8	1059	22.8	0.8

4.4 Intake of Fruit and Vegetables

Dietary behaviors were assessed by asking respondents how many days they consumed fruit and vegetables in a typical week in the past year and how many servings of each that they consumed on one of those days. Table 25 indicates that both men and women reported similar mean days of fruits consumed in a week, 3.0 (±0.2) and 3.1 (±0.2) days, respectively. This similarity in proportions between men and women was evident across all age groups. Although slight fluctuations in mean days were noted, there were no substantial differences across age groups and genders.

Table 25 Mean number of days in a week that fruits are consumed by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of days	95% CI	n	Mean number of days	95% CI	n	Mean number of days	95% CI
25-34	173	3.0	0.4	312	2.9	0.3	485	2.9	0.3
35-44	181	3.0	0.3	297	3.4	0.3	478	3.2	0.2
45-54	177	3.1	0.3	240	3.2	0.3	417	3.1	0.2
55-64	91	3.3	0.5	110	3.2	0.4	201	3.2	0.4
25-64	622	3.0	0.2	959	3.1	0.2	1581	3.1	0.2

Table 26 shows that the study population reported an average of 3.7 (±0.2) days per week on which vegetables were consumed for both men and women. The mean number of days of vegetable consumption was highest among men in the 55-64 year age group (4.1 days ±0.5) and in the women age group 35-44 years (4.0 days ±0.3). Although no significant differences in mean number of days vegetables were consumed were observed across age groups and between genders.

Table 26 Mean number of days in a week that vegetables are consumed by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of days	95% CI	n	Mean number of days	95% CI	n	Mean number of days	95% CI
25-34	166	3.8	0.3	303	3.5	0.2	469	3.6	0.2
35-44	175	3.6	0.4	292	4.0	0.3	467	3.8	0.3
45-54	177	3.7	0.3	242	3.7	0.4	419	3.7	0.3
55-64	90	4.1	0.5	107	3.9	0.4	197	4.0	0.4
25-64	608	3.7	0.2	944	3.7	0.2	1552	3.7	0.2

Table 27 indicates that there was a low consumption of fruits consumed on the day when fruits were eaten. The mean number of servings of fruits consumed was only 1.5 (±0.1), with little difference between men (1.4 serves ±0.2) and women (1.6 serves ±0.2). Again there was no significant difference in reported number of fruit servings consumed by either gender or age group.

Table 27 Mean number of servings of fruits consumed on a day when fruits were eaten

Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
25-34	173	1.2	0.3	312	1.3	0.3	485	1.3	0.3
35-44	181	1.4	0.4	297	1.7	0.3	478	1.5	0.2
45-54	177	1.4	0.4	240	1.8	0.3	417	1.6	0.3
55-64	91	1.8	0.6	110	1.6	0.4	201	1.7	0.4
25-64	622	1.4	0.2	959	1.6	0.2	1581	1.5	0.1

The reported mean number of servings of vegetables consumed overall on a day that vegetables were eaten was the same for men (2.0 serves ±0.3) and women (2.0 serves ±0.2). Across both sexes, men in the oldest age group 55-64 years reported the highest mean number of vegetable servings (2.6 serves ±0.9), whereas women in the youngest age group 25-34 reported the lowest mean number of vegetable servings (1.8 serves ±0.3), but these estimates did not differ significantly by age group. For both genders, the increase in mean number of vegetable servings with age was very marginal and statistically non-significant (Table 28).

Although the level of vegetable consumption (2.0 serves ±0.2) was significantly higher than that for fruit (1.5 serves ±0.1), the overall consumption of either vegetables or fruit reported by the study population was generally low.

Table 28 Mean number of servings of vegetables consumed on a day when vegetables were eaten

Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
25-34	166	1.9	0.5	303	1.8	0.3	469	1.8	0.3
35-44	175	2.0	0.5	292	2.0	0.4	467	2.0	0.3
45-54	177	2.1	0.6	242	2.1	0.4	419	2.1	0.4
55-64	90	2.6	0.9	107	2.2	0.7	197	2.4	0.6
25-64	608	2.0	0.3	944	2.0	0.2	1552	2.0	0.2

Table 29 reports on the combined mean number of servings of fruit and vegetables consumed per day for both men and women. This table shows that on average respondents reported consuming 3.4 (±0.3) serves of fruit and vegetables per day. The mean numbers of combined fruit and vegetable servings were similar between men (3.3 serves ±0.4) and women (3.4 serves ±0.3), with no significant difference by age group.

Table 29 Mean number of combined servings of fruit and vegetables consumed per day of the week

Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
25-34	173	3.1	0.7	315	3.0	0.5	488	3.0	0.5
35-44	184	3.2	0.8	304	3.6	0.5	488	3.4	0.4
45-54	182	3.5	0.9	245	3.8	0.6	427	3.6	0.6
55-64	92	4.4	1.3	113	3.7	1.0	205	4.0	0.9
25-64	631	3.3	0.4	977	3.4	0.3	1608	3.4	0.3

Table 30 shows that 81.8% of respondents across both genders and age groups consumed less than five combined servings of fruit and vegetables per given day of the week. No substantial difference in proportions was noted between men (81.3% ±3.4) and women (82.4% ±2.7). For the total study population, the youngest age group of 25-34 years showed the highest proportion (84.4% ±4.2) that reported eating less than five combined servings of fruit and vegetables per day, but this did not differ significantly from other age groups.

Table 30 Percentage who consumed less than five combined servings of fruit and vegetables per day of the week

Age Group (years)	Men			Women			Both Sexes		
	n	% < five servings per day	95% CI	n	% < five servings per day	95% CI	n	% < five servings per day	95% CI
25-34	173	80.3	7.3	315	88.3	3.6	488	84.4	4.2
35-44	184	83.2	5.8	304	79.6	5.4	488	81.4	4.0
45-54	182	81.3	5.2	245	78.0	6.5	427	79.7	5.2
55-64	92	78.3	7.6	113	77.0	8.9	205	77.6	6.4
25-64	631	81.3	3.4	977	82.4	2.7	1608	81.8	2.3

4.5 Physical Activity

4.5.1 Measurements

Participation in physical activity was measured by asking participants to report on the frequency and duration of physical activity undertaken as part of their work, transport and leisure or recreation time. In the work and leisure domains, respondents were asked about the frequency (how many days per week) and duration (how many hours/minutes per day) of moderate- and vigorous-intensity activities. In the travel domain, respondents were asked about the frequency and duration of walking and cycling to and from places.

4.5.2 Analyses

The three domains of physical activity were first examined separately. This enabled determining the proportion of activity undertaken in each of the leisure, work and travel settings as a component of the total physical activity.

To examine levels of physical activity in each domain or setting, three levels of activity were created as indicated below: inactive, moderately active, and highly active. The total time per week participants spent in an activity in each domain was first computed by multiplying the number of days by the usual duration of the activity that was carried out. To take account of the levels of energy expenditure associated with different activities, the daily duration of activity was then converted into METminutes. The term MET (metabolic equivalent) is used to indicate the intensity of physical activity. A MET is defined as the ratio of the associated metabolic rate for a specific activity divided by the resting metabolic rate. The energy cost of sitting quietly is equivalent to a resting metabolic rate of approximately 1 MET.

For the purpose of this survey, the MET values for the three physical activity domains are:

Moderate physical activity (work and leisure domain) = 4.0 METS
Vigorous physical activity (work and leisure domain) = 8.0 METS
Transport related walking/cycling = 4.0 METS

The following levels of activity in terms of METminutes were then defined:

Inactive (low): <600 METminutes per week
Moderately active: 600-1500 METminutes per week
Highly active: >1500 METminutes per week

4.5.3 Levels of Physical Activity

Table 31 indicates that 55.7% (±5.1) of men reported a low level of physical activity in their combined work, transport and leisure time. Moderate level of physical activity was reported by 13.0% (±3.6) and high level of physical activity by 31.3% (±4.5) of Pohnpeian men. The proportions reporting moderate level of physical activity remained stable across age groups. For high level of physical activity, the proportions declined with increasing age but there was no significant difference between consecutive 10-year age groups.

Table 31 Categories of overall physical activity among men by age group

Age Group (years)	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
25-34	148	51.4	8.3	12.2	5.7	36.5	8.2
35-44	151	51.0	6.1	14.6	4.7	34.4	5.6
45-54	136	65.4	8.4	12.5	5.9	22.1	7.9
55-64	74	70.3	11.1	12.2	7.0	17.6	7.8
25-64	509	55.7	5.1	13.0	3.6	31.3	4.5

A significantly greater percentage of women (73.5% ±3.6) than men (55.7% ±5.1)) had low levels of physical activity (Tables 31 and 32). There was no significant difference in the proportion of low physical activity across female age groups. About 14.0% (±2.5) of women reported a moderate level of physical activity, which was not significantly different from the proportion reported by men (13.0% ±3.6). Only 12.6% (±2.7) of women reported a high level of physical activity as compared to men (31.3% ± 4.5).

Overall, 64.3% (±3.7) of the total study population reported a low level of physical activity, that is, less than 600 METminutes per week. Only 13.5% (±2.3) and 22.2% (±3.0) engaged in moderate and high level of physical activity, respectively. In both groups, there were no significant differences across age groups (Table 33).

Table 32 Categories of overall physical activity among women by age group

Age Group (years)	N	% Low	95% CI	% Moderate	95% CI	% High	95% CI
25-34	250	76.0	4.8	12.4	3.3	11.6	3.7
35-44	228	69.3	6.4	16.2	5.5	14.5	4.2
45-54	197	77.2	5.6	10.2	4.1	12.7	5.4
55-64	84	67.9	11.9	21.4	8.5	10.7	6.7
25-64	759	73.5	3.6	14.0	2.5	12.6	2.7

Table 33 Categories of overall physical activity among both sexes by age group

Age Group (years)	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
25-34	398	63.5	4.9	12.3	3.3	24.2	4.7
35-44	379	59.4	5.5	15.3	4.2	25.2	4.3
45-54	333	71.3	5.2	11.3	3.4	17.4	5.1
55-64	158	69.1	8.4	16.7	5.9	14.2	5.3
25-64	1268	64.3	3.7	13.5	2.3	22.2	3.0

Table 34 Level of total physical activity (mean minutes per day) by gender and age group

Age Group (years)	**Men**			**Women**			**Both Sexes**		
	n	Mean minutes	95% CI	n	Mean minutes	95% CI	n	Mean minutes	95% CI
25-34	148	122.1	29.2	250	40.3	9.2	398	81.8	17.3
35-44	151	114.8	29.0	228	59.7	19.3	379	89.4	19.7
45-54	136	69.0	21.4	197	47.4	17.0	333	58.3	14.5
55-64	74	74.6	28.8	84	43.2	14.7	158	59.1	15.9
25-64	509	105.0	15.1	759	47.8	9.2	1268	77.4	10.4

Table 34 shows total physical activity across all domains in minutes per day by gender. Overall, the study population reported a mean time spent in daily physical activity of 77.4 (±10.4) minutes. There was a significant gender difference with women engaged in physical activity for a mean of 47.8 (±9.2) minutes per day, and men for a mean of 105.0 (±15.1) minutes per day, doubled the time reported by women.

Tables 35-36 indicates that men carried out their daily physical activity mainly during work- (39.3% of activity) and transport-related (52.1% of activity) activities. For women, physical activity took place mainly during transport time (72.3% of activity), with the percentage of physical activity from work-related activities (23.1% of activity) being much less.

Physical activity undertaken as part of leisure time for either sports or health benefits was very low for both genders: 8.6% of total physical activity for men and 4.6% of total physical activity for women (Table 37).

Table 35 Percentage of physical activity from work-related activity, by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	% of total physical activity	95% CI	n	% of total physical activity	95% CI	n	% of total physical activity	95% CI
25-34	104	39.7	10.1	121	23.4	5.0	225	33.1	6.7
35-44	108	40.9	8.7	137	23.7	6.7	245	33.7	5.9
45-54	79	35.8	11.3	100	24.3	8.0	179	30.5	6.9
55-64	44	37.4	13.3	53	18.7	10.7	97	27.9	8.8
25-64	335	39.3	6.0	411	23.1	3.2	746	32.4	4.1

Table 36 Percentage of physical activity from transport-related activity, by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	% of total physical activity	95% CI	n	% of total physical activity	95% CI	n	% of total physical activity	95% CI
25-34	104	49.8	9.6	121	70.2	7.0	225	58.0	6.8
35-44	108	49.9	10.0	137	72.1	6.5	245	59.2	6.8
45-54	79	58.4	12.8	100	73.5	8.8	179	65.4	8.3
55-64	44	59.8	12.6	53	77.1	10.9	97	68.6	8.1
25-64	335	52.1	6.1	411	72.3	4.1	746	60.7	4.3

Table 37 Percentage of physical activity from recreation activity, by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	% of total physical activity	95% CI	n	% of total physical activity	95% CI	n	% of total physical activity	95% CI
25-34	104	10.5	5.1	121	6.5	4.1	225	8.9	3.2
35-44	108	9.2	5.1	137	4.2	3.0	245	7.1	3.6
45-54	79	5.8	5.2	100	2.2	2.6	179	4.1	3.4
55-64	44	2.7	4.7	53	4.2	3.9	97	3.5	3.5
25-64	335	8.6	3.1	411	4.6	2.4	746	6.9	2.3

4.6 Overweight and Obesity

Height, weight, and waist circumference were measured for each participant using the STEPwise standard protocols and as described in the Methodology section of this report. Waist circumference measurements were used as a measure of central obesity, which is considered to be a risk factor for cardiovascular diseases. The height and weight measurements were used to compute body mass

index (BMI) for each participant as the weight (kilograms) divided by the square of the height (metres^2). The BMI risk categories were defined as follows:

Underweight	BMI < 18.5
Normal weight	18.5 > BMI ≤ 24.9
Overweight	25.0 ≥ BMI < 30.0
Obese	BMI ≥ 30.0

4.6.1 Height and Weight

Pohnpeian men on average were taller (167.5 cm ±1.2) and heavier (79.5 kg ±2.2) than women (156.7 cm ± 0.8, 78.1 kg ±1.7). However, men and women did not differ significantly in mean body weight. This pattern of difference between men and women for height and weight was noted across all age groups. Younger cohorts were generally taller than the older cohorts, especially among men (Table 38). Mean weight was greatest in the 44-54 year group for both men (81.8 kg ±2.4) and women (78.0 kg ±2.1) but not significantly different from other age groups in either gender (Table 39).

Table 38 Mean height by gender and age group

Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
25-34	168	169.1	1.6	311	157.1	1.0
35-44	176	167.0	1.8	304	156.5	0.9
45-54	178	167.1	1.1	239	156.9	0.8
55-64	92	164.2	2.8	110	155.1	1.6
25-64	614	167.5	1.2	964	156.7	0.8

Table 39 Mean weight by gender and age group

Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
25-34	167	78.5	3.3	278	77.6	2.9
35-44	177	79.5	4.0	287	79.6	3.3
45-54	174	81.8	2.4	237	78.0	2.1
55-64	87	78.4	3.3	112	75.8	3.9
25-64	605	79.5	2.2	914	78.1	1.7

4.6.2 Body Mass Index and Weight Categories

Table 40 summarizes the distribution of BMI for men and women and combined. The overall mean BMI for the study population in Pohnpei was 29.4 kg/m^2 (± 0.5). Women had a significantly higher mean BMI (31.1 kg/m^2 ±0.5) than men (27.7 kg/m^2 ±0.7), and this gender difference was evident for all age groups. For men, mean BMI peaked in the 45-54 year group (29.0 kg/m^2) and for women in the 35-44 year group (31.5 kg/m^2), decreasing marginally thereafter in both genders.

Table 40 Mean body mass index (kg/m^2) by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	164	27.3	0.9	271	30.9	1.0	435	29.0	0.7
35-44	168	27.3	1.0	278	31.5	0.9	446	29.3	0.9
45-54	171	29.0	0.9	229	31.4	0.8	400	30.2	0.7
55-64	85	28.0	1.0	108	30.3	1.1	193	29.2	0.8
25-64	588	27.7	0.7	886	31.1	0.5	1474	29.4	0.5

Table 41 BMI classifications among men by age group

Age Group (years)	n	% Under-weight <18.5	95% CI	% Normal weight 18.5-24.9	95% CI	% Over-weight 25.0-29.9	95% CI	% Obese ≥30.0	95% CI
25-34	164	1.8	2.1	39.0	9.7	31.7	8.0	27.4	6.2
35-44	168	0.6	1.2	39.3	5.6	35.7	7.8	24.4	6.8
45-54	171	1.8	2.0	21.6	6.4	33.9	6.9	42.7	8.4
55-64	85	----	----	32.9	9.4	36.5	9.8	30.6	10.6
25-64	588	1.3	1.2	34.8	4.9	33.9	4.2	30.0	4.8

Tables 41 and 42 summarize the proportion of the surveyed population in each BMI category for men and women, respectively. The percentage of men with BMI (25.0-29.9 kg/m^2) was 33.9% (±4.2), the percentage of obesity was 30.0% (±4.8), with just over one third (34.8% ±4.9) classified as having an normal weight with BMI (18.5-24.9 kg/m^2). The percentage of women with BMI (25.0-29.9 kg/m^2) was 26.9% (±2.5), and the percentage of obesity was 55.8% (±3.8), with only 16.2% (±3.1) being within the normal weight range. There was a significantly higher proportion of men (33.9% ±4.2) with BMI (25.0-29.9 kg/m^2) as compared to women (26.9% ±2.5). In the obese category, a significantly higher proportion of obese women (55.8% ± 3.8) as compared to men (30.0% ± 4.8) was observed.

Table 42 BMI classifications among women by age group

Age Group (years)	n	% Under-weight <18.5	95% CI	% Normal weight 18.5-24.9	95% CI	% Over-weight 25.0-29.9	95% CI	% Obese ≥30.0	95% CI
25-34	271	1.5	1.4	18.8	6.1	26.2	4.9	53.5	6.4
35-44	278	1.1	1.2	12.2	3.5	29.9	4.9	56.8	5.8
45-54	229	0.9	1.2	16.6	4.9	22.7	4.7	59.8	5.8
55-64	108	0.9	1.9	17.6	7.1	28.7	9.4	52.8	10.2
25-64	886	1.2	0.7	16.2	3.1	26.9	2.5	55.8	3.8

Overall, the proportion of the study population classified as being overweight was 30.5% (±2.6) and obese was 42.6% (±3.7), with 25.7% (±3.5) with an acceptable or normal BMI. The highest proportion of respondents (29.2% ±6.2) with a normal BMI range was in the 25-34 age group) (Table 43), declining thereafter with increasing age.

Table 43 BMI classifications among both sexes by age group

Age Group (years)	n	% Under-weight <18.5	95% CI	% Normal weight 18.5-24.9	95% CI	% Over-weight 25.0-29.9	95% CI	% Obese ≥30.0	95% CI
25-34	435	1.7	1.2	29.2	6.2	29.0	5.0	40.1	4.7
35-44	446	0.8	1.1	26.2	4.4	32.9	4.5	40.1	5.6
45-54	400	1.3	1.3	19.2	4.0	28.6	4.6	50.9	6.1
55-64	193	0.5	1.0	24.9	6.8	32.4	6.2	42.1	7.2
25-64	1474	1.2	0.8	25.7	3.5	30.5	2.6	42.6	3.7

Table 44 Percentage of overweight (BMI ≥25 kg/m^2) by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	% BMI≥25	95% CI	n	% BMI≥25	95% CI	n	% BMI≥25	95% CI
25-34	164	59.1	9.6	271	79.7	6.4	435	69.2	6.1
35-44	168	60.1	5.6	278	86.7	4.0	446	73.0	4.6
45-54	171	76.6	6.3	229	82.5	4.9	400	79.4	4.3
55-64	85	67.1	9.4	108	81.5	7.4	193	74.6	7.2
25-64	588	63.9	5.1	886	82.7	3.4	1474	73.1	3.8

In general, the overall percentage of overweight was significantly higher among women (82.7% ± 3.4) than among men (63.9% ± 5.1). The percentage of overweight for men peaked in the 45-54 year group (76.6% ± 6.3) and for women this at-risk weight gain peaked earlier, in the 35-44 year group (86.7% ± 4.0) (Table 44).

4.6.3 Waist circumference

Cut-point values that are considered to infer increased risk of NCDs are ≥ 102 cm for males and ≥ 88 cm for females [8]. Both women and men had an increasing waist circumference with age, with women in all age groups being at an increased risk for NCDs, that is, with the mean waist circumference values across all age groups being ≥ 88 cm.

Table 45 Mean waist circumference (cm) by gender and age group

Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
25-34	170	87.7	2.1	289	92.8	2.3
35-44	184	90.3	2.1	292	96.3	2.0
45-54	178	97.2	2.0	236	97.5	2.6
55-64	92	98.0	2.7	112	96.4	3.6
25-64	624	91.5	1.6	929	95.2	1.7

4.7 Blood Pressure and Hypertension

To assess prevalence of hypertension, participants were asked if they had their blood pressure measured in the last 12 months, whether they had ever been told by a health worker that they had high blood pressure, and if they were currently receiving any treatment for high blood pressure. All survey participants also had their blood pressure measured using the STEPwise protocols described in the Methodology section of this report.

For the purpose of this survey, the prevalence of hypertension was computed to include those with:

- a mean systolic pressure ≥ 140 mmHg, whether or not they had previously been told by a health worker that they had high blood pressure, OR
- a mean diastolic pressure ≥ 90 mmHg, whether or not they had previously been told by a health worker that they had high blood pressure, OR
- normal mean systolic and diastolic pressures (i.e. normotensive) AND who were currently receiving anti-hypertensive medication, whether or not they had previously been told by a health worker that they had high blood pressure.

Those participants who reported having been ever told by a health worker that they had high blood pressure but who were normotensive and NOT on anti-hypertensive medication were NOT included among those considered to have hypertension.

Tables 46 and 47 indicate that the mean resting systolic and diastolic blood pressure was 128.9/77.1 mmHg for men and 117.9/72.6 mmHg for women. There was a statistically significant gender difference in systolic and diastolic blood pressure with men having higher blood pressure readings overall than women. Systolic resting blood pressure tended to increase with increasing age in both genders with the oldest age group having both the highest systolic pressure. Diastolic resting blood pressure also increased with age in both genders but peaked in the 45-54 year age group, declining slightly by age 55-64 years.

Table 46 Mean resting systolic blood pressure (mmHg) by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	176	127.1	2.5	312	111.9	2.0	488	119.4	1.9
35-44	184	126.9	3.1	302	117.6	2.7	486	122.4	2.3
45-54	169	131.6	2.7	230	125.6	3.2	399	128.7	2.3
55-64	83	138.4	5.5	105	129.0	7.0	188	133.5	5.0
25-64	612	128.9	1.8	949	117.9	1.9	1561	123.5	1.5

Table 47 Mean resting diastolic blood pressure (mmHg) by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	174	74.7	1.5	311	69.7	1.4	485	72.2	1.2
35-44	184	77.7	2.0	301	73.0	1.5	485	75.4	1.5
45-54	169	79.7	1.8	229	76.3	1.7	398	78.1	1.4
55-64	83	79.6	2.9	105	75.7	3.0	188	77.6	2.2
25-64	610	77.1	1.1	946	72.6	1.0	1556	74.9	0.9

Table 48 Percentage with hypertension
(SBP ≥140 and/or DBP ≥ 90 or currently on medication for raised blood pressure)

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	174	18.4	7.6	317	5.0	2.8	491	11.6	3.7
35-44	185	23.2	5.4	312	14.1	5.2	497	18.8	4.0
45-54	182	37.4	6.3	243	27.2	6.2	425	32.5	4.4
55-64	94	47.9	10.4	115	38.3	15.0	209	43.0	9.9
25-64	635	26.8	4.3	987	15.6	3.1	1622	21.2	2.7

Table 48 summarizes the prevalence of hypertension among the 25-64 year olds in Pohnpei. On average men had a significantly higher prevalence of hypertension (26.8% ± 4.3) than women (15.6% ± 3.1). The prevalence of hypertension increased with increasing age and was highest for both men and women in the oldest age group, 47.9% and 38.3% respectively.

4.8 Fasting Blood Glucose and Diabetes

All participants were asked if they previously had been told by a health worker that they had diabetes, and whether they were currently receiving treatment for diabetes. All participants also provided venous blood samples to assess their fasting blood sugar level.

Using the WHO guidelines for epidemiological studies [9], estimates of diabetes prevalence based on whole blood specimens the prevalence of diabetes was defined as those with:

- fasting plasma venous value of glucose greater than or equal to ≥126 mg/dl (≥ 7.0 mmol/l)) whether or not they had previously been told by a health worker that they had diabetes, OR
- normal fasting plasma venous value of glucose <126 mg/dl (< 7.0 mmol/l) AND who were currently receiving anti-diabetes medication prescribed by a health worker.

Those participants who had been told by a health worker that they had diabetes but who had normal fasting blood glucose, and who were NOT on anti-diabetes medication or on a special diet prescribed by a health worker, were included among those considered as having diabetes.

Table 49 Mean fasting blood glucose (mg/dl) by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	34	94.9	5.6	71	96.5	7.0	105	95.7	4.7
35-44	40	109.4	9.4	54	106.7	9.5	94	108.1	7.4
45-54	51	101.2	6.8	80	126.5	13.8	131	113.4	8.2
55-64	22	116.5	23.0	30	129.3	32.9	52	123.2	20.1
25-64	147	102.5	4.1	235	108.9	5.7	382	105.7	4.1

Tables 49 to 50 present results on mean fasting blood glucose and diabetes. Due to the small numbers in these tables careful interpretation of the results is required. The overall mean fasting blood glucose was 105.7 mg/dl, being higher in women (108.9 mg/dl ± 5.7) than men (102.5 mg/dl ± 4.1), although this difference was not significant statistically. For women, mean fasting blood glucose readings increased with increasing age, but there was no significant difference in consecutive 10-year age groups. For men, mean blood glucose readings also increased with age and also with no significant differences in consecutive 10-year age groups (Table 49).

Table 50 Prevalence of diabetes (≥ 7.0 mmol/l or ≥ 126 mg/dl)* by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	40	22.5	16.6	98	35.7	10.7	138	29.8	10.8
35-44	46	30.4	17.6	81	42.0	14.2	127	36.7	12.8
45-54	57	24.6	12.0	92	33.7	11.6	149	29.0	9.5
55-64	26	34.6	22.4	35	34.3	20.4	61	34.4	16.5
25-64	169	26.4	8.7	306	37.1	9.6	475	32.1	7.9

* cut-off point for plasma venous value

Table 50 shows that the overall prevalence of diabetes in Pohnpei was 32.1% with a slightly higher rate among women (37.1% ±9.6) as compared to men (26.4% ±8.7). For women diabetes prevalence was highest amongst the 35-44 year cohort, but there was not a significant difference between the age ranges. For men, a marked but not significant rise in prevalence occurred between the age of 25-34 years and 35-44 years, from 22.5% (±16.6) to 30.4% (±17.6) respectively.

4.9 Total Cholesterol

To assess the prevalence of high-risk cholesterol, blood samples were collected from participants for testing. Elevated blood cholesterol ≥5.20 mmol/l is considered to infer a risk for coronary artery disease. This cut-off point was used to classify the survey participants into a high-risk group.

Table 51 Mean levels of total blood cholesterol (mg/dl) by gender and age group

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	59	185.3	10.3	123	191.5	13.2	182	188.4	9.4
35-44	82	205.4	9.3	116	194.4	9.5	198	200.1	7.3
45-54	91	207.1	8.2	141	212.5	9.0	232	209.7	6.0
55-64	42	223.7	16.2	54	222.3	13.8	96	223.0	9.5
25-64	274	200.1	7.0	434	199.6	7.5	708	199.9	5.8

Table 51 shows the overall mean cholesterol level among Pohnpeian adults was 199.9 mg/dl with very similar mean levels noted between men (200.1 mg/dl ±7.0) and women (199.6 mg/dl ±7.5). There was a clear trend of increasing mean total blood cholesterol level with increasing age for both genders, peaking in the oldest age group (men: 223.7 mg/dl; women: 222.3 mg/dl).

Table 52 Percentage with raised blood cholesterol (≥ 5.2 mmol/l or ≥ 200 mg/dl)

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	59	33.9	12.0	123	33.3	8.7	182	33.6	7.7
35-44	82	52.4	10.1	116	39.7	8.7	198	46.2	7.0
45-54	91	59.3	10.9	141	62.4	9.9	232	60.8	7.5
55-64	42	66.7	14.2	54	70.4	13.4	96	68.6	9.0
25-64	274	48.4	7.6	434	44.8	5.1	708	46.6	4.8

A total of 46.6% of the study population had a raised total cholesterol ≥200 mg/dl (or ≥5.20 mmol/l). Overall, there was a higher proportion of men (48.4% ±7.6) with elevated cholesterol as compared to women (44.8% ±5.1), but this difference was not statistically significant. The proportions with high-risk cholesterol generally increased with increasing age with the highest proportions being in the 55-64 year group for both men (66.7%) and women (70.4%) (Table 52).

4.10 Combined Risk Factors

The FSM (Pohnpei) STEPS survey examined five key risk factors for NCDs, classified as:

- current daily smokers,
- overweight (BMI ≥ 25 kg/m^2),
- raised blood pressure (SBP ≥140 and/or DBP≥90 mmHg or currently on medication),
- consumed less than five combined servings of fruit and vegetables per day, and
- low level of activity (< 600 METminutes per week).

These five risk factors are combined to indicate the overall risk for NCDs as follows:

- Low risk: 0 of 5 risk factors
- Moderate risk: 1-2 of 5 risk factors
- High risk: 3 or more of 5 risk factors

Table 55 shows that only 1.0% of the population aged 25-64 years old was at low risk for NCDs (i.e. with none of the five risk factors), compared with 42.3% at moderate risk (with 1-2 risk factors) and 56.7% at raised risk (with 3-5 risk factors). Having 3-5 risk factors was more common among women (60.5%) than men (53.3%) (Table 53, 54). Although the proportion of raised risk (i.e. with 3 or more of the five risk factors) increased with increasing age for both genders, the younger cohort was also at high risk for NCDs, with 46.3% of men and 60.0% of women in the 25-44 year age group being at high risk (Table 53, 54).

Table 53 Percentage of NCD risk categories among men by age group

Age Group (years)	n	% with 0 risk factors	% with 1-2 risk factors	% with 3-5 risk factors
25-44	263	1.6	52.2	46.3
45-64	186	1.1	28.4	70.6
25-64	449	1.4	45.3	53.3

Table 54 Percentage of NCD risk categories among women by age group

Age Group (years)	n	% with 0 risk factors	% with 1-2 risk factors	% with 3-5 risk factors
25-44	399	0.2	39.8	60.0
45-64	252	1.2	37.1	61.7
25-64	651	0.5	38.9	60.5

Table 55 Percentage of NCD risk categories among both sexes by age group

Age Group (years)	n	% with 0 risk factors	% with 1-2 risk factors	% with 3-5 risk factors
25-44	662	1.0	46.4	52.6
45-64	438	1.1	32.7	66.2
25-64	1100	1.0	42.3	56.7

5. DISCUSSION AND CONCLUSIONS

The FSM (Pohnpei) STEPS survey represents the country's first comprehensive, population-based survey of 25-64 year olds on the key and common behavioral and physical risk factors for NCDs. The inception of the STEPS survey in Pohnpei was motivated by the growing need for timely and scientifically valid epidemiological information required to effectively set priorities and evaluate public health programs. Findings from the Pohnpei survey highlight risk factors that require urgent attention in order to reduce the burden of NCDs and achieve long-term health improvements.

Behavioral risk factors are highly prevalent in Pohnpei and clearly represent a major public health threat in the country. The current data indicate that at least one quarter of the population smoke on a daily basis, with smoking being initiated in the late adolescent years. Women faced similar risk as men of being at risk for related chronic diseases. Initiatives to prevent the uptake of smoking or to lower the rates of smoking during adolescence are therefore an important part of the public health initiative. Targeted cessation programs are also a necessary component of the anti-tobacco campaign to assist people who have adopted this behavior in order to lower their risk of chronic diseases.

The data on alcohol consumption showed that excessive drinking is a major concern in the country. Approximately 35.1% of men consumed on average 5 or more drinks per day in the past week, which was classified as 'binge' drinking (see Page 83). Drinking until intoxication on a regular basis can contribute to a range of health problems including liver cirrhosis, pancreatitis, mental illness, some cancers and cardiovascular diseases. It is also a contributing factor in road traffic injuries and other adverse social consequences. Introducing legislative and policing strategies to encourage responsible drinking and to reduce excessive drinking, particularly among younger men will be necessary.

Consuming adequate amount of fruit and vegetables has the potential to protect against the risk of developing coronary heart disease, stroke and type 2 diabetes. However, the adverse effects of modernization and globalization on the dietary habits of the people of FSM are evident in the findings of the survey. The current data clearly indicate a low level of fruit and vegetable intake, with 81.8% of the total population in Pohnpei consuming less than the recommended five combined servings of fruit and vegetables per day. Public health strategies to increase fruit and vegetable consumption need to address both the supply and demand issue. Increasing the availability and accessibility of the range, choice and quality of affordable healthy foods is an essential first step. There are cultural, social and economical factors that influence dietary behavior and these factors need to be considered. A deeper understanding of food preferences and the social drivers of dietary habits of Pohnpeian would increase the effectiveness of programs to support individuals to adopt healthy dietary habits.

The data on physical activity showed a high proportion of the study population (64.3%) as being physically inactive. While higher proportions of those classified as being highly active were among men, this level of activity occurred within the younger age groups. Overall, the evidence clearly indicates that a large segment of the adult population, especially women and older adults, are not achieving the minimum recommended levels of physical activity (30 minutes of moderate-intensity physical activity for at least 5 days per week). Physical activity undertaken as part of recreation and leisure was very low in Pohnpei, with most of the physical activity being carried out either during work

time or as part of travel. A range of community-based and environmental-level policies will be required to promote lifelong moderate-intensity physical activity across all ages and genders. This will include the adoption and dissemination of state-wide physical activity guidelines that would be health enhancing for the people of Pohnpei.

The results of this STEPS survey showed that 73.1% of the surveyed population was overweight (BMI ≥25 kg/m^2), with higher rates among women (82.7%) than in men (63.9%). The mean waist circumference of women in all age groups exceeded ≥80 cm, a cut-off value for women that is considered to increase their risk for cardiovascular disease. Consistent with findings from other STEPS surveys in the Pacific (e.g. Nauru, American Samoa and Tokelau STEPS reports published in 2007), the high rates of overweight and obesity were already evident in the younger age groups with at least two thirds of the younger cohorts overweight. Overall, the results observed in Pohnpei reflect the similar distributions of (high) prevalence of obesity across age groups and genders in other PICs.

The survey revealed that the prevalence of high blood pressure among the 25-64 year olds in Pohnpei was 21.2% with a higher prevalence among men (26.8%) as compared to women (15.6%). As expected, the prevalence increased with increasing age for both genders. High fasting blood cholesterol was documented in 46.6% of the total population, with the prevalence increased with increasing age to more than half of the men and women populations by age 45-54 years. The STEPS survey identified significant proportions of Pohnpeian adults at high physical risk for cardiovascular disease that require immediate management and long term monitoring.

The overall prevalence of diabetes in Pohnpei was 32.1%, with men (26.4%) and women (37.1%). The prevalence is markedly higher than that reported for Nauru (22.7%). While the overall prevalence of diabetes in Pohnpei was slightly lower than that found in American Samoa (47.3%), it is important to note that the level of diabetes in the country is still very high, especially among women aged 35-44 years.

The FSM (Pohnpei) STEPS survey has unquestionably provided vital snapshots of the magnitude of the NCD situation in the country. A comprehensive multi-level and multi-sectoral approach will be the key to tackling the prevalent chronic diseases and associated risk factors facing Pohnpei and its people. Evidence-based strategies exist but innovative approaches that are sensitive to the cultural and social environments of FSM will also be required.

6. RECOMMENDATIONS

The following specific initiatives are recommended as a high priority in Pohnpei:

Addressing policy, organizational and environmental factors

- Increase resources to implement the WHO Framework Convention on Tobacco Control.
- Increase local production and improve availability of fruit and vegetables.
- Develop policies both at the state and national levels on importation of healthy foods.
- Develop policies to improve physical environments that are physical activity-friendly.
- Establish sustainable funding structure to support NCD strategy implementation and monitoring.
- Establish supportive governmental organization and health infrastructure for NCD prevention.
- Increase the capacity of the healthcare system to identify, monitor, and treat individuals with hypertension.
- Increase the capacity of the healthcare system to identify, monitor, and treat individuals with diabetes.
- Increase the capacity of the healthcare system to provide primary health care and lifestyle counseling for NCD prevention.

Addressing NCD risk factors

- Comprehensive anti-smoking campaigns to reduce smoking rates across all age groups and in both genders, particularly targeting the younger age groups to prevent smoking uptake.
- Comprehensive smoking cessation programs to reduce smoking rates across all age groups in both genders.
- Increase public awareness regarding the adverse effects of betel nut chewing on oral diseases, such as mouth cancer.
- Comprehensive health promotion campaigns to reduce alcohol consumption, particularly targeting binge drinking among men.
- Comprehensive health promotion efforts to highlight the benefits of fruit and vegetable consumption across all age groups and in both genders; including programs to increase consumption of healthy food.
- Increase public awareness of regular monitoring and screening of blood pressure and blood sugar level.
- Implement state- and nation-wide diabetes education program, including coordinated print and electronic media strategies and providing public information.
- Develop capacity of the healthcare system to use diabetes prevention and control as an entry point for promoting smoking cessation, reducing unhealthy diet and excessive alcohol consumption, and promoting physical activity in both clinical and general populations.
- Public health programs to emphasize reduction in the prevalence of the five common and critical risk factors for NCDs, including current daily smoking, being overweight or obese, having raised blood pressure, eating less than five combined servings of fruit and vegetables per day, and having a low level of physical activity.

Establishing and maintaining coalitions and partnerships

- Build coalitions, networks and partnerships with a common agenda and vision for NCD prevention and control.
- Develop a coalition work program in advocacy and action for preventing and controlling NCD risk factors, such as coalitions between private, government and NGO sectors in tobacco control, and improving food and nutrition and physical activity.
- Work with partners to strengthen secondary prevention and clinical treatment of the key NCDs.

Maintaining quality surveillance and public health information

- Secure effective leadership and commitments at the highest level to maintain a systematic framework of STEPS data collection (e.g. workforce, infrastructure and financial capacity) on an ongoing basis that will include repeated STEPS surveys.
- Increase the coverage of the STEPS surveillance to include other states of FSM (Chuuk, Kosrae, and Yap).

APPENDICES

Subject ID number: ☐☐☐ - ☐☐

Appendix 1. FSM (Pohnpei) STEPS Survey Questionnaire

NCD Risk Factors Survey in the Federated States of Micronesia

Conducted by the FSM Department of HESA and the Pohnpei State Department of Health Services in collaboration with the World Health Organization

The WHO STEPwise approach

Check if the following are completed:

For Interviewer:	Consent	☐	Appointment / fasting instructions	☐
For Team Leader:	Questionnaire review	☐	STEP 1 done ☐	see Team Leader ☐
For Registration:	Participant is fasting	☐	(only if STEP 3 required)	
	Consent	☐	STEP 1 done ☐	
For Checkout:	STEP 2 done	☐	STEP 3 done ☐ (only if STEP 3 required)	
	Results form given	☐	Health promotion material given if needed ☐	
	Checkout completed	☐		
For data entry:	Data entry complete	☐ first	☐ second	
	Data entry problems	☐	(write comments on page at end of form)	

PART 1: QUESTIONNAIRE-BASED ASSESSMENT

I. Identification information

I.2 Interviewer code: ☐☐ I.3 House code: ☐☐☐ I.4 Cluster code: ☐☐

I.5 Cluster Name: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

I.6 Date of completion of the questionnaire: ☐☐ / ☐☐ / ☐☐☐☐
Month Day Year

I.7 Name (family): ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

I.8 First name/s: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

I.9 Phone number (if any): ☐☐☐-☐☐☐☐

I.10 Hospital number (if any and respondent remembers) ☐☐ - ☐☐ - ☐☐

D. Demographic information

D.1 Sex: ---------- Male ☐[1] Female ☐[2]

D.2 What is your date of birth? ☐☐ / ☐☐ / ☐☐☐☐
Month Day Year

D.3 How old are you? (only if unsure of DOB) ---------- Years ☐☐

D.4 In total, how many years have you spent at school and in full-time study? ---- Years ☐☐

D.5 Ethnicity

Chuukese	☐[1]	Pingalapese	☐[5]	Mokilese	☐[9]
Yapese	☐[2]	Mortlockese	☐[6]	Kapingese	☐[10]
Kosraen	☐[3]	Nukuoroan	☐[7]	Other	☐[11]
Pohnpeian	☐[4]	Sapwuahfikese	☐[8]		

Subject ID number: ☐☐☐ - ☐☐

D.6 What is the **highest** level of education you have **completed**?

Never attended school ---------- ☐1
Elementary school (1-8 grades) ---------- ☐2
High school (9-12 grades) ---------- ☐3
2-Year college ---------- ☐4
4-Year college ---------- ☐5
Professional (Graduate, postgraduate) -- ☐6

D.7 Which of the following best describes your main work status over the last 12 months?

Government employee ---------- ☐1
Non-government employee ---------- ☐2
Self-employed ---------- ☐3
Non- paid (volunteer, subsistence etc) -- ☐4
Student ---------- ☐5
Homemaker ---------- ☐6
Retired ---------- ☐7
Unemployed (able to work) ---------- ☐8
Unemployed (unable to work) ---------- ☐9

D.8 How many people older than 18 years, including yourself, live in your household?

Number of people: ---------- ☐☐

D.9 Taking the past year, can you tell me what the average gross earnings of the household have been?

Per bi-weekly[1]: ---------- $ ☐☐☐☐☐☐
Or Per month[2]: ---------- $ ☐☐☐☐☐☐
Or Per year[3]: ---------- $ ☐☐☐☐☐☐
Or Refuse to reply: ---------- ☐4
Or Don't know: ---------- ☐5

D.10 If you don't know the amount, can you give an estimate of the annual household income if I read some options to you?

(choose one)

Is it less than $5,000? ---------- ☐1
Is it between $5,000 and $10,000? ---------- ☐2
Is it between $10,000 and $15,000? ---------- ☐3
Is it between $15,000 and $20,000? ---------- ☐4
Is it more than $20,000? ---------- ☐5

D.11 Which of the following health problems has a member of your immediate Family (siblings, parents or children)? (Check all that apply)

a) Heart disease ---------- ☐1
b) Mental health disease ---------- ☐1
c) Diabetes ---------- ☐1
d) Stroke ---------- ☐1
e) Asthma ---------- ☐1
f) Kidney disease ---------- ☐1
g) Liver disease ---------- ☐1
h) Hypertension ---------- ☐1
i) Cancer (specify site if possible) ---- ☐1 _____
j) Hearing related ---------- ☐1
k) Visual related ---------- ☐1

S. Tobacco use

S.1 (a) Do you **currently smoke** any tobacco products, such as cigarettes, cigars, or pipes? ---------- Yes ☐1 No ☐2
[If "no", skip to S.5]

(b) If "yes", do you currently smoke tobacco products **daily**? ---------- Yes ☐1 No ☐2
[If "no", skip to S.5]

Note: "Smoking daily" means to have a smoke at least once a day. Note that people, who smoke every day, except on days of religious fasting, are still considered daily smokers.

S.2 (a) **How old** were you when you first **started** smoking daily? Years old: ---------- ☐☐
[If "you don't remember", answer S.2(b) instead.]

(b) If you don't know how old you were, do you remember how long ago it was?
Weeks ago: ---------- ☐☐
Months ago: ---------- ☐☐
Years ago: ---------- ☐☐

S.3 On average, how many of the following items do you smoke each day?

Number per day
Manufactured cigarettes: ----- ☐☐
Hand-rolled cigarettes: ------- ☐☐
Pipefuls of tobacco: ---------- ☐☐
Cigars/cheroots/cigarillos: --- ☐☐
Other (*specify*_____) ☐☐

Subject ID number: ☐☐☐ - ☐☐

S.4 If you smoke, in your opinion, how useful would each of the following be in helping you to quit smoking tobacco? Please check one response for EACH item.

	Not Useful[1]	Somewhat Useful[2]	Very Useful[3]
a) Friends			
b) Substance abuse and mental health program / staff			
c) Medical Doctor			
d) Hang out with friends who don't smoke			
e) Pastor/Minister/Priest			
f) Youth groups			
g) Teacher/Professor			
h) Uncles, spouse or other relatives			
i) Parents			
j) Exercise/Increase participation in sports			
k) Stay away from bars/night clubs			

Note: Ask S5 and S6 ONLY to those who are NOT a current daily smoker

S.5 **In the past**, did you ever smoke daily? Yes ☐[1] No ☐[2] *[If "no", skip to S.7-9]*

S.6 (a) **How old** were you when you **stopped** smoking daily? Years old ---------- ☐☐
[If "you don't remember", answer S.6(b) instead.]

(b) If you don't know how old you were, do you remember how long ago?
Weeks ago: ---------- ☐☐
Months ago: ---------- ☐☐
Years ago: ---------- ☐☐

Assessing use of smokeless tobacco (ex. chewing tobacco / snuff)

S.7 (a) Do you **currently use** smokeless tobacco such as chewing tobacco or snuff? Yes ☐[1] No ☐[2]
[If "no", skip to S.9]

(b) If "yes", do you currently smoke tobacco products **daily**? ---------- Yes ☐[1] No ☐[2]
[If "no", skip to S.9]

S.8 On average, how many times do you use smokeless tobacco on the days that you use it?
Times per day ---------- ☐☐

Note: Ask S9 ONLY to those who are NOT a current daily user of smokeless tobacco

S.9 In the past, did you ever use smokeless tobacco **daily**? ---------- Yes ☐[1] No ☐[2]

Subject ID number: ☐☐☐ - ☐☐

S.10 If you use smokeless tobacco, in your opinion, how useful would each of the following be in helping you to quit using smokeless tobacco? Please check one response for EACH item.

	Not Useful[1]	Somewhat Useful[2]	Very Useful[3]
Friends			
Substance abuse and mental health program / staff			
Medical Doctor			
Hang out with friends who don't use smokeless tobacco			
Pastor/Minister/Priest			
Youth groups			
Teacher/Professor			
Uncles, spouse or other relatives			
Parents			
Exercise/Increase participation in sports			
Stay away from bars/night clubs			

Assessing use of betel nut

S.11 (a) Do you currently chew betel nut? Yes ☐[1] No ☐[2] *[If "no", skip to S.15]*

(b) If "yes", *d*o you currently chew **daily**? Yes ☐[1] No ☐[2] *[If "no", skip to S.15]*

S.12 When you chew, how many nuts on average do you chew at one time? ---------- ☐☐

S.13 On average, how many times each day do you chew? Times per day ---------- ☐☐

S.14 When you chew betel nut, do you add cigarettes or tobacco? (choose one)

Yes, all the time ---------- ☐[1]
Yes, but not all the time ---------- ☐[2]
No, never ---------- ☐[3]

Note: Ask S15 ONLY to those who are NOT a current daily betel nut user

S.15 In the past, did you ever chew betel nut **daily**? ----------Yes ☐[1] No ☐[2]

S.16 If you use betel nut, in your opinion, how useful would each of the following be in helping you to quit using betel nut? Please check one response for EACH item.

	Not Useful[1]	Somewhat Useful[2]	Very Useful[3]
a) Friends			
b) Substance abuse and mental health program / staff			
c) Medical Doctor			
d) Hang out with friends who don't use betel nut			
e) Pastor/Minister/Priest			
f) Youth groups			
g) Teacher/Professor			
h) Uncles, spouse or other relatives			
i) Parents			
j) Exercise/Increase participation in sports			
k) Stay away from bars/night clubs			

Subject ID number: ☐☐☐ - ☐☐

A. Alcohol consumption

Definition of 1 *standard drink* = 10g of alcohol content, for example:

1 glass/can/bottle (330 ml) of regular beer (5%)
1 measure (40 ml) of spirit or homebrew
1 glass (120 ml) of wine

A.1 (a) Have you ever consumed a drink that contains alcohol (such as beer, wine, liquor, fermented yeast, tuba/faluba)? ---------- Yes ☐[1] No ☐[2]
[If "no", skip to Nutrition section.]

(b) If "yes", was this within the past 12 months? ---------- Yes ☐[1] No ☐[2]
[If "no", skip to Nutrition section.]

A.2 In the past 12 months, how frequently have you had at least one alcoholic drink?

(Note: Use marked plastic cup to help determine the number of standard drinks)

5 or more days a week ---------- ☐[1]
1-4 days per week ---------- ☐[2]
1-3 days a month ---------- ☐[3]
less than once a month ---------- ☐[4]

A.3 When you drink alcohol, on average, how many drinks do you have during one day? Number of drinks: ---------- ☐☐

A.4 During the past 7 days, how many standard drinks of any alcoholic beverage did you have each day?

(Note: Use marked plastic cup to help determine the number of standard drinks)

Number of standard drinks
Monday: ---------- ☐☐
Tuesday: ---------- ☐☐
Wednesday: ---------- ☐☐
Thursday: ---------- ☐☐
Friday: ---------- ☐☐
Saturday: ---------- ☐☐
Sunday: ---------- ☐☐

A.5 (a) **For men only:**
In the past 12 months, on how many days did you have **five** or more alcoholic drinks in a single day? Number of days: ---------- ☐☐☐

(b) **For women only:**
In the past 12 months, on how many days did you have **four** or more alcoholic drinks in a single day? Number of days: ---------- ☐☐☐

A.6 **For everyone:**
In the past 12 months, what was the **largest number of drinks** you had on a single occasion, counting all types of alcoholic beverages combined? Number of drinks: ---------- ☐☐☐

Subject ID number: ☐☐☐ - ☐☐

A.7 If you use alcohol, in your opinion, how useful would each of the following be in helping you to quit using alcohol? Please check one response for EACH item.

	Not Useful[1]	Somewhat Useful[2]	Very Useful[3]
a) Friends			
b) Substance abuse and mental health program / staff			
c) Medical Doctor			
d) Hang out with friends who don't use alcohol			
e) Pastor/Minister/Priest			
f) Youth groups			
g) Teacher/Professor			
h) Uncles, spouse or other relatives			
i) Parents			
j) Exercise/Increase participation in sports			
k) Stay away from bars/night clubs			

SAK. Sakau consumption

SAK1. In your lifetime, have you **ever** tried or drunk sakau even once? ---------- Yes ☐[1] No ☐[2]
[If "no", go to next section on Nutrition]

SAK2. If "Yes, how old were you when you first tried sakau? ---------- ☐☐ years old

SAK3. During the last 30 days, on how many days or nights did you drink sakau? ☐☐

SAK4. Are you likely to smoke tobacco during and/or after drinking sakau? --------- Yes ☐[1] No ☐[2]

SAK5. Are you likely to drink alcohol during and/or after drinking sakau? ----------Yes ☐[1] No ☐[2]

SAK6. Which of the following are you likely to consume during or after drinking?

	Yes[1]	No[2]
Soft drinks ----------	☐	☐
Sweet snacks ----------	☐	☐
Cooked food ----------	☐	☐
Fish (raw or cooked) ----------	☐	☐
Cooked meat (pork, beef, chicken) ----------	☐	☐
Chicken ----------	☐	☐
Bread ----------	☐	☐
Rice ----------	☐	☐
Nothing at all ----------	☐	☐

Subject ID number: ☐☐☐ - ☐☐

N. Nutrition

Definition of serving size of fruit
(fresh, canned, frozen, excludes fruit juice) eaten with meals or as a snack:
- 1 cup diced
- 1 medium piece
- 2 small pieces

Example of fruit
fresh apple, orange, banana, grapes, watermelon, cantaloupe, kiwi, peaches, pears, pineapple, papaya, pandanus, lime, canned fruits, etc.

Definition of serving size of vegetable
(fresh, canned, frozen, excludes vegetable juice) eaten with meals or as a snack:
- 1 cup raw vegetables
- ½ cup cooked vegetables

Example of vegetables
corn, cucumber, cabbage, lettuce, carrots, bell peppers, broccoli, frozen vegetables, canned vegetables, breadfruit, taro, pumpkin, etc.

N.1 (a) On how many days do you eat fruit in a typical week?
Number of days: ---------- ☐
[If "zero", skip to N.2]

(b) How many servings of fruit do you eat on one of these days?
(Use measuring cups for serving size)
Number of servings: ---------- ☐☐

N.2 (a) On how many days do you eat vegetables in a typical week?
(Note definition of vegetables as shown above)
Number of days: ---------- ☐
[If "zero", skip to N.3]

(b) How many servings of vegetables do you eat on one of these days?
Number of servings: ---------- ☐☐

N.3 On how many days do you eat the following in a typical week?

Meat: Number of days: ---------- ☐
Chicken: Number of days: ---------- ☐
Eggs: Number of days: ---------- ☐
Milk products: Number of days: ---------- ☐
Fish: Number of days: ---------- ☐

N.4 (a) Do **you** usually prepare meals at home?
---------- Yes ☐[1] No ☐[2]
[If "no", skip to Physical Activity Section]

(b) What types of oil or fat are used **most often** for meal preparation at home? *(Indicate one only.)*

(choose one)
Vegetable oil ---------- ☐[1]
Lard or animal fat ---------- ☐[2]
Butter ---------- ☐[3]
Margarine ---------- ☐[4]
Coconut oil ---------- ☐[5]
Others ---------- ☐[6]
Nothing in particular ---------- ☐[7]
I don't use any oil or fat when preparing meals ---------- ☐[8]
Don't know ---------- ☐[9]

Subject ID number: ☐☐☐ - ☐☐

Physical activity – Core data set

O. Occupation-related physical activity (paid or unpaid)

Reply to the following questions thinking about a typical week during the past 12 months.

"Work" refers to the total of all activities related to things that the respondent has to do, be it paid or unpaid, such as paid employment, housework, household chores, harvesting food, fishing or hunting for food, seeking employment, etc.

O.1 Did you work mostly in the household? ---------- Yes ☐[1] No ☐[2]

O.2 How long is your typical workday? Hours ---------- ☐☐

O.3 Does your work involve mostly sitting or standing still—with walking for less than 10 minutes at a time? ---------- Yes ☐[1] No ☐[2]
[If "yes", skip to T.1.]

O.4 Does your work involve vigorous activity, like heavy lifting, digging, or construction work for at least 10 minutes at a time? ---------- Yes ☐[1] No ☐[2]
[If "no", skip to O.5.]

(a) If "yes", on how many days in a typical week? Days per week: ---------- ☐

(b) How much time do you spend doing this on a typical day? Hours/minutes: --- ☐☐h. ☐☐m.

O.5 Does your work involve moderate-intensity activities, like brisk walking or carrying light loads for at least 10 minutes at a time? ---------- Yes ☐[1] No ☐[2]
[If "no", skip to question T.1.]

(a) If "yes", on how many days in a typical week? Days per week: ---------- ☐

(b) How much time do you spend doing this on a typical day? Hours/minutes: --- ☐☐h. ☐☐m.

T. Travel-related physical activity

T.1 Do you walk or cycle (pedal bicycle) to and from places (to work, to the market, to church, etc.) for at least 10 minutes at a time? ---------- Yes ☐[1] No ☐[2]
[If "no", skip to L.1.]

(a) If "yes", on how many days in a typical week? Days per week: ---------- ☐

(b) How much time do you spend traveling this way on a typical day? Hours/minutes: - ☐☐h. ☐☐m.

L. Other physical activity (recreation/sport/leisure)

This set of questions is about activities you do in your leisure-time for recreation, such as sport (that is, activities aside from your work or travel, and not the activities already mentioned). These are activities that you choose to do voluntarily, not including necessary plantation work or household chores.

L.1 Does your recreation, sport and leisure (RSL) time involve mostly sitting, reclining, or standing, with walking for less than 10 minutes at a time? ---------- Yes ☐[1] No ☐[2]
[If "yes", skip to R.1.]

L.2 Do you do vigorous activities like weight lifting, running, or strenuous sports in your RSL-time for at least 10 minutes at a time? ---------- Yes ☐[1] No ☐[2]
[If "no", skip to L.3.]

(a) If "yes", on how many days in a typical week? Days per week: ---------- ☐

(b) How much time do you spend doing this on a typical day? Hours/minutes: --- ☐☐h. ☐☐m.

L.3 Do you do moderate-intensity activities, like brisk walking, cycling or swimming, in your RSL-time for at least 10 minutes at a time? ---------- Yes ☐[1] No ☐[2]
[If "no", skip to R.1.]

(a) If "yes", on how many days in a typical week? Days per week: ---------- ☐

(b) How much time do you spend doing this on a typical day? Hours/minutes: --- ☐☐h. ☐☐m.

R. Sitting/reclining

*This question is about sitting or reclining. Think back over the **past 7 days** to time spent at work, at home, or during recreation time, including time spent sitting at a desk, visiting friends, reading, or watching television – but not counting time spent sleeping.*

R.1 How much time do you spend sitting or reclining on a typical day? Hours/minutes: ----- ☐☐h. ☐☐m.

H. History of Hypertension and Diabetes

History of blood pressure

H.1 When was your blood pressure last measured by a health professional? (choose one)

- Within the past 12 months ----------. ☐1
- 1-5 years ago ---------- ☐2
- Not within the past 5 years ---------- ☐3
- Never ----------. ☐4
- Uncertain ----------. ☐5

H.2 During the past 12 months have you been told by a doctor or other health worker that you have elevated blood pressure or hypertension? ---------- Yes ☐1 No ☐2 Uncertain ☐3
[If "no", skip to H6]

H.3 Are you currently receiving any of the following treatments for high blood pressure prescribed by a doctor or other health worker:

a) Drug(s) (medication) – taken in the last 2 weeks --------- Yes ☐1 No ☐2 Uncertain ☐3
b) Special prescribed diet ---------- Yes ☐1 No ☐2 Uncertain ☐3
c) Advice or treatment to lose weight ---------- Yes ☐1 No ☐2 Uncertain ☐3
d) Advice or treatment to stop smoking ---------- Yes ☐1 No ☐2 Uncertain ☐3
e) Advice to exercise ---------- Yes ☐1 No ☐2 Uncertain ☐3

H.4 During the past 12 months have you seen a traditional healer for elevated blood pressure or hypertension? ---------- Yes ☐1 No ☐2

H.5 If yes: are you currently (i.e. in the last 2 weeks) taking any herbal or traditional remedy for your high blood pressure? ---------- Yes ☐1 No ☐2

History of diabetes

H.6 Have you had your blood sugar measured in the last 12 months? ---------- Yes ☐1 No ☐2 Uncertain ☐3

H.7 Have you ever been told by a doctor or other health worker that you have diabetes? ---------- Yes ☐1 No ☐2 Uncertain ☐3
..... *[If "no", skip to the next section]*

Subject ID number: ☐☐☐ - ☐☐

H.8 Are you currently receiving any of the following treatment for diabetes prescribed by doctor or other health worker:

Insulin ----------	Yes☐[1]	No☐[2]	Uncertain☐[3]
Oral drug (medication) - taken in the last 2 weeks --------	Yes☐[1]	No☐[2]	Uncertain☐[3]
Special prescribed diet ----------	Yes☐[1]	No☐[2]	Uncertain☐[3]
Advice or treatment to lose weight ----------	Yes☐[1]	No☐[2]	Uncertain☐[3]
Advice or treatment to stop smoking ----------	Yes☐[1]	No☐[2]	Uncertain☐[3]
Advice to exercise ----------	Yes☐[1]	No☐[2]	Uncertain☐[3]

H.9a During the past 12 months have you seen a traditional healer for diabetes? ---------- Yes☐[1] No☐[2]

H.9b *If yes*: are you currently (i.e. in the last 2 weeks) taking any herbal or traditional remedy for your diabetes? ---------- Yes☐[1] No☐[2]

H.10 About how many times in the past 12 months has a health worker checked your feet for any sores or irritations? ☐☐ (number)

H.11 When was the last time you had an eye exam in which the pupils were dilated. This would have made you temporarily sensitive to bright light.

(choose one)

Within the past month (anytime less than 1 month ago ---------- ☐

Within the past year (1 month but less than 12 months ago) ---------- ☐

Within the past 2 years (1 year but less than 2 years ago) ---------- ☐

2 or more years ago ---------- ☐

Never ---------- ☐

Don't know/Not sure ---------- ☐

Refused ---------- ☐

H.12 In the last 12 months, have you had a flu shot? Yes☐[1] No☐[2] Uncertain☐[3]

H.13 In the last 12 months, have you had a pneumonia shot? This shot is usually given only once or twice in a person's lifetime and is different from the flu shot. It is also called pneumococcal vaccine. Yes☐[1] No☐[2] Uncertain☐[3]

Comments

Subject ID number: ☐☐☐ - ☐☐

Step 2: Physical measurements

Height and weight M.1 Technician ID ☐☐

Use the following for unusual measurements:

Low value (out of range) ------ 777.7
Missing data ---------- 888.8
High value (out of range) ----- 999.9

M.2 Height Device ID ☐☐ M.3 Height -------- ☐☐☐.☐ centimeters

M.4 Weight Device ID ☐☐ M.5 Weight -------- ☐☐☐.☐ kilograms

Waist and hip M.6 Technician ID ☐☐

M.7 Participant currently pregnant Yes☐[1] No☐[2] Uncertain☐[3] *[If "yes", skip to M.11]*

M.8 Tape ID ☐☐ M.9 Waist girth --- ☐☐☐.☐ centimeters

M.10 Hip girth ----- ☐☐☐.☐ centimeters

Blood pressure M.11 Technician ID ☐☐ M.12 Device ID ☐☐

M.13 Cuff size used small ☐[1] normal ☐[2] large ☐[3]

Note: *Reading 3 needed only if readings 1 and 2 are 10mmHg or more apart*

Use the following for unusual measurements:

Low value (out of range) ---- 777
Missing data ---------- 888
High value (out of range) --- 999

Measurements: .....First ..... Second .....Third

M.14 Systolic blood pressure mmHg: ☐☐☐ ☐☐☐ ☐☐☐

M.15 Diastolic blood pressure mmHg: ☐☐☐ ☐☐☐ ☐☐☐

M.16 Pulse Rate bpm: ☐☐☐ ☐☐☐ ☐☐☐

Step 3: Biochemical measurements

Fasting status

B.1 During the last 12 hours have you had anything to eat, including chewing gum, or drink, other than water or unsweetened black tea or coffee?

Yes☐[1] No☐[2] Uncertain☐[3]

[*if "yes" or "uncertain", see Team Leader to reschedule for Step 3*]

Comments

Appendix 2. The Whole Data Book of the FSM (Pohnpei) STEPS Survey

WHO STEPS

Chronic Disease Risk Factor Surveillance

DATA BOOK FOR FEDERATED STATES OF MICRONESIA (POHNPEI)

IMPORTANT:

- You need to run the Epi Info programmes **AgeRange2564** (or **AgeRange1564**) and **MissingAgeSexConsen**t prior to running any of the programmes in the data book. You should only need to run these programmes one time. If age and/or sex can be entered for any records missing this information, then enter this missing information and run **Rerun_AgeSex2564** (or **Rerun_AgeSex1564**) followed by **MissingAgeSexConsent**.
- ALL questions that report results by age and/or sex use the variables **AgeRange**, **Sex**, and **Valid**. These variables are created in the above AgeRange and MissingAgeSexConsent programmes using the variables **C1**, **C2**, and **C3**.
- ALL weighted programs use the variables **PSU, Stratum,** and one of either **WStep1, WStep2,** or **WStep3**.
- Unweighted tables will not have confidence intervals associated with them.

Demographic Information Results

Age group by sex

Description: Summary information by age group and sex of the respondents.

Instrument question:

- Sex
- What is your date of birth?

Age group and sex of respondents						
Age Group (years)	Men		Women		Both Sexes	
	n	%	n	%	n	%
25-34	176	35.4	321	64.6	497	30.3
35-44	187	37.4	313	62.6	500	30.5
45-54	184	42.7	247	57.3	431	26.3
55-64	95	45.2	115	54.8	210	12.8
25-64	642	39.2	996	60.8	1638	100.0

Analysis Information:

- Questions used: C1, C2
- Epi Info programme name: Cagesex (unweighted)

Ethnicity

Description: Summary results for the ethnicity of the respondents.

Instrument Question:

- What is your [insert relevant ethnic group/racial group/cultural subgroup/others] background?

Ethnic group of respondents															
Age Group (years)	Both Sexes														
	n	1	2	3	4	5	6	7	8	9	10	11	12	13	% Other
25-34	489	1.4	0.4	0.0	2.5	0.0	0.0	3.3	0.2	1.2	0.0	89.8	0.8	0.2	0.2
35-44	497	0.6	1.0	0.2	2.4	0.2	0.0	3.2	0.8	1.0	0.0	87.9	1.8	0.2	0.6
45-54	428	0.5	0.7	0.7	3.7	0.0	0.2	2.3	0.9	2.1	0.2	87.4	0.7	0.5	0.0
55-64	206	1.0	2.4	0.5	5.3	0.0	0.0	5.3	1.0	0.0	0.0	82.0	1.9	0.0	0.5
25-64	1620	0.9	0.9	0.3	3.1	0.1	0.1	3.3	0.7	1.2	0.1	87.6	1.2	0.2	0.3

1 – Chuukese; 2 – Kapingese; 3 – Kosraen; 4 – Mokilese; 5 – Mortlochese; 6 – Mortlockes; 7 – Mortlockese; 8 – Nukuoroan; 9 – Pingalapese; 10 – Pohnapean; 11 – Pohnpeian; 12 – Sapwuahfikese; 13 – Yapese; 14 – Other

Analysis Information:

- Questions used: C5
- Epi Info programme name: Cethnic (unweighted)

Education Description: Mean number of years of education among respondents.

Instrument question:

- In total, how many years have you spent at school or in full-time study (excluding pre-school)?

Mean number of years of education						
Age Group (years)	Men		Women		Both Sexes	
	n	Mean	n	Mean	n	Mean
25-34	163	9.7	299	9.7	462	9.7
35-44	177	9.2	298	8.8	475	8.9
45-54	169	9.5	227	7.8	396	8.5
55-64	88	9.1	103	6.6	191	7.8
25-64	597	9.4	927	8.6	1524	8.9

Analysis Information:

- Questions used: C4
- Epi Info programme name: Ceduyears (unweighted)

Highest level of education

Description: Highest level of education achieved by the survey respondents.

Instrument question:

- What is the highest level of education you have completed?

Highest level of education							
	Men						
Age Group (years)	n	% No formal schooling	% Less than primary school	% Primary school completed	% Secondary school completed	% High school completed	% College/ University completed
25-34	175	2.3	43.4	32.0	16.6	5.7	0.0
35-44	187	1.6	54.5	33.7	6.4	3.2	0.5
45-54	184	3.8	45.7	33.7	7.6	8.2	1.1
55-64	95	2.1	54.7	22.1	12.6	5.3	3.2
25-64	**641**	2.5	49.0	31.5	10.5	5.6	0.9

Highest level of education							
	Women						
Age Group (years)	n	% No formal schooling	% Less than primary school	% Primary school completed	% Secondary school completed	% High school completed	% College/ University completed
25-34	317	0.3	46.1	41.6	10.1	1.9	0.0
35-44	311	1.3	57.6	33.8	5.5	1.6	0.3
45-54	245	1.2	72.7	23.7	1.6	0.8	0.0
55-64	111	1.8	85.6	9.9	0.9	0.9	0.9
25-64	**984**	1.0	60.8	31.1	5.5	1.4	**0.2**

Highest level of education							
	Both Sexes						
Age Group (years)	n	% No formal schooling	% Less than primary school	% Primary school completed	% Secondary school completed	% High school completed	% College/ University completed
25-34	492	1.0	45.1	38.2	12.4	3.3	0.0
35-44	498	1.4	56.4	33.7	5.8	2.2	0.4
45-54	429	2.3	61.1	28.0	4.2	4.0	0.5
55-64	206	1.9	71.4	15.5	6.3	2.9	1.9
25-64	1625	1.6	56.1	31.3	7.4	3.1	0.5

Analysis Information:

- Questions used: C6
- Epi Info programme name: Ceduhigh (unweighted)

Employment status

Description: Proportion of respondents in paid employment and those who are unpaid. Unpaid includes persons who are non-paid, students, homemakers, retired, and unemployed.

Instrument question:

- Which of the following best describes your main work status over the last 12 months?

Employment status					
	Men				
Age Group (years)	n	% Government employee	% Non-government employee	% Self-employed	% Unpaid
25-34	168	19.6	13.7	31.0	35.7
35-44	169	26.6	21.3	20.7	31.4
45-54	170	32.4	17.6	25.3	24.7
55-64	93	29.0	9.7	22.6	38.7
25-64	600	26.7	16.3	25.2	31.8

Employment status					
	Women				
Age Group (years)	n	% Government employee	% Non-government employee	% Self-employed	% Unpaid
25-34	286	8.0	11.2	18.5	62.2
35-44	285	8.8	8.1	20.7	62.5
45-54	228	7.9	9.2	18.0	64.9
55-64	105	7.6	2.9	17.1	72.4
25-64	904	8.2	8.7	18.9	64.2

Employment status					
	Both Sexes				
Age Group (years)	n	% Government employee	% Non-government employee	% Self-employed	% Unpaid
25-34	454	12.3	12.1	23.1	52.4
35-44	454	15.4	13.0	20.7	50.9
45-54	398	18.3	12.8	21.1	47.7
55-64	198	17.7	6.1	19.7	56.6
25-64	1504	15.6	11.8	21.4	51.3

Analysis Information:

- Questions used: C7
- Epi Info programme name: Cworkpaid (unweighted)

Unpaid work and unemployed

Description: Proportion of respondents in unpaid work.

Instrument question:

- Which of the following best describes your main work status over the last 12 months?

Unpaid work and unemployed							
	Men						
Age Group (years)	n	% Non-paid	% Student	% Home-maker	% Retired	Unemployed	
						% Able to work	% Not able to work
25-34	60	3.3	3.3	10.0	0.0	58.3	25.0
35-44	53	11.3	0.0	20.8	0.0	37.7	30.2
45-54	42	2.4	2.4	28.6	4.8	40.5	21.4
55-64	36	5.6	0.0	5.6	52.8	30.6	5.6
25-64	191	5.8	1.6	16.2	11.0	43.5	22.0

Unpaid work and unemployed							
	Women						
Age Group (years)	n	% Non-paid	% Student	% Home-maker	% Retired	Unemployed	
						% Able to work	% Not able to work
25-34	178	3.9	2.2	34.8	0.0	37.6	21.3
35-44	178	2.8	2.8	44.9	1.1	31.5	16.9
45-54	148	0.7	0.7	41.2	0.7	35.1	21.6
55-64	76	1.3	0.0	34.2	14.5	21.1	28.9
25-64	580	2.4	1.7	39.5	2.4	32.9	21.0

Unpaid work and unemployed							
	Both Sexes						
Age Group (years)	n	% Non-paid	% Student	% Home-maker	% Retired	Unemployed	
						% Able to work	% Not able to work
25-34	238	3.8	2.5	28.6	0.0	42.9	22.3
35-44	231	4.8	2.2	39.4	0.9	32.9	19.9
45-54	190	1.1	1.1	38.4	1.6	36.3	21.6
55-64	112	2.7	0.0	25.0	26.8	24.1	21.4
25-64	771	3.2	1.7	33.7	4.5	35.5	21.3

Analysis Information:

- Questions used: C7
- Epi Info programme name: Cworknotpaid (unweighted)

Estimated household earnings

Description: summary of participant household earnings by quintile.

Instrument question:

- If you don't know the amount, can you give an estimate of the annual household income if I read some options to you?

Estimated household earnings					
n	% Quintile 1: Under $5,000	% Quintile 2: $ 5,000 - $ 10,000	% Quintile 3: $ 10,000 - $ 15,000	% Quintile 4: $ 15,000 - $ 20,000	% Quintile 5: Over $ 20,000
1233	63.6	23.6	8.6	2.2	2.0

Analysis Information:

- Questions used: C10
- Epi Info programme name: Cquintile (unweighted)

Tobacco Use

Current smoking

Description: Current smokers among all respondents.

Instrument questions:

- Do you currently smoke any tobacco products, such as cigarettes, cigars, or pipes?

Percentage of current smokers									
Age Group (years)	Men			Women			Both Sexes		
	n	% Current smoker	95% CI	n	% Current smoker	95% CI	n	% Current smoker	95% CI
25-34	175	38.9	9.6	315	16.8	5.5	490	27.7	4.3
35-44	183	52.5	5.2	312	22.4	4.0	495	37.7	3.7
45-54	183	41.5	7.6	245	25.3	5.2	428	33.8	5.3
55-64	94	20.2	11.1	114	24.6	8.2	208	22.4	7.7
25-64	635	42.0	4.0	986	21.0	3.7	1621	31.6	2.2

Analysis Information:

- Questions used: T1
- Epi Info programme name: Tsmokestatus (unweighted); TsmokestatusWT (weighted)

Smoking Status

Description: Smoking status of all respondents.

Instrument questions:

- Do you currently smoke any tobacco products, such as cigarettes, cigars, or pipes?
- Do you currently smoke tobacco products daily?

Smoking status							
	Men						
Age Group (years)	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	175	28.0	7.5	10.9	5.6	61.1	9.6
35-44	183	46.4	5.5	6.0	3.3	47.5	5.2
45-54	183	37.7	6.9	3.8	2.7	58.5	7.6
55-64	94	16.0	8.8	4.3	4.0	79.8	11.1
25-64	**635**	34.8	3.7	7.2	2.5	58.0	4.0

Smoking status							
	Women						
Age Group (years)	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	315	13.3	4.3	3.5	3.0	83.2	5.5
35-44	312	17.6	3.7	4.8	2.5	77.6	4.0
45-54	245	18.4	4.2	6.9	3.7	74.7	5.2
55-64	114	17.5	6.2	7.0	6.3	75.4	8.2
25-64	**986**	16.1	3.0	4.9	1.4	79.0	3.7

Smoking status							
	Both Sexes						
Age Group (years)	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	490	20.5	3.0	7.1	3.3	72.3	4.3
35-44	495	32.3	3.9	5.4	2	62.3	3.7
45-54	428	28.5	4.9	5.3	2.1	66.2	5.3
55-64	208	16.8	5.4	5.7	4.7	77.6	7.7
25-64	1621	25.5	2.1	6.1	1.4	68.4	2.2

Analysis Information:

- Questions used: T1, T2
- Epi Info programme name: Tsmokestatus (unweighted); TsmokestatusWT (weighted)

Frequency of smoking

Description: Percentage of current daily smokers among smokers.

Instrument question:

- Do you currently smoke any tobacco products, such as cigarettes, cigars, or pipes?
- Do you currently smoke tobacco products daily?

Current daily smokers among smokers									
Age Group (years)	Men			Women			Both Sexes		
	n	% Daily smokers	95% CI	n	% Daily smokers	95% CI	n	% Daily smokers	95% CI
25-34	68	72.1	11.5	53	79.2	14.9	121	74.3	9.6
35-44	96	88.5	6.1	70	78.6	10.1	166	85.6	5.1
45-54	76	90.8	6.0	62	72.6	12.1	138	84.3	5.8
55-64	19	78.9	14.3	28	71.4	20.4	47	74.8	15.9
25-64	259	82.9	5.6	213	76.5	5.2	472	80.8	4.1

Analysis Information:

- Questions used: T1, T2
- Epi Info programme name: Tsmokefreq (unweighted); TsmokefreqWT (weighted)

Manufactured cigarette smokers

Description: Percentage of smokers who use manufactured cigarettes among daily smokers.

Instrument question:

- On average, how many of the following do you smoke each day?

Manufactured cigarette smokers among daily smokers									
Age Group (years)	Men			Women			Both Sexes		
	n	% Manu-factured cigarette smoker	95% CI	n	% Manu-factured cigarette smoker	95% CI	n	% Manu-factured cigarette smoker	95% CI
25-34	49	89.8	10.2	42	88.1	10.8	91	89.2	9.5
35-44	85	92.9	5.7	55	89.1	8.0	140	91.9	4.8
45-54	69	85.5	10.5	45	75.6	14.7	114	82.5	9.3
55-64	15	93.3	13.8	20	85.0	15.5	35	88.9	10.6
25-64	218	90.3	5.7	162	85.3	8.0	380	88.7	5.5

Analysis Information:

- Questions used: T1, T2, T5a
- Epi Info programme name: Tsmokeman (unweighted); TsmokemanWT (weighted)

Amount of tobacco used among smokers by type

Description: Mean amount of tobacco used by daily smokers per day, by type.

Instrument question:

- On average, how many of the following do you smoke each day?

Mean amount of tobacco used by daily smokers by type												
	Men											
Age Group (years)	n	Mean # of manu-factured cig.	95% CI	n	Mean # of hand-rolled cig.	95% CI	n	Mean # of pipes of tobacco	95% CI	n	Mean # of other type of tobacco	95% CI
25-34	44	17.5	3.4	2	16.0	7.5	----	----	----	1	2.0	----
35-44	79	16.9	2.7	5	15.0	10.6	----	----	----	1	2.0	----
45-54	59	21.6	2.8	1	20.0	----	----	----	----	2	3.0	----
55-64	14	21.1	5.8	1	10.0	----	----	----	----	----	----	----
25-64	196	18.3	1.9	9	15.3	7.5	----	----	----	4	2.4	0.4

Mean amount of tobacco used by daily smokers by type												
	Women											
Age Group (years)	n	Mean # of manu-factured cig.	95% CI	n	Mean # of hand-rolled cig.	95% CI	n	Mean # of pipes of tobacco	95% CI	n	Mean # of other type of tobacco	95% CI
25-34	37	13.9	3.3	2	15.0	9.3	----	----	----	2	2.0	----
35-44	49	15.2	2.9	2	13.5	12.1	----	----	----	2	8.0	7.5
45-54	34	18.0	3.8	3	23.3	16.6	----	----	----	3	8.3	12.6
55-64	17	12.9	5.5	3	4.3	6.1	----	----	----	1	10.0	----
25-64	137	15.1	1.9	10	13.8	6.6	----	----	----	8	6.4	5.6

Mean amount of tobacco used by daily smokers by type												
	Both Sexes											
Age Group (years)	n	Mean # of manu-factured cig.	95% CI	n	Mean # of hand-rolled cig.	95% CI	n	Mean # of pipes of tobacco	95% CI	n	Mean # of other type of tobacco	95% CI
25-34	81	16.3	2.7	4	15.6	4.3	----	----	----	3	2.0	----
35-44	128	16.5	2.3	7	14.7	7.5	----	----	----	3	5.2	6.0
45-54	93	20.6	2.7	4	22.2	11.0	----	----	----	5	5.7	7.7
55-64	31	17.0	4.7	4	5.9	5.2	----	----	----	1	10.0	----
25-64	333	17.3	1.7	19	14.8	4.9	----	----	----	12	4.6	3.9

Analysis Information:

- Questions used: T1, T2, T5(a-other)
- Epi Info programme name: Tsmoketype (unweighted); TsmoketypeWT (weighted)

Initiation of smoking

Description: Mean age of initiation and mean duration of smoking, in years, among daily smokers (no total age group for mean duration of smoking as age influences these values).

Instrument questions:

- How old were you when you first started smoking daily?
- How long ago did you stop smoking daily?

Mean age started smoking									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean age	95% CI	n	Mean age	95% CI	n	Mean age	95% CI
25-34	48	17.4	1.1	40	18.3	1.4	88	17.7	0.9
35-44	83	17.2	0.7	54	20.0	1.4	137	17.9	0.7
45-54	59	17.7	1.1	41	21.6	1.9	100	19.0	1.1
55-64	14	16.8	1.4	20	24.0	3.7	34	20.7	2.8
25-64	204	17.3	0.6	155	20.2	0.9	359	18.2	0.5

Mean duration of smoking									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean duration	95% CI	n	Mean duration	95% CI	n	Mean duration	95% CI
25-34	48	12.6	1.2	40	11.8	1.7	88	12.3	1.1
35-44	83	22.4	1.1	54	19.4	1.5	137	21.6	0.9
45-54	59	31.2	1.2	41	27.2	2.3	100	29.9	1.2
55-64	14	41.6	1.8	20	34.8	4.0	34	37.8	2.8
25-64	204	22.0	1.2	155	20.4	1.7	359	21.5	0.9

Analysis Information:

- Questions used: T1, T2, T3, T4
- Epi Info programme name: Tsmokeagetime (unweighted); TsmokeagetimeWT (weighted)

Percentage of ex daily smokers in the population

Description: Percentage of ex-daily smokers among all respondents and the mean duration, in years, since ex-daily smokers quit smoking daily.

Instrument question:

- In the past did you ever smoke daily?
- How old were you when you stopped smoking daily?

Ex-daily smokers among all respondents									
Age Group (years)	Men			Women			Both Sexes		
	n	% ex daily smokers	95% CI	n	% ex daily smokers	95% CI	n	% ex daily smokers	95% CI
25-34	127	15.0	7.1	279	3.6	2.1	406	8.6	3.6
35-44	102	10.8	6.8	258	1.6	1.8	360	5.4	3.3
45-54	115	7.0	5.0	202	3.5	2.6	317	5.1	3.1
55-64	80	3.8	4.3	95	----	----	175	1.9	2.1
25-64	424	10.8	3.8	834	2.6	1.1	1258	6.2	1.9

Analysis Information:

- Questions used: T6, T7, T8
- Epi Info programme name: Tsmokeexdaily (unweighted); TsmokeexdailyWT (weighted)

Current Users of smokeless tobacco

Description: Percentage of current users of smokeless tobacco among all respondents.

Instrument question:

- Do you currently use any smokeless tobacco such as [snuff, chewing tobacco, betel]?

Current users of smokeless tobacco									
Age Group (years)	Men			Women			Both Sexes		
	n	% Current users	95% CI	n	% Current users	95% CI	n	% Current users	95% CI
25-34	77	49.4	12.2	209	5.7	2.9	286	22.8	5.9
35-44	121	24.0	8.1	270	2.6	2.0	391	12.0	4.0
45-54	132	4.5	3.4	229	1.3	1.5	361	2.8	1.8
55-64	88	----	----	114	----	----	202	----	----
25-64	418	22.4	5.0	822	3.0	1.2	1240	11.4	2.5

Analysis Information:

- Questions used: T9
- Epi Info programme name: Tsmokelessstatus (unweighted); TsmokelessstatusWT (weighted)

Smokeless tobacco use

Description: Status of using smokeless tobacco among all respondents.

Instrument questions:

- Do you currently use any smokeless tobacco such as [snuff, chewing tobacco, betel]?
- Do you currently use smokeless tobacco products daily?

Smokeless tobacco use							
	Men						
Age Group (years)	n	Current user				% Does not use smokeless tobacco	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	77	16.9	8.5	32.5	10.3	50.6	12.2
35-44	121	6.6	4.0	17.4	7.5	76.0	8.1
45-54	132	2.3	2.6	2.3	2.6	95.5	3.4
55-64	88	----	----	----	----	100.0	----
25-64	418	7.3	2.9	15.1	4.3	77.6	5.0

Smokeless tobacco use							
	Women						
Age Group (years)	n	Current user				% Does not use smokeless tobacco	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	209	2.9	2.2	2.9	2.1	94.3	2.9
35-44	270	0.7	1.0	1.9	1.8	97.4	2.0
45-54	229	0.4	0.9	0.9	1.3	98.7	1.5
55-64	114	----	----	----	----	100.0	----
25-64	822	1.3	0.8	1.7	1.1	97.0	1.2

Smokeless tobacco use							
	Both Sexes						
Age Group (years)	n	Current user				% Does not use smokeless tobacco	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
25-34	286	8.3	3.9	14.4	4.4	77.2	5.9
35-44	391	3.3	1.8	8.7	3.7	88.0	4.0
45-54	361	1.3	1.2	1.5	1.3	97.2	1.8
55-64	202	----	----	----	----	100.0	----
25-64	1240	3.9	1.4	7.5	2.1	88.6	2.5

Analysis Information:

- Questions used: T9, T10
- Epi Info programme name: Tsmokelessstatus (unweighted); TsmokelessstatusWT (weighted)

Percentage of ex daily users of smokeless tobacco in the population

Description: Percentage of ex-daily users of smokeless tobacco among all respondents.

Instrument question:

- In the past, did you ever use smokeless tobacco such as [snuff, chewing tobacco, betel] daily?

Ex-daily smokeless tobacco users									
Age Group (years)	Men			Women			Both Sexes		
	n	% Ex daily users	95% CI	n	% Ex daily users	95% CI	n	% Ex daily users	95% CI
25-34	162	15.4	5.9	314	10.2	5.0	476	12.7	4.2
35-44	177	23.2	8.0	310	13.2	5.0	487	18.2	4.6
45-54	181	31.5	8.4	246	20.3	5.9	427	26.1	5.9
55-64	95	33.7	9.9	115	14.8	8.0	210	24.1	7.6
25-64	615	23.3	4.8	985	13.6	3.6	1600	18.4	3.4

Analysis Information:

- Questions used: T12
- Epi Info programme name: Tsmokelessexdaily (unweighted); TsmokelessexdailyWT (weighted)

Current tobacco users

Description: Percentage of daily and current (daily plus non-daily) tobacco users, includes smoking and smokeless, among all respondents.

Instrument questions:

- Do you currently smoke tobacco products daily?
- Do you currently use smokeless tobacco products daily?

Daily tobacco users									
Age Group (years)	Men			Women			Both Sexes		
	n	% Daily users	95% CI	n	% Daily users	95% CI	n	% Daily users	95% CI
25-34	76	40.8	12.9	205	15.1	5.3	281	25.2	6.0
35-44	118	52.5	8.8	269	17.8	3.6	387	33.0	4.9
45-54	131	40.5	9.6	227	17.6	4.5	358	28.1	5.5
55-64	88	17.0	9.3	113	17.7	6.2	201	17.4	5.6
25-64	413	41.2	5.6	814	16.9	3.0	1227	27.5	3.2

Current tobacco users									
Age Group (years)	Men			Women			Both Sexes		
	n	% Current users	95% CI	n	% Current users	95% CI	n	% Current users	95% CI
25-34	76	68.4	14.2	205	18.0	5.4	281	37.8	7.3
35-44	118	67.8	8.7	269	24.5	4.7	387	43.4	5.8
45-54	131	45.8	10.4	227	23.8	5.3	358	33.9	6.1
55-64	88	21.6	11.9	113	24.8	8.3	201	23.3	8.1
25-64	413	55.7	6.4	814	22.4	3.7	1227	36.8	3.9

Analysis Information:

- Questions used: T1, T2, T9, T10
- Epi Info programme name: Tdailyuser (unweighted); TdailyuserWT (weighted)

Alcohol Consumption

Alcohol consumption status

Description: Alcohol consumption status of all respondents. Abstainers have not consumed alcohol in the last 12 months.*

Instrument questions:

- Have you consumed alcohol (such as beer, wine, spirits, fermented cider, or (add other local examples) within the past 12 months?
- Have you consumed alcohol (such as beer, wine, spirits, fermented cider, or (add other local examples) within the past 30 days?

Alcohol consumption status					
	Men				
Age Group (years)	n	% Drank in last 12 months	95% CI	% Abstainer	95% CI
25-34	170	60.6	7.3	39.4	7.3
35-44	186	50.5	7.0	49.5	7.0
45-54	181	33.1	10.1	66.9	10.1
55-64	94	19.1	7.5	80.9	7.5
25-64	631	47.5	4.5	52.5	4.5

Alcohol consumption status					
	Women				
Age Group (years)	n	% Drank in last 12 months	95% CI	% Abstainer	95% CI
25-34	317	13.2	5.1	86.8	5.1
35-44	312	8.7	3.5	91.3	3.5
45-54	246	7.7	3.1	92.3	3.1
55-64	112	4.5	3.5	95.5	3.5
25-64	987	9.9	2.6	90.1	2.6

Alcohol consumption status					
	Both Sexes				
Age Group (years)	n	% Drank in last 12 months	95% CI	% Abstainer	95% CI
25-34	487	36.1	5.4	63.9	5.4
35-44	498	30.2	5.4	69.8	5.4
45-54	427	20.9	5.8	79.1	5.8
55-64	206	11.7	4.1	88.3	4.1
25-64	1618	28.7	3.4	71.3	3.4

Analysis Information:

- Questions used: A1, A4
- Epi Info programme name: Aconsumption (unweighted); AconsumptionWT (weighted)*

*Note: If STEPS instrument version 1.4 was used, please use the Epi Info programme Aconsumptionv1.4 (unweighted) and AconsumptionWTv1.4 (weighted)

Frequency of alcohol consumption

Description: Frequency of alcohol consumption in the last year among those respondents who have drank in the last 12 months.

Instrument question:

- In the past 12 months, how frequently have you had at least one drink?

Frequency of alcohol consumption in the last 12 months									
Age Group (years)	Men								
	n	% 5-6 days p. week	95% CI	% 1-4 days p. week	95% CI	% 1-3 days p. month	95% CI	% < once a month	95% CI
25-34	101	10.9	7.8	31.7	9.0	37.6	9.7	19.8	8.4
35-44	90	18.9	10.4	36.7	12.1	35.6	9.1	8.9	6.0
45-54	58	27.6	12.3	27.6	9.4	39.7	11.8	5.2	5.7
55-64	18	5.6	10.8	11.1	14.0	55.6	23.1	27.8	26.6
25-64	267	15.9	5.3	32.0	5.9	37.9	5.5	14.2	5.4

Frequency of alcohol consumption in the last 12 months									
Age Group (years)	Women								
	n	% 5-6 days p. week	95% CI	% 1-4 days p. week	95% CI	% 1-3 days p. month	95% CI	% < once a month	95% CI
25-34	42	7.1	8.1	21.4	13.1	45.2	15.0	26.2	13.7
35-44	26	7.7	9.4	34.6	15.8	38.5	16.7	19.2	15.6
45-54	18	16.7	18.0	33.3	21.9	11.1	13.9	38.9	20.7
55-64	4	25.0	45.4	----	----	50.0	52.4	25.0	45.3
25-64	90	9.4	6.3	26.0	10.8	38.4	10.1	26.2	9.1

Frequency of alcohol consumption in the last 12 months									
Age Group (years)	Both Sexes								
	n	% 5-6 days p. week	95% CI	% 1-4 days p. week	95% CI	% 1-3 days p. month	95% CI	% < once a month	95% CI
25-34	143	10.2	6.3	29.7	7.8	39.1	8.0	21.0	8.6
35-44	116	17.3	8.9	36.4	10.8	36.0	8.9	10.3	5.2
45-54	76	25.7	10.4	28.6	10.2	34.7	10.4	11.0	4.7
55-64	22	8.7	11.4	9.3	12.1	54.7	20.9	27.3	23.9
25-64	357	14.8	4.6	31.0	5.7	38.0	5.1	16.2	5.2

Analysis Information:

- Questions used: A1, A2
- Epi Info programme name: Afrequency (unweighted); AfrequencyWT (weighted)

Standard drinks per drinking day

Description: Number of standard drinks consumed on a drinking day among those respondents who have drank in the last 12 months.

Instrument question:

- When you drink alcohol, on average, how many drinks do you have during one day?

Number of standard drinks consumed on a drinking day											
Age Group (years)	Men										
	n	% 1 drink	95% CI	% 2-3 drinks	95% CI	% 4-5 drinks	95% CI	% 6+ drinks	95% CI	Mean # of standard drinks	95% CI
25-34	101	19.8	7.2	20.8	7.0	10.9	5.3	48.5	9.0	8.0	1.6
35-44	91	18.7	8.9	27.5	9.2	9.9	4.5	44.0	11.2	6.1	1.4
45-54	54	24.1	13.6	25.9	14.4	3.7	4.5	46.3	15.5	6.7	1.6
55-64	18	33.3	22.5	22.2	29.5	----	----	44.4	27.2	3.9	1.5
25-64	264	20.5	6.2	23.9	5.8	9.1	3.1	46.4	7.0	7.0	1.0

Number of standard drinks consumed on a drinking day											
Age Group (years)	Women										
	n	% 1 drink	95% CI	% 2-3 drinks	95% CI	% 4-5 drinks	95% CI	% 6+ drinks	95% CI	Mean #of standard drinks	95% CI
25-34	40	57.5	16.8	20.0	14.5	7.5	8.0	15.0	10.4	2.7	0.9
35-44	26	61.5	22.8	11.5	12.8	----	----	26.9	20.6	4.3	2.7
45-54	17	58.8	20.1	5.9	12.1	17.6	18.7	17.6	17.2	4.2	3.4
55-64	4	100.0	----	----	----	----	----	----	----	1.0	----
25-64	87	60.5	11.3	14.8	9.0	6.6	5.1	18.2	8.7	3.3	1.0

Number of standard drinks consumed on a drinking day											
Age Group (years)	Both Sexes										
	n	% 1 drink	95% CI	% 2-3 drinks	95% CI	% 4-5 drinks	95% CI	% 6+ drinks	95% CI	Mean # of standard drinks	95% CI
25-34	141	26.8	6.8	20.6	6.2	10.3	4.7	42.3	8.0	7.0	1.3
35-44	117	24.6	8.6	25.3	7.8	8.5	3.9	41.6	9.9	5.8	1.2
45-54	71	30.2	12.1	22.4	12.3	6.2	4.5	41.2	12.6	6.3	1.2
55-64	22	44.0	22.6	18.7	25.9	----	----	37.3	22.6	3.5	1.3
25-64	351	27.2	5.3	22.4	4.9	8.7	3.0	41.7	6.1	6.4	0.9

Analysis Information:

- Questions used: A1, A3
- Epi Info programme name: Anumdrinkperday (unweighted); AnumdrinkperdayWT (weighted)

Largest number of drinks in last 12 months

Description: Largest number of drinks consumed during a single occasion in the last 12 months among last 12 month drinker.

Instrument question:

- In the past 12 months what was the largest number of drinks you had on a single occasion, counting all types of standard drinks together?

Mean maximum number of drinks consumed on one occasion in the last 12 months									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean maximum number	95% CI	n	Mean maximum number	95% CI	n	Mean maximum number	95% CI
25-34	80	14.0	2.6	27	4.3	1.8	107	12.4	2.2
35-44	67	12.4	3.5	16	6.3	4.8	83	11.6	3.1
45-54	35	12.8	4.5	13	2.9	1.4	48	10.8	3.7
55-64	12	6.4	2.2	1	5.0	----	13	6.3	2.0
25-64	194	13.0	1.8	57	4.6	1.7	251	11.8	1.5

Analysis Information:

- Questions used: A1; A6
- Epi Info programme name: Alargestnum (unweighted); AlargestnumWT (weighted)

Five or more drinks on a single occasion

Description: Percentage of current drinkers who drank five or more drinks per day in the past week.

Instrument question:

- During the past week, how many standard drinks of any alcoholic beverage did you have each day?

Five or more drinks on a single occasion			
Age Group (years)	Men		
	n	% of current drinkers	95% CI
25-34	78	33.4	15.3
35-44	70	37.2	15.9
45-54	35	41.7	23.9
55-64	11	15.0	18.0
25-64	194	35.1	9.7

Analysis Information:

- Questions used: A1; A7
- Epi Info programme name: Abingemen (unweighted); AbingemenWT (weighted)

Four or more drinks on a single occasion

Description: Percentage of current drinkers who drank five or more drinks per day in the past week.

Instrument question:

- During the past week, how many standard drinks of any alcoholic beverage did you have each day?

Four or more drinks on a single occasion			
Age Group (years)	Women		
	n	% of current drinkers	95% CI
25-34	20	31.0	31.2
35-44	9	4.4	2.0
45-54	9	15.9	22.2
55-64	1	1.0	----
25-64	39	22.0	19.5

Analysis Information:

- Questions used: A1; A8
- Epi Info programme name: Abingewomen (unweighted); AbingewomenWT (weighted)

Fruit and Vegetable Consumption

Mean number of days of fruit and vegetable consumption

Description: mean number of days fruit and vegetables consumed.

Instrument questions:

- In a typical week, on how many days do you eat fruit?
- In a typical week, on how many days do you eat vegetables?

Mean number of days fruit consumed in a typical week									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of days	95% CI	n	Mean number of days	95% CI	n	Mean number of days	95% CI
25-34	173	3.0	0.4	312	2.9	0.3	485	2.9	0.3
35-44	181	3.0	0.3	297	3.4	0.3	478	3.2	0.2
45-54	177	3.1	0.3	240	3.2	0.3	417	3.1	0.2
55-64	91	3.3	0.5	110	3.2	0.4	201	3.2	0.4
25-64	622	3.0	0.2	959	3.1	0.2	1581	3.1	0.2

Mean number of days vegetables consumed in a typical week									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of days	95% CI	n	Mean number of days	95% CI	n	Mean number of days	95% CI
25-34	166	3.8	0.3	303	3.5	0.2	469	3.6	0.2
35-44	175	3.6	0.4	292	4.0	0.3	467	3.8	0.3
45-54	177	3.7	0.3	242	3.7	0.4	419	3.7	0.3
55-64	90	4.1	0.5	107	3.9	0.4	197	4.0	0.4
25-64	608	3.7	0.2	944	3.7	0.2	1552	3.7	0.2

Analysis Information:

- Questions used: D1, D3
- Epi Info programme name: Ddays (unweighted); DdaysWT (weighted)

Mean number of servings of fruit and vegetable consumption

Description: mean number of fruit, vegetable, and combined fruit and vegetable servings on average per day.

Instrument questions:

- In a typical week, on how many days do you eat fruit?
- How many servings of fruit do you eat on one of those days?
- In a typical week, on how many days do you eat vegetables?
- How many servings of vegetables do you eat on one of those days?

Mean number of servings of fruit on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
25-34	173	1.2	0.3	312	1.3	0.3	485	1.3	0.3
35-44	181	1.4	0.4	297	1.7	0.3	478	1.5	0.2
45-54	177	1.4	0.4	240	1.8	0.3	417	1.6	0.3
55-64	91	1.8	0.6	110	1.6	0.4	201	1.7	0.4
25-64	622	1.4	0.2	959	1.6	0.2	1581	1.5	0.1

Mean number of servings of vegetables on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
25-34	166	1.9	0.5	303	1.8	0.3	469	1.8	0.3
35-44	175	2.0	0.5	292	2.0	0.4	467	2.0	0.3
45-54	177	2.1	0.6	242	2.1	0.4	419	2.1	0.4
55-64	90	2.6	0.9	107	2.2	0.7	197	2.4	0.6
25-64	608	2.0	0.3	944	2.0	0.2	1552	2.0	0.2

Mean number of servings of fruit and/or vegetables on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
25-34	173	3.1	0.7	315	3.0	0.5	488	3.0	0.5
35-44	184	3.2	0.8	304	3.6	0.5	488	3.4	0.4
45-54	182	3.5	0.9	245	3.8	0.6	427	3.6	0.6
55-64	92	4.4	1.3	113	3.7	1.0	205	4.0	0.9
25-64	631	3.3	0.4	977	3.4	0.3	1608	3.4	0.3

Analysis Information:

- Questions used: D1, D2 , D3, D4
- Epi Info programme name: Dservings (unweighted); DservingsWT (weighted)

Fruit and vegetable consumption per day

Description: Frequency of fruit and/or vegetable consumption.

Instrument questions:

- In a typical week, on how many days do you eat fruit?
- How many servings of fruit do you eat on one of those days?
- In a typical week, on how many days do you eat vegetables?
- How many servings of vegetables do you eat on one of those days?

Number of servings of fruit and/or vegetables on average per day									
Age Group (years)	Men								
	n	% no fruit and/or vegetables	95% CI	% 1-2 servings	95% CI	% 3-4 servings	95% CI	% ≥5 servings	95% CI
25-34	173	23.7	7.3	42.2	7.8	14.5	5.6	19.7	7.3
35-44	184	23.9	6.9	45.7	9.0	13.6	4.5	16.8	5.8
45-54	182	25.8	5.7	36.8	7.5	18.7	6.4	18.7	5.2
55-64	92	17.4	8.0	44.6	12.4	16.3	8.2	21.7	7.6
25-64	631	23.6	3.7	42.4	4.1	15.2	2.8	18.7	3.4

Number of servings of fruit and/or vegetables on average per day									
Age Group (years)	Women								
	n	% no fruit and/or vegetables	95% CI	% 1-2 servings	95% CI	% 3-4 servings	95% CI	% ≥5 servings	95% CI
25-34	315	24.4	3.9	47.6	6.1	16.2	4.5	11.7	3.6
35-44	304	18.4	5.5	44.1	4.7	17.1	3.9	20.4	5.4
45-54	245	19.2	4.8	44.1	7.4	14.7	5.0	22.0	6.5
55-64	113	22.1	9.4	38.1	10.5	16.8	6.1	23.0	8.9
25-64	977	21.3	3.0	44.9	3.4	16.2	2.6	17.6	2.7

Number of servings of fruit and/or vegetables on average per day									
Age Group (years)	Both Sexes								
	n	% no fruit and/or vegetables	95% CI	% 1-2 servings	95% CI	% 3-4 servings	95% CI	% ≥5 servings	95% CI
25-34	488	24.1	4.0	45.0	5.5	15.3	2.9	15.6	4.2
35-44	488	21.3	4.8	44.9	5.7	15.3	3.2	18.6	4.0
45-54	427	22.7	4.1	40.3	6.2	16.8	4.5	20.3	5.2
55-64	205	19.8	6.9	41.2	9.0	16.6	5.8	22.4	6.4
25-64	1608	22.5	2.8	43.6	3.1	15.7	1.9	18.2	2.3

Analysis Information:

- Questions used: D1, D2 , D3, D4
- Epi Info programme name: Dfiveormore (unweighted); DfiveormoreWT (weighted)

Fruit and vegetable consumption per day

Description: Percentage of those eating less than five servings of fruit and/or vegetables on average per day.

Instrument questions:

- In a typical week, on how many days do you eat fruit?
- How many servings of fruit do you eat on one of those days?
- In a typical week, on how many days do you eat vegetables?
- How many servings of vegetables do you eat on one of those days?

Less than five servings of fruit and vegetables on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	% < five servings per day	95% CI	n	% < five servings per day	95% CI	n	% < five servings per day	95% CI
25-34	173	80.3	7.3	315	88.3	3.6	488	84.4	4.2
35-44	184	83.2	5.8	304	79.6	5.4	488	81.4	4.0
45-54	182	81.3	5.2	245	78.0	6.5	427	79.7	5.2
55-64	92	78.3	7.6	113	77.0	8.9	205	77.6	6.4
25-64	631	81.3	3.4	977	82.4	2.7	1608	81.8	2.3

Analysis Information:

- Questions used: D1, D2 , D3, D4
- Epi Info programme name: Dfiveormore (unweighted); DfiveormoreWT (weighted)

Type of oil used most frequently

Description: type of oil or fat most often used for meal preparation in households (presented only for both sexes because results are for the household not individuals).

Instrument question:

- What type of oil or fat is most often used for meal preparation in your household?

Type of oil or fat most often used for meal preparation in household										
n (house-holds)	% Vege-table oil	95% CI	% Lard	95% CI	% Marga-rine	95% CI	% None used	95% CI	% Other	95% CI
1173	53.4	7.9	46.0	8.1	0.2	0.2	0.1	0.2	0.4	0.6

Analysis Information:

- Questions used: D5
- Epi Info programme name: Doil (unweighted); DoilWT (weighted)

Physical Activity

Introduction

A population's physical activity (or inactivity) can be described in different ways. The two most common ways are
(1) to estimate a population's mean or median physical activity using a continuous indicator such as MET-minutes per week or time spent in physical activity, and
(2) to classify a certain percentage of a population as 'inactive' by setting up a cut-point for a specific amount of physical activity.

When analyzing GPAQ data, both continuous as well as categorical indicators are used.

Metabolic Equivalent (MET)

METs (Metabolic Equivalents) are commonly used to express the intensity of physical activities, and are also used for the analysis of GPAQ data.

Applying MET values to activity levels allows us to calculate total physical activity. MET is the ratio of a person's working metabolic rate relative to the resting metabolic rate. One MET is defined as the energy cost of sitting quietly, and is equivalent to a caloric consumption of 1 kcal/kg/hour. For the analysis of GPAQ data, existing guidelines have been adopted: It is estimated that, compared to sitting quietly, a person's caloric consumption is four times as high when being moderately active, and eight times as high when being vigorously active.

Therefore, for the calculation of a person's total physical activity using GPAQ data, the following MET values are used:

Domain	MET value
Work	• Moderate MET value = 4.0 • Vigorous MET value = 8.0
Transport	Cycling and walking MET value = 4.0
Recreation	• Moderate MET value = 4.0 • Vigorous MET value = 8.0

Categorical indicator

For the calculation of a categorical indicator, the total time spent in physical activity during a typical week, the number of days as well as the intensity of the physical activity are taken into account.
The three levels of physical activity suggested for classifying populations are low, moderate, and high. The criteria for these levels are shown below.

- **High**

A person reaching any of the following criteria is classified in this category:
- Vigorous-intensity activity on at least 3 days achieving a minimum of at least 1,500 MET-minutes/week OR
- 7 or more days of any combination of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 3,000 MET-minutes per week.

- **Moderate**

A person not meeting the criteria for the "high" category, but meeting any of the following criteria is classified in this category:
- 3 or more days of vigorous-intensity activity of at least 20 minutes per day

OR
- 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day OR
- 5 or more days of any combination of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 600 MET-minutes per week.

- **Low**

A person not meeting any of the above mentioned criteria falls in this category.

Levels of total physical activity

Description: Percentage of respondents classified into three categories of total physical activity.

Instrument questions:

- activity at work
- travel to and from places
- recreational activities

Level of total physical activity							
Age Group (years)	Men						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
25-34	148	51.4	8.3	12.2	5.7	36.5	8.2
35-44	151	51.0	6.1	14.6	4.7	34.4	5.6
45-54	136	65.4	8.4	12.5	5.9	22.1	7.9
55-64	74	70.3	11.1	12.2	7.0	17.6	7.8
25-64	509	55.7	5.1	13.0	3.6	31.3	4.5

Level of total physical activity							
Age Group (years)	Women						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
25-34	250	76.0	4.8	12.4	3.3	11.6	3.7
35-44	228	69.3	6.4	16.2	5.5	14.5	4.2
45-54	197	77.2	5.6	10.2	4.1	12.7	5.4
55-64	84	67.9	11.9	21.4	8.5	10.7	6.7
25-64	759	73.5	3.6	14.0	2.5	12.6	2.7

Level of total physical activity							
Age Group (years)	Both Sexes						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
25-34	398	63.5	4.9	12.3	3.3	24.2	4.7
35-44	379	59.4	5.5	15.3	4.2	25.2	4.3
45-54	333	71.3	5.2	11.3	3.4	17.4	5.1
55-64	158	69.1	8.4	16.7	5.9	14.2	5.3
25-64	1268	64.3	3.7	13.5	2.3	22.2	3.0

Analysis Information:

- Questions used: P1-P16
- Epi Info programme name: Ptotallevels (unweighted); PtotallevelsWT (weighted)

Total physical activity-mean

Description: Mean minutes of total physical activity on average per day.

Instrument questions

- activity at work
- travel to and from places
- recreational activities

Mean minutes of total physical activity on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean minutes	95% CI	n	Mean minutes	95% CI	n	Mean minutes	95% CI
25-34	148	122.1	29.2	250	40.3	9.2	398	81.8	17.3
35-44	151	114.8	29.0	228	59.7	19.3	379	89.4	19.7
45-54	136	69.0	21.4	197	47.4	17.0	333	58.3	14.5
55-64	74	74.6	28.8	84	43.2	14.7	158	59.1	15.9
25-64	509	105.0	15.1	759	47.8	9.2	1268	77.4	10.4

Analysis Information:

- Questions used: P1-P16
- Epi Info programme name: Ptotal (unweighted); PtotalWT (weighted)

Total physical activity-median

Description: Median minutes of total physical activity on average per day.

Instrument questions

- activity at work
- travel to and from places
- recreational activities

Median minutes of total physical activity on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Median minutes	Inter-quartile range (P25-P75)	n	Median minutes	Inter-quartile range (P25-P75)	n	Median minutes	Inter-quartile range (P25-P75)
25-34	256	51.4	(0.0 - 162.9)	248	0.0	(0.0 – 42.9)	504	19.3	(0.0 – 94.3)
35-44	216	51.4	(0.0 - 154.3)	185	17.1	(0.0 – 57.9)	401	30.0	(0.0 – 102.9)
45-54	129	17.1	(0.0 - 85.7)	127	2.9	(0.0 – 51.4)	256	8.6	(0.0 – 68.6)
55-64	61	17.1	(0.0 - 85.7)	60	12.9	(0.0 – 55.7)	121	15.0	(0.0 – 77.1)
25-64	662	40.0	**(0.0 - 145.7)**	619	8.6	(0.0 – 51.4)	1282	19.3	(0.0 – 85.7)

Analysis Information:

- Questions used: P1-P16
- Epi Info programme name: Ptotal (unweighted); PtotalmedianWT (weighted)

Domain-specific physical activity-mean

Description: Mean minutes spent in work-, transport- and recreation-related physical activity on average per day.

Instrument questions:

- activity at work
- travel to and from places
- recreational activities

Mean minutes of work-related physical activity on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean minutes	95% CI	n	Mean minutes	95% CI	n	Mean minutes	95% CI
25-34	148	68.4	21.8	250	15.9	5.1	398	42.6	12.6
35-44	151	66.3	20.2	228	31.6	18.7	379	50.3	13.2
45-54	136	32.5	12.5	197	20.9	9.3	333	26.7	7.8
55-64	74	41.1	24.2	84	15.4	11.1	158	28.4	13.0
25-64	509	58.2	10.5	759	21.5	6.9	1268	40.5	6.6

Mean minutes of transport-related physical activity on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean minutes	95% CI	n	Mean minutes	95% CI	n	Mean minutes	95% CI
25-34	148	42.4	14.2	250	19.8	5.0	398	31.3	7.7
35-44	151	38.5	13.9	228	25.4	6.3	379	32.5	9.2
45-54	136	32.1	14.9	197	25.6	10.7	333	28.9	10.1
55-64	74	33.1	13.3	84	24.7	10.2	158	29.0	8.6
25-64	509	38.3	9.0	759	23.1	3.4	1268	30.9	5.9

Mean minutes of recreation-related physical activity on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean minutes	95% CI	n	Mean minutes	95% CI	**n**	**Mean minutes**	**95% CI**
25-34	148	11.2	5.2	250	4.7	3.7	398	8.0	3.3
35-44	151	10.0	6.9	228	2.7	1.9	379	6.6	4.1
45-54	136	4.4	5.5	197	0.9	1.1	333	2.7	2.9
55-64	74	0.5	0.7	84	3.0	3.4	158	1.7	1.7
25-64	509	8.5	3.0	759	3.2	1.7	1268	5.9	2.0

Analysis Information:

- Questions used: P1-P16
- Epi Info programme name: Psetspecific (unweighted); PsetspecificWT (weighted)

Domain-specific physical activity - median

Description: Median minutes spent on average per day in work-, transport- and recreation-related physical activity.

Instrument questions:

- activity at work
- travel to and from places
- recreational activities

Median minutes of work-related physical activity on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Median minutes	Inter-quartile range (P25-P75)	n	Median minutes	Inter-quartile range (P25-P75)	n	Median minutes	Inter-quartile range (P25-P75)
25-34	256	0.0	(0.0 – 77.1)	248	0.0	(0.0 – 0.0)	504	0.0	(0.0 – 21.4)
35-44	216	0.0	(0.0 – 55.7)	185	0.0	(0.0 – 0.0)	401	0.0	(0.0 – 34.3)
45-54	129	0.0	(0.0 – 8.6)	127	0.0	(0.0 – 0.0)	256	0.0	(0.0 – 0.0)
55-64	61	0.0	(0.0 – 2.9)	60	0.0	(0.0 – 0.0)	121	0.0	(0.0 – 0.0)
25-64	662	0.0	(0.0 – 51.4)	619	0.0	(0.0 – 0.0)	1282	0.0	(0.0 – 12.9)

Median minutes of transport-related physical activity on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Median minutes	Inter-quartile range (P25-P75)	n	Median minutes	Inter-quartile range (P25-P75)	n	Median minutes	Inter-quartile range (P25-P75)
25-34	256	12.9	(0.0 – 45.0)	248	0.0	(0.0 – 25.7)	504	0.0	(0.0 – 34.3)
35-44	216	7.1	(0.0 – 42.9)	185	5.7	(0.0 – 30.0)	401	7.1	(0.0 – 34.3)
45-54	129	0.0	(0.0 – 34.3)	127	0.0	(0.0 – 34.3)	256	0.0	(0.0 – 34.3)
55-64	61	0.0	(0.0 – 38.6)	60	5.0	(0.0 – 25.7)	121	0.0	(0.0 – 34.3)
25-64	662	5.7	(0.0 – 42.9)	619	0.0	(0.0 – 30.0)	1282	0.0	(0.0 – 34.3)

Median minutes of recreation-related physical activity on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Median minutes	Inter-quartile range (P25-P75)	n	Median minutes	Inter-quartile range (P25-P75)	n	Median minutes	Inter-quartile range (P25-P75)
25-34	256	0.0	(0.0 – 0.0)	248	0.0	(0.0 – 0.0)	504	0.0	(0.0 – 0.0)
35-44	216	0.0	(0.0 – 0.0)	185	0.0	(0.0 – 0.0)	401	0.0	(0.0 – 0.0)
45-54	129	0.0	(0.0 – 0.0)	127	0.0	(0.0 – 0.0)	256	0.0	(0.0 – 0.0)
55-64	61	0.0	(0.0 – 0.0)	60	0.0	(0.0 – 0.0)	121	0.0	(0.0 – 0.0)
25-64	662	0.0	(0.0 – 0.0)	619	0.0	(0.0 – 0.0)	1282	0.0	(0.0 – 0.0)

Analysis Information:

- Questions used: P1-P16
- Epi Info programme name: Psetspecific (unweighted); PsetspecificmedianWT (weighted)

No physical activity by domain

Description: Percentage of respondents classified as doing no work-, transport- or recreational-related physical activity.

Instrument questions:

- activity at work
- travel to and from places
- recreational activities

No work-related physical activity									
Age Group (years)	Men			Women			Both Sexes		
	n	% no activity at work	95% CI	n	% no activity at work	95% CI	n	% no activity at work	95% CI
25-34	148	62.2	8.9	250	84.0	3.7	398	72.9	5.2
35-44	151	62.3	6.6	228	81.6	5.5	379	71.2	4.8
45-54	136	74.3	9.9	197	83.8	4.9	333	79.0	5.0
55-64	74	74.3	10.8	84	85.7	7.9	158	79.9	6.6
25-64	509	65.7	5.1	759	83.4	2.6	1268	74.2	3.1

No transport-related physical activity									
Age Group (years)	Men			Women			Both Sexes		
	n	% no activity for transport	95% CI	n	% no activity for transport	95% CI	n	% no activity for transport	95% CI
25-34	148	43.2	9.2	250	56.8	6.9	398	49.9	5.8
35-44	151	45.7	10.7	228	46.5	8.0	379	46.1	8.0
45-54	136	58.1	8.6	197	55.3	8.2	333	56.7	6.7
55-64	74	54.1	13.6	84	45.2	10.7	158	49.7	10.0
25-64	509	47.9	7.0	759	52.3	5.6	1268	50.0	5.6

No recreation-related physical activity									
Age Group (years)	Men			Women			Both Sexes		
	n	% no activity at recreation	95% CI	n	% no activity at recreation	95% CI	n	% no activity at recreation	95% CI
25-34	148	81.1	7.6	250	93.6	3.6	398	87.2	4.3
35-44	151	86.8	6.3	228	94.3	3.5	379	90.2	4.5
45-54	136	92.6	5.4	197	97.0	3.2	333	94.8	3.5
55-64	74	97.3	3.9	84	91.7	6.0	158	94.5	3.6
25-64	509	86.7	3.8	759	94.3	2.5	1268	90.4	2.8

Analysis Information:

- Questions used: P1-P16
- Epi Info programme name: Pnoactivitybyset (unweighted); PnoactivitybysetWT (weighted)

Composition of total physical activity

Description: Percentage of work, transport and recreational activity contributing to total activity.

Instrument questions:

- activity at work
- travel to and from places
- recreational activities

Composition of total physical activity							
	Men						
Age Group (years)	n	% Activity from work	95% CI	% Activity for transport	95% CI	% Activity during leisure time	95% CI
25-34	104	39.7	10.1	49.8	9.6	10.5	5.1
35-44	108	40.9	8.7	49.9	10.0	9.2	5.1
45-54	79	35.8	11.3	58.4	12.8	5.8	5.2
55-64	44	37.4	13.3	59.8	12.6	2.7	4.7
25-64	335	39.3	6.0	52.1	6.1	8.6	3.1

Composition of total physical activity							
	Women						
Age Group (years)	n	% Activity from work	95% CI	% Activity for transport	95% CI	% Activity during leisure time	95% CI
25-34	121	23.4	5.0	70.2	7.0	6.5	4.1
35-44	137	23.7	6.7	72.1	6.5	4.2	3.0
45-54	100	24.3	8.0	73.5	8.8	2.2	2.6
55-64	53	18.7	10.7	77.1	10.9	4.2	3.9
25-64	411	23.1	3.2	72.3	4.1	4.6	2.4

Composition of total physical activity							
	Both Sexes						
Age Group (years)	n	% Activity from work	95% CI	% Activity for transport	95% CI	% Activity during leisure time	95% CI
25-34	225	33.1	6.7	58.0	6.8	8.9	3.2
35-44	245	33.7	5.9	59.2	6.8	7.1	3.6
45-54	179	30.5	6.9	65.4	8.3	4.1	3.4
55-64	97	27.9	8.8	68.6	8.1	3.5	3.5
25-64	746	32.4	4.1	60.7	4.3	6.9	2.3

Analysis Information:

- Questions used: P1-P16
- Epi Info programme name: Pcomposition(unweighted); PcompositionWT (weighted)

No vigorous physical activity

Description: Percentage of respondents not engaging in vigorous physical activity.

Instrument questions:

- activity at work
- recreational activities

No vigorous physical activity									
Age Group (years)	Men			Women			Both Sexes		
	n	% no vigorous activity	95% CI	n	% no vigorous activity	95% CI	n	% no vigorous activity	95% CI
25-34	148	59.5	8.1	250	92.8	3.2	398	75.9	4.7
35-44	151	69.5	7.6	228	92.1	3.5	379	79.9	5.4
45-54	136	84.6	7.2	197	94.9	4.2	333	89.7	4.2
55-64	74	82.4	9.1	84	95.2	4.8	158	88.7	6.1
25-64	509	69.8	4.2	759	93.3	2.5	1268	81.1	2.8

Analysis Information:

- Questions used: P1-P16
- Epi Info programme name: Pnovigorous(unweighted); PnovigorousWT (weighted)

Sedentary Description: Minutes spent in sedentary activities on a typical day.

Instrument question:

- sedentary behaviour

Minutes spent in sedentary activities on average per day					
	Men				
Age Group (years)	n	Mean minutes	95% CI	Median minutes	Inter-quartile range (P25-P75)
25-34	11	238.2	187.8	150	(90 – 210)
35-44	14	176.1	53.8	150	(135 – 210)
45-54	12	284.2	137.6	150	(135 – 380)
55-64	10	163.5	52.8	150	(90 – 210)
25-64	47	215.3	73.4	150	(90 – 210)

Minutes spent in sedentary activities on average per day					
	Women				
Age Group (years)	n	Mean minutes	95% CI	Median minutes	Inter-quartile range (P25-P75)
25-34	29	194.6	80.2	130	(90 – 150)
35-44	26	196.3	92.5	150	(100 – 195)
45-54	15	200.0	76.0	150	(90 – 260)
55-64	6	146.7	47.1	135	(100 – 150)
25-64	76	192.8	47.8	135	(90 – 195)

Minutes spent in sedentary activities on average per day					
	Both Sexes				
Age Group (years)	n	Mean minutes	95% CI	Median minutes	Inter-quartile range (P25-P75)
25-34	40	211.9	87.3	130	(90 – 190)
35-44	40	186.5	54.5	150	(110 – 210)
45-54	27	245.5	87.8	150	(130 – 270)
55-64	16	157.8	39.8	135	(90 – 150)
25-64	123	203.6	40.6	150	(90 – 210)

Analysis Information:

- Question used : P1-P16
- Epi Info programme name: Psedentary (unweighted);
  - PsedentaryWT (weighted)
  - PsedentarymedianWT (weighted)

Blood Pressure and Diabetes History

Blood pressure diagnosis and treatment

Description: Raised blood pressure diagnosis and treatment results among all respondents.

Instrument questions:

- During the past 12 months have you been told by a doctor or other health worker that you have elevated blood pressure or hypertension?
- Are you currently receiving any of the following treatments/advice for high blood pressure prescribed by a doctor or other health worker?
- Drugs (medication) that you have taken in the last 2 weeks?

Raised blood pressure diagnosed by doctor or health worker in last 12 months									
Age Group (years)	Men			Women			Both Sexes		
	n	% diagnosed	95% CI	n	% diagnosed	95% CI	n	% diagnosed	95% CI
25-34	78	3.8	5.7	184	6.0	4.2	262	5.1	3.6
35-44	98	10.2	6.8	176	11.4	5.0	274	10.8	4.4
45-54	113	21.2	9.2	163	19.6	7.1	276	20.4	6.4
55-64	70	25.7	11.1	76	23.7	12.2	146	24.7	8.3
25-64	359	13.0	3.5	599	12.5	3.3	958	12.7	2.4

Currently taking blood pressure drugs prescribed by doctor or health worker									
Age Group (years)	Men			Women			Both Sexes		
	n	% taking meds	95% CI	n	% taking meds	95% CI	n	% taking meds	95% CI
25-34	5	----	----	14	50.0	28.1	19	30.8	24.5
35-44	10	10.0	18.4	22	50.0	21.3	32	32.2	17.1
45-54	29	44.8	20.8	30	46.7	17.6	59	45.6	13.5
55-64	19	57.9	19.1	23	43.5	21.8	42	50.6	16.3
25-64	63	34.5	10.2	89	47.5	12.9	152	41.1	8.8

Analysis Information:

- Questions used: H1, H2, H3a
- Epi Info programme name: Hraisedbpadvice (unweighted); HraisedbpadviceWT (weighted)

Blood pressure lifestyle advice

Description: Percentage of respondents who received lifestyle advice from a doctor or health worker to treat raised blood pressure.

Instrument question:

- Are you currently receiving any of the following treatments/advice for high blood pressure prescribed by a doctor or other health worker?

Advised by doctor or health worker to have special prescribed diet									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	5	60.0	45.9	13	38.5	25.1	18	47.1	23.5
35-44	10	40.0	38.9	21	57.1	22.5	31	49.3	24.9
45-54	29	79.3	18.5	30	66.7	20.9	59	74.1	12.1
55-64	17	64.7	26.9	19	63.2	22.4	36	63.9	15.2
25-64	61	64.8	14.5	83	57.5	11.4	144	61.2	9.6

Advised by doctor or health worker to lose weight									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	5	60.0	45.8	13	30.8	28.3	18	42.5	25.1
35-44	9	44.4	41.8	19	52.6	24.1	28	48.9	24.3
45-54	28	78.6	15.1	29	69.0	17.4	57	74.6	11.0
55-64	17	88.2	15.6	18	50.0	21.8	35	70.1	11.0
25-64	59	71.1	13.1	79	52.5	10.5	138	62.0	8.4

Advised by doctor or health worker to stop smoking									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	3	33.3	57.0	13	30.8	28.4	16	31.5	26.6
35-44	10	40.0	38.9	17	41.2	25.7	27	40.6	24.7
45-54	26	69.2	19.7	25	64.0	23.4	51	67.2	11.9
55-64	15	73.3	18.5	17	11.8	15.0	32	43.0	15.7
25-64	54	59.4	16.2	72	39.0	13.3	126	49.4	10.2

Advised by doctor or health worker to start or do more exercise									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	6	50.0	42.7	12	25.0	24.8	18	36.6	27.2
35-44	10	50.0	39.1	21	61.9	22.8	31	56.5	23.2
45-54	27	77.8	19.6	28	78.6	16.4	55	78.1	12.9
55-64	17	76.5	17.8	20	60.0	20.6	37	68.2	12.9
25-64	60	66.8	14.6	81	59.2	14.4	141	63.1	11.0

Analysis Information:

- Questions used: H3(b-e)
- Epi Info programme name: Hraisedbplifestyle (unweighted); HraisedbplifestyleWT (weighted)

Blood pressure advice by a traditional healer

Description: Percentage of respondents who have sought advice or received treatment from traditional healers for raised blood pressure.

Instrument questions:

- During the past 12 months have you seen a traditional healer for raised blood pressure?
- Are you currently taking any herbal or traditional remedy for your high blood pressure?

Seen a traditional healer in the last 12 months									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	13	30.8	22.4	33	21.2	16.1	46	25.1	13.7
35-44	18	33.3	19.1	30	36.7	20.0	48	35.0	12.7
45-54	21	33.3	23.2	27	40.7	19.7	48	36.8	16.2
55-64	9	22.2	29.2	7	28.6	35.6	16	24.8	26.7
25-64	61	31.5	10.7	97	30.7	9.1	158	31.1	7.2

Currently taking herbal or traditional remedy for high blood pressure									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	9	11.1	22.2	24	29.2	20.4	33	22.0	15.4
35-44	15	20.0	23.0	23	17.4	19.5	38	18.8	13.1
45-54	15	33.3	31.3	19	36.8	16.0	34	35.0	18.3
55-64	8	12.5	24.8	5	20.0	37.6	13	15.1	19.0
25-64	47	20.0	12.9	71	26.5	11.4	118	23.2	6.6

Analysis Information:

- Questions used: H4, H5
- Epi Info programme name: Hraisedbptrad (unweighted); HraisedbptradWT (weighted)

Diabetes diagnosis and treatment

Description: Diabetes diagnosis and treatment results among all respondents.

Instrument questions:

- During the past 12 months, have you ever been told by a doctor or other health worker that you have diabetes?
- Are you currently taking any of the following treatments/advice for diabetes prescribed by a doctor or other health worker?

Diabetes diagnosed by doctor or health worker in last 12 months									
Age Group (years)	Men			Women			Both Sexes		
	n	% diagnosed	95% CI	n	% diagnosed	95% CI	n	% diagnosed	95% CI
25-34	155	3.2	3.8	292	9.6	3.1	447	6.5	2.8
35-44	172	4.1	3.0	280	8.6	3.4	452	6.2	2.2
45-54	164	5.5	3.3	214	6.5	3.4	378	6.0	2.4
55-64	79	5.1	4.8	106	4.7	3.7	185	4.9	3.1
25-64	570	4.2	1.7	892	8.2	2.3	1462	6.2	1.6

Currently taking insulin prescribed for diabetes by doctor or health worker									
Age Group (years)	Men			Women			Both Sexes		
	n	% taking insulin	95% CI	n	% taking insulin	95% CI	n	% taking insulin	95% CI
25-34	3	33.3	59.5	23	26.1	20.8	26	27.4	19.9
35-44	7	----	----	21	33.3	26.3	28	21.0	19.1
45-54	8	25.0	34.8	13	30.8	24.7	21	28.0	17.2
55-64	5	20.0	39.1	5	40.0	46.0	10	29.2	28.0
25-64	23	16.5	18.0	62	30.2	14.9	85	25.5	12.0

Currently taking oral drugs prescribed for diabetes by doctor or health worker									
Age Group (years)	Men			Women			Both Sexes		
	n	% taking meds	95% CI	n	% taking meds	95% CI	n	% taking meds	95% CI
25-34	2	----	----	23	52.2	19.8	25	45.3	17.8
35-44	7	42.9	34.8	27	51.9	16.8	34	49.0	15.5
45-54	9	22.2	31.5	13	46.2	31.5	22	34.1	19.1
55-64	5	40.0	61.0	5	80.0	37.5	10	58.4	32.1
25-64	23	30.0	22.0	68	52.9	11.8	91	45.7	9.3

Analysis Information:

- Questions used: H7, H8a, H8b
- Epi Info programme name: Hdiabetes (unweighted); HdiabetesWT (weighted)

Diabetes lifestyle advice

Description: Percentage of respondents who received lifestyle advice from a doctor or health worker to diabetes.

Instrument question:

- Are you currently taking any of the following treatments/advice for diabetes prescribed by a doctor or other health worker?

Advised by doctor or health worker to have special prescribed diet									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	2	50.0	77.3	24	79.2	16.9	26	75.5	19.2
35-44	7	71.4	31.5	24	75.0	16.6	31	73.8	17.1
45-54	9	44.4	39.3	15	86.7	18.9	24	66.9	23.4
55-64	6	66.7	45.4	5	60.0	45.9	11	63.9	26.4
25-64	24	59.3	23.1	68	77.8	10.5	92	71.8	11.3

Advised by doctor or health worker to lose weight									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	2	50.0	77.3	26	73.1	14.4	28	70.4	15.5
35-44	6	66.7	34.3	22	63.6	18.5	28	64.6	16.7
45-54	9	66.7	30.3	14	85.7	18.4	23	76.5	16.4
55-64	6	50.0	51.5	5	80.0	37.5	11	62.5	27.0
25-64	23	61.2	20.3	67	72.5	8.6	90	69.0	8.3

Advised by doctor or health worker to stop smoking									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	2	50.0	77.8	25	60.0	17.1	27	58.8	18.0
35-44	7	57.1	34.8	24	54.2	18.4	31	55.2	18.5
45-54	9	55.6	41.2	11	81.8	24.9	20	67.5	24.6
55-64	4	50.0	55.0	5	80.0	37.6	9	65.5	29.6
25-64	22	54.7	22.2	65	62.0	8.8	87	59.7	9.6

Advised doctor or health worker to start or do more exercise									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	2	50.0	78.5	27	74.1	15.1	29	71.3	16.0
35-44	7	42.9	35.1	24	75.0	15.4	31	64.1	17.5
45-54	8	62.5	32.9	14	92.9	14.6	22	79.0	18.0
55-64	5	60.0	54.7	5	80.0	37.5	10	69.2	29.3
25-64	22	52.6	20.9	70	77.6	9.4	92	70.1	9.6

Analysis Information:

- Questions used: H8(c-f)
- Epi Info programme name: Hdiabeteslifestyle (unweighted); HdiabeteslifestyleWT (weighted)

Diabetes advice by traditional healer

Description: Percentage of respondents who are have sought advice or treatment from traditional healers for diabetes.

Instrument questions:

- During the past 12 months have you seen a traditional healer for diabetes?
- Are you currently taking any herbal or traditional remedy for your diabetes?

Seen a traditional healer for diabetes in the last 12 months									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	3	----	----	25	44.0	20.5	28	36.4	17.0
35-44	7	28.6	39.4	21	14.3	15.8	28	19.6	17.1
45-54	5	40.0	47.9	13	38.5	29.6	18	39.0	22.9
55-64	7	14.3	29.6	5	----	----	12	8.9	18.0
25-64	22	21.7	20.8	64	30.8	10.4	86	27.9	8.0

Currently taking herbal or traditional treatment for diabetes									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	2	----	----	21	47.6	21.7	23	40.8	20.8
35-44	6	50.0	54.2	19	15.8	15.0	25	28.1	22.2
45-54	5	40.0	50.4	9	44.4	39.6	14	42.4	20.7
55-64	1	100.0	----	5	40.0	46.3	6	51.4	42.8
25-64	14	39.9	32.4	54	35.9	10.8	68	37.0	12.0

Analysis Information:

- Questions used: H9, H10
- Epi Info programme name: Hdiabetestrad (unweighted); HdiabetestradWT (weighted)

Physical Measurements

Height, weight and BMI

Description: Mean height, weight, and body mass index among all respondent (excluding pregnant women for weight and BMI).

Instrument questions:

- Height
- Weight

Mean height (cm)							
Age Group (years)	Men			Women			
	n	Mean	95% CI	n	Mean	95% CI	
25-34	168	169.1	1.6	311	157.1	1.0	
35-44	176	167.0	1.8	304	156.5	0.9	
45-54	178	167.1	1.1	239	156.9	0.8	
55-64	92	164.2	2.8	110	155.1	1.6	
25-64	614	167.5	1.2	964	156.7	0.8	

Mean weight (kg)							
Age Group (years)	Men			Women			
	n	Mean	95% CI	n	Mean	95% CI	
25-34	167	78.5	3.3	278	77.6	2.9	
35-44	177	79.5	4.0	287	79.6	3.3	
45-54	174	81.8	2.4	237	78.0	2.1	
55-64	87	78.4	3.3	112	75.8	3.9	
25-64	605	79.5	2.2	914	78.1	1.7	

Mean BMI (kg/m^2)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	164	27.3	0.9	271	30.9	1.0	435	29.0	0.7
35-44	168	27.3	1.0	278	31.5	0.9	446	29.3	0.9
45-54	171	29.0	0.9	229	31.4	0.8	400	30.2	0.7
55-64	85	28.0	1.0	108	30.3	1.1	193	29.2	0.8
25-64	588	27.7	0.7	886	31.1	0.5	1474	29.4	0.5

Analysis Information:

- Questions used: M3, M4, M5
- Epi Info programme name: Mbmi (unweighted); MbmiWT (weighted)

BMI categories

Description: Percentage of respondents (excluding pregnant women) in each BMI category.

Instrument questions:

- Height
- Weight

BMI classifications									
	Men								
Age Group (years)	n	% Under-weight <18.5	95% CI	% Normal weight 18.5-24.9	95% CI	% Over-weight 25.0-29.9	95% CI	% Obese ≥30.0	95% CI
25-34	164	1.8	2.1	39.0	9.7	31.7	8.0	27.4	6.2
35-44	168	0.6	1.2	39.3	5.6	35.7	7.8	24.4	6.8
45-54	171	1.8	2.0	21.6	6.4	33.9	6.9	42.7	8.4
55-64	85	----	----	32.9	9.4	36.5	9.8	30.6	10.6
25-64	588	1.3	1.2	34.8	4.9	33.9	4.2	30.0	4.8

BMI classifications									
	Women								
Age Group (years)	n	% Under-weight <18.5	95% CI	% Normal weight 18.5-24.9	95% CI	% Over-weight 25.0-29.9	95% CI	% Obese ≥30.0	95% CI
25-34	271	1.5	1.4	18.8	6.1	26.2	4.9	53.5	6.4
35-44	278	1.1	1.2	12.2	3.5	29.9	4.9	56.8	5.8
45-54	229	0.9	1.2	16.6	4.9	22.7	4.7	59.8	5.8
55-64	108	0.9	1.9	17.6	7.1	28.7	9.4	52.8	10.2
25-64	886	1.2	0.7	16.2	3.1	26.9	2.5	55.8	3.8

BMI classifications									
	Both Sexes								
Age Group (years)	n	% Under-weight <18.5	95% CI	% Normal weight 18.5-24.9	95% CI	% Over-weight 25.0-29.9	95% CI	% Obese ≥30.0	95% CI
25-34	435	1.7	1.2	29.2	6.2	29.0	5.0	40.1	4.7
35-44	446	0.8	1.1	26.2	4.4	32.9	4.5	40.1	5.6
45-54	400	1.3	1.3	19.2	4.0	28.6	4.6	50.9	6.1
55-64	193	0.5	1.0	24.9	6.8	32.4	6.2	42.1	7.2
25-64	1474	1.2	0.8	25.7	3.5	30.5	2.6	42.6	3.7

Analysis Information:

- Questions used: M3, M4, M5
- Epi Info programme name: Mbmiclass (unweighted); MbmiclassWT (weighted)

BMI≥25 Description: Percentage of respondents being classified as overweight or obese (BMI≥25 kg/m^2)

Instrument questions:

- Height
- Weight

BMI≥25 (kg/m^2)									
Age Group (years)	Men			Women			Both Sexes		
	n	% BMI≥25	95% CI	n	% BMI≥25	95% CI	n	% BMI≥25	95% CI
25-34	164	59.1	9.6	271	79.7	6.4	435	69.2	6.1
35-44	168	60.1	5.6	278	86.7	4.0	446	73.0	4.6
45-54	171	76.6	6.3	229	82.5	4.9	400	79.4	4.3
55-64	85	67.1	9.4	108	81.5	7.4	193	74.6	7.2
25-64	588	63.9	5.1	886	82.7	3.4	1474	73.1	3.8

Analysis Information:

- Questions used: M3, M4, M5
- Epi Info programme name: Mbmiclass (unweighted); MbmiclassWT (weighted)

Waist circumference

Description: Mean waist circumference among all respondents (excluding pregnant women).

Instrument question:

- Waist circumference measurement

Waist circumference (cm)						
Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
25-34	170	87.7	2.1	289	92.8	2.3
35-44	184	90.3	2.1	292	96.3	2.0
45-54	178	97.2	2.0	236	97.5	2.6
55-64	92	98.0	2.7	112	96.4	3.6
25-64	624	91.5	1.6	929	95.2	1.7

Analysis Information:

- Questions used: M5, M7
- Epi Info programme name: Mwaist (unweighted); MwaistWT (weighted)

Hip circumference

Description: Mean hip circumference among all respondents (excluding pregnant women).

Instrument question:

- Hip circumference measurement

Hip circumference (cm)						
Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
25-34	170	97.4	2.3	288	105.8	1.6
35-44	183	98.0	1.7	291	107.7	1.6
45-54	178	100.2	2.3	235	108.4	1.9
55-64	92	99.4	2.2	113	107.9	2.2
25-64	623	98.4	1.5	927	107.1	0.9

Analysis Information:

- Questions used: M5, M15
- Epi Info programme name: Mhip (unweighted); MhipWT (weighted)

Waist / hip ratio

Description: Mean waist-to-hip ratio among all respondents (excluding pregnant women).

Instrument question:

- Waist and hip circumference measurement

Mean waist / hip ratio						
Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
25-34	170	0.9	0.0	288	0.9	0.0
35-44	183	0.9	0.0	291	0.9	0.0
45-54	178	1.0	0.0	235	0.9	0.0
55-64	92	1.0	0.0	112	0.9	0.0
25-64	623	0.9	0.0	926	0.9	0.0

Analysis Information:

- Questions used: M5, M7, M15
- Epi Info programme name: Mwaisthipratio (unweighted); MwaisthipratioWT (weighted)

Blood pressure

Description: Mean blood pressure among all respondents, excluding those currently on medication for raised blood pressure.

Instrument question:

- During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?
- Reading 1-3 systolic and diastolic blood pressure

Mean systolic blood pressure (mmHg)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	176	127.1	2.5	312	111.9	2.0	488	119.4	1.9
35-44	184	126.9	3.1	302	117.6	2.7	486	122.4	2.3
45-54	169	131.6	2.7	230	125.6	3.2	399	128.7	2.3
55-64	83	138.4	5.5	105	129.0	7.0	188	133.5	5.0
25-64	612	128.9	1.8	949	117.9	1.9	1561	123.5	1.5

Mean diastolic blood pressure (mmHg)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	174	74.7	1.5	311	69.7	1.4	485	72.2	1.2
35-44	184	77.7	2.0	301	73.0	1.5	485	75.4	1.5
45-54	169	79.7	1.8	229	76.3	1.7	398	78.1	1.4
55-64	83	79.6	2.9	105	75.7	3.0	188	77.6	2.2
25-64	610	77.1	1.1	946	72.6	1.0	1556	74.9	0.9

Analysis Information:

- Questions used: M11a, M11b, M12a, M12b, M13a, M13b, M14
- Epi Info programme name: Mbloodpressure (unweighted); MbloodpressureWT (weighted)

Raised blood pressure

Description: Percentage of respondents with raised blood pressure and percentage on medication for raised blood pressure.

Instrument question:

- During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?
- Reading 1-3 systolic and diastolic blood pressure

SBP ≥140 and/or DBP ≥ 90 mmHg									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	174	18.4	7.6	311	3.2	1.9	485	10.7	3.8
35-44	184	22.8	5.5	301	11.0	4.6	485	17.1	4.0
45-54	169	32.5	6.5	229	22.7	6.0	398	27.8	4.5
55-64	83	41.0	11.5	105	32.4	16.0	188	36.5	10.5
25-64	610	24.7	4.3	946	12.2	3.0	1556	18.5	2.7

SBP ≥140 and/or DBP ≥ 90 mmHg or currently on medication for raised blood pressure									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	174	18.4	7.6	317	5.0	2.8	491	11.6	3.7
35-44	185	23.2	5.4	312	14.1	5.2	497	18.8	4.0
45-54	182	37.4	6.3	243	27.2	6.2	425	32.5	4.4
55-64	94	47.9	10.4	115	38.3	15.0	209	43.0	9.9
25-64	635	26.8	4.3	987	15.6	3.1	1622	21.2	2.7

Currently on medication for raised blood pressure									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	174	----	----	317	1.9	1.7	491	1.0	0.9
35-44	185	0.5	1.1	312	3.5	1.8	497	2.0	1.0
45-54	182	7.1	4.0	243	5.8	2.8	425	6.5	2.2
55-64	94	11.7	6.1	115	8.7	6.2	209	10.2	4.4
25-64	635	2.8	1.1	987	3.8	1.4	1622	3.3	1.0

Analysis Information:

- Questions used: M11a, M11b, M12a, M12b, M13a, M13b, M14
- Epi Info programme name: Mraisedbp (unweighted); MraisedbpWT (weighted)

Raised blood pressure

Description: Percentage of respondents with raised blood pressure and percentage on medication for raised blood pressure.

Instrument question:

- During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?
- Reading 1-3 systolic and diastolic blood pressure

SBP ≥160 and/or DBP ≥ 100 mmHg									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	174	0.6	1.1	311	----	----io	485	0.3	0.6
35-44	184	3.3	3.0	301	1.3	1.3	485	2.3	1.6
45-54	169	9.5	4.6	229	7.0	3.9	398	8.3	3.1
55-64	83	19.3	10.3	105	9.5	5.8	188	14.2	6.2
25-64	610	4.9	1.7	946	2.7	1.0	1556	3.8	1.1

SBP ≥160 and/or DBP ≥ 100 mmHg or currently on medication for raised blood pressure									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	174	0.6	1.1	317	1.9	1.7	491	1.2	1.0
35-44	185	3.8	3.5	312	4.8	2.5	497	4.3	2.0
45-54	182	15.9	5.8	243	12.3	5.2	425	14.2	3.7
55-64	94	28.7	10.4	115	17.4	6.4	209	22.9	6.9
25-64	635	7.6	2.2	987	6.4	1.7	1622	7.0	1.5

Currently on medication for raised blood pressure									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	174	----	----	317	1.9	1.7	491	1.0	0.9
35-44	185	0.5	1.1	312	3.5	1.8	497	2.0	1.0
45-54	182	7.1	4.0	243	5.8	2.8	425	6.5	2.2
55-64	94	11.7	6.1	115	8.7	6.2	209	10.2	4.4
25-64	635	2.8	1.1	987	3.8	1.4	1622	3.3	1.0

Analysis Information:

- Questions used: M11a, M11b, M12a, M12b, M13a, M13b, M14
- Epi Info programme name: Mraisedbp (unweighted); MraisedbpWT (weighted)

Heart rate

Description: Mean heart rate among all respondents and percentage with a raised heart rate.

Instrument question:

- Heart Rate measurement

Mean beats per minute									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	173	69.7	1.6	312	73.2	1.4	485	71.5	1.1
35-44	182	69.9	1.2	311	73.0	1.3	493	71.4	0.8
45-54	178	72.6	1.7	240	71.6	1.5	418	72.2	1.2
55-64	94	70.1	2.4	113	71.6	1.4	207	70.9	1.5
25-64	627	70.4	0.9	976	72.7	0.9	1603	71.5	0.7

Percentage with beats per minute over 100									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	173	1.2	1.6	312	1.0	1.1	485	1.0	0.9
35-44	182	1.1	1.5	311	1.0	1.1	493	1.0	1.1
45-54	178	2.2	2.2	240	0.4	0.8	418	1.2	1.3
55-64	94	----	----	113	0.9	1.9	207	0.5	0.9
25-64	627	1.3	0.7	976	0.8	0.6	1603	1.0	0.5

Analysis Information:

- Questions used: M16a, M16b, M16c
- Epi Info programme name: Mheartrate (unweighted); MheartrateWT (weighted)

Biochemical Measurements

Mean fasting blood glucose

Description: mean fasting blood glucose results excluding those currently on medication for diabetes (Non-fasting recipients excluded).
Instrument questions:

- Are you currently receiving any of the following treatments for diabetes prescribed by a doctor or other health worker?
- Insulin?
- Oral drugs (medication) that you have taken in the last 2 weeks?
- During the last 12 hours have you had anything to eat or drink, other than water?
- Blood glucose measurement

Mean fasting blood glucose (mmol/L)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	34	5.3	0.3	71	5.4	0.4	105	5.3	0.3
35-44	40	6.1	0.5	54	5.9	0.5	94	6.0	0.4
45-54	51	5.6	0.4	80	7.0	0.8	131	6.3	0.5
55-64	22	6.5	1.3	30	7.2	1.8	52	6.8	1.1
25-64	147	5.7	0.2	235	6.0	0.3	382	5.9	0.2

Mean fasting blood glucose (mg/dl)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	34	94.9	5.6	71	96.5	7.0	105	95.7	4.7
35-44	40	109.4	9.4	54	106.7	9.5	94	108.1	7.4
45-54	51	101.2	6.8	80	126.5	13.8	131	113.4	8.2
55-64	22	116.5	23.0	30	129.3	32.9	52	123.2	20.1
25-64	147	102.5	4.1	235	108.9	5.7	382	105.7	4.1

Analysis Information:

- Questions used: H8a, H8b, B1, B5
- Epi Info programme name:
  - measurement in mmol/L: Bglucose (unweighted); BglucoseWT (weighted)
  - measurement in mg/dl: BglucoseMg (unweighted); BglucoseMgWT (weighted)

Raised blood glucose

Description: Categorization of respondents into blood glucose level categories and percentage currently on medication for raised blood glucose (non-fasting recipients excluded).

Instrument questions:

- Are you currently receiving any of the following treatments for diabetes prescribed by a doctor or other health worker?
- Insulin?
- Oral drugs (medication) that you have taken in the last 2 weeks?
- During the last 12 hours have you had anything to eat or drink, other than water?
- Blood glucose measurement

Impaired Fasting Glycaemia*									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	40	2.5	5.1	98	2.0	2.8	138	2.2	2.7
35-44	46	8.7	10.1	81	7.4	6.2	127	8.0	5.5
45-54	57	7.0	8.2	92	10.9	8.9	149	8.9	6.7
55-64	26	19.2	16.8	35	8.6	11.8	61	13.7	10.2
25-64	169	6.9	4.7	306	5.8	2.9	475	6.3	2.7

Raised blood glucose or currently on medication for diabetes and/or diagnosed with diabetes**									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	40	22.5	16.6	98	35.7	10.7	138	29.8	10.8
35-44	46	30.4	17.6	81	42.0	14.2	127	36.7	12.8
45-54	57	24.6	12.0	92	33.7	11.6	149	29.0	9.5
55-64	26	34.6	22.4	35	34.3	20.4	61	34.4	16.5
25-64	169	26.4	8.7	306	37.1	9.6	475	32.1	7.9

Currently on medication for diabetes									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	40	2.5	5.1	98	14.3	7.1	138	9.0	4.8
35-44	46	6.5	7.1	81	22.2	11.7	127	15.0	7.7
45-54	57	5.3	6.3	92	8.7	7.2	149	6.9	5.6
55-64	26	11.5	16.3	35	11.4	11.7	61	11.5	8.2
25-64	169	5.1	3.3	306	15.4	6.9	475	10.6	4.1

* Impaired fasting glycaemia is defined as either

- plasma venous value: ≥6.1mmol/L (110mg/dl) and <7.0mmol/L (126mg/dl)
- capillary whole blood value: ≥5.6mmol/L (100mg/dl) and <6.1mmol/L (110mg/dl)

** Raised blood glucose is defined as either

- plasma venous value: ≥ 7.0 mmol/L (126 mg/dl)
- capillary whole blood value: ≥ 6.1 mmol/L (110 mg/dl)

Analysis Information:

- Questions used: H8a, H8b, B1, B5

Epi Info programme name:

- measurement in mmol/L: Bglucose (unweighted); BglucoseWT (weighted)
- measurement in mg/dl: BglucoseMg (unweighted); BglucoseMgWT (weighted)

Total cholesterol

Description: Mean total cholesterol among all respondents.

Instrument question:

- Total cholesterol measurement

Mean total cholesterol (mmol/L)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	59	4.8	0.3	123	5.0	0.3	182	4.9	0.2
35-44	82	5.3	0.2	116	5.0	0.2	198	5.2	0.2
45-54	91	5.4	0.2	141	5.5	0.2	232	5.4	0.2
55-64	42	5.8	0.4	54	5.7	0.4	96	5.8	0.2
25-64	274	5.2	0.2	434	5.2	0.2	708	5.2	0.2

Mean total cholesterol (mg/dl)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	59	185.3	10.3	123	191.5	13.2	182	188.4	9.4
35-44	82	205.4	9.3	116	194.4	9.5	198	200.1	7.3
45-54	91	207.1	8.2	141	212.5	9.0	232	209.7	6.0
55-64	42	223.7	16.2	54	222.3	13.8	96	223.0	9.5
25-64	274	200.1	7.0	434	199.6	7.5	708	199.9	5.8

Analysis Information:

- Questions used: B7
- Epi Info programme name:
  - measurement in mmol/L: Btotallipids (unweighted); BtotallipidsWT (weighted)
  - measurement in mg/dl: BtotallipidsMg (unweighted); BtotallipidsMgWT (weighted)

Raised total cholesterol

Description: Percentage of respondents with raised total cholesterol.

Instrument question:

- Total cholesterol measurement

Total cholesterol ≥ 5.2 mmol/L or ≥ 200 mg/dl									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	59	33.9	12.0	123	33.3	8.7	182	33.6	7.7
35-44	82	52.4	10.1	116	39.7	8.7	198	46.2	7.0
45-54	91	59.3	10.9	141	62.4	9.9	232	60.8	7.5
55-64	42	66.7	14.2	54	70.4	13.4	96	68.6	9.0
25-64	274	48.4	7.6	434	44.8	5.1	708	46.6	4.8

Total cholesterol ≥ 6.5 mmol/L or ≥ 250 mg/dl									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	59	5.1	5.6	123	9.8	6.3	182	7.5	3.9
35-44	82	14.6	6.8	116	8.6	5.9	198	11.7	5.4
45-54	91	16.5	8.0	141	21.3	8.7	232	18.8	5.2
55-64	42	31.0	15.1	54	20.4	11.4	96	25.6	8.0
25-64	274	13.1	4.7	434	12.7	3.6	708	12.9	3.4

Analysis Information:

- Questions used: B7
- Epi Info programme name:
  - measurement in mmol/L: Btotallipids (unweighted); BtotallipidsWT (weighted)
  - measurement in mg/dl: BtotallipidsMg (unweighted); BtotallipidsMgWT (weighted)

High density lipoprotein (HDL)

Description: Mean HDL among all respondents and percentage of respondents with low HDL.

Instrument question:

- HDL cholesterol measurement

HDL (mmol/L)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	57	1.1	0.1	113	1.1	0.1	170	1.1	0.1
35-44	76	1.1	0.1	112	1.1	0.1	188	1.1	0.1
45-54	86	1.1	0.0	128	1.1	0.1	214	1.1	0.0
55-64	39	1.1	0.1	52	1.2	0.1	91	1.1	0.1
25-64	258	1.1	0.1	405	1.1	0.0	663	1.1	0.1

HDL (mg/dl)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	57	42.9	4.0	113	40.7	2.8	170	41.8	3.0
35-44	76	41.0	3.9	112	43.2	2.2	188	42.1	2.7
45-54	86	41.1	1.7	128	41.8	2.7	214	41.4	1.6
55-64	39	41.1	4.1	52	44.9	5.3	91	43.1	3.5
25-64	258	41.7	2.8	405	42.1	1.7	663	41.9	2.1

Percentage of those with HDL <1.03mmol/L or <40 mg/dl			
Age Group (years)	Men		
	n	%	95% CI
25-34	57	49.1	13.0
35-44	76	56.6	14.9
45-54	86	51.2	9.6
55-64	39	43.6	14.9
25-64	258	51.4	8.7

Percentage of those with HDL <1.29mmol/L or <50 mg/dl			
Age Group (years)	Women		
	n	%	95% CI
25-34	113	83.2	7.9
35-44	112	72.3	9.2
45-54	128	82.8	8.7
55-64	52	86.5	8.6
25-64	405	80.0	5.6

Analysis Information:

- Questions used: B9
- Epi Info programme name:
  - measurement in mmol/L: Bhdlipids (unweighted); BhdlipidsWT (weighted)
  - measurement in mg/dl: BhdlipidsMg (unweighted); BhdlipidsMgWT (weighted)

Triglycerides

Description: Mean triglycerides among all respondents and percentage of respondents with raised triglycerides.

Instrument question:

- Triglyceride measurement

Triglycerides (mmol/L)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	52	1.3	0.2	111	0.9	0.1	163	1.1	0.1
35-44	73	1.4	0.2	103	1.1	0.1	176	1.2	0.1
45-54	82	1.4	0.2	127	1.4	0.3	209	1.4	0.2
55-64	40	1.5	0.3	46	1.3	0.2	86	1.4	0.2
25-64	247	1.3	0.1	387	1.1	0.1	634	1.2	0.1

Triglycerides (mg/dl)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	52	112.6	16.4	111	80.7	11.2	163	96.1	10.8
35-44	73	121.2	17.5	103	97.7	13.3	176	109.8	12.7
45-54	82	120.5	18.7	127	125.1	24.2	209	122.7	18.7
55-64	40	128.5	27.6	46	116.4	19.5	86	122.7	15.4
25-64	247	118.7	10.5	387	98.2	9.0	634	108.5	7.2

Percentage of those with Triglycerides ≥ 2.26 mmol/L or ≥ 200 mg/dl									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	52	13.5	9.6	111	2.7	3.0	163	7.9	5.3
35-44	73	15.1	8.9	103	7.8	5.7	176	11.5	6.3
45-54	82	15.9	8.9	127	8.7	5.0	209	12.4	5.7
55-64	40	12.5	9.6	46	10.9	9.5	86	11.7	5.4
25-64	247	14.4	4.5	387	6.2	2.3	634	10.4	2.6

Analysis Information:

- Questions used: B8
- Epi Info programme name:
  - measurement in mmol/L: Btriglyceride (unweighted); BtriglycerideWT (weighted)
  - measurement in mg/dl: BtriglycerideMg (unweighted); BtriglycerideMgWT (weighted)

Raised Risk

Raised risk

Description: Percentage of respondents with 0, 1-2, or 3-5 of the following risk factors:

- current daily smoker
- less than 5 servings of fruits & vegetables per day
- low level of activity (<600 MET -minutes)
- overweight or obese (BMI ≥ 25 kg/m^2)
- raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP).

Instrument question: combined from Step 1 and Step 2

Raised Risk				
Age Group (years)	Men			
	n	% with 0 risk factors	% with 1-2 risk factors	% with 3-5 risk factors
25-44	263	1.6	52.2	46.3
45-64	186	1.1	28.4	70.6
25-64	449	1.4	45.3	53.3

Raised Risk				
Age Group (years)	Women			
	n	% with 0 risk factors	% with 1-2 risk factors	% with 3-5 risk factors
25-44	399	0.2	39.8	60.0
45-64	252	1.2	37.1	61.7
25-64	651	0.5	38.9	60.5

Raised Risk				
Age Group (years)	Both Sexes			
	n	% with 0 risk factors	% with 1-2 risk factors	% with 3-5 risk factors
25-44	662	1.0	46.4	52.6
45-64	438	1.1	32.7	66.2
25-64	1100	1.0	42.3	56.7

Analysis Information:

- Questions used: T1, T2, D1-D4, P1-P16b, M3, M4, M5, M11a-M13b, M14
- Epi Info programme name: Raisedrisk (unweighted); RaisedriskWT (weighted)

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