Kiribati NCD Risk Factors STEPS REPORT 2015-2016

in collaboration with World Health Organization (WHO)

TE MAURI TE RAOI AO TE TABOMOA

World Health Organization
Western Pacific Region

Kiribati
NCD Risk Factors
STEPS REPORT
2015-2016

Printed in Suva, Fiji

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List of Abbreviations

BMI	Body Mass Index
BP	Blood Pressure
CI	Confidence Interval
CVD	Cardiovascular Diseases
DBP	Diastolic Blood Pressure
DM	Diabetes Mellitus
FBS	Fasting Blood Sugar
GDP	Gross Domestic Product
HTN	Hypertension
MET	Metabolic Equivalent
MFAT	New Zealand's Ministry of Foreign Affairs and Trade
mg/dl	Milligrams per decilitre (unit of blood chemistry values)
MHMS	Ministry of Health and Medical Services
mmHg	Millimetres of mercury (unit of blood pressure measurement)
mmol/L	Millimoles per litre (unit for blood chemistry value)
NCD	Noncommunicable diseases
NGO	Non-government organizations
SBP	Systolic Blood Pressure
WHO	World Health Organization

Foreword by Ministry of Health and Medical Services

Mr. Tauanei Marea
Honorable Minister for Health and Medical Services

On behalf of the Government of Kiribati through the Ministry of Health and Medical Services (MHMS), we would like to take this opportunity to thank our Implementing partners and donors who have assisted with the implementation of this second round of the Kiribati NCD Steps Survey 2015-2016. Thank you to the World Health Organization (WHO) for the technical support and guidance to review, plan and implement the different modules of this survey, to ensure Kiribati team manages to complete them accordingly. Also our sincere appreciation and thank you to the Government of New Zealand through the Ministry of Foreign Aid and Trade (MFAT) for the financial assistance which has enabled the implementation to be carried out as planned. Without these assistance and support, the NCD Steps Survey 2015-2016 would not be able to be completed.

To the Kiribati team, our youth volunteers, MHMS staff and technical staff from WHO's in-country office, a sincere thank you to you individually for your continuous spirit and willingness to work as a team to ensure the Survey is accomplished in line with what is expected. The report as we witnessed its compilation is the result of the efforts you have put together from the initial phase till the last day of such survey's implementation. Your efforts is well spent and would enabled Kiribati Government to see improvements and/or challenges that we are facing and to face in order to address ongoing issues related to the burden of Non-communicable diseases (NCDs). This report will provide concrete evidence to support MHMS to plan for interventions to put forward to the Government of Kiribati and to partners and donors to support so that such NCDs' issues and challenges are addressed vigorously.

Noncommunicable diseases have been affecting the productivity of our people. The prematurity death of our young generation is also linked to the prevalence of NCDs as we have also started to have young amputees due to the degradation effect of diabetes, the number one NCD in Kiribati. Our lifestyles have changed, the food that we eat have shifted from locally grown to imported canned and processed foods, our physical activities have declined due to the introduction of high technologies in households. In addition the smoking rate and alcohol consumption have confounded the main cause of NCDs in our Kiribati communities.

Aligning with the Kiribati Vision in 20 years (KV20), in order to have a wealthier, healthier and peaceful nation, MHMS has prioritized the support to address NCD's health issues so that early prevention, detection and treatment are well planned and implemented. With confounding effect of other factors such as climate change, MHMS will maximize the utilization of exisiting resources through integration to ensure all health priorities are addressed and we do have resilient health systems to face confounding impacts. As the main responsible Ministry to initiate the addressing of health issues directly and indirectly linked to the increasing prevalence of NCDs, we will continue to dialogue with you partners and donors, and also to link our work to our relevant stakeholders, whether from Government bodies and associations or from Non-government organizations (NGO), as addressing NCDs' health related issues should be a combined effort. MHMS will continue to work alongside you partners, donors and stakeholders to continue the fight against these preventable health issues.

Kam bati n rabwa.

Honorable Minister for Health and Medical Services

Foreword by the World Health Organization

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It is now well-established that NCDs are at crisis levels in Pacific island countries and areas (PICs), with heart disease and diabetes being the leading causes of death in all PICs. Risk factors for NCDs, which include tobacco use, insufficient physical activity and unhealthy diet, are responsible for most deaths due to NCDs.

Risk factors for NCDs can be categorized as behavioural (such as physical activity, tobacco use and diet), physical (such as overweight/obesity and raised blood pressure), or biochemical (blood sugar or cholesterol levels). Fortunately, all risk factors can be reduced or avoided through personal and public health changes.

While the burden of NCDs is especially high in PICs, it is a global problem. The second Global status report on NCDs (2014) from WHO, released in January 2015, highlighted the considerable human, social and economic consequences of NCDs worldwide. To combat the NCD crisis, in 2013, the World Health Assembly adopted a comprehensive global monitoring framework with nine targets and 25 indicators. The STEPwise approach to Surveillance of NCD Risk Factors (STEPS) provides information for six of these nine targets, assessed primarily through population-based risk factor surveys. The STEPS survey also contributes to our understanding of progress towards the Sustainable Development Goal to reduce premature mortality from NCDs by one third by 2030.

The successful development of the second STEPS survey for Kiribati (completed in 2016) is an important step to alleviating the burden of NCDs and their risk factors in the i-Kiribati, as well as contributing to the global understanding of NCDs. Some key findings of this survey are:

- Nearly half (47.7%) of respondents smoke tobacco products, significantly more men
- 11.6% of respondents were current alcohol drinkers (drank alcohol within the prior 30 days), drinking approximately 13 standard drinks per occasion;
- 35.8% of respondents do not meet WHO recommendations for physical activity, significantly more women than men;
- The proportion of respondents who were obese was 45.6% - the average BMI of people in Kiribati is 30.4 obese classification);
- No changes in fruit and vegetable intake, physical activity, mean BMI, raised blood glucose and age of initiating smoking since the previous survey in 2004;
- 70.1% of respondents reported having between 3 and 5 key risk factors (daily smoking, low fruit and vegetable intake, inadequate physical activity, high BMI and raised blood pressure).

Having this detailed bank of information provides an evidence-based platform for developing public health interventions, be they high-level inclusions in national development planning or community-based lifestyle interventions.

WHO is pleased to have collaborated with the Kiribati Ministry of Health and Medical Services to produce this important second STEPs report, and WHO will continue to support the Government of Kiribati in public health planning and actions to prevent and control NCDs, with a view to improved health and well-being of all citizens.

Executive Summary

Kiribati conducted its first NCD STEPS survey in 2004 and the report was published in 2007. The first survey provided baseline assessment of the NCD risk factors and showed high levels of risk-taking behaviour and NCDs, and has contributed to the planning of interventions and NCD strategy. A second STEPS survey is now needed to monitor progress and trends. A brief comparison will be made to see how prevalence has changed since the first survey. Planning for this second survey began in September 2014, and data was collected from May 2015 to July 2016. The Ministry of Health and Medical Services (MHMS) led the implementation of the survey with technical and financial support from the World Health Organization.

The key objectives of the NCD STEPS survey were:

- To document the prevalence and magnitude of key NCDs and their modifiable risk factors among adults aged 18-69.
- To compare NCDs and their risk factors across three age groups and between men and women.
- To monitor progress towards achieving the 9 voluntary global targets by 2025.

A total of 2,156 individuals, 99.0% I-Kiribati and 1.0% of other ethnicity participated in the survey. The survey respondents included 54.3% women (n=1170) and 45.7% men (n=986).. About a third (31.6%) have at least primary school education, 30.5% have junior secondary school education, 27.5% have senior secondary school education, 3.0% have college degrees, 0.3% have post-graduate degrees, 4.6% have less than primary school education and 2.5% have no formal schooling. Two thirds (66.6%) are in unpaid work or unemployed, whilst 12.5% are non-government employees, 12.6% are government employees and 8.3% are self-employed.

Kiribati has two key documents that guide health sector strategies: (1) Kiribati Health Strategic Plan 2012-2015, which has an extended version from 2012-2015, and (2) Kiribati Development Plan 2012-2015. The Kiribati Health Strategic Plan 2012-2015 sets out six core issues and 12 key strategies. To address the high burden and incidence of noncommunicable disease, Kiribati outlined three strategies – improve outreach of NCD curative services; improve and expand coverage on awareness of the root causes of NCD; and improve screening, detection and access to treatment services for all NCDs. The actions included strengthening initiatives related to integration of NCD services into primary health care, tobacco control, alcohol misuse, healthy eating, physical activity, prevention and management of diabetes, prevention and early treatment of cancer, hypertension, heart disease, chronic lung disease, and mental health. The MHMS also outlined collaborations with other Ministries to address key issues – with the Ministry of Finance and Economic Development on higher taxes on tobacco and alcohol, and increased funding for initiatives targeting NCD risk factors; with the Ministry of Education on facilities and spaces for physical activity; with the maneaba on healthy eating and physical activity initiatives, and alcohol and tobacco restrictions; and with maneaba and community support groups to strengthen health outreach initiatives. It is recommended that priorities identified from this report be included in the national health strategic plan when it is being updated.[1]

The Kiribati Development Plan indicated that NCDs are a major challenge, but progress was noted in tobacco control and alcohol misuse with the passage of the Bill, in mental health, and in the prevention and management of diabetes. The Development Plan outlined strategies to improve health such as strengthening initiatives to reduce risk factors (i.e. tobacco and alcohol control, healthy eating, physical activity, prevention, early detection and treatment of cervical cancer, hypertension, heart disease, chronic lung disease and diabetes); improve effectiveness and efficiency of health service delivery; develop programme to maintain and replace infrastructure and equipment; improve procurement and supply of essential medicines and technologies; and improve sport and physical activity participation particularly for youth and people with disabilities.[2]

Behavioural risk factors

Nearly half of the Kiribati population (47.7%) were current smokers with no statistically significant differences between the three age groups. Significantly more men than women smoke – 64.7% of men and 33.4% of women; and significantly more women aged 45-69 years smoked than those aged 30-44 years. On average, the people of Kiribati began smoking at the age of 18.5 years. Those aged 18-29 years initiated at a significantly younger age of 16.4 years compared to 19.2 years among those aged 30-44 and 19.4 years among those aged 45-69 years.

More than half (55.5%) of daily smokers smoked less than 5 cigarettes a day, 21.1% smoked 5-9 cigarettes, 8.2% smoked 10-14 cigarettes, 10.4% smoked 15-24 cigarettes and 4.8% smoked more than 25 cigarettes a day. There was no statistically significant difference between the three age groups. However, significantly more women than men smoked less than 5 cigarettes a day (79.6% of men and 39.6% of women). On average, daily smokers smoked 6.8 cigarettes, cheroots or cigarillos, 2.3 manufactured cigarettes and 0.3 hand-rolled cigarettes daily.

With regards to the use of smokeless tobacco, 4.2% were current users. A significantly higher proportion of men than women were current smokeless tobacco users – 7.6% of men and 1.4% of women; and those aged 18-29 were also more likely to use smokeless tobacco products (10.1%) than those aged 30-44 (1.4%) and 45-69 years (1.4%), especially among men.

More than half of the population (62.7%) have been exposed to second-hand smoke in homes and 28.2% in workplaces in the past week. Nearly six in 10 current smokers had tried to stop smoking in the past 12 months; and one third had been advised by a doctor or other health worker to stop smoking.

Two thirds (67.4%) of the Kiribati population had never drunk alcohol, 10.3% abstained from alcohol in the past 12 months, 11.6% were current drinkers and 10.7% drank in the past 12 months though not currently. A significantly higher proportion of women than men were lifetime abstainers – 81.6% of women and 50.3% of men; and a significantly higher proportion of men than women were current alcohol drinkers – 19.7% of men and 4.8% of women.

Among current drinkers, the mean number of drinking occasions in the past 30 days was 6.0; and the mean number of standard drinks per occasion was 13.4. Among these current drinkers, 76.2% engaged in lower-end level of drinking, 20.4% at the high-end level and 3.4% at the intermediate level. With regards to binge drinking, 9.8% did so at least once in the past 30 days – men were much more likely to binge drink than women (17.6% compared to 3.3%). In the past 7 days, 5.6% of current drinkers drank daily, 4.5% drank 5-6 days, 15.2% drank 3-4 days, 49.1% drank 1-2 days and 25.6% did not drink. One third (31.4%) of current drinkers consumed unrecorded alcohol in the past 7 days.

A quarter (26.1%) of the Kiribati population consumed kava in the past 12 months – a significantly higher proportion of men (48.0%) than women (8.0%); and a significantly higher proportion of those aged 18-29 (30.2%) and 30-44 years (32.6%) than those aged 45-69 years (15.1%). In the last 30 days, the population consumed kava on 1.6 days, men (3.2 days) more than women (0.3 days), and those aged 30-44 (2.5 days) more than those aged 45-69 years (0.8 days). They spent about 1.4 hours drinking kava in each session, men (2.6 hours) more than women (0.4 hours) and those aged 18-29 (1.6 hours) and 30-44 (1.9 hours) more than those aged 45-69 (0.7 hours). Of the kava drinkers, 13.5% were likely to drink alcohol during or after drinking kava, men (16.0%) more than women (1.2%); and 73.9% would smoke tobacco

The majority (98.4%) of the Kiribati population consumed less than the recommended five servings of fruit and/or vegetables per day – 73.3% did not consume any fruit and/or vegetables; 22.1% consumed 1-2 servings on average per day; 3.0% consumed 3-4 servings; and 1.6% consumed 5 or more servings on average per day. The mean number of days fruit was consumed in a typical week was 1.6 days and 1.5 days for vegetables; and the mean number of servings of fruit and/or vegetables consumed on average per day was 0.9.

Overall, 41.3% of the population always or often added salt before eating or when eating, and 61.1% did so when cooking or preparing food at home. With regards to adding salt when cooking or preparing food at home, those aged 18-29 (70.7%) and 30-44 (67.5%) were more likely to do so than those aged 45-69 years (44.8%).

On average Kiribati population consumed 3.7 servings of sugary drinks per day. They also added on average 5.2 teaspoons of sugar to a drink per day. There were no significant differences between men and women or between the three age groups.

The Kiribati population consumed fresh fish on 5.0 days in a typical week with 2.3 servings on average per day. They also consumed tinned fish on 1.5 days in a typical week with 0.3 servings on average per day.

Overall, 35.8% of the population did not meet the WHO recommendations on physical activity for health – significantly more women (45.8%) than men (23.8%) did not meet the recommendations; and a significantly higher proportion of those aged 45-69 (44.2%) did not meet the recommendations compared to those aged 18-29 years (25.5%). One third (31.4%) of the population were defined as having high levels of physical activity, 28.8% moderate levels and 39.7% low levels. Significantly more women (49.5%) than men (27.9%) had low levels of physical activity; and more men (47.2%) than women (18.3%) had high levels of physical activity. A higher proportion of the population aged 45-69 had low levels of physical activity (50.8%) than those aged 18-29 years (27.4%); and a higher proportion of the population aged 18-29 (45.6%) had high levels of physical activity than those aged 30-44 (28.4%) and 45-69 years (20.7%).

The mean minutes of total physical activity the Kiribati population engaged in on average per day was 81.4 minutes – men significantly more than women (113.5 minutes compared to 54.6 minutes); and those aged 45-69 had fewer physical activity minutes (63.5 minutes) than those aged 18-29 years (110.4 minutes). Work-related physical activity contributed to 48.1% of total physical activity, transport to 40.6% and leisure to 11.3% overall; and there were no statistically significant differences between men and women and between the three age groups except for leisure. The mean number of minutes the Kiribati population spent in sedentary activities was 166.6, with no significant differences between men and women as well as between the three age groups.

Historical risk factors

The survey found that 53.0% of the Kiribati population had never had their blood pressure measured, 34.0% had been measured but not diagnosed, 4.5% had been diagnosed but not within the past 12 months, and 8.5% were diagnosed within the past 12 months.

Overall, 79.2% of the population had never had their blood sugar measured, 19.3% were measured but not diagnosed, 0.4% were diagnosed but not within the past 12 months and 1.1% were diagnosed within the past 12 months.

Most of the population (99.0%) had never had their cholesterol measured, 0.8% had been measured but not diagnosed, 0.1% had been diagnosed but not within the past 12 months and 0.1% were diagnosed within the past 12 months.

In terms of receiving lifestyle advice from a doctor or health worker: (a) 43.5% of the population had been advised to quit using tobacco or not start; (b) 45.2% had been advised to reduce salt in the diet; (c) 44.5% had been advised to eat at least five servings of fruit and/or vegetables each day; (d) 47.8% had been advised to reduce fat in the diet; (e) 45.4% had been advised to do more physical activity; and (f) 40.5% had been advised to maintain a healthy body weight or to lose weight.

Among women aged 18-69 years, it was found that 16.4% had ever been tested for cervical cancer.

Mental health

With regards to the state of mental well-being, 81.9% of the population were classified as well, 10.5% classified with a mild mental disorder, 5.9% with a moderate mental disorder and 1.7% classified with a severe mental disorder. There were no statistically significant differences between men and women and between the three age groups.

Overall, 5.1% had seriously considered attempting suicide, more so among women than men – 6.8% of women and 3.0% of men. In the last 12 months, 4.5% of the population had made a plan on how to attempt suicide; 5.1% had ever attempted suicide, more women (6.8%) than men (3.0%); and 65.0% of those who had ever attempted suicide had attempted it in the last 12 months.

Physical risk factors

The mean body mass index (BMI) of the Kiribati population was 30.4 kg/m^2 – women had a higher mean BMI (31.8 kg/m^2) than men (28.5 kg/m^2). Women aged 45-69 had a higher mean BMI (32.8 kg/m^2) than those aged 18-29 years (29.9 kg/m^2); though in general, there was no statistically significant difference between the three age groups.

According to the BMI risk categories, 0.6% were underweight, 18.4% were of normal weight, 35.5% were overweight, and 45.6% were obese. A significantly higher proportion of those aged 30-44 were classified as obese (52.4%) than those aged 18-29 years (35.0%); and there were no statistically significant differences between the three age groups for the other classifications. A significantly higher proportion of men was classified as overweight (44.6%) compared to women (28.6%); and a higher proportion of women was classified as obese (55.6%) than men (32.1%). There were no statistically significant differences between men and women for the other classifications.

The mean waist circumference of men was 92.0 cm and 94.5 cm for women, and the difference is not statistically significant. There were statistically significant differences between the age groups – men aged 18-29 had a lower mean waist circumference than those aged 45-69; and women aged 18-29 had a lower mean than those aged 30-44 and 45-69 years. The mean hip circumference of men was 102.3 cm, lower than that of women at 106.6 cm. The mean waist-hip ratio was 0.9 for both men and women, with no statistically significant difference between men and women and between the three age groups.

A third of the population (34.4%) had raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg or were currently on medication for the condition, with no statistically significant difference between men and women. A significantly higher proportion of the population aged 30-44 (38.4%) and 45-69 (44.9%) had raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg or were currently on medication for the condition compared to those aged 18-29 (15.0%).

One tenth of the population (11.7%) had raised blood pressure SBP ≥160 and/or DBP ≥ 100 mmHg or were currently on medication for raised blood pressure, with no statistically significant difference between men and women. A significantly higher proportion of the population aged 45-69 had raised blood pressure SBP ≥160 and/or DBP ≥ 100 mmHg or were currently on medication for raised blood (19.2%) than those aged 18-29 (3.3%).

Overall, the mean systolic blood pressure (SBP) was 127.4 mmHg and the mean diastolic blood pressure (DBP) was 84.4 mmHg. The mean SBP increased with age; and DBP was higher among those aged 30-44 and 45-69 compared to 18-29 year olds.
Among those who had raised blood pressure of SBP≥140 and/or DBP≥90 or were currently on medication, majority (94.4%) were not on medication and had raised blood pressure of SBP≥140 and/or DBP≥90; 3.4% were on medication and had raised blood pressure of SBP≥140 and/or DBP≥90; and 2.2% were on medication and had SBP<140 and DBP<90. There were no significant differences between men and women and between the three age groups.

Biochemical risk factors

The mean fasting plasma glucose (plasma equivalent) was 5.9 mmol/L, and those aged 45-69 had a higher mean (6.8 mmol/L) than those aged 18-29 (4.9 mmol/L), with no statistically significant difference between men and women. Overall, 12.1% of the population was categorized as having impaired fasting glycaemia (plasma equivalent), with no statistically significant differences between men and women and between the three age groups; and 16.4% had raised blood glucose or were currently on medication for diabetes, with a higher proportion of women having the condition (20.2%) compared to men (11.6%), and a higher proportion of those aged 45-69 (29.5%) having the condition compared to those aged 18-29 (2.0%).

The mean total cholesterol was 3.8 mmol/L, with no statistically significant differences between men and women. Those aged 45-69 had higher mean total cholesterol (4.2 mmol/L) than those aged 18-29 years (3.4 mmol/L). Overall, 15.6% had total cholesterol ≥ 5.0 mmol/L or were currently on medication for raised cholesterol and 7.2% had total cholesterol ≥ 6.2 mmol/L or were currently on medication for raised cholesterol. There were no statistically significant differences between men and women and between the three age groups.

Among women of child-bearing age, 9.5% had anaemia and the mean haemoglobin level was 12.3 g/dL.

Cardiovascular disease risk and combined risk factors

In Kiribati, 11.4% of the population aged 40-69 had a CVD risk of ≥30% or more. Overall, 70.1% had 3-5 risk factors, 29.8% had 1-2 risk factors and 0.1% had no risk factors. A significantly higher proportion of those aged 18-44 (37.7%) had 1-2 risk factors compared to those aged 45-69 (16.8%); and a significantly higher proportion of those aged 45-69 (82.8%) had 3-5 risk factors compared to those aged 18-44 (62.3%). There was no significant difference between men and women.

Comparison of results with previous survey

The comparison of the two surveys (the first one in 2004 and the second one now in 2015) reveals some positive trends but also some negative ones. The below refers only to 18-64 years.

- Reduction in prevalence of current smokers (60.1% ⟶48.9%).
- Reduction in prevalence of daily smokers (56.6% ⟶46.0%)
- No significant change in mean age of initiation among current daily smokers
- No significant change in fruit and vegetable intake
- No significant change in physical activity levels
- No significant change in mean BMI, or in prevalence of overweight or obesity
- Increase in proportion with raised blood pressure of SBP ≥140 and/or DBP ≥ 90 mmHg or were currently on medication for the condition (14.5% ⟶33.3%).
- No significant change in the prevalence of diabetes/raised blood glucose.
- Decrease in proportion with total cholesterol ≥ 5.0mmol/L or who were currently on medication for raised cholesterol (25.8% ⟶15.6%) but no significant change in the prevalence of those with total cholesterol ≥ 6.2mmol/L

Conclusion

The data has provided current data on NCD risk factors in Kiribati, and will enable monitoring of progress and evaluation of the impact of health promotion programmes and interventions. Since the first NCD STEPS survey, efforts need to be increased to further reduce prevalence of tobacco use, prevent youth from initiating smoking, reduce harmful use of alcohol, reduce consumption of salt and sugar, and to continue to promote consumption of fruits and vegetables and physical activity.

Recommendations

A summary of priority actions for Kiribati are outlined below:

Governance and leadership

- Secure increased resources for health promotion and NCDs from taxes and licensing fees on tobacco and alcohol.

Surveillance

- Establish an ongoing and robust NCD STEPS surveillance system to enable monitoring of trends and use of data for action.

Strategies to address NCD risk factors

- Address tobacco use through taxation; strengthening enforcement of the Tobacco Control Act; removing designated smoking zones; advocating and creating smoke-free homes and communities; strengthening cessation services; and increasing awareness of risks.
- Address harmful use of alcohol through taxation; strengthening the Alcohol Control Act; strengthening enforcement of the Act; implementing spot fines; controlling youth access; restricting the hours for purchase and consumption of alcohol; strengthening enforcement of restrictions on black market or home-brew; and increasing awareness of the consequences of harmful alcohol use.
- Address unhealthy diet through tax and price measures to promote healthier options and discourage unhealthy ones; increasing resources for nutrition, especially at the MHMS; improving access to and availability of fruits and vegetables; increasing awareness of the adverse health effects of high sugar consumption through campaigns; and working with settings such as workplaces to ensure availability of healthier food and drink options; and establishing policies for caterers and vendors.
- Promote physical activity through initiatives and community-based programmes that support active ageing and encourage women to exercise; increase human resources for physical activity programmes; and encourage workplaces to conduct programmes that promote active living.
- Create environments and settings (e.g. villages, workplaces, schools, markets) that enable healthy living and encourage utilization of preventive services.

Establish and maintain coalitions and partnerships

- Build coalitions and partnerships across sectors to address NCD risk factors that are beyond the authority of the MHMS, such as food importation, trade, tax, commercial investment and agriculture. Collaborate with maneaba, media, faith-based organizations and nongovernmental organizations to implement advocacy and education programmes.

Strengthen health systems

- Promote universal health coverage as a means of preventing and controlling NCDs.
- Enhance access to essential NCD interventions through expansion of the WHO Package of Essential Non communicable Disease Interventions.
- Assess gaps in manpower and facilities and develop a plan to fill the gaps and meet demand for sevices.

1. Introduction

1.1. Background and Rationale

Noncommunicable diseases are now the leading causes of morbidity and mortality in many countries including Kiribati. NCDs were responsible for 68% of the world's deaths in 2012; and out of the 38 million deaths worldwide due to NCDs, more than 40% were premature, affecting people under 70 years of age. The majority of premature deaths were found to be in low- and middle-income countries. It was estimated that between 2011 and 2025, the economic losses from NCDs, if nothing changed, would be US$7 trillion. This far exceeds the annual cost of US$11.2 billion to implement a set of high-impact interventions.[ii]

In 2011, world leaders committed to addressing NCDs through the Political Declaration of the High-Level Meeting of the General Assembly on the Prevention and Control of NCDs. Subsequently in 2013, the World Health Assembly (WHA) adopted a comprehensive global monitoring framework and nine voluntary global targets to be attained by 2025. The WHA had also endorsed a set of actions, outlined in the WHO Global action plan for the prevention and control of noncommunicable diseases 2013-2020, to be implemented by Member States and WHOs. [iii]

Kiribati has two key documents that guide health sector strategies: (1) Kiribati Health Strategic Plan 2012-2015, and (2) Kiribati Development Plan 2016-2019. The Kiribati Health Strategic Plan 2012-2015 sets out six core issues and 12 key strategies. To address the high burden and incidence of noncommunicable disease, Kiribati outlined three strategies – improve outreach of NCD curative services; improve and expand coverage on awareness of the root causes of NCD; and improve screening, detection and access to treatment services for all NCDs.

The Kiribati Development Plan indicated that NCDs are a major challenge, but noted progress in tobacco and alcohol control, mental health, and the prevention and management of diabetes. The Development Plan outlined strategies to strengthen initiatives to reduce NCD risk factors; improve effectiveness and efficiency of health service delivery; maintain and replace infrastructure and equipment; improve procurement and supply of essential medicines and technologies; and improve sport and physical activity participation particularly for youth and people with disabilities.[v]

For Kiribati to achieve the overarching 25% reduction of premature mortality from the four major NCDs by 2025, it needs to know the current prevalence of risk factors contributing to NCDs. As such, this survey was conducted to provide current estimates on NCDs and its risk factors, inform development of policies and programmes, and assess progress and effectiveness of strategies and interventions. Repeated surveys will enable Kiribati to map trends and report on progress made in attaining the nine voluntary global targets.

1.2. The National Context

1.2.1 Geography

Kiribati consists of 33 low lying coral atolls of which 22 are inhabited.[vi] It has a landmass of 811 square kilometres and over 3.5 million square kilometres of maritime area. The islands are divided into three groups Gilbert (including Banaba), Phoenix and Line.

1.2.2 Population and culture

The population size is about 112,000 according to 2015 estimations[vii] . Approximately 36% of the population are below 15 years of age and 3.6% above 65 years [viii]. The total fertility rate was estimated at 3 in 2012 [ix]. and its annual population growth rate is estimated at 2.2%. Life expectancy at birth is currently 65.0 years for men and 70.0 years for women [xi].

Both English and Kiribati are the official languages [xii].

1.2.3 Government

Kiribati has a two-tier system of government at the central and local levels. The central Government consists of 42 democratically elected members of Parliament, led by the President who is elected from among the members of Parliament. The local level consists of 23 elected and appointed councils. There has been political stability since 2003 [xiii].

1.2.4 Economy

Kiribati is classified by the World Bank as a lower middle income country [xiii]. Kiribati's per capita gross domestic product was US$1307.4 in 2010 [xiv]. Its major economic activity is fishing and handicrafts; and has had relative macroeconomic stability due to the use of Australian dollar as its domestic currency, its access to external assistance and sound fiscal management of Revenues Equalizing Reserve Funds from previous phosphate deposits. [xvi]

1.2.5 Health infrastructure and health status

The Government provides medical care and comprehensive primary health care services are offered through its network of 92 health centres and dispensaries. There is a referral hospital in South Tarawa that provides a range of secondary curative services as well as hospitals in Kiritimati and North Tabiteuea Island that provide basic surgical, medical and maternity services. People are typically referred overseas if they require tertiary curative services.. According to 2010 estimates, the health worker to population ratio was 0.4 doctors per 1000, 1.14 paramedical staff per 1000, 0.72 midwives per 1000, 0.04 pharmacists per 1000 and 0.04 dentists per 1000 [xvii].

Kiribati faces a double burden of disease with high mortality and morbidity from both noncommunicable and communicable diseases. The main NCDs causing mortality are cardiovascular diseases, digestive diseases, diabetes, malignant neoplasms and others.[xix] The burden of NCDs is expected to rise with high and increasing prevalence of obesity, diabetes, raised blood pressure and raised cholesterol.

According to the 2013-2017 WHO Country Cooperation Strategy, the island is faced with several challenges: (1) geographic isolation with widely dispersed populations which pose logistical challenges (transport and communications), (2) ageing workforce in the health sector, (3) unsustainable health care financing, and (4) vulnerability to climate change. There are opportunities however to alleviate the situation: (1) renewed interest by donor partners to support the health sector, (2) increased political attention to address the NCD crisis, and (3) acknowledgement of unabated population growth which can hinder socioeconomic development [xix].

1.3 Developing NCD STEPS in Kiribati

Kiribati conducted the first NCD STEPS survey in 2004-6 and included 1,755 respondents aged 15-64 years. This second NCD STEPS survey included 2,156 respondents aged 18-69 years. This will inform resource allocation for NCD prevention and control, inform policy and programmes, enable monitoring of progress towards the global NCD targets by 2025, and enable reporting as part of country commitments to the UN Political Declaration on NCDs.

2. Objectives

The overall aim of the NCD STEPS risk factor survey is to investigate the prevalence of key NCDs and their associated risk factors.

The STEPS survey:

- To document the prevalence and magnitude of key NCDs and their modifiable risk factors among adults aged 18-69.
- To compare NCDs and their risk factors across three age groups and between men and women.
- To monitor progress towards achieving the 9 voluntary global targets by 2025.

Kiribati's objectives were to:

- Describe the current levels of risk factors for chronic diseases in the Kiribati population.
- Track the direction and magnitude of changes in risk factors since the first STEPS.
- Collect data which can be used for planning, evaluation and prediction of future demands for health services.
- Build country capacity for survey planning, implementation, analysis, reporting and publication.
- Contribute to a regional NCD data repository and country-level reporting in 2016, 2025 to the UN.

3. Methodology

3.1. Survey Structure

The Kiribati STEPS survey followed a sequential three-step process as follows (Figure 1):

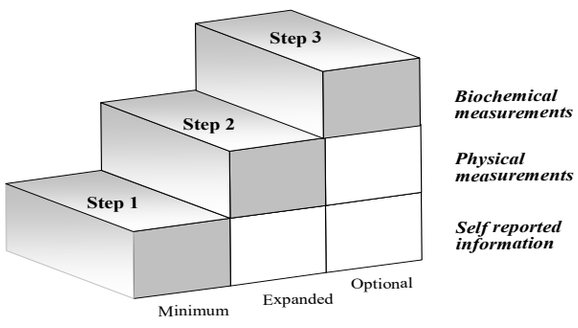
Step 1: A questionnaire-based (interview) survey on tobacco use, alcohol drinking, fruit and vegetable consumption, and physical activity.

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

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

The second Kiribati NCD STEPS Survey in 2015 used Version 3.1 of the questionnaire whilst Version 1.4 was used in the first survey in 2004. Similar to other NCD STEPS surveys conducted in the Pacific region, the Kiribati survey collected core information across all three steps. NCD STEPS standardized survey methodology was followed. Differences between age groups or sexes are statistically significant if 95% Confidence Intervals (CI) do not overlap.

Figure 1: The WHO STEPwise approach to surveillance of NCDs.



3.2. Survey Sampling Methodology

The second Kiribati STEPS Survey was a population-based survey of 18-69 year olds. The decision was to use three age groups: 18-29, 30-44, 45-69 years for men and women using the following corrections:

- Design Effect of 1.0 (clustering at village and household level)
- 95% confidence interval; p value .05
- 0.7% response rate
- Baseline prevalence percentage indicator: 0.5
- FPC – not applicable
- 6 age-sex groups (18-29 years, 30-44 years, 45-69 years)

As STEPS is intended to be nationally representative, a multi-stage cluster sampling method was used. The STEPS sampling spreadsheet was completed using the most recent census information (2012). The sample was selected in two stages assuming no replacement. At the first stage, a sample of Enumeration Areas (Islands and villages) from each stratum using probability proportional to size (PPS) sampling was selected. In the second stage, a fixed number of households from each selected Enumeration Area using systematic sampling was selected. The third stage of sampling selection was done at the household level using the KISH method.

The sampling identified that data collection would be needed on the following islands: Makin, Butaritari, Marakei, Abaiang, North Tarawa, South Tarawa,Betio, Maiana, Abemama, Kuria, Aranuka, Nonouti, Tabiteuea North, Tabiteuea South, Arorae, Tabuaeran and Kiritimati. Further details in Annex 3.

3.3. Sample Size

A sample size of 3,929 was calculated, according to the WHO standard formula for STEPS to ensure national representativeness and the KISH method was used to select participants from households. Overall, 2,156 individuals participated yielding a response rate of 54.9%.

3.4. Data Collection Process

In general, the survey personnel obtained informed consent from survey participants, gave fasting instructions to those participating in STEP 3, and made appointment times for those who consented to participate in the survey. Survey personnel conducted STEP 1 (questionnaire) at home if the participant was willing; if not, it will follow STEPS 2 and 3, which was done at a central location in each village on the second (or third) morning.

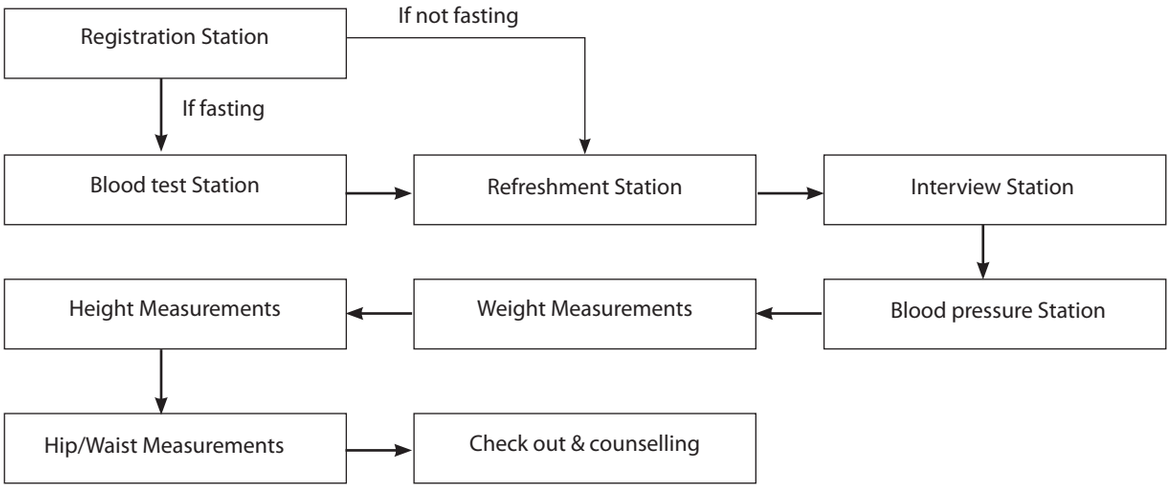


Figure 2: Sequence of data collection and stations at the survey base.

3.4.1 Registration of Participants

At the registration station, survey personnel:

- Confirmed consent of the participant to be involved in the survey.
- Ensured that participants understood steps 1, 2 and 3 involved in the survey.
- Obtained participant's date of birth and confirmed that they were within their target group.
- Confirmed fasting status of the participant.
- Directed the participant to the appropriate station depending on their fasting status.

3.4.2 Step 1 - Behavioural Risk Factors Interviews

All participants participated in a face-to-face interview in which questions were asked on smoking, alcohol, kava, fruit and vegetable consumption, salt, fat and sugar consumption, fresh and tinned fish consumption, physical activity, history of chronic conditions and medications, cervical cancer screening and mental health. Most expanded questions were included on tobacco, alcohol, kava, diet and physical activity. Survey staff also asked questions on demographic indicators, including education level, marital status, work status and household income. The questionnaire was administered through a personal digital assistant (PDA).

3.4.3 Step 2 - Physical Measurements

Survey staff obtained physical measurements following the recommended STEPwise protocols. Height and weight were measured once using the Seca Stadiometer to the nearest whole centimetre and the Seca scales to the nearest 0.1 kg, respectively. 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 of pregnant participants was not measured.

The OMRON M4 Digital Automatic Blood Pressure Monitor was used to measure resting blood pressure. Blood pressure was measured three times - the first reading followed by two more measurements taken in 2-3 minute intervals. The three readings of the blood pressure were recorded, and the average of the second and third readings was used in the analysis.

3.4.4 Step 3 - Biochemical Measurements

The survey included taking blood and urine samples. To measure fasting blood glucose and total cholesterol, participants fasted from 10:00pm the previous night until 7:00am the following morning. Capillary blood samples were drawn using the finger prick method; and the Cardiochek used to measure total cholesterol, HDL and glucose in samples. All women of child-bearing age (18-49 years old) had capillary blood samples drawn using the finger prick method to measure haemoglobin using Hemocue 301.

Spot urine sample was needed from a representative sample of 720 participants. Due to expected high refusal rate, 1,440 were invited (approximately one in three). 24-hour urine samples were needed for 150 men and 150 women, and were identified from convenient locations within the STEPS sampling frame. Due to expected high non-response rate, 350 men and 350 women were invited to provide 24-hour samples. This is approximately half those being asked to provide spot samples.

3.4.5 Check-out Station

All participants received health advice and counseling and were provided with literature about smoking, alcohol drinking, obesity and nutrition, physical activity, hypertension, diabetes, and heart diseases. Participants who were identified as being at high risk of developing, or with advanced chronic conditions were referred to the Hospital Health Services for a follow-up clinical examination.

3.5. Data Management and Analysis

3.5.1 Data Entry

Hand-held PDAs were used to record data as collected. When shortages of PDAs in some sites occurred, data was collected initially by hard copy and then transferred to PDAs when possible.

3.5.2 Data Analysis

Data analyses were conducted using the Epi Info Version 3.5.1. Analysis was undertaken by the Division of Pacific Technical Support, and verified by WHO HQ NCD surveillance team.

The results presented below are supplemented by additional information in the Data Book presented at Appendix 2.

4. Results

4.1. Characteristics of the Survey Population

The survey respondents (2,156) were divided into three age groups: 18-29 years (682 participants), 30-44 (770 participants) and 45-69 (704 participants); and women made up slightly more than half of the respondents (54.3%).

The mean per capita annual income calculated based on 1,563 participants who responded to the survey question was AUD 1526.7.

Table 1. Demographics of survey respondents

Age group and sex of respondents								
Age Group (years)	Men			Women			Both Sexes	
	n	%		n	%		n	%
18-29	321	47.1		361	52.9		682	31.6
30-44	335	43.5		435	56.5		770	35.7
45-69	330	46.9		374	53.1		704	32.7
18-69	986	45.7		1170	54.3		2156	100.0

Table 2 shows that the survey respondents were primarily Kiribati (99.0%) and others (1.0%).

Table 2. Ethnicity of survey respondents

Ethnic group of respondents			
Age Group (years)	Both Sexes		
	n	% Kiribati	% Other ethnic group
18-29	682	99.4	0.6
30-44	770	98.7	1.3
45-69	704	98.9	1.1
18-69	2156	99.0	1.0

Table 3 shows that there were small differences between age groups and between men and women – 10.7 years of education among 18-29 year olds, 10.5 years among 30-44 year olds and 8.9 years among 45-69 year olds; and 9.9 years among men and 10.2 years among women.

Table 3. Mean number of years of education

Mean number of years of education								
Age Group (years)	Men			Women			Both Sexes	
	n	Mean		n	Mean		n	Mean
18-29	315	10.3		357	11.1		672	10.7
30-44	329	10.2		426	10.7		755	10.5
45-69	310	9.1		354	8.7		664	8.9
18-69	954	9.9		1137	10.2		2091	10.0

Table 4 shows that 31.6% have completed primary school education, 30.5% junior secondary school education, 27.5% senior secondary school education, 3.0% have college degrees, 0.3% have post-graduate degrees, 4.6% have less than primary school education and 2.5% have never attended school. For the highest level of education among men or women, please see Appendix 2.

Table 4. Highest level of education attained, both sexes combined

Highest level of education								
Age Group (years)	Both Sexes							
	n	% Never attended school	% Less than primary school	% Primary school completed	% Junior secondary school completed	% Senior Secondary School completed	% College/ University completed	% Post graduate degree
18-29	677	0.7	1.9	10.2	40.5	43.6	3.1	0.0
30-44	763	2.4	2.5	34.7	29.1	26.9	3.9	0.5
45-69	688	4.5	9.6	49.1	22.1	12.5	1.9	0.3
18-69	2128	2.5	4.6	31.6	30.5	27.5	3.0	0.3

Table 5 shows that most respondents are currently married (70.3%), 15.3% have never married and 14.4% are of other marital status (separated, divorced, widowed or cohabiting). For marital status among men or women, please see Appendix 2.

Table 5. Marital status, both sexes combined

Marital status							
Age Group (years)	Both Sexes						
	n	% Never married	% Currently married	% Separated	% Divorced	% Widowed	% Cohabiting
18-29	680	37.9	52.4	1.5	1.6	1.3	5.3
30-44	767	6.1	83.1	2.5	1.0	2.3	5.0
45-69	697	3.4	73.9	1.9	2.3	15.4	3.2
18-69	2144	15.3	70.3	2.0	1.6	6.3	4.5

Table 6 shows that two thirds (66.6%) were in unpaid work (non-paid, studying, conducting home duties, retired) or unemployed, 12.6% were government employees, 12.5% were non-government employees, and 8.3% were self-employed.

A greater proportion of women than men were in unpaid work (71.9% of women vs. 60.2% of men). Women tended to work for the government (10.6% of women were government employees and 9.0% were non-government employees); whilst men tended to be non-government employees (16.8% of men were non-government employees and 14.9% were government employees). The proportion of women and men who were self-employed were similar (8.0% of men and 8.5% of women). For employment status by sex, please see tables in Appendix 2.

Table 6. Employment status, both sexes combined

Employment status					
Age Group (years)	Both Sexes				
	n	% Government employee	% Non-government employee	% Self-employed	% Unpaid
18-29	672	8.3	12.1	8.2	71.4
30-44	765	18.7	16.9	8.5	55.9
45-69	696	9.9	8.3	8.2	73.7
18-69	2133	12.6	12.5	8.3	66.6

Table 7 shows that among those engaged in unpaid work, 42.8% were home-makers, 25.0% were unemployed but able to work, 9.3% were unemployed and not able to work, and 11.5% were not paid, 6.1% were retired and 5.3% were students.

Among women who were unpaid and unemployed, 48.0% were home-makers, 23.3% were unemployed but able to work, 9.1% were unemployed and not able to work, 11.2% were non-paid and the rest were either students and retirees. Among men, 35.4% were home-makers, 27.4% were unemployed but able to work, 9.6% were unemployed but not able to work, 11.8% were non-paid, and the rest were either students or retirees. For details on type of unpaid or unemployment status by sex, please see Appendix 2.

Table 7. Unpaid work and unemployment, both sexes combined

Unpaid work and unemployed							
Age Group (years)	Both Sexes						
	n	% Non-paid	% Student	% Homemaker	% Retired	Unemployed	
						% Able to work	% Not able to work
18-29	480	12.5	15.2	36.3	0.4	27.9	7.7
30-44	428	11.4	0.7	49.3	0.7	27.3	10.5
45-69	513	10.5	0.0	43.5	16.0	20.3	9.7
18-69	1421	11.5	5.3	42.8	6.1	25.0	9.3

4.2. Tobacco use

This section elaborates on tobacco consumption status, levels and patterns in Kiribati. The questionnaire asked whether they smoked tobacco products and were then categorized into the following:

- Current smokers – those who currently smoke any tobacco products (such as cigarettes, cigars or pipes).
- Current daily smokers – those who currently smoke tobacco products daily.
- Current non-daily smokers – those who currently smoke tobacco products but not daily.
- Current smokeless tobacco users – those who currently used smokeless tobacco products (such as snuff, chewing tobacco or betel).
- Current daily smokeless tobacco users – those who currently used smokeless tobacco products daily.
- Current non-daily smokeless tobacco users – those who currently used smokeless tobacco products but not daily.
- Current tobacco users – those who currently used smoking and smokeless tobacco products.

Table 8 shows that nearly half of the population (47.7%, 95%CI= 41.5-54.0) were current smokers. The proportion of men who were current smokers was nearly twice that of women – 64.7% (95%CI= 54.6-74.8) of men and 33.4% (95%CI= 28.2-38.6) of women.

Among women, a significantly higher proportion of women aged 45-69 were current smokers (44.6%, 95%CI= 38.0-51.2) compared to those aged 30-44 years (28.3%, 95%CI= 19.3-37.4).

In general, there were no statistically significant differences in smoking prevalence between the three age groups.

Table 8. Percentage of current smokers

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
18-29	304	58.5	39.6-77.4	349	28.5	16.8-40.1	653	42.9	28.5-57.3
30-44	305	71.9	63.5-80.2	421	28.3	19.3-37.4	726	46.9	39.7-54.2
45-69	301	64.2	53.5-74.8	355	44.6	38.0-51.2	656	53.8	46.7-60.8
18-69	910	64.7	54.6-74.8	1125	33.4	28.2-38.6	2035	47.7	41.5-54.0

Table 9 shows that 61.6% (95%CI= 52.7-70.5) of men were current daily smokers, 35.3% (95%CI= 25.2-45.4) did not smoke any tobacco products, and 3.1% (95%CI= 0.8-5.5) were current non-daily smokers.

There was no statistically significant difference in smoking status between the three age groups.

Table 9. Smoking status among men

Smoking status							
Age Group (years)	Men						
	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
18-29	304	56.7	36.7-76.6	1.9	0.0-3.8	41.5	22.6-60.4
30-44	305	68.3	60.6-76.0	3.6	0.2-7.0	28.1	19.8-36.5
45-69	301	60.2	49.3-71.0	4.0	0.0-8.6	35.8	25.2-46.5
18-69	910	61.6	52.7-70.5	3.1	0.8-5.5	35.3	25.2-45.4

Table 10 shows that the majority of women were non-smokers – 66.6% (95%CI= 61.4-71.8) did not smoke, 30.9% (95%CI= 25.6-36.2) were current daily smokers and 2.5% (95%CI= 0.5-4.5) were current non-daily smokers.

Among female current smokers, a significantly higher proportion of those aged 45-69 smoked daily (44.3%, 95%CI= 37.6-50.9) than those aged 18-29 years (21.8%, 95%CI= 13.3-30.3) and 30-44 years (27.6%, 95%CI= 18.8-36.5). Significantly more women aged 30-44 were non-smokers (71.7%, 95%CI= 62.6-80.7) than those aged 45-69 years (55.4%, 95%CI= 48.8-62.0).

Table 10. Smoking status among women

Smoking status							
Age Group (years)	Women						
	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
18-29	349	21.8	13.3-30.3	6.7	0.1-13.3	71.5	59.9-83.2
30-44	421	27.6	18.8-36.5	0.7	0.0-1.3	71.7	62.6-80.7
45-69	355	44.3	37.6-50.9	0.3	0.0-0.9	55.4	48.8-62.0
18-69	1125	30.9	25.6-36.2	2.5	0.5-4.5	66.6	61.4-71.8

Table 11 shows that more than half overall indicated that they were non-smokers – 52.3% (95%CI= 46.0-58.5) did not smoke, 45.0% (95%CI= 39.6-50.3) were current daily smokers and 2.8% (95%CI= 0.8-4.8) were current non-daily smokers.

There was no statistically significant difference between the three age groups.

Table 11. Smoking status, both sexes combined

Smoking status							
Age Group (years)	Both Sexes						
	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
18-29	653	38.5	26.5-50.5	4.4	1.5-7.3	57.1	42.7-71.5
30-44	726	45.0	37.2-52.8	1.9	0.6-3.3	53.1	45.8-60.3
45-69	656	51.7	44.9-58.5	2.1	0.0-4.2	46.2	39.2-53.3
18-69	2035	45.0	39.6-50.3	2.8	0.8-4.8	52.3	46.0-58.5

Table 12 shows that among current smokers, 94.2% (95%CI= 90.6-97.8) smoke daily – 95.0% (95%CI= 91.9-98.0) of men and 93.1% (95%CI= 87.7-98.5) of women.

There was no statistically significant difference between men and women and between the three age groups.

Table 12. Percentage of current smokers who smoke 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
18-29	161	96.3	92.1-100.0	84	80.0	62.5-97.5	245	90.2	85.9-94.4
30-44	224	94.6	90.2-99.0	159	97.8	95.8-99.9	383	95.7	92.7-98.8
45-69	190	94.2	87.6-100.0	163	97.9	94.6-100.0	353	95.9	92.0-99.9
18-69	575	95.0	91.9-98.0	406	93.1	87.7-98.5	981	94.2	90.6-97.8

Table 13 shows that the mean age of initiating smoking among current daily smokers was 18.5 (95%CI= 17.6-19.4) years.

There was no statistically significant difference between men and women.

Table 13. Mean age started smoking among current daily smokers

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
18-29	147	15.8	15.2-16.5	75	17.5	16.4-18.6	222	16.4	15.9-16.9
30-44	212	18.0	17.0-19.0	151	21.4	19.7-23.1	363	19.2	18.4-20.1
45-69	179	18.6	16.2-21.0	156	20.3	17.6-23.1	335	19.4	17.2-21.6
18-69	538	17.6	16.6-18.5	382	20.0	18.5-21.5	920	18.5	17.6-19.4

Table 14 shows that the mean duration of smoking among current daily smokers was 20.9 years (95%CI= 18.2-23.6) – 20.4 years (95%CI= 16.4-24.4) for men and 21.7 years (95%CI= 20.5-22.8) for women.

There were statistically significant difference in mean duration of smoking between all three age groups but no statistically significant difference between men and women.

Table 14. Mean duration of smoking among current daily smokers

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
18-29	147	8.6	7.4-9.9	75	7.2	6.2-8.1	222	8.2	7.4-8.9
30-44	212	18.8	17.4-20.2	151	15.9	13.6-18.2	363	17.8	16.8-18.7
45-69	179	33.0	29.4-36.6	156	32.9	30.1-35.6	335	32.9	30.3-35.6
18-69	538	20.4	16.4-24.4	382	21.7	20.5-22.8	920	20.9	18.2-23.6

Table 15 shows that slightly more than a third (37.4%, 95%CI= 30.8-44.1) of current daily smokers smoked manufactured cigarettes – 37.4% (95%CI= 29.1-45.7) of male current daily smokers and 37.4% (95%CI= 30.3-44.6) of female current daily smokers.

There were no statistically significant differences between men and women and between the three age groups.

Table 15. Percentage of current daily smokers who smoked manufactured cigarettes

Manufactured cigarette smokers among current 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
18-29	148	40.2	27.2-53.2	76	-	-	224	39.7	25.3-54.2
30-44	210	42.5	31.1-53.9	148	31.9	23.6-40.2	358	38.7	29.7-47.8
45-69	180	29.3	12.3-46.3	154	40.4	22.1-58.7	334	34.6	18.6-50.6
18-69	538	37.4	29.1-45.7	378	37.4	30.3-44.6	916	37.4	30.8-44.1

Table 16 shows that the mean amount of tobacco used by current daily smokers were: 2.3 (95%CI= 1.4-3.2) manufactured cigarettes, 0.3 (95%CI= 0.1-0.4) hand-rolled cigarettes, and 6.8 (95%CI= 5.1-8.4) of cigarettes, cheroots and cigarillos.

There were no statistically significant difference between men and women and the three age groups. Please see Appendix 2 for details.

Table 16. Mean amount of tobacco used by current daily smokers by type and age, both sexes combined

Mean amount of tobacco used by current daily smokers by type												
Age Grp (yrs)	Both Sexes											
	n	Mean # of manu-factured cig.	95% CI	n	Mean # of hand-rolled cig.	95% CI	n	Mean # of pipes of tob.	95% CI	n	Mean # of cigs, che-roots, cigari-llos	95% CI
18-29	223	2.2	0.3-4.1	223	0.2	0.0-0.3	-	-	-	98	-	-
30-44	358	2.9	0.6-5.2	358	0.3	0.1-0.5	-	-	-	144	8.1	3.2-13.0
45-69	333	1.8	0.7-3.0	333	0.3	0.1-0.5	-	-	-	121	6.1	4.7-7.5
18-69	914	2.3	1.4-3.2	914	0.3	0.1-0.4	-	-	-	363	6.8	5.1-8.4

Table 17 shows that 55.5% (95%CI= 46.0-64.9) of daily smokers smoked less than 5 cigarettes each day, 21.1% (95%CI= 12.4-29.7) smoked 5-9 cigarettes, 8.2% smoked 10-14 cigarettes, 10.4% smoked 15-24 cigarettes and 4.8% smoked more than 25 cigarettes per day.

There were no statistically significant differences between the three age groups.

Significantly more women than men smoked less than 5 cigarettes per day – 79.6% of women (95%CI= 66.1-93.2) and 39.6% of men (95%CI= 26.9-52.3). For more details on the quantity smoked by men and women, please see Appendix 2.

Table 17. Percentage of daily smokers smoking the given quantities of manufactured or hand-rolled cigarettes each day

Percentage of daily smokers smoking given quantities of manufactured or hand-rolled cigarettes per day											
Age Grp (yrs)	Both Sexes										
	n	% <5 Cigs.	95% CI	% 5-9 Cigs.	95% CI	% 10-14 Cigs.	95% CI	% 15-24 Cigs.	95% CI	% ≥ 25 Cigs.	95% CI
18-29	98	-	-	-	-	-	-	-	-	-	-
30-44	144	45.3	23.8-66.7	22.9	6.4-39.3	8.5	2.8-14.2	20.4	0.0-50.5	3.0	0.0-7.7
45-69	121	58.5	51.4-65.6	19.4	7.4-31.5	12.9	0.0-26.0	8.0	2.1-13.8	1.3	0.0-4.0
18-69	363	55.5	46.0-64.9	21.1	12.4-29.7	8.2	3.6-12.9	10.4	0.4-20.5	4.8	0.0-10.3

Table 18 shows that overall, 5.0% (95%CI= 2.0-7.9) were ex-daily smokers – 5.5% (95%CI= 2.7-8.3) of men and 4.5% (95%CI= 1.0-8.1) of women.

There were no statistically significant differences between men and women and between the three age groups.

Table 18. Percentage of ex-daily smokers

Ex-daily smokers									
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
18-29	290	3.0	0.2-5.7	341	6.7	0.0-13.9	631	4.9	1.6-8.2
30-44	283	8.7	0.7-16.8	403	1.2	0.1-2.4	686	4.4	1.3-7.5
45-69	279	5.0	0.6-9.4	342	6.4	0.9-11.8	621	5.7	2.5-9.0
18-69	852	5.5	2.7-8.3	1086	4.5	1.0-8.1	1938	5.0	2.0-7.9

Table 19 shows that overall, 4.2% (95%CI= 2.7-5.7) were current users of smokeless tobacco (e.g. snuff, chewing tobacco or betel).

A significantly higher proportion of men than women were current smokeless tobacco users – 7.6% (95%CI= 5.2-10.1) of men and 1.4% (95%CI= 0.3-2.5) of women.

Significantly more iKiribati aged 18-29 currently used any smokeless tobacco products (10.1%, 95%CI= 4.9-15.4) than those aged 30-44 (1.4%, 95%CI= 0.4-2.4) and 45-69 years (1.4%, 95%CI= 0.0-3.5). Similarly, a significantly higher proportion of men aged 18-29 were current smokeless tobacco users (17.2%, 95%CI= 8.6-25.8) than those aged 30-44 (2.8%, 95%CI= 0.6-5.0) and 45-69 year (2.7%, 95%CI= 0.0-7.2). Among women, there were no statistically significant differences between the three age groups.

Table 19. Percentage of current users of smokeless tobacco

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
18-29	316	17.2	8.6-25.8	360	3.8	0.6-7.0	676	10.1	4.9-15.4
30-44	330	2.8	0.6-5.0	431	0.3	0.0-0.7	761	1.4	0.4-2.4
45-69	324	2.7	0.0-7.2	372	0.3	0.0-0.9	696	1.4	0.0-3.5
18-69	970	7.6	5.2-10.1	1163	1.4	0.3-2.5	2133	4.2	2.7-5.7

Table 20 shows that most of the population (95.8%, 95%CI= 94.3-97.3) were not users of smokeless tobacco, 2.9% (95%CI= 1.5-4.3) were current daily users and 1.3% (95%CI= 0.8-1.9) were current non-daily users.

A significantly higher proportion of men were current daily users of smokeless tobacco (5.0%, 95%CI= 2.7-7.2) than women (1.2%, 95%CI= 0.2-2.2), and were current non-daily users (2.7%, 95%CI= 1.6-3.8) compared to women (0.2%, 95%CI= 0.0-0.5). A higher proportion of women than men were not users of smokeless tobacco – 98.6% of women (95%CI= 97.5-99.7) and 92.4% of men (95%CI= 89.9-94.8). Please see Appendix 2 for details.

Table 20. Status of smokeless tobacco use

Smokeless tobacco use							
Age Group (years)	Both Sexes						
	n	Current user				% Does not use smokeless tobacco	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
18-29	676	8.0	3.8-12.2	2.1	0.5-3.7	89.9	84.6-95.1
30-44	761	0.8	0.0-1.6	0.6	0.0-1.3	98.6	97.6-99.6
45-69	696	0.1	0.0-0.2	1.3	0.0-3.5	98.6	96.5-100.0
18-69	2133	2.9	1.5-4.3	1.3	0.8-1.9	95.8	94.3-97.3

Table 21 shows that 1.9% (95%CI= 0.9-2.9) were ex-daily users of smokeless tobacco – 2.9% (95%CI= 1.2-4.6) of men and 1.1% (95%CI= 0.0-2.2) of women.

There was no statistically significant difference between men and women.

Table 21. Percentage of ex-daily users of smokeless tobacco

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
18-29	316	7.0	2.2-11.7	360	3.1	0.0-6.5	676	5.0	2.0-7.9
30-44	330	1.6	0.0-3.4	431	0.2	0.0-0.6	761	0.8	0.0-1.6
45-69	324	0.0	0.0-0.0	372	0.0	0.0-0.0	696	0.0	0.0-0.0
18-69	970	2.9	1.2-4.6	1163	1.1	0.0-2.2	2133	1.9	0.9-2.9

Table 22 shows that nearly half of the population (49.9%, 95%CI= 44.3-55.5) were current tobacco users (smoking and smokeless).

The proportion of men who were current tobacco users was more than twice that of women – 68.2% (95%CI= 58.9-77.5) of men and 31.8% (95%CI= 26.6-37.1) of women.

Among women, significantly more aged 45-69 (44.3%, 95%CI= 37.6-50.9) were current tobacco users than those aged 18-29 (24.8%, 95%CI= 17.2-32.3) and 30-44 years (27.6%, 95%CI= 18.8-36.5).

In general, there was no statistically significant difference between the three age groups.

Table 22. Percentage of current tobacco users (smoking and smokeless)

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
18-29	303	67.9	50.5-85.3	349	24.8	17.2-32.3	652	49.1	36.3-61.9
30-44	305	72.4	64.2-80.6	421	27.6	18.8-36.5	726	47.2	39.9-54.5
45-69	301	64.2	53.5-74.8	355	44.3	37.6-50.9	656	53.8	46.7-60.8
18-69	909	68.2	58.9-77.5	1125	31.8	26.6-37.1	2034	49.9	44.3-55.5

Table 23 shows that 46.9% (95%CI= 42.1-51.8) of the population were daily tobacco users. Significantly more men were daily tobacco users compared to women – 64.8% (95%CI= 56.8-72.9) of men and 34.5% (95%CI= 29.4-39.5) of women.

Among women, a significantly higher proportion of those aged 45-69 were daily tobacco users (44.6%, 95%CI= 38.0-51.2) than those aged 30-44 (28.4%, 95%CI= 19.3-37.4).

In general, there was no statistically significant difference between the three age groups.

Table 23. Percentage of daily tobacco users (smoking and smokeless)

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
18-29	303	65.6	47.7-83.5	349	31.8	21.4-42.1	652	44.3	33.7-54.9
30-44	305	68.6	60.9-76.3	421	28.4	19.3-37.4	726	45.2	37.3-53.0
45-69	301	60.2	49.3-71.0	355	44.6	38.0-51.2	656	51.7	44.9-58.5
18-69	909	64.8	56.8-72.9	1125	34.5	29.4-39.5	2034	46.9	42.1-51.8

Table 24 shows that 58.8% of current smokers had tried to stop smoking in the past 12 months – 54.3% (95%CI= 40.5-68.1) of male current smokers and 65.6% (95%CI= 55.5-75.7) of female current smokers.

There were no statistically significant differences between men and women and between the three age groups.

Table 24. Percentage of current smokers who tried to stop smoking in the past 12 months

Smoking Cessation									
Age Group (years)	Men			Women			Both Sexes		
	n	% tried to stop smoking	95% CI	n	% tried to stop smoking	95% CI	n	% tried to stop smoking	95% CI
18-29	161	67.5	42.4-92.5	84	64.8	39.9-89.6	245	66.5	42.7-90.2
30-44	224	52.4	38.9-65.9	159	67.6	51.9-83.3	383	57.7	48.4-67.1
45-69	190	44.4	33.1-55.7	163	64.7	52.8-76.5	353	53.9	49.2-58.6
18-69	575	54.3	40.5-68.1	406	65.6	55.5-75.7	981	58.8	48.7-69.0

Table 25 shows that 35.1% (95%CI= 21.1-49.0) of current smokers were advised to stop smoking by a doctor or other health worker in the past 12 months – 25.9% (95%CI= 16.7-35.2) of men and 49.1% (95%CI= 30.1-68.0) of women.

Among male current smokers, a significantly higher proportion of those aged 45-69 were advised to quit smoking (35.2%, 95%CI= 27.1-43.4) compared to those aged 18-29 (11.1%, 95%CI= 0.0-25.1). Among women, there was no statistically significant difference between the three age groups.

In general, there were no statistically significant differences between men and women and between the three age groups.

Table 25. Percentage of current smokers who were advised to quit smoking

Stop smoking for health reasons									
Age Group (years)	Men			Women			Both Sexes		
	n	% Advised to quit	95% CI	n	% Advised to quit	95% CI	n	% Advised to quit	95% CI
18-29	106	11.1	0.0-25.1	64	-	-	170	24.0	2.0-46.1
30-44	169	28.1	16.6-39.7	124	53.0	32.9-73.0	293	37.0	22.9-51.2
45-69	136	35.2	27.1-43.4	122	48.6	29.0-68.2	258	41.1	32.1-50.1
18-69	411	25.9	16.7-35.2	310	49.1	30.1-68.0	721	35.1	21.1-49.0

Table 26 shows that there are high rates of exposure to environmental tobacco smoke (ETS). More than half overall (62.7%, 95%CI= 57.6-67.8) have been exposed to ETS in homes in the past 7 days – 63.7% (95%CI= 57.0-70.4) of men and 61.9% (95%CI= 56.0-67.7) of women.

There were no statistically significant differences between men and women and between the three age groups.

Table 26. Percentage who reported exposure to environmental tobacco smoke in homes in the past 7 days

Exposed to ETS in home on 1 or more of the past 7 days									
Age Group (years)	Men			Women			Both Sexes		
	n	% Exposed	95% CI	n	% Exposed	95% CI	n	% Exposed	95% CI
18-29	316	69.5	54.8-84.2	360	65.0	54.5-75.5	676	67.1	57.1-77.1
30-44	331	60.9	53.2-68.5	431	58.3	50.5-66.1	762	59.4	54.7-64.1
45-69	324	60.7	47.9-73.6	372	62.7	54.1-71.4	696	61.8	56.5-67.1
18-69	971	63.7	57.0-70.4	1163	61.9	56.0-67.7	2134	62.7	57.6-67.8

Table 27 shows that 28.2% (95%CI= 14.2-42.2) overall reported exposure to ETS in the workplace in the past 7 days – 24.9% (95%CI= 12.8-37.0) of men and 31.0% (95%CI= 13.2-48.8) of women.

There were no statistically significant differences between men and women and between the three age groups.

Table 27. Percentage who reported exposure to ETS in the workplace in the past 7 days

Exposed to ETS in the workplace on 1 or more of the past 7 days									
Age Group (years)	Men			Women			Both Sexes		
	n	% Exposed	95% CI	n	% Exposed	95% CI	n	% Exposed	95% CI
18-29	195	20.6	9.4-31.8	232	28.2	14.4-41.9	427	24.5	14.2-34.9
30-44	232	33.3	14.2-52.5	272	27.0	17.8-36.1	504	29.6	16.9-42.3
45-69	187	20.7	10.3-31.2	230	39.0	4.3-73.7	417	30.1	9.1-51.2
18-69	614	24.9	12.8-37.0	734	31.0	13.2-48.8	1348	28.2	14.2-42.2

4.3. Alcohol consumption

This section elaborates on alcohol consumption status, levels and patterns. Respondents were asked whether they consumed alcohol and were then categorized into the following:

- Current drinkers – those who consumed alcohol in the past 30 days.
- Occasional drinkers – those who consumed alcohol in the past 12 month but not in the past 30 days.
- Past 12 months abstainers – those who have consumed alcohol but had not done so in the past 12 months.
- Non-drinkers or lifetime abstainers – those who have never consumed alcohol in his/her lifetime.

Table 28 shows that half of the men were lifetime abstainers (50.3%, 95%CI= 36.5-64.2), 12.2% (95%CI= 9.3-15.2) had abstained from alcohol in the past 12 months, 19.7% (95%CI= 13.1-26.3) were current drinkers and 17.7% (95%CI= 8.0-27.5) had consumed alcohol in the past 12 months though not currently (in the past 30 days).

There was no statistically significant difference between the three age groups.

Table 28. Alcohol consumption status of men

Alcohol consumption status									
Age Group (years)	Men								
	n	% Current drinker (past 30 days)	95% CI	% Drank in past 12 months, not current	95% CI	% Past 12 months abstainer	95% CI	% Lifetime abstainer	95% CI
18-29	316	22.5	16.0-29.0	24.6	2.7-46.4	12.6	5.4-19.8	40.4	20.0-60.8
30-44	329	18.7	10.7-26.7	20.5	11.9-29.2	10.1	5.1-15.1	50.7	42.6-58.8
45-69	324	18.0	7.4-28.5	8.0	3.1-12.8	14.0	6.5-21.5	60.1	45.1-75.1
18-69	969	19.7	13.1-26.3	17.7	8.0-27.5	12.2	9.3-15.2	50.3	36.5-64.2

Table 29 shows that the majority of women were lifetime abstainers (81.6%, 95%CI= 76.4-86.9), 8.8% (95%CI= 4.2-13.3) had abstained from alcohol in the past 12 months, 4.8% (95%CI= 2.7-7.0) were current drinkers and 4.8% (95%CI= 1.4-8.1) consumed alcohol in the past 12 months though not currently.
Older women aged 45-69 (92.1%, 95%CI= 89.1-95.1) were significantly more likely than younger women aged 18-29 (72.6%, 95%CI= 64.3-80.8) and 30-44 years (80.1%, 95%CI= 73.3-86.9) to be lifetime abstainers.
There was no statistically significant difference between the three age groups otherwise.

Table 29. Alcohol consumption status of women

Alcohol consumption status									
Age Group (years)	Women								
	n	% Current drinker (past 30 days)	95% CI	% Drank in past 12 months, not current	95% CI	% Past 12 months abstainer	95% CI	% Lifetime abstainer	95% CI
18-29	360	4.8	2.2-7.5	10.9	0.0-22.3	11.7	0.5-23.0	72.6	64.3-80.8
30-44	431	8.1	2.6-13.5	2.8	0.1-5.4	9.0	6.1-12.0	80.1	73.3-86.9
45-69	372	1.2	0.0-2.6	1.1	0.0-2.4	5.6	2.5-8.7	92.1	89.1-95.1
18-69	1163	4.8	2.7-7.0	4.8	1.4-8.1	8.8	4.2-13.3	81.6	76.4-86.9

Table 30 shows that 67.4% (95%CI= 58.6-76.2) overall were lifetime abstainers, 10.3% (95%CI= 7.8-12.9) abstained from alcohol in the past 12 months, 11.6% (95%CI= 7.6-15.6) were current drinkers and 10.7% (95%CI= 4.4-16.9) drank in the past 12 months though not currently.

There was no statistically significant difference between the three age groups.

A significantly higher proportion of women than men abstained from alcohol in their lifetime. Correspondingly, a significantly higher proportion of men than women were current alcohol drinkers. (Compare Tables 28 and 29.)

Table 30. Alcohol consumption status, both sexes combined

Alcohol consumption status									
Age Group (years)	Both Sexes								
	n	% Current drinker (past 30 days)	95% CI	% Drank in past 12 months, not current	95% CI	% Past 12 months abstainer	95% CI	% Lifetime abstainer	95% CI
18-29	676	13.2	10.4-16.0	17.3	0.7-34.0	12.1	5.3-19.0	57.4	44.3-70.4
30-44	760	12.7	6.9-18.4	10.4	6.5-14.4	9.5	7.3-11.7	67.4	60.7-74.1
45-69	696	8.9	3.4-14.4	4.2	1.6-6.8	9.5	6.1-12.9	77.4	69.9-84.9
18-69	2132	11.6	7.6-15.6	10.7	4.4-16.9	10.3	7.8-12.9	67.4	58.6-76.2

Table 31 shows that majority of those who consumed alcohol in the past 12 months drank infrequently – 25.7% (95%CI= 16.7-34.6) drank less than once a month and 30.7% (95%CI= 16.2-45.2) drank 1-3 days per month. A small percentage drank daily (3.0%, 95%CI= 0.0-6.7), 10.9% (95%CI= 5.9-15.9) drank 5-6 days per week and 7.0% (95%CI= 2.7-11.3) drank 3-4 days per week.

There was no significant difference between the three age groups and between men and women in terms of the frequency of alcohol consumption. For details on the frequency of alcohol consumption for men and women, please see Appendix 2.

Table 31. Frequency of alcohol consumption among those who drank in the last 12 months, both sexes combined

Frequency of alcohol consumption in the past 12 months									
Age Group (yrs)	Both Sexes								
	n	% Daily	95% CI	% 5-6 days/ week	95% CI	% 3-4 days/ week	95% CI	% 1-2 days/ week	95% CI
18-69	113	3.0	0.0-6.7	10.9	5.9-15.9	7.0	2.7-11.3	22.7	1.6-43.8

Frequency of alcohol consumption in the past 12 months				
Age Group (yrs)				
	% < 1-3/mth	95% CI	% < once/ mth	95% CI
18-69	30.7	16.2-45.2	25.7	16.7-34.6

Table 32 shows that the mean number of drinking occasions among current drinkers was 6.0 (95%CI= 5.1-6.9) in the past 30 days – 6.4 (95%CI= 5.0-7.8) among men, however the number of female respondents was too small to report.

The number of respondents was too small to report on any statistically significant difference between the three age groups.

Table 32. Mean number of drinking occasions in the past 30 days among current drinkers

Mean number of drinking occasions in the past 30 days among current (past 30 days) drinkers									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18-69	142	6.4	5.0-7.8	41	-	-	183	6.0	5.1-6.9

Table 33 shows that the mean number of standard drinks current drinkers consumed at each occasion was 13.4 (95%CI= 11.8-15.0) – 14.8 (95%CI= 13.2-16.5), among men the number of female respondents was too small to report.

The number of respondents was too small to report by the three age groups.

Table 33. Mean number of standard drinks consumed on a drinking occasion among current drinkers

Mean number of standard drinks per drinking occasion among current (past 30 days) drinkers									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18-69	142	14.8	13.2-16.5	38	-	-	180	13.4	11.8-15.0

Table 34 shows that overall, a small percentage of the population drank at the high-end level

(2.1%, 95%CI= 0.9-3.3).

A significantly higher proportion of men drank at the high-end level compared to women – 4.1% (95%CI= 1.9-6.2) of men and 0.5% (95%CI= 0.0-0.9) of women.

There was no statistically significant difference between the three age groups.

Table 34. Percentage who drink at the high-end level (≥60g of pure alcohol on average per occasion among men and ≥40g of pure alcohol on average per occasion among women)

Percentage drinking at high-end level (≥60g of pure alcohol on average per occasion among men and ≥40g of pure alcohol on average per occasion among women)									
Age Group (years)	Men			Women			Both Sexes		
	n	% ≥60g	95% CI	n	% ≥40g	95% CI	n	% high-end level	95% CI
18-29	302	2.9	0.6-5.1	354	0.4	0.0-0.9	572	1.5	0.4-2.7
30-44	320	3.3	0.0-6.8	427	0.3	0.0-0.9	694	1.6	0.1-3.1
45-69	318	6.0	0.0-12.2	371	0.7	0.0-2.1	652	3.1	0.0-6.7
18-69	940	4.1	1.9-6.2	1152	0.5	0.0-0.9	1918	2.1	0.9-3.3

Table 35 shows that overall, a very small percentage of the population drank at the intermediate level (0.3%, 95%CI= 0.0-0.7).

A significantly higher proportion of women than men drank at the intermediate level – 3.3% (95%CI= 1.8-4.8) of women and 0.8% (95%CI= 0.0-1.5) of men.

Among women, a significantly higher proportion of those aged 18-29 (3.3%, 95%CI= 1.3-5.2) and 30-44 (6.0%, 95%CI= 1.8-10.2) drank at the intermediate level than those aged 45-69 (0.3%, 95%CI= 0.0-0.8).

In general, there was no statistically significant difference between the three age groups.

Table 35. Percentage who drink at the intermediate level (40-59.9g of pure alcohol on average per occasion among men and 20-39.9g of pure alcohol on average per occasion among women)

Percentage drinking at intermediate level (40-59.9g of pure alcohol on average per occasion among men and 20-39.9g of pure alcohol on average per occasion among women)									
Age Group (years)	Men			Women			Both Sexes		
	n	% 40-59.9g	95% CI	n	% 20-39.9g	95% CI	n	% intermediate level	95% CI
18-29	302	0.9	0.0-2.1	354	3.3	1.3-5.2	572	0.4	0.0-1.0
30-44	320	1.4	0.0-3.2	427	6.0	1.8-10.2	694	0.6	0.0-1.4
45-69	318	0.0	0.0-0.0	371	0.3	0.0-0.8	652	0.0	0.0-0.0
18-69	940	0.8	0.0-1.5	1152	3.3	1.8-4.8	1918	0.3	0.0-0.7

Table 36 shows that overall, 7.8% (95%CI= 4.3-11.3) of the population drank at the lower-end level.

A significantly higher proportion of men (13.2%, 95%CI= 7.0-19.5) than women (3.3%, 95%CI= 1.8-4.8) consumed alcohol at the lower-end level.

Among women, a significantly higher proportion of those aged 18-29 (3.3%, 95%CI= 1.3-5.2) and 30-44 (6.0%, 95%CI= 1.8-10.2) consumed alcohol at the lower level compared to those aged 45-69 years (0.3%, 95%CI= 0.0-0.8).

In general, there was no statistically significant difference between the three age groups.

Table 36. Percentage who drink at the lower-end level (<40g of pure alcohol on average per occasion among men and <20g of pure alcohol on average per occasion among women)

Percentage drinking at lower-end level (<40g of pure alcohol on average per occasion among men and <20g of pure alcohol on average per occasion among women)									
Age Group (years)	Men			Women			Both Sexes		
	n	% <40g	95% CI	n	% <20g	95% CI	n	% lower-end level	95% CI
18-29	302	16.6	9.6-23.6	354	3.3	1.3-5.2	572	9.5	6.5-12.5
30-44	320	12.2	4.9-19.5	427	6.0	1.8-10.2	694	8.6	3.3-14.0
45-69	318	10.9	4.6-17.3	371	0.3	0.0-0.8	652	5.2	2.4-8.0
18-69	940	13.2	7.0-19.5	1152	3.3	1.8-4.8	1918	7.8	4.3-11.3

Table 37 shows that among current drinkers, 76.2%, (95%CI= 67.7-84.7) engaged in lower-end level of drinking, 20.4% (95%CI= 12.9-28.0) in high-end level and 3.4% (95%CI= 0.0-7.5) in intermediate level of drinking.

There was no statistically significant difference between the three age groups.

The number of respondents was too small to report on any statistically significant difference between men and women. For details on drinking levels of male and female current drinkers, please see Appendix 2.

Table 37. Percentage of current drinkers with different drinking levels, both sexes combined

High-end, intermediate, and lower-end level drinking among current (past 30 days) drinkers							
Age Group (years)	Both sexes						
	n	% high-end	95% CI	% intermediate	95% CI	% lower-end	95% CI
18-29	84	13.4	3.8-23.1	3.6	0.0-8.9	82.9	72.7-93.2
30-44	53	14.8	2.7-26.8	5.5	0.0-14.0	79.7	64.1-95.3
45-69	37	-	-	-	-	-	-
18-69	174	20.4	12.9-28.0	3.4	0.0-7.5	76.2	67.7-84.7

Table 38 shows that the mean maximum number of standard drinks current drinkers consumed on one occasion in the past 30 days was 17.7 (95%CI= 15.5-20.0) – 20.1 (95%CI= 17.3-22.9) for men. The number of respondents was too small to report on any statistically significant difference between men and women and between the three age groups.

Table 38. Mean maximum number of standard drinks consumed on one occasion in the past 30 days among current drinkers

Mean maximum number of standard drinks consumed on one occasion in the past 30 days									
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
18-69	135	20.1	17.3-22.9	35	-	-	170	17.7	15.5-20.0

Table 39 shows that 9.8% (95%CI= 5.5-14.0) overall had six or more drinks on a single occasion at least once in the past 30 days – men were significantly more likely to binge drink (17.6%, 95%CI= 10.0-25.2) than women (3.3%, 95%CI= 1.6-5.0).

There was no statistically significant difference between the three age groups.

Table 39. Percentage who had six or more drinks on a single occasion at least once during the past 30 days

Six or more drinks on a single occasion at least once during the past 30 days among total population									
Age Group (years)	Men			Women			Both Sexes		
	n	% ≥ 6 drinks	95% CI	n	% ≥ 6 drinks	95% CI	n	% ≥ 6 drinks	95% CI
18-29	316	20.0	12.6-27.3	360	2.5	0.9-4.2	676	10.8	7.5-14.1
30-44	329	17.1	8.7-25.6	431	5.9	2.0-9.8	760	10.8	5.3-16.2
45-69	324	15.6	4.5-26.6	372	1.0	0.0-2.4	696	7.7	1.9-13.5
18-69	969	17.6	10.0-25.2	1163	3.3	1.6-5.0	2132	9.8	5.5-14.0

Table 40 shows that the mean number of times current drinkers consumed six or more drinks on a single occasion in the past 30 days was 3.7 (95%CI= 3.3-4.1) – 4.1 times (95%CI= 3.5-4.7) for men. The number of respondents was too small to report on any statistically significant difference between men and women and between the three age groups.

Table 40. Mean number of times current drinkers consumed six or more drinks on a single occasion in the past 30 days

Mean number of times with six or more drinks during a single occasion in the past 30 days among current drinkers									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of times	95% CI	n	Mean number of times	95% CI	n	Mean number of times	95% CI
18-69	137	4.1	3.5-4.7	36	-	-	173	3.7	3.3-4.1

Table 41 shows that in the past 7 days, 25.6% (95%CI= 9.8-41.5) of current drinkers did not drink, 49.1% (95%CI= 37.3-60.9) drank 1-2 days, 15.2% (95%CI= 10.4-20.0) drank 3-4 days, 4.5% (95%CI= 0.0-9.5) drank 5-6 days, and 5.6% (95%CI= 0.0-11.8) drank daily.

The number of respondents was too small to report on any statistically significant difference between men and women and between the three age groups. For details on the frequency of alcohol consumptions among male and female current drinkers in the past 7 days, please see Appendix 2.

Table 41. Frequency of alcohol consumption among current drinkers in the past 7 days, both sexes combined

Frequency of alcohol consumption in the past 7 days among current drinkers											
Age Group (yrs)	Both Sexes										
	n	% Daily	95% CI	% 5-6 days	95% CI	% 3-4 days	95% CI	% 1-2 days	95% CI	% 0 days	95% CI
18-29	80	3.9	0.0-8.5	3.5	0.0-8.9	11.6	3.3-19.9	69.4	48.2-90.7	11.6	0.0-23.9
30-44	55	5.3	0.0-14.0	7.8	0.0-19.3	14.6	0.0-35.0	42.2	17.9-66.5	30.1	12.5-47.6
45-69	37	-	-	-	0.0-2.5	20.8	0.0-50.2	32.5	24.4-40.5	37.5	6.3-68.7
18-69	172	5.6	0.0-11.8	4.5	0.0-9.5	15.2	10.4-20.0	49.1	37.3-60.9	25.6	9.8-41.5

Table 42 shows that current drinkers consumed on average of 2.8 (95%CI= 1.1-4.6) standard drinks per day in the past 7 days.

The number of respondents was too small to report on any statistically significant difference between men and women and between the three age groups.

Table 42. Mean number of standard drinks current drinkers consumed on average per day in the past 7 days

Mean number of standard drinks consumed on average per day in the past 7 days among current drinkers									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean number	95% CI	n	Mean number	95% CI	n	Mean number	95% CI
18-69	136	3.3	1.3-5.2	36	-	-	172	2.8	1.1-4.6

Table 43 shows that 31.4% (95%CI= 14.3-48.6) of current drinkers consumed unrecorded alcohol in the past 7 days. Unrecorded alcohol includes alcohol brewed at home, brought over the border, not intended for drinking or that is untaxed. The number of respondents was too small to report on any statistically significant difference between men and women and between the three age groups.

Table 43. Percentage of current drinkers who consumed unrecorded alcohol in the past 7 days

Consumption of unrecorded alcohol									
Age Group (years)	Men			Women			Both Sexes		
	n	% consuming unrecorded alcohol	95% CI	n	% consuming unrecorded alcohol	95% CI	n	% consuming unrecorded alcohol	95% CI
18-69	156	32.4	21.5-43.2	48	-	-	204	31.4	14.3-48.6

Table 44 shows that 20.6% (95%CI= 6.2-35.1) of past 12 month drinkers had experienced being unable to stop drinking monthly or more frequently, 35.4% (95%CI= 15.2-55.5) experienced it less than monthly and 44.0% (95%CI= 35.6-52.4) have never experienced being unable to stop drinking.

In general, there was no statistically significant difference between the three age groups; and the number of female respondents was too small to report on any statistically significant difference between men and women. For more details on male and female past 12 month drinkers, please see Appendix 2.

Table 44. Percentage of past 12 month drinkers who were not able to stop drinking once started during the past year, both sexes combined

Frequency of not being able to stop drinking once started during the past 12 months among past 12 month drinkers							
Age Group (years)	Both Sexes						
	n	% monthly or more frequently	95% CI	% less than monthly	95% CI	% never	95% CI
18-29	164	16.3	0.3-32.3	46.2	23.1-69.3	37.5	26.3-48.8
30-44	126	20.1	10.5-29.7	26.2	14.1-38.3	53.7	45.6-61.8
45-69	64	31.7	4.5-58.8	27.6	0.0-59.7	40.8	23.3-58.3
18-69	354	20.6	6.2-35.1	35.4	15.2-55.5	44.0	35.6-52.4

Table 45 shows that 41.0% (95%CI= 30.6-51.4) of past 12 month drinkers had never failed to do what was normally expected from them. However, 21.0% (95%CI= 5.6-36.5) reported failing to do what was normally expected from them because of drinking monthly or more frequently; and 38.0% (95%CI= 23.2-52.8) reported failing to do so less than monthly.

In general, there was no statistically significant difference between the three age groups; and the number of female respondents was too small to report on any statistically significant difference between men and women. For details on frequency of failing to do what was normally expected because of drinking among men and women, please see Appendix 2.

Table 45. Frequency of past 12 month drinkers failing to do what was normally expected from them because of drinking during the past 12 months, both sexes combined

Frequency of failing to do what was normally expected from you during the past 12 months among past 12 month drinkers							
Age Group (years)	Both Sexes						
	n	% monthly or more frequently	95% CI	% less than monthly	95% CI	% never	95% CI
18-29	164	16.1	0.4-31.8	43.8	26.9-60.6	40.1	28.1-52.1
30-44	126	22.7	9.6-35.8	34.6	26.6-42.6	42.7	29.2-56.2
45-69	64	29.3	3.3-55.3	30.9	1.1-60.8	39.8	22.7-56.9
18-69	354	21.0	5.6-36.5	38.0	23.2-52.8	41.0	30.6-51.4

Table 46 shows that majority (73.5%, 95%CI= 53.8-93.1) of past 12 month drinkers did not need a first drink in the morning to get going. However, 15.4% (95%CI= 5.1-25.7) needed to monthly or more frequently and 11.1% (95%CI= 1.4-20.8) needed it less than monthly.

In general, there was no statistically significant difference between the three age groups; and the number of female respondents was too small to report on any statistically significant difference between men and women. For details on men and women and the frequency of them needing a first drink in the morning to get going, please see Appendix 2.

Table 46. Frequency of past 12 month drinkers needing a first drink in the morning to get going during the past 12 months, both sexes combined

Frequency of needing a first drink in the morning to get going during the past 12 months among past 12 month drinkers							
Age Group (years)	Both Sexes						
	n	% monthly or more frequently	95% CI	% less than monthly	95% CI	% never	95% CI
18-29	164	11.2	0.2-22.2	10.9	0.0-23.5	77.9	55.1-100.0
30-44	126	20.0	11.0-29.0	13.3	0.2-26.4	66.7	46.2-87.2
45-69	64	16.6	1.2-32.0	7.5	2.1-12.9	75.9	62.0-89.9
18-69	354	15.4	5.1-25.7	11.1	1.4-20.8	73.5	53.8-93.1

Table 47 shows that 29.7% (95%CI= 16.4-42.9) of former drinkers stopped drinking due to health reasons, with insufficient numbers to report by age group or gender.

Table 47. Percentage of former drinkers who stopped drinking due to health reasons

Percentage of former drinkers who stopped drinking due to health reasons										
Age Group (years)	Men				Women				Both Sexes		
	n	% stopping due to health reasons	95% CI		n	% stopping due to health reasons	95% CI		n	% stopping due to health reasons	95% CI
18-69	159	30.7	13.0-48.4		87	28.5	14.2-42.7		246	29.7	16.4-42.9

Table 48 shows that overall, the majority (83.6%, 95%CI= 77.6-89.6) of the population never had family or partner problems due to someone else's drinking during the past 12 months. However, 14.4% (95%CI= 8.9-19.9) had such problems less than monthly and 2.0% (95%CI= 0.5-3.5) had them monthly or more frequently.

There were no statistically significant differences between the three age groups and between men and women. For more details on frequency of family or partner problems due to someone else's drinking experienced by men and women, please see Appendix 2.

Table 48. Frequency of family/partner problems due to someone else's drinking during the past 12 months, both sexes combined

Frequency of family/partner problems due to someone else's drinking during the past 12 months							
Age Group (years)	Both Sexes						
	n	% monthly or more frequently	95% CI	% less than monthly	95% CI	% never	95% CI
18-29	676	2.6	0.9-4.3	14.9	7.9-21.9	82.5	74.6-90.4
30-44	760	1.8	0.5-3.1	14.6	7.0-22.2	83.6	76.4-90.7
45-69	696	1.6	0.0-4.0	13.7	8.0-19.4	84.7	77.9-91.5
18-69	2132	2.0	0.5-3.5	14.4	8.9-19.9	83.6	77.6-89.6

4.4. Kava consumption

Table 49 shows that 26.1% (95%CI= 19.6-32.6) overall have ever tried or drunk kava in the past 12 months.

A significantly higher proportion of men than women consumed kava in the past 12 months – 48.0% (95%CI= 34.5-61.4) of men and 8.0% (95%CI= 6.2-9.8) of women.

A significantly higher proportion of 18-29 year olds (30.2%, 95%CI= 19.3-41.1) and 30-44 year olds (32.6%, 95%CI= 25.5-39.6) consumed kava in the past 12 months compared to 45-69 year olds (15.1%, 95%CI= 11.9-18.2). This was similar among men where more 18-29 year olds and 30-44 year olds consumed kava than those aged 45-69 years. Among women, there was no statistically significant difference between the three age groups.

Table 49. Percentage who consumed kava in the past 12 months, both sexes combined

Percentage who consumed kava in the past 12 months									
Age Group (years)	Men			Women			Both Sexes		
	n	% Kava drinkers	95% CI	n	% Kava drinkers	95% CI	n	% Kava drinkers	95% CI
18-29	318	58.1	35.7-80.4	364	5.7	0.4-11.1	682	30.2	19.3-41.1
30-44	332	60.1	46.7-73.5	432	11.3	8.5-14.1	764	32.6	25.5-39.6
45-69	324	25.1	17.2-33.0	375	6.6	1.7-11.5	699	15.1	11.9-18.2
18-69	974	48.0	34.5-61.4	1171	8.0	6.2-9.8	2145	26.1	19.6-32.6

Table 50 shows that in the last 30 days, the population consumed kava on 1.6 days (95%CI= 1.0-2.2).

In the last 30 days, men consumed kava on significantly more days than women – 3.2 days (95%CI= 2.0-4.4) among men and 0.3 days (95%CI= 0.2-0.4) among women.

Those aged 30-44 consumed kava on significantly more days than those aged 45-69 – 2.5 days (95%CI= 1.2-3.8) among those aged 30-44 and 0.8 days (95%CI= 0.6-1.1) among those aged 45-69 years.

Table 50. Mean number of days kava was consumed in the last 30 days among those who drank it in the past 12 months

Mean number of days kava was consumed in last 30 days									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean days	95% CI	n	Mean days	95% CI	n	Mean days	95% CI
18-29	318	2.7	1.6-3.9	364	0.3	0.0-0.6	682	1.4	0.9-1.9
30-44	332	5.3	2.9-7.6	432	0.4	0.1-0.6	764	2.5	1.2-3.8
45-69	324	1.6	1.0-2.1	375	0.2	0.0-0.4	699	0.8	0.6-1.1
18-69	974	3.2	2.0-4.4	1171	0.3	0.2-0.4	2145	1.6	1.0-2.2

Table 51 shows that the Kiribati population spent about 1.4 hours (95%CI= 1.0-1.8) drinking kava in a session.

Men spent significantly more hours drinking kava in a session compared to women – 2.6 hours (95%CI= 1.9-3.4) among men and 0.4 hours (95%CI= 0.2-0.5) among women.

Those aged 18-29 and 30-44 spent significantly more hours drinking kava in a session compared to those aged 45-69 – 1.6 hours (95%CI= 1.0-2.2) among those aged 18-29, 1.9 hours (95%CI= 1.5-2.4) among those aged 30-44 and 0.7 hours (95%CI= 0.5-0.8) among those aged 45-69 years.

Table 51. Mean number of hours spent drinking kava in a session

Mean number of hours spent drinking kava in a session									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of hours	95% CI	n	Mean number of hours	95% CI	n	Mean number of hours	95% CI
18-29	323	3.1	1.9-4.4	365	0.3	0.0-0.5	688	1.6	1.0-2.2
30-44	337	3.7	2.4-4.9	436	0.6	0.3-0.8	773	1.9	1.5-2.4
45-69	330	1.1	0.7-1.6	376	0.3	0.1-0.4	706	0.7	0.5-0.8
18-69	990	2.6	1.9-3.4	1177	0.4	0.2-0.5	2167	1.4	1.0-1.8

Table 52 shows that 13.5% (95%CI= 7.7-19.4) of kava drinkers were likely to drink alcohol during or after drinking kava.

Men were significantly more likely than women to drink alcohol during or after kava – 16.0% (95%CI= 8.8-23.3) of men and 1.2% (95%CI= 0.0-2.7) of women.

There was no statistically significant difference between the three age groups.

Table 52. Likelihood of drinking alcohol during or after drinking kava, both sexes combined

Percentage of respondents drinking alcohol during/after drinking kava									
Age Group (years)	Men			Women			Both Sexes		
	n	% alcohol consumption during/after kava session	95% CI	n	% alcohol consumption during/after kava session	95% CI	n	% alcohol consumption during/after kava session	95% CI
18-29	184	23.6	12.0-35.2	27	-	-	211	21.4	11.4-31.4
30-44	206	10.7	2.0-19.3	50	-	-	256	8.9	1.7-16.1
45-69	125	10.9	0.0-23.1	28	-	-	153	8.3	0.0-18.1
18-69	515	16.0	8.8-23.3	105	1.2	0.0-2.7	620	13.5	7.7-19.4

Table 53 shows that 73.9% (95%CI= 65.4-82.5) of kava drinkers were likely to smoke tobacco during or after drinking kava.

Kava drinkers aged 30-44 were more likely to smoke during or after the kava session (79.4%, 95%CI= 70.3-88.5) than those aged 45-69 (55.7%, 95%CI= 41.6-69.9).

There was no statistically significant difference between men and women.

Table 53. Percentage of respondents who smoke tobacco during or after drinking kava, gender disaggregated

Percentage of respondents smoking tobacco during/after drinking kava									
Age Group (years)	Men			Women			Both Sexes		
	n	% smoking during/after kava session	95% CI	n	% smoking during/after kava session	95% CI	n	% smoking during/after kava session	95% CI
18-29	184	77.7	60.9-94.4	27	68.5	55.7-81.4	211	76.7	61.4-92.1
30-44	206	85.0	76.4-93.6	50	56.3	29.4-83.2	256	79.4	70.3-88.5
45-69	125	54.4	38.9-69.8	28	60.1	16.0-100.0	153	55.7	41.6-69.9
18-69	515	76.7	67.5-86.0	105	60.1	44.5-75.7	620	73.9	65.4-82.5

Table 54 shows that 79.5% (95%CI= 74.4-84.6) of kava drinkers would usually eat during and/or after drinking kava. There were no statistically significant differences between men and women and between the three age groups.

Table 54. Likelihood of consuming food during or after drinking kava, both sexes combined

Percentage of respondents who consumed food during/after drinking kava									
Age Group (years)	Men			Women			Both Sexes		
	n	% Consumed food during/after kava session	95% CI	n	% Consumed food during/after kava session	95% CI	n	% Consumed food during/after kava session	95% CI
18-29	184	80.1	73.6-86.6	27	-	-	211	80.8	74.3-87.2
30-44	206	84.6	78.5-90.7	50	-	-	256	79.0	70.1-87.8
45-69	125	80.3	71.6-89.0	28	-	-	153	78.1	71.3-84.9
18-69	515	82.0	76.8-87.2	105	67.0	56.8-77.2	620	79.5	74.4-84.6

Table 55 shows that 55.3% (95%CI= 37.7-73.0) consumed other types of food and drinks whilst 2.5% (95%CI= 0.2-4.8) consumed soft drinks, 22.6% (95%CI= 9.2-35.9) consumed sweets and 19.6% (95%CI= 11.2-28.0) consumed salted snacks.

There were no statistically significant differences between men and women and between the three age groups.

Table 55. Percentage who consumed the given types of food and drinks during or after drinking kava, both sexes combined

Percentage of food and drinks consumed during/after drinking kava									
Age Group (years)	Both Sexes								
	n	% Soft drinks	95% CI	% Sweets	95% CI	% Salted Snacks	95% CI	% Others	95% CI
18-29	156	3.0	0.0-7.1	28.5	5.6-51.3	17.7	3.4-32.1	50.8	18.9-82.7
30-44	201	2.4	0.3-4.6	17.5	6.2-28.8	20.2	11.5-28.8	59.9	50.4-69.4
45-69	114	1.3	0.0-3.0	22.2	10.5-34.0	22.6	6.6-38.6	53.8	35.1-72.5
18-69	472	2.5	0.2-4.8	22.6	9.2-35.9	19.6	11.2-28.0	55.3	37.7-73.0

4.5. Fruit and vegetable consumption

WHO recommends at least five portions (approximately 400 grams) of fruits and vegetables a day to reduce the risk of NCDs. To assess respondents' fruit and vegetable intake, they were asked how many days they consumed fruit and vegetables in a typical week, and how many servings of each type they consumed on one of those days.

Table 56 shows that the mean number of days fruit was consumed in a typical week was 1.6 days (95%CI= 1.4-1.9). There were no statistically significant differences between men and women and between the three age groups.

Table 56. Mean number of days fruit was consumed in a typical week

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
18-29	309	1.5	0.9-2.1	352	1.6	1.4-1.9	661	1.6	1.2-1.9
30-44	323	1.7	1.2-2.1	418	1.8	1.4-2.2	741	1.7	1.5-2.0
45-69	310	1.7	1.3-2.1	366	1.5	1.2-1.9	676	1.6	1.3-2.0
18-69	942	1.6	1.4-1.9	1136	1.7	1.4-1.9	2078	1.6	1.4-1.9

Table 57 shows that the mean number of days vegetables was consumed in a typical week was 1.5 days (95%CI= 1.3-1.7). There were no statistically significant differences between men and women and between the three age groups.

Table 57. Mean number of days vegetables was consumed in a typical week

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
18-29	306	1.4	0.8-2.1	348	1.4	1.1-1.8	654	1.4	1.1-1.8
30-44	321	1.3	0.9-1.6	417	1.5	1.2-1.8	738	1.4	1.2-1.6
45-69	310	1.7	1.4-2.1	362	1.7	1.3-2.1	672	1.7	1.4-2.0
18-69	937	1.5	1.2-1.7	1127	1.6	1.3-1.8	2064	1.5	1.3-1.7

Table 58 shows that the mean number of servings of fruit and/or vegetables consumed on average per day was 0.9 (95%CI= 0.6-1.1). There were no statistically significant differences between men and women and between the three age groups in terms of the mean number of servings of fruit and/or vegetables consumed on average per day.

The Kiribati population consumed 0.5 (95%CI= 0.3-0.6) servings of fruits and 0.4 (95%CI= 0.3-0.6) servings of vegetables on average per day. There were no statistically significant differences in consumption of fruits and vegetables between men and women and between the three age groups. Please see Appendix 2 for more details.

Table 58. Mean number of servings of fruit and/or vegetables on average per day

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
18-29	302	1.1	0.3-1.8	338	0.8	0.5-1.2	640	0.9	0.4-1.5
30-44	320	0.8	0.6-0.9	414	0.8	0.5-1.1	734	0.8	0.6-1.0
45-69	302	0.9	0.6-1.1	357	0.9	0.6-1.2	659	0.9	0.6-1.1
18-69	924	0.9	0.6-1.2	1109	0.8	0.6-1.1	2033	0.9	0.6-1.1

Table 59 shows that overall, 73.3% (95%CI= 65.4-81.2) did not consume any fruit and/or vegetables; 22.1% (95%CI= 16.6-27.5) consumed 1-2 servings; 3.0% (95%CI= 0.8-5.2) consumed 3-4 servings; and 1.6% (95%CI= 0.7-2.6) consumed more than 5 servings on average per day. There were no statistically significant differences between the three age groups and between men and women. For details on the number of fruit and/or vegetable servings consumed by men and women, please see Appendix 2.

Table 59. Percentage who consumed the specified number of servings of fruit and/or vegetables on average per day, both sexes combined

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
18-29	640	75.9	63.6-88.1	17.9	9.6-26.1	3.8	0.3-7.3	2.5	0.2-4.7
30-44	734	73.6	65.5-81.6	22.9	16.5-29.2	2.5	0.5-4.4	1.1	0.1-2.0
45-69	659	70.4	62.1-78.7	25.4	18.2-32.6	2.8	0.9-4.8	1.3	0.2-2.5
18-69	2033	73.3	65.4-81.2	22.1	16.6-27.5	3.0	0.8-5.2	1.6	0.7-2.6

Table 60 shows that overall, 98.4% (95%CI= 97.4-99.3) consumed less than five servings of fruit and/or vegetables per day. There were no statistically significant differences between men and women and between the three age groups.

Table 60. Percentage who consumed less than five servings of fruit and/or vegetables on average per day

Less than five servings of fruit and/or 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
18-29	302	96.8	93.3-100.0	338	98.2	95.7-100.0	640	97.5	95.3-99.8
30-44	320	99.0	97.8-100.0	414	98.9	97.7-100.0	734	98.9	98.0-99.9
45-69	302	98.7	96.7-100.0	357	98.7	97.5-99.8	659	98.7	97.5-99.8
18-69	924	98.1	96.8-99.4	1109	98.6	97.4-99.8	2033	98.4	97.4-99.3

4.6. Dietary salt

WHO recommends less than 5 g of salt (approximately 1 teaspoon) per day to reduce risk of high blood pressure and consequently risk of heart disease and stroke. Respondents were asked how much and how often they added salt or salty sauce, how much salty processed food they consumed, their knowledge of salt and its health consequences, and actions they have taken to control salt intake.

Table 61 shows that overall, 41.3% (95%CI= 33.7-48.9) of the population always or often added salt before eating or when eating – 34.5% (95%CI= 27.6-41.4) of men and 47.0% (95%CI= 37.4-56.6) of women.

A significantly higher proportion of those aged 18-29 (53.6%, 95%CI= 43.2-64.0) and 30-44 (42.9%, 95%CI= 35.3-50.4) would add salt always or often before or when eating compared to those aged 45-69 years (27.5%, 95%CI= 20.5-34.4). Among women, those aged 18-29 were also more likely to add salt always or often before eating or when eating (61.5%, 95%CI= 52.4-70.6) than those aged 45-69 years (31.1%, 95%CI= 14.8-47.4).There was no statistically significant difference between men and women.

Table 61. Percentage who add salt always or often before eating or when eating

Add salt always or often before eating or when eating									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	312	44.8	29.1-60.4	359	61.5	52.4-70.6	671	53.6	43.2-64.0
30-44	327	35.4	25.1-45.6	428	48.6	40.3-56.8	755	42.9	35.3-50.4
45-69	319	23.2	13.0-33.4	368	31.1	14.8-47.4	687	27.5	20.5-34.4
18-69	958	34.5	27.6-41.4	1155	47.0	37.4-56.6	2113	41.3	33.7-48.9

Table 62 shows that overall, 61.1% (95%CI= 51.6-70.6) always or often added salt when cooking or preparing food at home.

Significantly higher proportion 18-29 year olds (70.7%, 95%CI= 58.4-83.1) and 30-44 year olds (67.5%, 95%CI= 58.4-76.6) would add salt always or often when cooking or preparing food at home compared to those aged 45-69 (44.8%, 95%CI= 37.1-52.6). Among men, a higher proportion of those aged 30-44 would do so (61.5%, 95%CI= 54.1-68.8) compared to those aged 45-69 (41.5%, 95%CI= 31.0-52.0). Among women, a higher proportion of those aged 18-29 (74.5%, 95%CI= 64.0-84.9) and 30-44 (72.0%, 95%CI= 60.5-83.5) would do so compared to those aged 45-69 years (47.7%, 95%CI= 36.4-59.1).

There was no statistically significant difference between men and women.

Table 62. Percentage who add salt always or often when cooking or preparing food at home

Add salt always or often when cooking or preparing food at home									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	307	66.4	46.4-86.3	358	74.5	64.0-84.9	665	70.7	58.4-83.1
30-44	324	61.5	54.1-68.8	429	72.0	60.5-83.5	753	67.5	58.4-76.6
45-69	320	41.5	31.0-52.0	367	47.7	36.4-59.1	687	44.8	37.1-52.6
18-69	951	56.3	46.1-66.5	1154	65.0	55.0-75.0	2105	61.1	51.6-70.6

Table 63 shows that overall, 8.2% (95%CI= 3.9-12.5) always or often consumed processed food high in salt – 7.0% (95%CI= 3.7-10.3) of men and 9.2% (95%CI= 3.6-14.8) of women.

There were no statistically significant differences between men and women and between the three age groups.

Table 63. Percentage who always or often consumed processed food high in salt

Always or often consume processed food high in salt									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	309	6.5	1.5-11.6	356	11.1	2.9-19.2	665	8.9	2.6-15.3
30-44	322	8.6	4.5-12.7	419	9.0	2.7-15.3	741	8.8	4.7-12.9
45-69	316	6.0	2.1-9.8	360	7.5	2.8-12.2	676	6.8	2.9-10.7
18-69	947	7.0	3.7-10.3	1135	9.2	3.6-14.8	2082	8.2	3.9-12.5

Table 64 shows that overall, 19.5% (95%CI= 13.8-25.2) thought that they consumed far too much or too much salt. Significantly more women than men thought that they consumed far too much or too much salt – 25.2% (95%CI= 18.5-32.0) among women and 12.5% (95%CI= 7.7-17.3) among men.

There was no statistically significant difference between the three age groups.

Table 64. Percentage who think they consumed far too much or too much salt

Think they consume far too much or too much salt									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	309	11.0	3.3-18.8	359	34.8	20.6-49.1	668	24.0	14.5-33.5
30-44	324	17.7	8.9-26.5	426	27.7	16.1-39.2	750	23.4	13.4-33.3
45-69	319	8.5	3.6-13.4	364	13.1	4.0-22.1	683	11.0	6.9-15.1
18-69	952	12.5	7.7-17.3	1149	25.2	18.5-32.0	2101	19.5	13.8-25.2

Table 65 shows that overall, 0.8% (95%CI= 0.5-1.1) reported that they consumed far too much salt and 18.7% (95%CI= 13.1-24.4) reported that they consumed too much salt. Slightly more than half (57.9%, 95%CI= 48.4-67.5) reported that they consumed just the right amount of salt, 19.5% (95%CI= 15.7-23.2) that they consumed too little and 3.1% (95%CI= 1.6-4.6) far too little.

Those aged 45-69 were more likely to report consuming too little salt (30.0%, 95%CI= 17.7-42.3) compared to those aged 18-29 years (13.9%, 95%CI= 10.6-17.2). There were no statistically significant differences between the three age groups for the other categories.

A significantly higher proportion of women than men reported that they consumed too much salt – 24.4% (95%CI= 17.8-31.0) of women and 11.7% (95%CI= 6.8-16.7) of men. For more details on what men and women reported on the amount of salt they consumed, please see Appendix 2.

Table 65. Percentage who self-reported how much salt they consumed, both sexes combined

Self-reported quantity of salt consumed											
Age Group (years)	Both Sexes										
	n	% Far too much	95% CI	% Too much	95% CI	% Just the right amt	95% CI	% Too little	95% CI	% Far too little	95% CI
18-29	668	0.6	0.1-1.2	23.4	13.8-32.9	60.4	48.5-72.3	13.9	10.6-17.2	1.7	0.0-4.4
30-44	750	1.3	0.8-1.9	22.0	12.4-31.7	59.6	51.4-67.8	14.8	10.1-19.4	2.3	0.9-3.6
45-69	683	0.4	0.0-0.8	10.6	6.6-14.6	53.7	42.9-64.5	30.0	17.7-42.3	5.3	2.9-7.7
18-69	2101	0.8	0.5-1.1	18.7	13.1-24.4	57.9	48.4-67.5	19.5	15.7-23.2	3.1	1.6-4.6

Table 66 shows that overall, 54.7% (95%CI= 41.4-67.9) stated that lowering salt in diet was very important, 26.8% (95%CI= 19.8-33.8) as somewhat important and 18.5% (95%CI= 10.8-26.3) as not at all important.

There were no statistically significant differences between the three age groups and between men and women. For more details on the responses of men and women, please see Appendix 2.

Table 66. Percentage who stated the different importance of lowering salt in diet, both sexes combined

Importance of lowering salt in diet							
Age Group (years)	Both Sexes						
	n	% Very important	95% CI	% Somewhat important	95% CI	% Not at all important	95% CI
18-29	578	51.7	31.2-72.2	24.5	14.5-34.6	23.8	12.2-35.4
30-44	638	54.9	44.7-65.0	27.7	21.2-34.2	17.5	9.8-25.1
45-69	594	57.1	43.8-70.3	27.9	19.4-36.4	15.1	8.9-21.3
18-69	1810	54.7	41.4-67.9	26.8	19.8-33.8	18.5	10.8-26.3

Table 67 shows that overall, 71.0% (95%CI= 64.3-77.8) thought that consuming too much salt could cause serious health problems.

There were no statistically significant differences between men and women and between the three age groups.

Table 67. Percentage who think consuming too much salt could cause serious health problems

Think consuming too much salt could cause serious health problem									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	315	67.4	55.6-79.2	360	68.3	60.6-76.1	675	67.9	62.3-73.5
30-44	328	62.4	50.4-74.4	430	77.7	67.0-88.4	758	71.1	62.4-79.8
45-69	324	73.9	65.5-82.3	371	74.2	61.8-86.7	695	74.1	65.4-82.8
18-69	967	67.9	59.6-76.2	1161	73.6	67.2-80.1	2128	71.0	64.3-77.8

Table 68 shows that on average, the Kiribati population ate 1.2 (95%CI= 0.9-1.5) meals outside a home.

Among men, those aged 30-44 ate more meals outside a home on average (1.5, 95%CI= 1.2-1.7) compared to those aged 45-69 years (0.8, 95%CI= 0.5-1.1).

In general, there were no statistically significant differences between men and women and between the three age groups.

Table 68. Mean number of meals eaten outside a home

Mean number of meals eaten outside a home									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18-29	295	1.4	0.7-2.1	343	1.4	1.0-1.9	638	1.4	0.9-1.9
30-44	317	1.5	1.2-1.7	416	1.3	0.8-1.9	733	1.4	1.0-1.7
45-69	308	0.8	0.5-1.1	351	0.7	0.4-1.0	659	0.8	0.5-1.0
18-69	920	1.2	0.9-1.6	1110	1.2	0.8-1.5	2030	1.2	0.9-1.5

4.7. Sugar consumption

WHO recommends reducing sugar intake to prevent unhealthy weight gain and risk of dental caries. Sugar intake can be reduced by limiting consumption of food and drinks containing high amounts of sugar, and eating fresh fruits and vegetables as snacks. In this section, survey respondents were asked how often and how much sugary drinks were consumed as well as how much sugar was added. Sugary drinks include fizzy drinks (excluding pure unsweetened fruit juice), cordials or drink mixes, milo and homemade drinks with added sugar; and one serving of sugary drink refers to one can of drink or one large glass.

Table 69 shows that the Kiribati population consumed on average per day 3.7 servings (95%CI= 2.0-5.5) – 3.5 servings (95%CI= 1.6-5.4) among men and 3.9 servings (95%CI= 1.9-5.8) among women.

There were no statistically significant differences between men and women and between the three age groups.

Table 69. Mean number of servings of sugary drinks consumed per day

Mean number of servings of sugary drinks consumed per day									
Age Group (years)	Men			Women			Both Sexes		
	n	mean	95% CI	n	mean	95% CI	n	mean	95% CI
18-29	274	4.4	1.2-7.7	320	4.2	1.9-6.4	594	4.3	2.5-6.1
30-44	297	3.9	1.6-6.2	383	4.9	1.7-8.0	680	4.5	1.7-7.2
45-69	291	2.3	1.2-3.3	335	2.4	0.8-3.9	626	2.3	1.1-3.6
18-69	862	3.5	1.6-5.4	1038	3.9	1.9-5.8	1900	3.7	2.0-5.5

Table 70 shows that the Kiribati population added 5.2 teaspoons (95%CI= 4.0-6.3) of sugar to a drink on average per day – 5.1 teaspoons (95%CI= 3.6-6.6) among men and 5.2 teaspoons (95%CI= 3.8-6.6) among women. Drinks that they could have added sugar to include milo, tea or coffee.

There were no statistically significant differences between men and women and between the three age groups.

Table 70. Mean number of teaspoon of sugar added to a drink per day

Mean number of teaspoon of sugar added to a drink per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean # of teaspoons	95% CI	n	Mean # of teaspoons	95% CI	n	Mean # of teaspoons	95% CI
18-29	278	3.8	3.1-4.6	324	5.3	4.4-6.3	602	4.7	4.2-5.2
30-44	305	6.0	4.5-7.6	391	6.1	3.1-9.1	696	6.1	4.1-8.0
45-69	284	5.6	2.1-9.0	332	4.0	2.9-5.0	616	4.7	2.9-6.5
18-69	867	5.1	3.6-6.6	1047	5.2	3.8-6.6	1914	5.2	4.0-6.3

4.8. Fresh and tinned fish consumption

Table 71 shows that in a typical week, the Kiribati population consumed fresh fish on 5.0 days (95%CI= 4.4-5.6). There were no statistically significant differences between men and women and between the three age groups.

Table 71. Mean number of days fresh fish was consumed in a typical week

Mean number of days fresh fish was consumed in a typical week									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean # of days	95% CI	n	Mean # of days	95% CI	n	Mean # of days	95% CI
18-29	315	5.2	4.3-6.0	360	4.9	4.4-5.5	675	5.0	4.4-5.7
30-44	329	5.0	4.5-5.6	431	5.0	4.3-5.7	760	5.0	4.4-5.6
45-69	324	5.1	4.5-5.7	370	4.9	4.3-5.4	694	5.0	4.5-5.5
18-69	968	5.1	4.5-5.7	1161	4.9	4.4-5.5	2129	5.0	4.4-5.6

Table 72 shows that the Kiribati population consumed 2.3 servings (95%CI= 1.8-2.8) of fresh fish on average per day. There were no statistically significant differences between men and women and between the three age groups.

Table 72. Mean number of servings of fresh fish consumed on average per day

Mean number of servings of fresh fish consumed on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean # of servings	95% CI	n	Mean # of servings	95% CI	n	Mean # of servings	95% CI
18-29	299	2.3	1.7-3.0	330	2.0	1.6-2.4	629	2.1	1.7-2.6
30-44	313	3.1	2.1-4.0	407	2.2	1.5-3.0	720	2.6	1.9-3.3
45-69	300	2.2	1.7-2.8	349	2.0	1.1-2.9	649	2.1	1.5-2.7
18-69	912	2.6	1.9-3.2	1086	2.1	1.5-2.7	1998	2.3	1.8-2.8

Table 73 shows that in a typical week, the Kiribati population consumed tinned fish on 1.5 days (95%CI= 1.1-1.8). There were no statistically significant differences between men and women and between the three age groups.

Table 73. Mean number of days tinned fish was consumed in a typical week

Mean number of days tinned fish was consumed in a typical week									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean # of days	95% CI	n	Mean # of days	95% CI	n	Mean # of days	95% CI
18-29	314	1.5	1.0-2.1	360	1.6	1.2-2.1	674	1.6	1.1-2.0
30-44	329	1.4	1.1-1.8	431	1.6	1.2-1.9	760	1.5	1.1-1.9
45-69	324	1.4	1.1-1.7	370	1.4	0.9-1.8	694	1.4	1.0-1.7
18-69	967	1.5	1.1-1.8	1161	1.5	1.2-1.9	2128	1.5	1.1-1.8

Table 74 shows that the Kiribati population consumed 0.3 servings (95%CI= 0.2-0.5) of tinned fish on average per day. There were no statistically significant differences between men and women and between the three age groups.

Table 74. Mean number of servings of tinned fish consumed on average per day

Mean number of servings of tinned fish consumed on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean # of servings	95% CI	n	Mean # of servings	95% CI	n	Mean # of servings	95% CI
18-29	276	0.4	0.2-0.6	296	0.4	0.2-0.5	572	0.4	0.2-0.5
30-44	294	0.3	0.2-0.5	361	0.4	0.2-0.5	655	0.4	0.2-0.5
45-69	276	0.3	0.2-0.5	310	0.3	0.1-0.4	586	0.3	0.2-0.4
18-69	846	0.4	0.2-0.5	967	0.3	0.2-0.5	1813	0.3	0.2-0.5

4.9. Physical activity

A population's physical activity (or inactivity) can be described in different ways. The two most common ways used for analyzing Global Physical Activity Questionnaire (GPAQ) data 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 the population into specific groups by setting cut-off points for a specific amount of physical activity.

Continuous indicator: Metabolic Equivalent (MET)

METs are commonly used to express the intensity of physical activities; and 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. Guidelines have been adopted for the analysis of GPAQ data: 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. 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: WHO global recommendations on physical activity for health

Calculation of the recommended amount of physical activity for health takes into account the total time spent in physical activity during a typical week and the intensity of the physical activity.

Throughout the week, including activity for work, during transport and leisure time, adults should do at least:

- 150 minutes of moderate-intensity physical activity OR
- 75 minutes of vigorous-intensity physical activity OR
- An equivalent combination of moderate- and vigorous-intensity physical activity achieving at least 600 MET-minutes.

The three levels of physical activity for classifying populations were low, moderate and high. The criteria for these levels are shown below.

High	Moderate	Low
A person who meets the following criteria: 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	A person who does not meet the criteria for the "high" category but meets the following: 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.	A person who does not meet any of the abovementioned criteria.

Table 75 shows that overall, 35.8% (95%CI= 31.8-39.7) of the Kiribati population did not meet the WHO recommendations on physical activity for health.

A significantly higher proportion of women (45.8%, 95%CI= 40.9-50.6) than men (23.8%, 95%CI= 18.0-29.5) did not meet the recommendations.

A significantly higher proportion of those aged 45-69 (44.2%, 95%CI= 38.0-50.4) did not meet the WHO recommendations on physical activity for health compared to those aged 18-29 years (25.5%, 95%CI= 19.2-31.7). This was the case among men and women as well. Among men, 30.9% (95%CI= 21.9-40.0) of those aged 45-69 did not meet the WHO recommendations compared to 10.3% (95%CI= 2.9-17.6) of those aged 18-29; and among women, 55.7% (95%CI= 47.3-64.1) of those aged 45-69 did not meet the recommendations compared to 39.0% (95%CI= 30.9-47.0) of those aged 18-29 years.

Table 75. Percentage who did not meet WHO recommendations on physical activity for health

Not meeting WHO recommendations on physical activity for health									
Age Group (years)	Men			Women			Both Sexes		
	n	% not meeting recs	95% CI	n	% not meeting recs	95% CI	n	% not meeting recs	95% CI
18-29	303	10.3	2.9-17.6	345	39.0	30.9-47.0	648	25.5	19.2-31.7
30-44	320	30.1	17.2-43.0	419	42.8	37.3-48.4	739	37.3	30.4-44.3
45-69	317	30.9	21.9-40.0	360	55.7	47.3-64.1	677	44.2	38.0-50.4
18-69	940	23.8	18.0-29.5	1124	45.8	40.9-50.6	2064	35.8	31.8-39.7

Table 76 shows that 47.2% of men (95%CI= 38.8-55.5) engaged in high levels of physical activity, 24.9% (95%CI= 20.5-29.3) in moderate levels and 27.9% (95%CI= 20.9-34.9) in low levels.

Significantly higher proportion of men aged 30-44 (34.9%, 95%CI= 22.9-47.0) and 45-69 (38.0%, 95%CI= 28.5-47.5) engaged in low levels of physical activity than those aged 18-29 (10.9%, 95%CI= 3.1-18.6); and significantly higher proportion of men aged 18-29 (64.5%, 95%CI= 54.3-74.7) engaged in high levels of physical activity than those aged 45-69 years (34.3%, 95%CI= 25.2-43.5).

Table 76. Classification of men according to their total physical activity level

Level of total physical activity							
Age Group (years)	Men						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
18-29	303	10.9	3.1-18.6	24.6	19.5-29.8	64.5	54.3-74.7
30-44	320	34.9	22.9-47.0	22.4	14.5-30.3	42.7	25.5-59.9
45-69	317	38.0	28.5-47.5	27.7	19.2-36.1	34.3	25.2-43.5
18-69	940	27.9	20.9-34.9	24.9	20.5-29.3	47.2	38.8-55.5

Table 77 shows that 18.3% (95%CI= 13.6-23.1) of women had high levels of physical activity, 32.1% (95%CI= 26.1-38.2) had moderate levels and 49.5% (95%CI= 44.7-54.3) low levels.

A significantly higher proportion of women aged 45-69 (61.9%, 95%CI= 51.3-72.6) had low levels of physical activity than those aged 18-29 (42.1%, 95%CI= 33.8-50.5) and 30-44 years (44.9%, 95%CI= 39.5-50.4); and a significantly higher proportion of women aged 18-29 (28.9%, 95%CI= 18.0-39.9) had high levels of physical activity than those aged 45-69 years (8.9%, 95%CI= 2.9-14.9). There was no statistically significant difference between the three age groups in terms of their levels of physical activity.

Table 77. Classification of women according to their total physical activity level

Level of total physical activity							
Age Group (years)	Women						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
18-29	345	42.1	33.8-50.5	29.0	19.2-38.7	28.9	18.0-39.9
30-44	419	44.9	39.5-50.4	37.5	31.9-43.1	17.6	12.5-22.6
45-69	360	61.9	51.3-72.6	29.2	20.4-38.0	8.9	2.9-14.9
18-69	1124	49.5	44.7-54.3	32.1	26.1-38.2	18.3	13.6-23.1

Table 78 shows that overall, 31.4% (95%CI= 27.2-35.7) had high levels of physical activity, 28.8% (95%CI= 26.1-31.6) moderate levels and 39.7% (95%CI= 35.4-44.0) low levels.

A significantly higher proportion of the population aged 45-69 had low levels of physical activity (50.8%, 95%CI= 45.8-55.8) than those aged 18-29 years (27.4%, 95%CI= 20.4-34.5). A significantly higher proportion of the population aged 18-29 had high levels of physical activity (45.6%, 95%CI= 35.2-56.1) than those aged 30-44 years (28.4%, 95%CI= 21.9-34.9) and 45-69 (20.7%, 95%CI= 16.0-25.4).

A significantly higher proportion of women (49.5%, 95%CI= 44.7-54.3) than men (27.9%, 95%CI= 20.9-34.9) had low levels of physical activity. Correspondingly, a higher proportion of men (47.2%, 95%CI= 38.8-55.5) than women (18.3%, 95%CI= 13.6-23.1) had high levels of physical activity.

Table 78. Classification according to their total physical activity level, both sexes combined

Level of total physical activity							
Age Group (years)	Both Sexes						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
18-29	648	27.4	20.4-34.5	26.9	20.5-33.3	45.6	35.2-56.1
30-44	739	40.6	34.5-46.8	31.0	26.7-35.2	28.4	21.9-34.9
45-69	677	50.8	45.8-55.8	28.5	25.1-31.9	20.7	16.0-25.4
18-69	2064	39.7	35.4-44.0	28.8	26.1-31.6	31.4	27.2-35.7

Table 79 shows that the population engaged in 81.4 minutes (95%CI= 73.1-89.6) of total physical activity on average (mean) per day.

Men engaged in significantly more physical activity on average per day (113.5 minutes, 95%CI= 96.8-130.2) than women (54.6 minutes, 95%CI= 44.5-64.7). Those aged 45-69 engaged in significantly fewer minutes of total physical activity per day (63.5 minutes, 95%CI= 48.0-79.0) than those aged 18-29 years (110.4 minutes, 95%CI= 84.7-136.1).

Table 79. Mean minutes of total physical activity on average per day

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
18-29	303	155.7	115.3-196.2	345	70.3	49.8-90.8	648	110.4	84.7-136.1
30-44	320	91.2	60.6-121.8	419	56.1	47.3-64.9	739	71.3	57.4-85.1
45-69	317	93.4	65.2-121.6	360	37.6	18.4-56.7	677	63.5	48.0-79.0
18-69	940	113.5	96.8-130.2	1124	54.6	44.5-64.7	2064	81.4	73.1-89.6

Table 80 shows that the population engaged in 38.6 minutes of total physical activity on average (median) per day. The median for men was nearly three times that of women (71.4 compared to 25.7 minutes). The median minutes of total physical activity the population engaged in per day decreased with age – 73.6 minutes among 18-29 year olds, 34.3 minutes among 30-44 year olds and 25.7 minutes among 45-69 year olds.

Table 80. Median minutes of total physical activity on average per day

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)
18-29	303	124.3	62.1-246.4	345	34.3	4.3-110.0	648	73.6	18.6-167.1
30-44	320	41.4	15.0-149.3	419	34.3	4.3-82.9	739	34.3	6.4-90.0
45-69	317	40.0	12.9-142.9	360	10.7	0.0-47.1	677	25.7	0.0-65.7
18-69	940	71.4	20.0-187.1	1124	25.7	1.4-78.6	2064	38.6	7.1-120.0

Table 81 shows that the population engaged in 47.4 minutes (95%CI= 37.3-57.4) of work-related physical activity on average (mean) per day.

Men engaged in significantly more work-related physical activity (68.8 minutes, 95%CI= 50.0-87.6) compared to women (29.5 minutes, 95%CI= 21.8-37.1).

There was no statistically significant difference between the three age groups in terms of the mean minutes of work-related physical activity.

Table 81. Mean minutes of work-related physical activity on average per day

Mean minutes of work-related physical activity on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean minutes	95% CI	n	95%	Mean minutes	n	Mean minutes	95% CI
18-29	303	94.0	35.3-152.6	345	37.1	24.7-49.6	648	63.8	30.5-97.2
30-44	320	51.6	27.0-76.2	419	30.0	23.2-36.8	739	39.3	29.2-49.4
45-69	317	60.8	37.9-83.7	360	21.5	5.7-37.3	677	39.7	26.7-52.8
18-69	940	68.8	50.0-87.6	1124	29.5	21.8-37.1	2064	47.4	37.3-57.4

Table 82 shows that the population engaged in 22.0 minutes (95%CI= 15.8-28.3) of transport-related physical activity on average (mean) per day.

There were no statistically significant differences between men and women and between the three age groups.

Table 82. Mean minutes of transport-related physical activity on average per day

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	n	Mean minutes	95% CI
18-29	303	27.2	14.7-39.7	345	22.8	11.8-33.7	648	24.8	15.9-33.8
30-44	320	21.4	14.1-28.6	419	20.2	13.9-26.5	739	20.7	14.8-26.7
45-69	317	28.1	17.8-38.4	360	14.3	10.3-18.4	677	20.7	15.1-26.4
18-69	940	25.6	16.2-34.9	1124	19.1	14.1-24.2	2064	22.0	15.8-28.3

Table 83 shows that the population engaged in 12.0 minutes (95%CI= 9.5-14.4) of recreation-related physical activity on average (mean) per day.

Men engaged in significantly more recreation-related physical activity (19.1 minutes, 95%CI= 14.4-23.8) than women (6.0 minutes, 95%CI= 3.8-8.2).

The mean minutes of recreation-related physical activity decreased with age – 21.8 minutes (95%CI= 15.9-27.6) among 18-29 year olds, 11.3 minutes (95%CI= 8.1-14.4) among 30-44 year olds and 3.0 minutes (95%CI= 1.2-4.9) among 45-69 year olds. Among men, the mean of those aged 18-29 was higher (34.6 minutes, 95%CI= 21.5-47.7) than those aged 45-69 (4.5 minutes, 95%CI= 1.0-8.0); and among women, the mean of those aged 18-29 was also higher (10.4 minutes, 95%CI= 6.5-14.3) than those aged 45-69 years (1.8 minutes, 95%CI= 0.6-2.9).

Table 83. Mean minutes of recreation-related physical activity on average per day

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
18-29	303	34.6	21.5-47.7	345	10.4	6.5-14.3	648	21.8	15.9-27.6
30-44	320	18.3	12.2-24.3	419	5.9	2.3-9.5	739	11.3	8.1-14.4
45-69	317	4.5	1.0-8.0	360	1.8	0.6-2.9	677	3.0	1.2-4.9
18-69	940	19.1	14.4-23.8	1124	6.0	3.8-8.2	2064	12.0	9.5-14.4

Table 84 shows that overall, 42.7% (95%CI= 36.2-49.2) were classified as having no work-related physical activity. A significantly higher proportion of women were classified as having no work-related physical activity (51.3%, 95%CI= 41.1-61.5) than men (32.3%, 95%CI= 25.0-39.7). A significantly higher proportion of those aged 45-69 were classified as having no work-related physical activity (53.5%, 95%CI= 42.5-64.5) than those aged 18-29 years (29.8%, 95%CI= 19.6-40.0). Among men, a higher proportion of those aged 45-69 were classified as having no work-related physical activity (44.4%, 95%CI= 33.2-55.5) compared to those aged 18-29 (16.2%, 95%CI= 7.3-25.1).

Among women, there was no statistically significant difference between the three age groups.

Table 84. Percentage classified as having no work-related physical activity

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
18-29	303	16.2	7.3-25.1	345	41.9	31.0-52.7	648	29.8	19.6-40.0
30-44	320	36.4	23.3-49.5	419	50.6	41.7-59.5	739	44.5	38.4-50.6
45-69	317	44.4	33.2-55.5	360	61.4	43.6-79.3	677	53.5	42.5-64.5
18-69	940	32.3	25.0-39.7	1124	51.3	41.1-61.5	2064	42.7	36.2-49.2

Table 85 shows that overall, 36.7% (95%CI= 27.7-45.6) were classified as having no transport-related physical activity – 53.8% (95%CI= 47.6-60.0) of men and 57.7% (95%CI= 50.6-64.9) of women. There were no statistically significant differences between men and women and between the three age groups.

Table 85. Percentage classified as having no transport-related physical activity

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
18-29	303	35.8	16.0-55.5	345	36.6	29.1-44.1	648	36.2	24.7-47.7
30-44	320	31.5	19.1-43.9	419	28.0	16.7-39.2	739	29.5	18.5-40.5
45-69	317	36.9	22.2-51.6	360	51.6	40.7-62.5	677	44.8	33.2-56.3
18-69	940	34.7	21.1-48.3	1124	38.3	31.9-44.7	2064	36.7	27.7-45.6

Table 86 shows that overall, 77.7% (95%CI= 74.2-81.2) were classified as having no recreation-related physical activity. A higher proportion of women (82.9%, 95%CI= 77.8-88.1) than men (71.4%, 95%CI= 65.4-77.4) were classified as having no recreation-related physical activity.

There was a statistically significant difference between the three age groups. The proportion of those having no recreation-related physical activity increased with age – 65.6% (95%CI= 60.0-71.1) of 18-29 year olds, 76.2% (95%CI= 72.3-80.1) of 30-44 year olds and 91.3% (95%CI= 86.6-95.9) of 45-69 year olds.

Table 86. Percentage classified as having no recreation-related physical activity

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
18-29	303	52.8	38.8-66.8	345	76.9	68.2-85.5	648	65.6	60.0-71.1
30-44	320	71.3	63.5-79.2	419	79.9	72.8-87.1	739	76.2	72.3-80.1
45-69	317	90.0	83.5-96.5	360	92.3	87.4-97.2	677	91.3	86.6-95.9
18-69	940	71.4	65.4-77.4	1124	82.9	77.8-88.1	2064	77.7	74.2-81.2

Table 87 shows that for men, work contributed to 52.6% (95%CI= 45.8-59.4) of total physical activity, transport to 33.7% (95%CI= 27.9-39.6) and leisure to 13.7% (95%CI= 10.2-17.1). Work contributed most to total physical activity among all men across the three age groups.

Transport contributed to a significantly higher proportion of total physical activity for 45-69 year olds (43.1%, 95%CI= 33.1-53.1) compared to 18-29 year olds (23.0%, 95%CI= 14.5-31.5). The proportion of leisure to total physical activity decreased with age – 21.4% (95%CI= 14.2-28.7) for 18-29 year olds, 13.7% (95%CI= 9.0-18.5) for 30-44 year olds and 4.2% (95%CI= 0.9-7.5) for 45-69 year olds. There was no statistically significant difference between the three age groups in terms of the proportion work contributed to total physical activity.

Table 87. Composition of total physical activity by work, transport and leisure activities for men

Composition of total physical activity							
Age Group (years)	Men						
	n	% Activity from work	95% CI	% Activity for transport	95% CI	% Activity during leisure time	95% CI
18-29	277	55.6	42.3-68.8	23.0	14.5-31.5	21.4	14.2-28.7
30-44	263	49.0	37.8-60.2	37.3	26.4-48.2	13.7	9.0-18.5
45-69	236	52.7	42.8-62.6	43.1	33.1-53.1	4.2	0.9-7.5
18-69	776	52.6	45.8-59.4	33.7	27.9-39.6	13.7	10.2-17.1

Table 88 shows that for women, work contributed to 43.8% (95%CI= 31.5-56.2) of total physical activity, transport to 47.0% (95%CI= 34.2-59.9) and leisure to 9.1% (95%CI= 7.5-10.7). Work contributed most to total physical activity for women aged 18-29 whilst transport contributed most for women aged 30-44 and 45-69 years.

The proportion of leisure to total physical activity was higher among 18-29 year olds (12.3%, 95%CI= 9.5-15.1) than among 45-69 year olds (5.6%, 95%CI= 2.4-8.9). There were no statistically significant differences between the three age groups in terms of the proportion work and transport contributed to total physical activity.

Table 88. Composition of total physical activity by work, transport and leisure activities for women

Composition of total physical activity							
Age Group (years)	Women						
	n	% Activity from work	95% CI	% Activity for transport	95% CI	% Activity during leisure time	95% CI
18-29	249	46.0	32.4-59.6	41.7	27.6-55.8	12.3	9.5-15.1
30-44	318	40.3	28.7-52.0	50.8	38.0-63.6	8.8	6.4-11.3
45-69	255	46.0	31.0-61.0	48.3	33.7-62.9	5.6	2.4-8.9
18-69	822	43.8	31.5-56.2	47.0	34.2-59.9	9.1	7.5-10.7

Table 89 shows that for the Kiribati population, work contributed 48.1% (95%CI= 40.1-56.1) to total physical activity, transport to 40.6% (95%CI= 31.9-49.2) and leisure to 11.3% (95%CI= 9.4-13.3). Leisure contributed to a significantly higher proportion of total physical activity for 18-29 year olds (17.0%, 95%CI= 13.1-20.9) and 30-44 year olds (11.0%, 95%CI= 8.2-13.8) than for 45-69 year olds (4.9%, 95%CI= 2.3-7.5). There were no statistically significant differences between the three age groups in terms of the contribution of work and transport to total physical activity. There was no statistically significant difference between men and women.

Table 89 Composition of total physical activity by work, transport and leisure activites, both sexes combined

Composition of total physical activity							
Age Group (years)	Both Sexes						
	n	% Activity from work	95% CI	% Activity for transport	95% CI	% Activity during leisure time	95% CI
18-29	526	50.9	38.0-63.8	32.1	20.2-44.0	17.0	13.1-20.9
30-44	581	44.1	39.0-49.2	44.9	38.2-51.6	11.0	8.2-13.8
45-69	491	49.5	39.1-59.8	45.6	35.4-55.9	4.9	2.3-7.5
18-69	1598	48.1	40.1-56.1	40.6	31.9-49.2	11.3	9.4-13.3

Table 90 shows that overall, 72.2% (95%CI= 69.2-75.2) did not engage in vigorous physical activity. A significantly higher proportion of women (88.1%, 95%CI= 84.6-91.6) than men (53.1%, 95%CI= 48.8-57.5) did not engage in vigorous physical activity.

A significantly higher proportion of those aged 45-69 did not engage in vigorous physical activity (80.9%, 95%CI= 74.4-87.3) compared to those aged 18-29 years (59.8%, 95%CI= 49.5-70.2). Among men, significantly more of those aged 45-69 did not engage in vigorous physical activity (70.0%, 95%CI= 60.0-79.9) than those aged 18-29 years (31.5%, 95%CI= 20.5-42.5). Among women, there was no statistically significant difference between the three age groups.

Table 90. Percentage who did not engage in vigorous physical activity

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
18-29	303	31.5	20.5-42.5	345	84.9	78.9-90.9	648	59.8	49.5-70.2
30-44	320	57.9	39.7-76.1	419	88.9	84.8-93.0	739	75.5	66.7-84.3
45-69	317	70.0	60.0-79.9	360	90.3	84.4-96.2	677	80.9	74.4-87.3
18-69	940	53.1	48.8-57.5	1124	88.1	84.6-91.6	2064	72.2	69.2-75.2

Table 91 shows that on average, the mean number of minutes the population spent in sedentary activities each day was 166.6 minutes (95%CI= 152.5-180.7) and the median was 150.0.

There were no statistically significant differences between the three age groups and between men and women.

For mean and median minutes spent in sedentary activities among men and women, please see table in Appendix 2.

Table 91. Minutes spent in sedentary activities on average per day, both sexes combined

Minutes spent in sedentary activities on average per day					
Age Group (years)	Both Sexes				
	n	Mean minutes	95% CI	Median minutes	Inter-quartile range (P25-P75)
18-29	672	158.3	145.1-171.5	150.0	60.0-240.0
30-44	755	163.0	149.1-176.9	120.0	90.0-210.0
45-69	692	178.7	147.8-209.6	150.0	60.0-240.0
18-69	2119	166.6	152.5-180.7	150.0	80.0-240.0

4.10. History of raised blood pressure

Table 92 shows that 57.3% (95%CI= 48.0-66.6) of men had never had their blood pressure measured by a doctor or health worker, 30.6% (95%CI= 21.3-39.9) had been measured but not diagnosed, 4.4% (95%CI= 2.6-6.2) were diagnosed but not within the past 12 months and 7.7% (95%CI= 2.5-12.8) had been diagnosed within the past 12 months.

A significantly higher proportion of men aged 18-29 (86.2%, 95%CI= 80.2-92.2) had never had their blood pressure measured compared to older men aged 30-44 (44.5%, 95%CI= 27.1-61.9) and 45-69 years (40.8%, 95%CI= 23.0-58.6).

There was no statistically significant difference between the three age groups in terms of being diagnosed within the past 12 months.

Table 92. Blood pressure measure and diagnosis status of men

Blood pressure measurement and diagnosis									
Age Group (years)	Men								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
18-29	313	86.2	80.2-92.2	10.5	6.1-14.8	0.4	0.0-1.2	2.9	0.2-5.5
30-44	325	44.5	27.1-61.9	41.4	28.2-54.7	7.8	2.2-13.4	6.3	2.7-9.8
45-69	323	40.8	23.0-58.6	40.2	19.9-60.4	5.1	0.9-9.4	13.9	1.3-26.5
18-69	961	57.3	48.0-66.6	30.6	21.3-39.9	4.4	2.6-6.2	7.7	2.5-12.8

Table 93 shows that 49.4% (95%CI= 43.3-55.6) of women had never had their blood pressure measured, 36.9% (95%CI= 31.4-42.3) had ever been measured but not diagnosed, 4.5% (95%CI= 2.4-6.7) had been diagnosed but not within the past 12 months, and 9.2% (95%CI= 6.8-11.6) were diagnosed within the past 12 months.

A significantly higher proportion of women aged 18-29 (66.9%, 95%CI= 58.1-75.6) had never had their blood pressure measured compared to older women aged 30-44 (44.0%,

There was no statistically significant difference between the three age groups in terms of being diagnosed within the past 12 months.

Table 93. Blood pressure measurement and diagnosis status of women

Blood pressure measurement and diagnosis									
Age Group (years)	Women								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
18-29	359	66.9	58.1-75.6	26.3	16.5-36.1	1.1	0.0-3.1	5.8	0.0-11.8
30-44	429	44.0	37.5-50.4	37.2	31.6-42.9	7.5	3.4-11.6	11.3	8.1-14.5
45-69	369	38.6	30.4-46.7	46.8	38.1-55.4	4.5	1.2-7.9	10.1	5.5-14.8
18-69	1157	49.4	43.3-55.6	36.9	31.4-42.3	4.5	2.4-6.7	9.2	6.8-11.6

Table 94 shows that overall, 53.0% (95%CI= 46.0-60.0) had never had their blood pressure measured, 34.0% (95%CI= 27.3-40.7) had been measured but not diagnosed, 4.5% (95%CI= 2.8-6.2) had been diagnosed but not within the past 12 months, and 8.5% (95%CI= 5.5-11.5) were diagnosed within the past 12 months.

A significantly higher proportion of the Kiribati population aged 18-29 were never measured (76.0%, 95%CI= 71.4-80.5) compared to those aged 30-44 (44.2%, 95%CI= 34.3-54.1) and 45-69 years (39.6%, 95%CI= 28.4-50.8).

A significantly higher proportion of those aged 30-44 (7.6%, 95%CI= 3.2-12.1) and 45-69 (4.8%, 95%CI= 2.5-7.1) were diagnosed but not within the past 12 months compared to those aged 18-29 years (0.8%, 95%CI= 0.0-1.9).

There were no statistically significant differences between the three age groups in terms of being diagnosed within the past 12 months, and between men and women.

Table 94. Blood pressure measurement and diagnosis status, both sexes combined

Blood pressure measurement and diagnosis									
Age Group (yrs)	Both sexes								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
18-29	672	76.0	71.4-80.5	18.8	14.5-23.1	0.8	0.0-1.9	4.4	0.1-8.7
30-44	754	44.2	34.3-54.1	39.0	33.1-45.0	7.6	3.2-12.1	9.1	6.5-11.8
45-69	692	39.6	28.4-50.8	43.7	31.0-56.4	4.8	2.5-7.1	11.9	5.3-18.5
18-69	2118	53.0	46.0-60.0	34.0	27.3-40.7	4.5	2.8-6.2	8.5	5.5-11.5

Table 95 shows that 24.2% (95%CI= 14.7-33.7) of the Kiribati population diagnosed with raised blood pressure were currently taking drugs prescribed by a doctor or health worker.

There were no statistically significant differences between men and women and between the three age groups.

Table 95 Percentage diagnosed with raised blood pressure currently taking drugs prescribed by doctor or health worker

Currently taking blood pressure drugs prescribed by doctor or health worker among those diagnosed									
Age Group (years)	Men			Women			Both Sexes		
	n	% taking meds	95% CI	n	% taking meds	95% CI	n	% taking meds	95% CI
18-69	113	20.4	6.7-34.1	155	27.0	18.9-35.1	268	24.2	14.7-33.7

Table 96 shows that 24.4% (95%CI= 9.6-39.1) of those previously diagnosed with raised blood pressure had seen a traditional healer.

There were no statistically significant differences between men and women, and between the three age groups.

Table 96. Percentage previously diagnosed with raised blood pressure who had seen a traditional healer

Seen a traditional healer among those previously diagnosed											
Age Group (years)	Men				Women				Both Sexes		
	n	%	95% CI		n	%	95% CI		n	%	95% CI
18-69	113	33.1	2.6-63.6		155	18.0	8.5-27.4		268	24.4	9.6-39.1

Table 97 shows that 26.0% (95%CI= 12.9-39.0) of those previously diagnosed with raised blood pressure were currently taking traditional medicine. There were no statistically significant differences between men and women, and between the three age groups.

Table 97 Percentage previously diagnosed with raised blood pressure currently taking herbal or traditional remedy

Currently taking herbal or traditional remedy for high blood pressure among those previously diagnosed									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-69	113	31.4	0.4-62.4	155	22.0	13.8-30.1	268	26.0	12.9-39.0

4.11. History of diabetes

Table 98 shows that 64.9% (95%CI= 58.1-71.8) of men had never had their blood sugar measured, 27.0% (95%CI= 23.3-30.8) were measured but not diagnosed, 2.2% (95%CI= 0.1-4.3) were diagnosed but not within the past 12 months and 5.8% (95%CI= 3.5-8.2) were diagnosed within the past 12 months.

A significantly higher proportion of men aged 18-29 had never had their blood sugar measured (88.7%, 95%CI= 81.9-95.5) compared to those aged 30-44 (52.6%, 95%CI= 37.5-67.7) and 45-69 years (53.1%, 95%CI= 38.5-67.8).

A significantly higher proportion of men aged 30-44 (33.8%, 95%CI= 28.7-38.8) and 45-69 (38.8%, 95%CI= 23.6-54.1) had been measured but not diagnosed compared to those aged 18-29 years (8.8%, 95%CI= 3.7-13.9).

There were no statistically significant differences between the three age groups in terms of being diagnosed with raised blood sugar.

Table 98. Blood sugar measurement and diagnosis status of men

Blood sugar measurement and diagnosis									
Age Group (yrs)	Men								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
18-29	313	88.7	81.9-95.5	8.8	3.7-13.9	0.4	0.0-1.1	2.1	0.0-4.7
30-44	325	52.6	37.5-67.7	33.8	28.7-38.8	4.7	0.0-10.9	9.0	0.0-18.8
45-69	323	53.1	38.5-67.8	38.8	23.6-54.1	1.6	0.0-3.8	6.5	1.8-11.1
18-69	961	64.9	58.1-71.8	27.0	23.3-30.8	2.2	0.1-4.3	5.8	3.5-8.2

Table 99 shows that 53.7% (95%CI= 44.9-62.5) of women had never had their blood sugar measured, 37.4% (95%CI= 26.5-48.2) were measured but not diagnosed, 1.6% (95%CI= 0.4-2.7) were diagnosed but not within the past 12 months and 7.4% (95%CI= 4.8-10.0) were diagnosed within the past 12 months.
A significantly higher proportion of women aged 18-29 had never had their blood sugar measured (70.7%, 95%CI= 63.5-78.0) compared to women aged 30-44 (48.7%, 95%CI= 36.0-61.4) and 45-69 years (42.7%, 95%CI= 30.9-54.5).

Significantly higher proportion of women aged 30-44 (6.6%, 95%CI= 3.8-9.5) and 45-69 (15.2%, 95%CI= 7.4-23.1) were diagnosed within the past 12 months compared to those aged 18-29 years (0.2%, 95%CI= 0.0-0.5).

There were no statistically significant differences between the three age groups in terms of being measured but not diagnosed, and being diagnosed but not within the past 12 months.

Table 99. Blood sugar measurement and diagnosis status of women

Blood sugar measurement and diagnosis									
Age Group (years)	Women								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
18-29	359	70.7	63.5-78.0	28.6	21.2-36.0	0.4	0.0-1.0	0.2	0.0-0.5
30-44	429	48.7	36.0-61.4	43.2	29.4-57.0	1.5	0.0-3.0	6.6	3.8-9.5
45-69	369	42.7	30.9-54.5	39.3	22.1-56.5	2.8	0.4-5.1	15.2	7.4-23.1
18-69	1157	53.7	44.9-62.5	37.4	26.5-48.2	1.6	0.4-2.7	7.4	4.8-10.0

Table 100 shows that overall, 79.2% (95%CI= 73.8-84.6) had never had their blood sugar measured, 19.3% (95%CI= 14.7-23.9) were measured but not diagnosed, 0.4% (95%CI= 0.0-0.9) were diagnosed but not within the past 12 months and 1.1% (95%CI= 0.0-2.2) were diagnosed within the past 12 months.

There were no statistically significant differences between the three age groups in terms of being diagnosed but not within the past 12 months, and between men and women.

Table 100. Blood sugar measurement and diagnosis status in both sexes combined

Blood sugar measurement and diagnosis									
Age Group (years)	Both sexes								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
18-29	672	79.2	73.8-84.6	19.3	14.7-23.9	0.4	0.0-0.9	1.1	0.0-2.2
30-44	754	50.4	36.9-63.8	39.1	31.5-46.7	2.9	0.3-5.4	7.7	3.4-11.9
45-69	692	47.5	35.9-59.0	39.1	23.7-54.4	2.2	0.6-3.9	11.2	5.4-16.9
18-69	672	79.2	73.8-84.6	19.3	14.7-23.9	0.4	0.0-0.9	1.1	0.0-2.2

4.12. History of raised total cholesterol

Table 101 shows that majority of men had never had their cholesterol measured (98.6%, 95%CI= 97.8-99.4), 1.1% (95%CI= 0.5-1.8) had been measured but not diagnosed, 0.1% (95%CI= 0.0-0.2) were diagnosed but not within the past 12 months and 0.2% (95%CI= 0.0-0.4) were diagnosed within the past 12 months.

A significantly higher proportion of men aged 30-44 had their cholesterol measured but were not diagnosed (2.4%, 95%CI= 1.0-3.9) compared to those aged 18-29 years (0.3%, 95%CI= 0.0-0.7). There were no statistically significant differences between the three age groups in other instances.

Table 101. Total cholesterol measurement and diagnosis status of men

Total cholesterol measurement and diagnosis									
Age Group (yrs)	Men								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
18-29	312	99.5	98.8-100.0	0.3	0.0-0.7	0.0	0.0-0.0	0.2	0.0-0.7
30-44	325	97.4	95.9-98.9	2.4	1.0-3.9	0.2	0.0-0.6	0.0	0.0-0.0
45-69	323	99.0	98.0-99.9	0.6	0.0-1.3	0.0	0.0-0.0	0.4	0.0-0.9
18-69	960	98.6	97.8-99.4	1.1	0.5-1.8	0.1	0.0-0.2	0.2	0.0-0.4

Table 102 shows that the majority (99.3%, 95%CI= 98.8-99.8) of women had never had their cholesterol measured, 0.5% (95%CI= 0.1-1.0) had been measured but not diagnosed, 0.1% (95%CI= 0.0-0.2) had been diagnosed but not within the past 12 months and 0.1% (95%CI= 0.0-0.2) were diagnosed within the past 12 months.

There were no statistically significant differences between the three age groups.

Table 102. Total cholesterol measurement and diagnosis status of women

Total cholesterol measurement and diagnosis									
Age Group (yrs)	Women								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
18-29	359	99.9	99.7-100.0	0.1	0.0-0.3	0.0	0.0-0.0	0.0	0.0-0.0
30-44	429	98.7	97.7-99.8	1.2	0.2-2.2	0.1	0.0-0.2	0.0	0.0-0.0
45-69	369	99.4	98.8-100.0	0.2	0.0-0.5	0.2	0.0-0.5	0.2	0.0-0.6
18-69	1157	99.3	98.8-99.8	0.5	0.1-1.0	0.1	0.0-0.2	0.1	0.0-0.2

Table 103 shows that overall, 99.0% (95%CI= 98.4-99.6) of the Kiribati population had never had their cholesterol measured, 0.8% (95%CI= 0.3-1.3) had been measured but not diagnosed, 0.1% (95%CI= 0.0-0.2) had been diagnosed but not within the past 12 months and 0.1% (95%CI= 0.0-0.3) were diagnosed within the past 12 months.

Table 103. Total cholesterol measurement and diagnosis status, both sexes combined

Total cholesterol measurement and diagnosis									
Age Group (yrs)	Both sexes								
	n	% Never measured	95% CI	% mea-sured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
18-29	671	99.7	99.3-100.0	0.2	0.0-0.5	0.0	0.0-0.0	0.1	0.0-0.3
30-44	754	98.1	97.1-99.2	1.7	0.7-2.8	0.1	0.0-0.3	0.0	0.0-0.0
45-69	692	99.2	98.6-99.8	0.4	0.0-0.8	0.1	0.0-0.3	0.3	0.0-0.6
18-69	2117	99.0	98.4-99.6	0.8	0.3-1.3	0.1	0.0-0.2	0.1	0.0-0.3

4.13. History of cardiovascular diseases

Table 104 shows that overall, 9.6% (95%CI= 7.1-12.1) reported having ever had a heart attack or chest pain from heart disease or a stroke.

There were no statistically significant differences between men and women and between the three age groups.

Table 104. Percentage who have ever had a heart attack or chest pain from heart disease or a stroke

Having ever had a heart attack or chest pain from heart disease or a stroke									
Age Group (years)	Men			Women			Both Sexes		
	n	% CVD history	95% CI	n	% CVD history	95% CI	n	% CVD history	95% CI
18-29	312	5.8	3.6-8.0	359	11.4	6.0-16.7	671	8.7	5.1-12.4
30-44	326	8.4	0.7-16.1	429	11.7	4.9-18.4	755	10.3	5.3-15.3
45-69	323	6.6	1.7-11.4	369	12.4	5.9-18.8	692	9.7	5.3-14.1
18-69	961	6.9	3.3-10.5	1157	11.8	8.6-15.0	2118	9.6	7.1-12.1

Table 104 shows that overall, 2.7% (95%CI= 1.3-4.1) were currently taking aspirin regularly to prevent or treat heart disease.

There were no statistically significant differences between men and women and between the three age groups.

Table 105. Percentage currently taking aspirin regularly to prevent or treat heart disease

Currently taking aspirin regularly to prevent or treat heart disease										
Age Group (years)	Men				Women				Both Sexes		
	n	% taking aspirin	95% CI		n	% taking aspirin	95% CI		n	% taking aspirin	95% CI
18-29	312	2.8	0.0-7.9		359	2.5	0.3-4.7		671	2.6	0.0-5.2
30-44	326	1.9	0.1-3.6		429	1.0	0.1-2.0		755	1.4	0.4-2.4
45-69	323	4.5	0.3-8.7		369	3.8	1.1-6.4		692	4.1	1.3-6.9
18-69	961	3.1	0.6-5.5		1157	2.4	1.3-3.5		2118	2.7	1.3-4.1

Table 106 shows that overall, 1.1% (95%CI= 0.1-2.1) were currently taking statins regularly to prevent or treat heart disease. There were no statistically significant differences between men and women and between the three age groups.

Table 106. Percentage currently taking statins regularly to prevent or treat heart disease

Currently taking statins regularly to prevent or treat heart disease										
Age Group (years)	Men				Women				Both Sexes	
	n	% taking statins	95% CI		n	% taking statins	95% CI		n	% taking statins	95% CI
18-29	312	2.7	0.0-7.8		359	0.0	0.0-0.0		671	1.3	0.0-3.7
30-44	326	0.9	0.0-2.0		429	0.7	0.0-1.5		755	0.8	0.1-1.5
45-69	323	1.8	0.0-4.2		369	0.9	0.0-1.8		692	1.3	0.0-2.6
18-69	961	1.8	0.0-3.8		1157	0.5	0.1-1.0		2118	1.1	0.1-2.1

4.14. Lifestyle advice

In this section, survey respondents were asked whether they had been advised by a doctor or health worker to quit or not start on tobacco, to reduce salt in the diet, to eat at least five servings of fruit and/or vegetable, to reduce fat in the diet, to start or do more physical activity, and to maintain a healthy body weight or to lose weight.

Table 107 shows that overall, 43.5% (95%CI= 33.0-54.0) had been advised by a doctor or health worker to quit using tobacco or not start. There were no statistically significant differences between men and women and between the three age groups.

Table 107. Percentage advised by doctor or health worker to quit using tobacco or not start

Advised by doctor or health worker to quit using tobacco or don't start									
Age Group (years)	Men			Women			Both Sexes		
	n	% advised	95% CI	n	% advised	95% CI	n	% advised	95% CI
18-29	312	47.0	31.9-62.1	359	39.4	26.0-52.9	671	43.0	36.0-50.1
30-44	326	37.4	26.3-48.4	429	39.2	22.5-55.8	755	38.4	26.7-50.1
45-69	323	49.5	27.3-71.8	369	49.1	36.4-61.9	692	49.3	34.0-64.6
18-69	961	44.7	33.9-55.4	1157	42.5	28.5-56.5	2118	43.5	33.0-54.0

Table 108 shows that overall, 45.2% (95%CI= 33.7-56.7) had been advised by a doctor or health worker to reduce salt in the diet. There were no statistically significant differences between men and women and between the three age groups.

Table 108. Percentage advised by doctor or health worker to reduce salt in the diet

Advised by doctor or health worker to reduce salt in the diet									
Age Group (years)	Men			Women			Both Sexes		
	n	% advised	95% CI	n	% advised	95% CI	n	% advised	95% CI
18-29	312	44.9	24.3-65.4	359	40.6	26.1-55.2	671	42.6	32.5-52.7
30-44	326	34.7	22.3-47.1	429	49.7	34.1-65.4	755	43.3	30.1-56.5
45-69	323	50.4	31.4-69.4	369	49.3	35.5-63.0	692	49.8	35.0-64.6
18-69	961	43.3	30.3-56.4	1157	46.7	34.8-58.7	2118	45.2	33.7-56.7

Table 109 shows that overall, 44.5% (95%CI= 30.8-58.3) had been advised by a doctor or health worker to eat at least five servings of fruit and/or vegetables each day.

There were no statistically significant differences between men and women and between the three age groups.

Table 109. Percentage advised by doctor or health worker to eat at least five servings of fruit and/or vegetables each day

Advised by doctor or health worker to eat at least five servings of fruit and/or vegetables each day									
Age Group (years)	Men			Women			Both Sexes		
	n	% advised	95% CI	n	% advised	95% CI	n	% advised	95% CI
18-29	312	45.5	27.0-64.1	359	37.3	22.4-52.2	671	41.2	29.3-53.1
30-44	326	36.5	24.1-49.0	429	50.5	34.7-66.3	755	44.5	31.6-57.3
45-69	323	53.7	32.4-75.0	369	42.9	24.4-61.4	692	47.9	28.5-67.3
18-69	961	45.3	31.6-58.9	1157	43.9	29.4-58.4	2118	44.5	30.8-58.3

Table 110 shows that overall, 47.8% (95%CI= 35.8-59.7) had been advised by a doctor or health worker to reduce fat in the diet. There were no significant differences between men and women and between the three age grogroups.

Table 110. Percentage advised by doctor or health worker to reduce fat in the diet

Advised by doctor or health worker to reduce fat in the diet									
Age Group (years)	Men			Women			Both Sexes		
	n	% advised	95% CI	n	% advised	95% CI	n	% advised	95% CI
18-29	312	35.9	15.5-56.2	359	44.5	32.4-56.6	671	40.4	25.1-55.8
30-44	326	43.8	30.5-57.1	429	52.5	36.0-69.0	755	48.8	34.7-62.8
45-69	323	57.3	38.9-75.8	369	51.1	37.1-65.1	692	54.0	39.0-68.9
18-69	961	45.6	31.5-59.8	1157	49.5	38.8-60.2	2118	47.8	35.8-59.7

Table 111 shows that overall, 45.4% (95%CI= 32.7-58.2) had been advised by a doctor or health worker to start or do more physical activity. There were no statistically significant differences between men and women and between the three age groups.

Table 111. Percentage advised by doctor or health worker to start or do more physical activity

Advised by doctor or health worker to start or do more physical activity									
Age Group (years)	Men			Women			Both Sexes		
	n	% advised	95% CI	n	% advised	95% CI	n	% advised	95% CI
18-29	312	54.8	39.9-69.6	359	41.2	26.5-55.8	671	47.6	38.4-56.8
30-44	326	36.3	22.4-50.2	429	48.3	33.4-63.1	755	43.1	30.0-56.2
45-69	323	53.0	34.8-71.2	369	39.7	20.0-59.3	692	45.8	27.2-64.4
18-69	961	48.1	36.1-60.0	1157	43.3	29.3-57.2	2118	45.4	32.7-58.2

Table 112 shows that overall, 40.5% (95%CI= 28.4-52.7) had been advised by a doctor or health worker to maintain a healthy body weight or to lose weight. There were no statistically significant differences between men and women and between the three age groups.

Table 112. Percentage advised by doctor or health worker to maintain a healthy body weight or to lose weight

Advised by doctor or health worker to maintain a healthy body weight or to lose weight									
Age Group (years)	Men			Women			Both Sexes		
	n	% advised	95% CI	n	% advised	95% CI	n	% advised	95% CI
18-29	312	51.9	36.8-67.0	359	36.6	23.1-50.2	671	43.8	32.7-54.8
30-44	326	31.6	18.9-44.3	429	46.1	31.2-61.0	755	39.8	27.0-52.7
45-69	323	43.6	30.3-56.8	369	33.3	15.5-51.2	692	38.1	23.0-53.1
18-69	961	42.4	31.7-53.1	1157	39.0	24.9-53.1	2118	40.5	28.4-52.7

4.15. Cervical cancer screening

Table 113 shows that 16.4% (95%CI= 8.8-24.1) of women had ever been tested for cervical cancer. There was no statistically significant difference between the three age groups.

Table 113. Percentage of females ever tested for cervical cancer

Age Group (years)	Women		
	n	% ever tested	95% CI
18-29	344	10.8	4.6-17.0
30-44	418	19.4	13.0-25.7
45-69	358	18.7	3.6-33.9
18-69	1120	16.4	8.8-24.1

4.16. Mental health disorder

In this section, respondents were asked mental health disorder (K10) questions. The questions include how often they felt tired out for no good reason, nervous, hopeless, restless, depressed, sad or worthless.

Table 114 shows that 86.1% (95%CI= 82.7-89.6) of men were classified as well, 7.6% (95%CI= 5.4-9.8) classified as having a mild mental disorder, 4.8% (95%CI= 3.1-6.5) a moderate mental disorder and 1.5% (95%CI= 0.3-2.8) classified as having a severe mental disorder. There was no significant difference between the three age groups.

Table 114. Percentage of men in each mental health disorder category

Age Group (years)	Percentage of mental health disorder								
	Men								
	n	% likely to be well <20	95% CI	% Mild mental disorder 20-24	95% CI	% Moderate mental disorder 25-29	95% CI	% severe mental disorder >=30	95% CI
18-29	311	80.2	74.2-86.2	10.7	7.8-13.5	6.9	2.8-10.9	2.2	0.0-5.0
30-44	326	89.9	85.4-94.5	5.4	2.7-8.0	2.9	0.6-5.3	1.7	0.0-3.7
45-69	322	88.3	81.7-94.9	6.6	1.3-12.0	4.4	1.5-7.4	0.6	0.0-1.5
18-69	959	86.1	82.7-89.6	7.6	5.4-9.8	4.8	3.1-6.5	1.5	0.3-2.8

Table 115 shows that 78.4% (95%CI= 75.1-81.7) of women were classified as well, 13.0% (95%CI= 8.7-17.2) as having a mild mental disorder, 6.8% (95%CI= 4.2-9.5) a moderate mental disorder and 1.8% (95%CI= 0.0-3.8) classified as having a severe mental disorder. There was no significant difference between the three age groups.

Table 115. Percentage of women in each mental health disorder category

Age Group (years)	Percentage of mental health disorder								
	Women								
	n	% likely to be well <20	95% CI	% Mild mental disorder 20-24	95% CI	% Moderate mental disorder 25-29	95% CI	% severe mental disorder>=30	95% CI
18-29	359	82.1	77.7-86.4	10.3	7.8-12.9	6.9	2.6-11.1	0.7	0.0-1.5
30-44	425	71.7	63.3-80.2	15.3	7.3-23.3	9.0	0.2-17.9	3.9	0.0-9.1
45-69	368	82.3	74.6-89.9	12.9	7.4-18.4	4.4	0.4-8.3	0.5	0.0-1.0
18-69	1152	78.4	75.1-81.7	13.0	8.7-17.2	6.8	4.2-9.5	1.8	0.0-3.8

Table 116 shows that overall, 81.9% (95%CI= 79.2-84.6) were classified as well, 10.5% (95%CI= 8.5-12.5) as having a mild mental disorder, 5.9% (95%CI= 4.0-7.8) as having a moderate mental disorder and 1.7% (95%CI= 0.6-2.7) with a severe mental disorder.

There were no statistically significant differences between men and women and between the three age groups.

Table 116. Prevalence of mental health disorders, both sexes combined

Percentage of mental health disorder									
Age Group (years)	Both Sexes								
	n	% likely to be well <20	95% CI	% Mild mental disorder 20-24	95% CI	% Moderate mental disorder 25-29	95% CI	% severe mental disorder >=30	95% CI
18-29	670	81.2	77.8-84.6	10.5	8.4-12.6	6.9	4.9-8.8	1.4	0.0-3.0
30-44	751	79.6	74.9-84.3	11.0	5.9-16.1	6.4	1.5-11.3	3.0	0.1-5.9
45-69	690	85.0	81.3-88.8	10.0	7.2-12.9	4.4	2.4-6.3	0.5	0.0-1.1
18-69	2111	81.9	79.2-84.6	10.5	8.5-12.5	5.9	4.0-7.8	1.7	0.6-2.7

4.17. Mental health and suicide

In this section, survey respondents were asked whether they had seriously considered attempting suicide, details about and extent of their suicide attempt and their family history of suicide attempts.

Table 117 shows that overall, 5.1% (95%CI= 3.7-6.5) had seriously considered attempting suicide in the last 12 months.

Significantly more women than men had seriously considered attempting suicide in the last 12 months – 6.8% (95%CI= 4.7-8.9) of women and 3.0% (95%CI= 1.5-4.5) of men.

There was no statistically significant difference between the three age groups.

Table 117. Percentage who had seriously considered attempting suicide in the last 12 months

Percentage having seriously considered attempting suicide in the last 12 months									
Age Group (years)	Men			Women			Both Sexes		
	n	% considered attempting suicide	95% CI	n	% considered attempting suicide	95% CI	n	% considered attempting suicide	95% CI
18-29	314	5.2	1.4-9.0	360	7.0	2.4-11.7	674	6.2	4.0-8.4
30-44	327	3.1	0.5-5.7	428	7.3	2.4-12.1	755	5.5	2.5-8.4
45-59	318	0.6	0.0-1.4	370	6.0	2.7-9.2	688	3.5	1.7-5.4
18-69	959	3.0	1.5-4.5	1158	6.8	4.7-8.9	2117	5.1	3.7-6.5

Table 118 shows that overall, 4.5% had made a plan on how to attempt suicide in the last 12 months, with no significant differences between men and women and between the three age groups.

Table 118. Percentage who had made a plan on how to attempt suicide in the last 12 months

Percentage who had planned how to attempt suicide in the past 12 months									
Age Group (years)	Men			Women			Both Sexes		
	n	% planned how to attempt suicide	95% CI	n	% planned how to attempt suicide	95% CI	n	% planned how to attempt suicide	95% CI
18-29	313	5.7	2.6-8.9	359	5.9	0.6-11.3	672	5.8	2.5-9.2
30-44	327	2.3	0.2-4.4	429	4.9	1.3-8.6	756	3.8	1.2-6.4
45-59	320	2.2	0.0-5.0	369	5.6	2.2-9.0	689	4.0	1.2-6.9
18-69	960	3.4	2.3-4.5	1157	5.5	2.7-8.2	2117	4.5	2.9-6.2

Table 119 shows that overall, 5.1% (95%CI= 3.7-6.5) had ever attempted suicide.

A significantly higher proportion of women than men had ever attempted suicide – 6.8% (95%CI= 4.7-8.9) of women and 3.0% (95%CI= 1.5-4.5) of men.

There was no significant difference between the three age groups.

Table 119. Percentage who had ever attempted suicide

Percentage having ever attempted suicide									
Age Group (years)	Men			Women			Both Sexes		
	n	% attempted suicide	95% CI	n	% attempted suicide	95% CI	n	% attempted suicide	95% CI
18-29	314	5.2	1.4-9.0	360	7.0	2.4-11.7	674	6.2	4.0-8.4
30-44	327	3.1	0.5-5.7	428	7.3	2.4-12.1	755	5.5	2.5-8.4
45-59	318	0.6	0.0-1.4	370	6.0	2.7-9.2	688	3.5	1.7-5.4
18-69	959	3.0	1.5-4.5	1158	6.8	4.7-8.9	2117	5.1	3.7-6.5

Table 120 shows that 11.0% (95%CI= 6.2-15.7) of the population had ever had a close family (i.e. mother, father, brother, sister or children) attempt suicide, with no significant differences between men and women and between the three age groups.

Table 120. Percentage who had ever had a close family member attempt suicide

Percentage having close family who attempted suicide									
Age Group (years)	Men			Women			Both Sexes		
	n	% close family attempt suicide	95% CI	n	% close family attempt suicide	95% CI	n	% close family attempt suicide	95% CI
18-29	313	8.4	3.1-13.6	361	12.9	6.5-19.4	674	10.8	5.4-16.2
30-44	328	8.8	4.2-13.5	427	15.9	3.7-28.2	755	12.8	6.7-19.0
45-59	320	13.8	0.0-30.4	367	5.1	2.6-7.6	687	9.1	1.0-17.1
18-69	961	10.3	3.5-17.1	1155	11.5	5.7-17.3	2116	11.0	6.2-15.7

Table 121 shows that overall, 8.5% (95%CI= 5.4-11.6) had ever had a close family die from suicide, with no significant differences between men and women and between the three age groups.

Table 121. Percentage who had ever had a close family die from suicide

Percentage having close family who died from suicide									
Age Group (years)	Men			Women			Both Sexes		
	n	% close family died from suicide	95% CI	n	% close family died from suicide	95% CI	n	% close family died from suicide	95% CI
18-29	313	6.5	1.7-11.3	362	6.9	3.0-10.7	675	6.7	4.5-8.9
30-44	328	8.0	3.4-12.5	425	13.2	0.0-27.2	753	10.9	4.0-17.8
45-59	320	14.2	0.0-33.0	369	2.5	0.1-4.8	689	7.8	0.0-15.8
18-69	961	9.5	2.9-16.1	1156	7.7	3.0-12.4	2117	8.5	5.4-11.6

4.18. Physical measurements

4.18.1 Height and Weight

Height and weight of each participant (excluding pregnant women) was measured following the standardized STEPS protocol. The body mass index (BMI) of each participant was calculated by dividing weight (kilograms) by square of height (metres^2). BMI risk categories are defined as follows:

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

Table 122 shows that the mean height of men was 170.7 cm (95%CI= 169.4-171.9) and 158.4 cm (95%CI= 157.6-159.2) for women.

There was statistically significant difference in mean height between men and women and between women aged 30-44 and 45-69 years.

Table 122. Mean height (cm)

Mean height (cm)						
Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
18-29	177	170.1	168.5-171.7	212	159.0	157.8-160.2
30-44	187	171.4	169.6-173.2	249	160.0	159.1-160.9
45-69	202	170.4	167.8-172.9	237	156.4	155.1-157.7
18-69	566	170.7	169.4-171.9	698	158.4	157.6-159.2

Table 123 shows that the mean weight of men was 83.4 kg (95%CI= 80.4-86.3) and 79.7 kg (95%CI= 78.1-81.4) for women.

There were no statistically significant differences in mean weight between men and women and between the three age groups.

Table 123. Mean weight (kg)

Mean weight (kg)						
Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
18-29	177	79.4	76.5-82.3	212	75.6	72.1-79.2
30-44	186	83.5	77.2-89.7	249	82.4	78.9-85.8
45-69	202	85.8	81.7-89.9	235	80.1	77.9-82.2
18-69	565	83.4	80.4-86.3	696	79.7	78.1-81.4

4.18.2 Body Mass Index and Weight Categories

Table 124 shows that the mean BMI overall was 30.4 kg/m^2 (95%CI= 29.6-31.1).

Women had significantly higher mean BMI than men – 31.8 kg/m^2 (95%CI= 31.0-32.6) among women and 28.5 kg/m^2 (95%CI= 27.5-29.4) among men.

Among women, those aged 45-69 had a significantly higher mean BMI (32.8 kg/m^2, 95%CI= 31.6-34.0) than those aged 18-29 (29.9 kg/m^2, 95%CI= 28.5-31.3). In general, there was no statistically significant difference between the three age groups.

Table 124. Mean BMI (kg/m$^{2)}$

Mean BMI (kg/m^2)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18-29	174	27.5	26.7-28.3	212	29.9	28.5-31.3	386	28.9	27.8-30.0
30-44	182	28.5	26.7-30.4	247	32.2	31.0-33.5	429	30.7	29.9-31.6
45-69	198	29.0	27.8-30.1	234	32.8	31.6-34.0	432	31.1	29.8-32.3
18-69	554	28.5	27.5-29.4	693	31.8	31.0-32.6	1247	30.4	29.6-31.1

Table 125 shows that 44.6% of Kiribati men were classified as overweight (44.6%, 95%CI= 35.0-54.3), 32.1% (95%CI= 23.6-40.6) as obese, 23.1% (95%CI= 14.7-31.4) as having normal weight and 0.2% (95%CI= 0.0-0.5) as underweight.

A significantly higher proportion of men aged 18-29 were classified as normal weight (33.5%, 95%CI= 24.8-42.1) compared to those aged 45-69 years (13.2%, 95%CI= 3.6-22.7). There was no statistically significant difference between the three age groups for the other classifications.

Table 125. Percentage of men in the specific BMI classifications

BMI classifications									
Age Group (years)	Men								
	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
18-29	174	0.0	0.0-0.0	33.5	24.8-42.1	36.9	28.6-45.3	29.6	18.2-41.0
30-44	182	0.0	0.0-0.0	27.2	10.6-43.8	35.8	19.9-51.7	37.0	24.6-49.3
45-69	198	0.5	0.0-1.2	13.2	3.6-22.7	56.6	42.4-70.8	29.8	20.2-39.4
18-69	554	0.2	0.0-0.5	23.1	14.7-31.4	44.6	35.0-54.3	32.1	23.6-40.6

Table 126 shows that 55.6% (95%CI= 51.4-59.9) of Kiribati women were classified as obese, 28.6% (95%CI= 22.6-34.6) as overweight, 14.9% (95%CI= 9.0-20.8) as having normal weight and 0.8% (95%CI= 0.0-1.8) as underweight.

A significantly higher proportion of women aged 45-69 were classified as obese (60.8%, 95%CI= 47.4-74.2) compared to those aged 18-29 years (38.9%, 95%CI= 30.6-47.2). There were no statistically significant differences between the three age groups for the other classifications.

Table 126. Percentage of women in the specific BMI classifications

BMI classifications									
Age Group (years)	Women								
	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
18-29	212	2.4	0.0-6.0	21.6	10.6-32.6	37.1	23.6-50.7	38.9	30.6-47.2
30-44	247	0.0	0.0-0.0	9.6	2.3-16.8	27.5	12.4-42.7	62.9	47.2-78.5
45-69	234	0.6	0.0-1.3	15.3	8.9-21.6	23.4	14.5-32.3	60.8	47.4-74.2
18-69	693	0.8	0.0-1.8	14.9	9.0-20.8	28.6	22.6-34.6	55.6	51.4-59.9

Table 127 shows that overall, 45.6% (95%CI= 40.9-50.2) were classified as obese, 35.5% (95%CI= 30.4-40.6) as overweight, 18.4% (95%CI= 12.3-24.5) as having normal weight and 0.6% (95%CI= 0.0-1.1) as underweight.

A significantly higher proportion of those aged 30-44 were classified as obese (52.4%, 95%CI= 44.0-60.7) compared to those aged 18-29 years (35.0%, 95%CI= 28.4-41.6). There were no statistically significant differences between the three age groups for the other classifications.

A significantly higher proportion of men were classified as overweight (44.6%, 95%CI= 35.0-54.3) compared to women (28.6%, 95%CI= 22.6-34.6); and a higher proportion of women were classified as obese (55.6%, 95%CI= 51.4-59.9) than men (32.1%, 95%CI= 23.6-40.6). There was no statistically significant difference between men and women for the other classifications.

Table 127. Percentage in the specific BMI classifications, both sexes combined

BMI classifications									
Age Group (years)	Both Sexes								
	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
18-29	386	1.4	0.0-3.5	26.6	17.4-35.7	37.1	29.6-44.5	35.0	28.4-41.6
30-44	429	0.0	0.0-0.0	16.7	8.9-24.5	30.9	18.5-43.3	52.4	44.0-60.7
45-69	432	0.5	0.0-1.1	14.3	8.1-20.5	38.5	27.4-49.6	46.7	36.3-57.0
18-69	1247	0.6	0.0-1.1	18.4	12.3-24.5	35.5	30.4-40.6	45.6	40.9-50.2

Table 128 shows that overall, 81.0% (95%CI= 74.7-87.4) were classified as overweight (BMI≥25). There were no significant differences between men and women and between the three age groups.

Table 128. Percentage classified as overweight (BMI≥25)

BMI≥25									
Age Group (years)	Men			Women			Both Sexes		
	n	% BMI≥25	95% CI	n	% BMI≥25	95% CI	n	% BMI≥25	95% CI
18-29	174	66.5	57.9-75.2	212	76.1	65.3-86.8	386	72.1	63.0-81.1
30-44	182	72.8	56.2-89.4	247	90.4	83.2-97.7	429	83.3	75.5-91.1
45-69	198	86.4	76.6-96.1	234	84.2	77.9-90.4	432	85.2	78.9-91.5
18-69	554	76.7	68.4-85.1	693	84.3	78.2-90.3	1247	81.0	74.7-87.4

4.18.3 Waist and hip circumference

Waist circumference is a measure of central obesity and a measure of the risk of cardiovascular diseases. The WHO cut-off points for increased risk of NCDs are: waist circumference ≥102cm for men and ≥ 88cm for women; waist-hip ratio of ≥ 0.90 for men and ≥ 0.85 for women.

Table 129 shows that the mean waist circumference of men was 92.0 cm (95%CI= 89.1-94.8) and 94.5 cm (95%CI= 92.5-96.5) for women. There was no statistically significant difference in mean waist circumference between men and women.

Younger men aged 18-29 had a significantly lower mean waist circumference (86.3 cm, 95%CI= 84.4-88.1) than older men aged 45-69 years (94.6 cm, 95%CI= 91.1-98.1). Younger women aged 18-29 also had a significantly lower mean waist circumference (88.7 cm, 95%CI= 85.4-92.0) than older women aged 30-44 years (95.8 cm, 95%CI= 92.3-99.4) and 45-69 years (97.5 cm, 95%CI= 94.9-100.0).

Table 129. Mean waist circumference (cm)

Mean waist circumference (cm)						
Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
18-29	177	86.3	84.4-88.1	212	88.7	85.4-92.0
30-44	187	93.1	87.9-98.4	248	95.8	92.3-99.4
45-69	201	94.6	91.1-98.1	237	97.5	94.9-100.0
18-69	565	92.0	89.1-94.8	697	94.5	92.5-96.5

Table 130 shows that the mean hip circumference of men was 102.3 cm (95%CI= 100.3-104.3) and 106.6 cm (95%CI= 104.7-108.6) for women. The difference in mean hip circumference between men and women was statistically significant.

There was no statistically significant difference between the three age groups.

Table 130 Mean hip circumference (cm)

Hip circumference (cm)						
Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
18-29	175	101.0	99.3-102.8	213	103.7	100.7-106.8
30-44	187	102.8	99.1-106.5	247	107.3	105.0-109.7
45-69	202	102.7	99.8-105.5	237	108.1	105.7-110.5
18-69	564	102.3	100.3-104.3	697	106.6	104.7-108.6

Table 131 shows that the mean waist-hip ratio of men was 0.9 (95%CI= 0.9-0.9) and 0.9 for women (95%CI= 0.9-0.9). There was no statistically significant difference between men and women, and between the three age groups.

Table 131. Mean waist-hip ratio

Mean waist / hip ratio						
Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
18-29	175	0.9	0.8-0.9	212	0.9	0.8-0.9
30-44	187	0.9	0.9-0.9	247	0.9	0.9-0.9
45-69	201	0.9	0.9-0.9	237	0.9	0.9-0.9
18-69	563	0.9	0.9-0.9	696	0.9	0.9-0.9

4.18.4 Blood pressure

As part of the STEP 2 protocol, survey participants had their blood pressure measured. Respondents were also asked whether they have ever had their blood pressure measured by a doctor or other health worker, whether they have ever been told that they have high blood pressure, whether they have been told in the last 12 months, whether they were currently receiving any treatment for raised blood pressure, and whether they have sought treatment from a traditional healer.

The STEPS protocol considers those of having a raised blood pressure if they have:

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

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

Table 132 shows that overall, the mean systolic blood pressure was 127.4 mm Hg (95%CI= 126.2-128.7). Men

had significantly higher mean systolic blood pressure than women – 130.4 mmHg (95%CI= 128.3-132.4) for men and 125.3 mmHg (95%CI= 123.8-126.8) for women.

The mean systolic blood pressure increased with age – 120.3 mmHg (95%CI= 118.0-122.5) among 18-29 year olds, 125.9 mmHg (95%CI= 122.9-128.9) among 30-44 year olds and 134.1 mmHG (95%CI= 131.6-136.5) among 45-69 year olds. Among men, the mean systolic blood pressure of 45-69 year olds (134.8 mmHg, 95%CI= 130.5-139.1) was significantly higher than that of 18-29 year olds (126.6 mmHg, 95%CI= 124.9-128.3). Among women, the mean systolic blood pressure increased with age – 116.1 mmHg (95%CI= 112.7-119.5) among 18-29 year olds, 124.6 mmHg (95%CI= 120.9-128.3) among 30-44 year olds and 133.4 mmHg (95%CI= 131.2-135.6) among 45-69 year olds.

Table 132. Mean systolic 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
18-29	178	126.6	124.9-128.3	226	116.1	112.7-119.5	404	120.3	118.0-122.5
30-44	190	127.8	124.2-131.5	258	124.6	120.9-128.3	448	125.9	122.9-128.9
45-69	201	134.8	130.5-139.1	238	133.4	131.2-135.6	439	134.1	131.6-136.5
18-69	569	130.4	128.3-132.4	722	125.3	123.8-126.8	1291	127.4	126.2-128.7

Table 133 shows that overall, the mean diastolic blood pressure was 84.4 mmHg (95%CI= 82.8-85.9). There was no statistically significant difference between men and women.

The mean diastolic blood pressure of those aged 30-44 (85.1 mmHg, 95%CI= 82.0-88.3) and 45-69 (87.1 mmHg, 95%CI= 84.5-89.7) were significantly higher than that of 18-29 year olds (79.6 mmHg, 95%CI= 78.1-81.2).

Among women, the mean diastolic blood pressure of those aged 30-44 (85.0 mmHg, 95%CI= 81.2-88.7) and 45-69 (88.6 mmHg, 95%CI= 86.0-91.2) were significantly higher than that of 18-29 year olds (79.0 mmHg, 95%CI= 77.0-81.0). Among men, there was no statistically significant difference between the three age groups.

Table 133. Mean diastolic blood pressure

Mean diastolic blood pressure (mmHg)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18-29	178	80.6	79.0-82.2	226	79.0	77.0-81.0	404	79.6	78.1-81.2
30-44	190	85.4	81.2-89.6	258	85.0	81.2-88.7	448	85.1	82.0-88.3
45-69	201	85.3	81.6-89.0	238	88.6	86.0-91.2	439	87.1	84.5-89.7
18-69	569	84.1	81.9-86.3	722	84.5	83.0-86.1	1291	84.4	82.8-85.9

Table 134 shows that overall, 33.1% (95%CI= 27.6-38.7), excluding those on medication, had raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg. There was no statistically significant difference between men and women.

The proportion of the population aged 30-44 and 45-69 with raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg, excluding those on medication, were significantly higher than that of 18-29 year olds – 37.0% (95%CI= 22.4-51.6) of those aged 30-44 and 43.4% (95%CI= 33.0-53.7) of those aged 45-69 and 14.6% (95%CI= 7.9-21.4) of those aged 18-29.

Among men, a significantly higher proportion of those aged 45-69 (34.7%, 95%CI= 24.5-45.0) had raised blood pressure SBP ≥140 and/or DBP ≥ 90 than those aged 18-29 (15.3%, 95%CI= 7.6-22.9). Among women, a significantly higher proportion of those aged 45-69 had raised blood pressure SBP ≥140 and/or DBP ≥ 90 (50.6%, 95%CI= 37.6-63.6) than those aged 18-29 (14.2%, 95%CI= 6.0-22.4).

Table 134. Percentage with raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg, excluding those on medication

SBP ≥140 and/or DBP ≥ 90 mmHg, excluding those on medication for raised blood pressure									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	178	15.3	7.6-22.9	225	14.2	6.0-22.4	403	14.6	7.9-21.4
30-44	183	41.1	21.0-61.2	254	34.2	17.3-51.1	437	37.0	22.4-51.6
45-69	191	34.7	24.5-45.0	226	50.6	37.6-63.6	417	43.4	33.0-53.7
18-69	552	31.6	22.9-40.3	705	34.2	28.1-40.3	1257	33.1	27.6-38.7

Table 135 shows that 34.4% (95%CI= 29.5-39.3) overall had raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg or were currently on medication for raised blood pressure. There was no significant difference between men and women.

The proportion of the population aged 30-44 and 45-69 with raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg or were currently on medication for raised blood pressure were significantly higher than that of 18-29 year olds – 38.4% (95%CI= 24.6-52.2) of 30-44 year olds, 44.9% (95%CI= 35.1-54.7) of 45-69 year olds and 15.0% (95%CI= 8.1-21.9) of 18-29 year olds.

Among men, a significantly higher proportion of those aged 30-44 (43.2%, 95%CI= 24.4-62.0) and 45-69 (36.5%, 95%CI= 26.0-47.0) had raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg or were currently on medication for raised blood pressure compared to those aged 18-29 (15.3%, 95%CI= 7.6-22.9). Among women, a significantly higher proportion of those aged 45-69 years had raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg or were currently on medication for raised blood pressure (52.0%, 95%CI= 39.6-64.4) than those aged 18-29 (14.8%, 95%CI= 6.5-23.2).

Table 135. Percentage with raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg or were currently on medication for raised blood pressure

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
18-29	178	15.3	7.6-22.9	226	14.8	6.5-23.2	404	15.0	8.1-21.9
30-44	190	43.2	24.4-62.0	258	35.1	18.5-51.6	448	38.4	24.6-52.2
45-69	201	36.5	26.0-47.0	239	52.0	39.6-64.4	440	44.9	35.1-54.7
18-69	569	33.2	25.0-41.4	723	35.3	29.6-41.0	1292	34.4	29.5-39.3

Table 136 shows that 10.0% (95%CI= 7.6-12.4) overall, excluding those on medication, had raised blood pressure SBP ≥160 and/or DBP ≥ 100 mmHg. There was no statistically significant difference between men and women.

Excluding those on medication, a significantly higher proportion of 45-69 year olds had raised blood pressure SBP ≥160 and/or DBP ≥ 100 mmHg (16.9%, 95%CI= 13.3-20.5) compared to 18-29 year olds (2.9%, 95%CI= 0.8-5.0).

Among men, excluding those on medication for raised blood pressure, a significantly higher proportion of those aged 45-69 (16.2%, 95%CI= 10.9-21.6) had raised blood pressure SBP ≥160 and/or DBP ≥ 100 mmHg than those aged 18-29 (2.6%, 95%CI= 0.0-5.5). Among women, excluding those on medication for raised blood pressure, a significantly higher proportion of those aged 45-69 had raised blood pressure SBP ≥140 and/or DBP ≥ 90 mmHg (17.4%, 95%CI= 12.6-22.2) than those aged 18-29 years (3.1%, 95%CI= 0.5-5.7).

Table 136. Percentage with raised blood pressure SBP ≥160 and/or DBP ≥ 100 mmHg, excluding those on medication for raised blood pressure

SBP ≥160 and/or DBP ≥ 100 mmHg, excluding those on medication for raised blood pressure									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	178	2.6	0.0-5.5	225	3.1	0.5-5.7	403	2.9	0.8-5.0
30-44	183	7.3	2.6-12.1	254	8.8	2.3-15.2	437	8.2	3.0-13.4
45-69	191	16.2	10.9-21.6	226	17.4	12.6-22.2	417	16.9	13.3-20.5
18-69	552	9.7	6.9-12.5	705	10.2	7.1-13.3	1257	10.0	7.6-12.4

Table 137 shows that 11.7% (95%CI= 0.0-0.0) overall had raised blood pressure SBP ≥160 and/or DBP ≥ 100 mmHg or were currently on medication for raised blood pressure.

A significantly higher proportion of the population aged 45-69 had raised blood pressure SBP ≥160 and/or DBP ≥ 100 mmHg or were currently on medication for raised blood pressure (19.2%, 95%CI= 15.5-22.8) than those aged 18-29 (3.3%, 95%CI= 1.0-5.7).

Among men, a significantly higher proportion of those aged 45-69 (18.5%, 95%CI= 12.2-24.9) had raised blood pressure or was currently on medication for raised blood pressure than those aged 18-29 (2.6%, 95%CI= 0.0-5.5). Among women, a significantly higher proportion of those aged 45-69 had raised blood pressure or was currently on medication for raised blood pressure (19.7%, 95%CI= 15.6-23.8) compared to those aged 18-29 years (3.8%, 95%CI= 0.6-7.0). There was no statistically significant difference between men and women.

Table 137. Percentage with raised blood pressure SBP ≥160 and/or DBP ≥ 100 mmHg or currently on medication for raised blood pressure

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
18-29	178	2.6	0.0-5.5	226	3.8	0.6-7.0	404	3.3	1.0-5.7
30-44	190	10.6	4.8-16.4	258	10.0	3.4-16.5	448	10.2	4.9-15.6
45-69	201	18.5	12.2-24.9	239	19.7	15.6-23.8	440	19.2	15.5-22.8
18-69	569	11.8	8.6-15.0	723	11.7	9.0-14.3	1292	11.7	0.0-0.0

Table 138 shows that among men who had raised blood pressure SBP≥140 and/or DBP≥90 or were currently on medication, majority (93.1%, 95%CI= 87.0-99.2) were not on medication and had raised blood pressure SBP≥140 and/or DBP≥90; 5.1% (95%CI= 0.2-10.0) were on medication and had raised blood pressure SBP≥140 and/or DBP≥90; and 1.8% (95%CI= 0.0-4.8) were on medication and had SBP<140 and DBP<90.

The number of respondents was too small to report on any statistically significant difference between the three age groups.

Table 138. Percentage of men with raised blood pressure with and without medication

Men with raised blood pressure and medication							
Age Group (years)	Men						
	n	% On medication and SBP<140 and DBP<90	95% CI	% On medication and SBP≥140 and/or DBP≥90	95% CI	% Not on medication and SBP≥140 and/or DBP≥90	95% CI
18-69	176	1.8	0.0-4.8	5.1	0.2-10.0	93.1	87.0-99.2

Table 139 shows that among women who had raised blood pressure SBP≥140 and/or DBP≥90 or were currently on medication, majority (95.4%, 95%CI= 91.4-99.4) were not on medication and had raised blood pressure SBP≥140 and/or DBP≥90; 2.2% (95%CI= 0.1-4.2) were on medication and had raised blood pressure of SBP≥140 and/or DBP≥90; and 2.4% (95%CI= 0.0-5.2) were on medication and had SBP<140 and DBP<90.

The number of respondents was too small to report on any statistically significant difference between the three age groups.

Table 139. Percentage of women with treated and/or controlled raised blood pressure

Women with raised blood pressure and medication							
Age Group (years)	Women						
	n	% On medication and SBP<140 and DBP<90	95% CI	% On medication and SBP≥140 and/ orDBP≥90	95% CI	% Not on medication and SBP≥140 and/ orDBP≥90	95% CI
18-69	228	2.4	0.0-5.2	2.2	0.1-4.2	95.4	91.4-99.4

Table 140 shows that among those who had raised blood pressure of SBP≥140 and/or DBP≥90 or were currently on medication, majority (94.4%, 95%CI= 90.2-98.7) were not on medication and had raised blood pressure of SBP≥140 and/or DBP≥90; 3.4% (95%CI= 0.5-6.2) were on medication and had raised blood pressure of SBP≥140 and/or DBP≥90; and 2.2% (95%CI= 0.0-4.5) were on medication and had SBP<140 and DBP<90.

There were no significant differences between men and women and between the three age groups.

Table 140. Percentage with raised blood pressure and medication both sexes combined

Percentage with treated and/or controlled raised blood pressure among those who had raised blood pressure or were currently on medication							
Age Group (years)	Both Sexes						
	n	% On medication and SBP<140 and DBP<90	95% CI	% On medication and SBP≥140 and/ orDBP≥90	95% CI	% Not on medication and SBP≥140 and/ orDBP≥90	95% CI
18-29	79	2.9	0.0-8.8	0.0	0.0-0.0	97.1	91.2-100.0
30-44	130	1.7	0.0-5.0	4.1	0.0-8.9	94.2	87.8-100.0
45-69	195	2.3	0.0-5.2	3.6	0.1-7.2	94.0	88.8-99.2
18-69	404	2.2	0.0-4.5	3.4	0.5-6.2	94.4	90.2-98.7

4.19. Biochemical measurements

4.19.1 Fasting blood glucose and diabetes

To measure fasting blood sugar levels, capillary whole blood was drawn using the finger prick method. Non-fasting participants were excluded for these measures in STEP 3. Estimates of elevated blood glucose prevalence were calculated based on the capillary whole blood glucose test results and by following the WHO guidelines for defining and elevated fasting plasma blood glucose:

- fasting capillary plasma equivalent value of glucose was ≥ 7.0 mmol/L (126 mg/dl) AND whether or not they have previously been told by a health worker that they have diabetes, OR
- normal capillary plasma equivalent value of glucose was < 7.0 mmol/L AND were currently receiving anti-diabetes medication prescribed by a health worker.

Note that these calculated values do not reflect diabetes rates. A second raised fasting blood glucose result is required to confirm diagnosis. As such, the term elevated blood glucose is used in this report. Participants who have been advised by a health worker that they have 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 NOT included among those considered as having elevated blood glucose.

Table 141 shows that the mean fasting blood glucose (plasma equivalent) overall was 5.9 mmol/L (95%CI= 5.7-6.2). Those aged 45-69 had a significantly higher mean fasting blood glucose (6.8 mmol/L, 95%CI= 6.4-7.2) than those aged 18-29 (5.9 mmol/L, 95%CI= 4.6-5.3).

There was no statistically significant difference between men and women.

Table 141. Mean fasting raised blood glucose (plasma equivalent) (mmol/L)

Mean fasting raised blood glucose (mmol/L)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18-29	170	4.8	4.4-5.3	212	5.0	4.8-5.3	382	4.9	4.6-5.3
30-44	183	6.0	5.4-6.5	249	5.9	4.8-7.0	432	5.9	5.4-6.5
45-69	188	6.1	5.6-6.7	225	7.4	6.7-8.1	413	6.8	6.4-7.2
18-69	541	5.7	5.4-5.9	686	6.2	5.8-6.6	1227	5.9	5.7-6.2

Table 142 shows that overall, 12.1% (95%CI= 6.4-17.8) were categorized as having impaired fasting glycaemia (plasma equivalent)

There were no statistically significant differences between men and women and between the three age groups.

Table 142. Percentage categorized as having impaired fasting glycaemia

Impaired Fasting Glycaemia*									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	170	11.8	3.5-20.2	212	12.1	2.0-22.3	382	12.0	3.9-20.1
30-44	183	12.4	4.3-20.5	249	9.8	3.6-16.0	432	10.8	4.7-16.9
45-69	188	13.0	6.5-19.5	225	14.0	4.1-24.0	413	13.5	7.8-19.2
18-69	541	12.4	6.9-18.0	686	11.8	5.3-18.4	1227	12.1	6.4-17.8
*Impaired fasting glycaemia is defined as plasma equivalent value: ≥6.1mmol/L (110mg/dl) and <7.0mmol/L (126mg/dl)									

Table 143 shows that overall, 16.4% (95%CI= 13.9-18.8) had raised blood glucose or were currently on medication for diabetes.

A significantly higher proportion of women had raised blood glucose or was currently on medication for diabetes compared to men – 20.2% (95%CI= 15.6-24.9) of women and 11.6% (95%CI= 7.9-15.3) of men.

A significantly higher proportion of the population aged 45-69 (29.5%, 95%CI= 20.2-38.8) had raised blood glucose or were currently on medication compared to younger ones aged 18-29 (2.0%, 95%CI= 0.3-3.6). Among women and men, a significantly higher proportion of those aged 45-69 had raised blood glucose or was currently on medication for diabetes (40.4%, 95%CI= 27.9-52.9) for women and (17.9%, 95%CI=9.2-26.6) for men than those aged 18-29 (1.4%, 95%CI= 0-2.8) for women and (2.6%, 95%CI=0-5.1) for men respectively. There were statistically significant difference between the three age groups among both women and men.

Table 143. Percentage categorized as having raised blood glucose or were currently on medication for diabetes

Raised blood glucose or currently on medication for diabetes**									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	170	2.6	0.0-5.1	212	1.4	0.0-2.8	382	2.0	0.3-3.6
30-44	183	13.4	6.3-20.5	249	16.5	6.5-26.6	432	15.4	10.2-20.5
45-69	188	17.9	9.2-26.6	225	40.4	27.9-52.9	413	29.5	20.2-38.8
18-69	541	11.6	7.9-15.3	686	20.2	15.6-24.9	1227	16.4	13.9-18.8
** Raised blood glucose is defined as plasma equivalent value: ≥ 7.0 mmol/L (126 mg/dl)									

Table 144 shows that overall, 4.1% (95%CI= 1.9-6.2) were currently on medication for diabetes.

A significantly higher proportion of the population aged 45-69 (9.0%, 95%CI= 3.0-15.0) were on medication compared to those aged 18-29 (0.7%, 95%CI= 0.0-1.5).

There was no statistically significant difference between men and women.

Table 144. Percentage currently on medication for diabetes

Currently on medication for diabetes									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	321	1.2	0.0-3.0	361	0.2	0.0-0.4	682	0.7	0.0-1.5
30-44	335	1.7	0.3-3.2	435	3.2	0.5-6.0	770	2.6	0.8-4.4
45-69	330	4.8	1.6-8.0	374	12.7	4.2-21.2	704	9.0	3.0-15.0
18-69	986	2.6	1.0-4.2	1170	5.3	2.6-8.1	2156	4.1	1.9-6.2

4.19.2 Total cholesterol

For elevated total blood cholesterol, a cut-off point ≥5.0 mmol/L (or ≥190 mg/dl) was used to classify respondents as being at higher risk for coronary artery disease.

Table 145 shows that overall, the mean total cholesterol overall was 3.8 mmol/L (95%CI= 3.6-4.1).

Those aged 45-69 had a higher mean total cholesterol (4.2 mmol/L, 95%CI= 3.9-4.4) than those aged 18-29 years (3.4 mmol/L, 95%CI= 3.1-3.7). Among women, those aged 45-69 had a higher mean total cholesterol (4.3 mmol/L, 95%CI= 4.1-4.6) than those aged 18-29 years (3.7 mmol/L, 95%CI= 3.5-3.9).

There was no statistically significant difference between men and women.

Table 145. Mean total cholesterol (mmol/L)

Mean total cholesterol (mmol/L)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18-29	168	3.1	2.7-3.5	207	3.7	3.5-3.9	375	3.4	3.1-3.7
30-44	179	3.8	3.3-4.4	247	3.9	3.6-4.3	426	3.9	3.6-4.3
45-69	186	4.0	3.4-4.5	222	4.3	4.1-4.6	408	4.2	3.9-4.4
18-69	533	3.7	3.2-4.1	676	4.0	3.7-4.3	1209	3.8	3.6-4.1

Table 146 shows that overall, 15.6% (95%CI= 10.0-21.2) had total cholesterol of ≥ 5.0 mmol/L or ≥ 190 mg/dl or were currently on medication for raised cholesterol.

There were no statistically significant differences between men and women and between the three age groups.

Table 146. Percentage with total cholesterol ≥ 5.0 mmol/L or ≥ 190 mg/dl or who were currently on medication for raised cholesterol

Total cholesterol ≥ 5.0 mmol/L or ≥ 190 mg/dl or currently on medication for raised cholesterol									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	168	5.4	0.0-11.3	207	18.1	10.4-25.8	375	11.8	9.1-14.6
30-44	179	17.1	2.8-31.5	247	15.9	4.4-27.5	426	16.4	6.0-26.7
45-69	186	11.4	0.0-24.4	222	24.4	16.7-32.1	408	18.1	10.0-26.2
18-69	533	11.1	1.0-21.3	676	19.3	14.9-23.7	1209	15.6	10.0-21.2

Table 147 shows that overall, 7.2% (95%CI= 2.5-11.8) had total cholesterol ≥ 6.2 mmol/L or ≥ 240 mg/dl or were currently on medication for raised cholesterol.

There was no statistically significant difference between men and women and between the three age groups.

Table 147. Percentage with total cholesterol ≥ 6.2 mmol/L or ≥ 240 mg/dl or who were currently on medication for raised cholesterol

Total cholesterol ≥ 6.2 mmol/L or ≥ 240 mg/dl or currently on medication for raised cholesterol									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-29	168	2.3	0.0-5.0	207	11.7	2.8-20.6	375	7.1	4.0-10.1
30-44	179	11.3	0.0-25.9	247	3.5	0.0-7.5	426	6.4	0.0-13.2
45-69	186	9.0	0.0-21.4	222	7.1	1.3-12.8	408	8.0	0.6-15.4
18-69	533	7.5	0.0-17.1	676	6.9	4.0-9.8	1209	7.2	2.5-11.8

4.19.4 Haemoglobin

Table 148 shows that 9.5% (95%CI= 0.0-19.3) of women of child-bearing age were anaemic.

Table 148. Percentage of women of child-bearing age (CBA) with anaemia

Percentage of women (CBA) with anaemia			
Age Group (years)	Women		
	n	% Anaemia	95% CI
18-49	447	9.5	0.0-19.3

Table 149 shows that the mean haemoglobin level of women of child-bearing age was 12.3 g/dL (95%CI= 12.0-12.6).

Table 149. Mean haemoglobin (g/dL) of women

Mean Haemoglobin (g/dL)			
Age Group (years)	Women		
	n	Mean	95% CI
18-49	447	12.3	12.0-12.6

4.20 Cardiovascular disease (CVD) risk factors

The combination of the following risk factors from STEP 1, 2 and 3 allows the estimation of a 10-year risk of developing cardiovascular diseases (CVD) in those aged 40-69 years. Those who have a 30% or greater risk to develop CVD in the next ten years have the highest risk.

- Current daily smoker
- Raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP).
- Raised blood glucose (plasma equivalent value ≥7mmol/L or currently on medication for raised diabetes)

Table 150 shows that 11.2% (95%CI= 5.5-16.9) of those aged 40-69 years had a 10-year CVD risk ≥ 30% or had existing CVD – 6.8% (95%CI= 0.9-12.8) of men and 14.8% (95%CI= 6.1-23.4) of women; and 12.2% (95%CI= 5.3-19.0) of those aged 40-54 and 8.7% (95%CI= 1.6-15.82) of those aged 55-69.

Table 150. Percentage aged 40-69 with a 10-year CVD risk ≥ 30% or with existing CVD

Percentage aged 40-69 with a 10-year CVD risk ≥ 30%*** or with existing CVD									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
40-54	156	5.9	0.0-11.7	194	18.3	6.2-30.3	350	12.2	5.3-19.0
55-69	82	10.3	0.0-24.6	96	7.9	0.0-16.2	178	8.7	1.6-15.8
40-69	238	6.8	0.9-12.8	290	14.8	6.1-23.4	528	11.2	5.5-16.9

***A 10-year CVD risk of ≥ 30% is defined according to age, sex, blood pressure, smoking status (current smokers OR those who quit smoking less than 1 year before the assessment), total cholesterol, and diabetes (previously diagnosed OR a fasting plasma glucose concentration > 7.0 mmol/l (126 mg/dl)).

4.21. Combined risk factors

The combination of risk factors for NCDs from STEP 1 and STEP 2 describes the percentage of survey participants 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).

Table 151 shows that 0.3% (95%CI= 0.0-1.0) had no risk factors, 32.3% (95%CI= 23.1-41.5) of men had 1-2 risk factors and 67.4% (95%CI= 58.3-76.5) had 3-5 risk factors.

There was no statistically significant difference between the two age groups.

Table 151. Percentage of men with 0, 1-2, or 3-5 risk factors

Summary of Combined Risk Factors							
Age Group (years)	Men						
	n	% with 0 risk factors	95% CI	% with 1-2 risk factors	95% CI	% with 3-5 risk factors	95% CI
18-44	332	0.0	0.0-0.0	41.2	25.4-57.1	58.8	42.9-74.6
45-69	183	0.8	0.0-2.5	18.6	7.0-30.3	80.6	68.6-92.5
18-69	515	0.3	0.0-1.0	32.3	23.1-41.5	67.4	58.3-76.5

Table 152 shows that 27.9% (95%CI= 19.8-36.0) of women had 1-2 risk factors and 72.1% (95%CI= 64.0-80.2) had 3-5 risk factors. A significantly higher proportion of younger women aged 18-44 (35.2%, 95%CI= 28.3-42.1) had 1-2 risk factors compared to older women aged 45-69 years (15.4%, 95%CI= 3.8-26.9). However, a signifi

cantly higher proportion of older women aged 45-69 (84.6%, 95%CI= 73.1-96.2) had 3-5 risk factors compared to younger women aged 18-44 years (64.8%, 95%CI= 57.9-71.7).

Table 152. Percentage of women with 0, 1-2, or 3-5 of risk factors

Summary of Combined Risk Factors							
Age Group (years)	Women						
	n	% with 0 risk factors	95% CI	% with 1-2 risk factors	95% CI	% with 3-5 risk factors	95% CI
18-44	416	-	-	35.2	28.3-42.1	64.8	57.9-71.7
45-69	214	-	-	15.4	3.8-26.9	84.6	73.1-96.2
18-69	630	-	-	27.9	19.8-36.0	72.1	64.0-80.2

Table 153 shows that overall, 0.1% (95%CI= 0.0-0.4) had no risk factors, 29.8% (95%CI= 23.9-35.7) had 1-2 risk factors and 70.1% (95%CI= 64.2-76.0) had 3-5 risk factors.

A significantly higher proportion of the population aged 18-44 (37.7%, 95%CI= 29.3-46.1) had 1-2 risk factors compared to those aged 45-69 years (16.8%, 95%CI= 7.0-26.7); and a significantly higher proportion of those aged 45-69 (82.8%, 95%CI= 72.8-92.8) had 3-5 risk factors compared to those aged 18-44 years (62.3%, 95%CI= 53.9-70.7). There was no statistically significant difference between men and women.

Table 153. Percentage with 0, 1-2, or 3-5 of risk factors, both sexes combined

Summary of Combined Risk Factors							
Age Group (years)	Both Sexes						
	n	% with 0 risk factors	95% CI	% with 1-2 risk factors	95% CI	% with 3-5 risk factors	95% CI
18-44	748	0.0	0.0-0.0	37.7	29.3-46.1	62.3	53.9-70.7
45-69	397	0.4	0.0-1.1	16.8	7.0-26.7	82.8	72.8-92.8
18-69	1145	0.1	0.0-0.4	29.8	23.9-35.7	70.1	64.2-76.0

5. Discussion and Conclusions

This section summarizes key findings on the noncommunicable disease risk factors i n Kiribati, which will provide an indication of the potential disease burden from developing and dying from a noncommunicable disease.

Almost all adults in Kiribati have several NCD risk factors – 29.8% had 1-2 risk factors and 70.1% had 3-5 risk factors. With 82.8% of those aged 45-69 and 62.3% of those aged 18-44 having 3-5 risk factors, Kiribati faces a risk of bearing a substantial disease burden from NCDs.

Behavioural risk factors

Nearly half of the Kiribati population (47.7%) were current smokers with 64.7% of men and 33.4% of women being current smokers. Among women, those aged 45-69 were more likely to be smokers than those aged 30-44. Most daily smokers (55.5%) smoked less than 5 cigarettes a day, 39.7% smoked 5-24 cigarettes a day, and 4.8% smoked 25 or more cigarettes a day. Overall, 4.2% currently use smokeless tobacco; more common among men than women, and more among those aged 18-29 than those aged 30-44 and 45-69 years. Measures are needed to prevent and discourage use of smoking and smokeless tobacco, through regulation, taxation and education.

There was high exposure to environmental tobacco smoke in homes, which suggest a need to promote smoke-free homes in communities. With more than half of current smokers having tried to stop smoking in the past 12 months, suggests there is a demand for cessation services. There is also a need to prevent sale of tobacco to minors and to prevent early smoking initiation as the mean initiation age of 16.4 years among 18-29 year olds was significantly lower than that of 30-44 year olds (19.2 years) and 45-69 year olds (19.4 years). Furthermore, with 73.9% of kava drinkers being likely to smoke tobacco during or after drinking kava, there is a need to change social norms around this practice and to strictly enforce smoke-free regulations in kava bars.

One tenth of the Kiribati population (11.6%) were current drinkers, and significantly more men than women were current drinkers (19.7% of men and 4.8% of women). The mean number of drinking occasions was 6.0 in the past 30 days and the mean number of standard drinks per occasion was 13.4. Overall, 9.8% binge drank at least once in the past 30 days – men more so than women (17.6% compared to 3.3%); and there was no statistically significant difference between the three age groups. This highlights a need to raise awareness of the harmful use of alcohol and to reduce it.

Compared to other Pacific Islands countries, Kiribati's consumption of fruits and vegetables is very low – 73.3% did not consume any fruit and/or vegetables; 22.1% consumed 1-2 servings on average per day, 3.0% consumed 3-4 servings, and 1.6% consumed 5 or more servings. The mean number of days fruit was consumed in a typical week was 1.6 days and 1.5 days for vegetables; and the mean number of servings of fruit and/or vegetables consumed on average per day was 0.9. Efforts to promote the supply and consumption of fresh fruits and vegetables need to be scaled up.

Slightly less than half (41.3%) of the population always or often added salt before and when eating, particularly among those aged 18-29 and 30-44 compared to those aged 45-69; 61.1% did so when cooking or preparing food at home; and 8.2% always or often consumed processed food high in salt. Overall, 0.8% reported that they consumed far too much salt, 18.7% that they consumed too much salt, 57.9% that they consumed just the right amount, 19.5% that they consumed too little and 3.1% that they consumed far too little. Kiribati can further raise awareness on how much salt people are eating and that most are actually eating too much even though majority think they are consuming just the right amount.

Consumption of sugary drinks is extremely high in Kiribati –average consumption was 3.7 servings per day and and 5.2 teaspoons of sugar were added to a drink in a typical day. With high overweight and obesity rates, Kiribati will need to raise awareness on the risks of consuming too much sugar and to look at other measures to control intake.

The Kiribati population is also relatively inactive with 35.8% not meeting the WHO recommendations on physical activity for health, especially women and those aged 45-69. Slightly more than a third (39.7%) were engaged in low levels of physical activity, 28.8% in moderate levels and 31.4% in high levels. Programmes need to be designed that encourages and enables women and older persons to participate in physical activity in a safe manner.

Historical risk factors

Overall in Kiribati, 53.0% have never had their blood pressure measured, 79.2% have never had their blood sugar measured and 99.0% have never had their cholesterol measured. Among women aged 18-69, only 16.4% had ever been tested for cervical cancer. Slightly less than half have been advised to quit using tobacco or not start, to reduce salt and fat in the diet, to eat more fruit and vegetables, to do more physical activity, and maintain a healthy body weight or to lose weight. Screening of high-risk individuals can be further improved, and a strong health system and community support would be needed to enhance early diagnosis and treatment.

Mental health

Mental health is also an important factor that affects behavioural risks and self-care. The Kiribati population's state of mental well-being appears to be relatively well though 5.1% had seriously considered attempting suicide, more so among women than men. There is a need to promote mental well-being and to provide adequate counseling services, particularly for women. Campaigns to reduce stigma surrounding mental disorders would also create a supportive environment.

Physical risk factors

The mean BMI of the Kiribati population was 30.4 kg/m^2 with 81.1% of the population classified as overweight or obese. A higher proportion of the population aged 30-44 were classified as obese compared to those aged 18-29; a higher proportion of men than women were classified as overweight; and a higher proportion of women than men were classified as obese. Consideration will have to be made on appropriate strategies to reduce overweight and obesity.

In Kiribati, 34.4% had raised blood pressure of SBP ≥140 and/or DBP ≥ 90 mmHg or were currently on medication, more so among 30-44 year olds and 45-69 year olds compared to those aged 18-29; and 11.7% had raised blood pressure of SBP ≥160 and/or DBP ≥ 100 mmHg or were currently on medication. Among those with raised blood pressure or were currently on medication, 94.4% were not on medication and had raised blood pressure, 3.4% were on medication and had raised blood pressure, and 2.2% were on medication and had normal blood pressure. Expansion of the WHO Package of Essential NCD Interventions (WHO PEN) protocol could help improve early diagnosis and adherence to treatment regimen.

Biochemical risk factors

Overall, 12.1% of the population were categorized as having impaired fasting glycaemia and the overall prevalence rates for raised blood glucose or currently on medication for diabetes were 16.4%. A significant higher proportion of the women had raised blood glucose of 20.2% compared to men 11.6%.

Overall, 15.6% of the Kiribati population had total cholesterol of ≥ 5.0 mmol/L or ≥ 190 mg/dl or were currently on medication for raised cholesterol and 7.2% had total cholesterol ≥ 6.2 mmol/L or ≥ 240 mg/dl or were currently on medication for raised cholesterol.

Approximately one tenth of women of child-bearing age had anaemia, which suggests a need to raise awareness about the condition and preventive practices. Kiribati would have to make healthier choices and fresh local produce more affordable and accessible; promote consumption of healthier foods and water; promote healthy lifestyles through the healthy settings approach; and strengthen primary health care and NCD prevention and management through expansion of the WHO PEN protocols.

6. Recommendations

This report provides current information on the prevalence and magnitude of key NCDs and their modifiable risk factors. Broadly comparing this with data from the first survey allows Kiribati to see what has improved and what has worsened and to inform allocation of resources and modification of interventions. Repeating the NCD STEPS survey in the future will allow monitoring of progress towards achieving the 9 voluntary global targets, mapping of trends over time, and inform interventions and strategic modifications required to reduce NCDs in the population.

In accordance to the objectives outlined in the global and regional action plans to reduce NCDs, the following strategies are recommended for Kiribati:

Strengthen governance and leadership

1) Develop new multisectoral strategic health plan. Involve stakeholders from different sectors throughout the process to ensure ownership and buy-in.
2) Work with other sectors to integrate NCD issues and approaches in other sectoral plans.
3) Secure adequate and increase resources for health promotion and NCDs.

Support quality surveillance and public health information system and practices

1) Establish an ongoing and robust NCD STEPS surveillance system. Repeat NCD STEPS survey at 5- to 7-year intervals, preferably in 2020 and 2025.
2) Monitor trends and determinants of NCDs, and use data for action.
3) Utilize and strengthen other surveillance mechanisms and evaluation methods to measure effectiveness of strategies and interventions (e.g. school-based surveys, cross-sectional surveys).

Implement strategies to address NCD risk factors

1) Accelerate implementation of the WHO Framework Convention on Tobacco Control.
    - strengthen enforcement of Tobacco Control Act and increase human resources
    - advocate for allocation of revenue from tobacco taxes and licensing for health promotion and enforcement
    - increase excise tax to make tobacco products less affordable
    - strengthen enforcement of smoke-free indoor public places including kava bars and workplaces
    - progress on removal of designated smoking zones
    - advocate for smoke-free homes
    - amend tobacco control act and regulations to prohibit sale of single sticks
    - strengthen enforcement of tobacco control regulations to stop sale to minors
    - expand and strengthen cessation services
    - increase awareness of risks through mass education programmes and campaigns
    - encourage and work with community leaders to lead tobacco control efforts including smoke-free communities
2) Advance the implementation of the WHO Global Strategy to Reduce Harmful Use of Alcohol.
    - review and update Alcohol Control Act and increase human resources for enforcements
    - consider spot fines to reduce delays in processing cases
    - increase excise tax to make alcohol less affordable
    - control access to alcohol particularly by youth such as enforcing minimum age
    - regulate availability of alcohol by restricting hours for purchasing and selling alcohol

- strengthen enforcement of existing restrictions on black market or home production of alcohol
- step up campaigns for preventing harmful alcohol use

3) Implement the WHO Global Strategy on Diet, Physical Activity and Health

Diet:

- increase resources for nutrition including increasing staff in MHMS
- improve access to and availability of fruits and vegetables through collaborations with other Ministries and agencies. Options include supporting home gardens, controlling prices at road-side market stalls, tenancy renewals to be subjected to having a minimum garden (e.g. bread-fruit, pandanus, banana), removal of VAT and import tax.
- increase awareness of the adverse health effects of high sugar consumption through campaigns
- impose taxes on sugar-sweetened beverages and sugar
- sustain access to fresh fish by ensuring affordability and considering price control measures if needed
- ensure continued access to and affordability of healthier cooking oils instead lard and other animal fats
- collaborate with workplaces to ensure access to healthier food and drink options; and control sugar-sweetened beverages and serving sizes by establishing policies for caterers and vendors
- enforce food regulations requiring use of iodized salt
- raise awareness on anaemia and healthier diet

Physical activity:

- develop initiatives to support active ageing
- organize community-based programmes that would encourage women to be physically active through collaborations with the Ministry of Women, Youth and Social Affairs
- increase human resources for physical activity programmes
- conduct workplace physical activity programmes such as weekly sessions for staff during working hours

4) Create health-enabling environments and settings (e.g. villages, workplaces, schools, markets)

- introduce settings-based policies (e.g. workplaces)
- promote preventive services (e.g. cancer screening, health checks), increase awareness and encourage utilization

Establish and maintain coalitions and partnerships

1) Build coalitions and partnerships across sectors to address NCD risk factors that are beyond the authority of the MHMS, such as food importation, trade, tax, commercial investment and agriculture.

2) Collaborate with maneaba, media organizations, faith-based organizations and nongovernrmental organizations to implement programmes and support advocacy and education.

Strengthen health systems

1) Promote universal health coverage as a means of preventing and controlling NCDs.
2) Enhance access to essential NCD interventions through expansion of the WHO Package of Essential Noncommunicable Disease Interventions:

- establish clinical practice guidelines

- scale up early detection
- provide counselling and patient education (e.g. brief advice)
- provide and increase cancer screening
- provide access to drug therapy to control diabetes, hypertension and myocardial infarction
- ensure availability of basic equipment and tools
- strengthen referral systems

3) Assess gaps in manpower, equipment and facilities, and develop a plan or alternative strategies to fill the gaps and meet demand for services:
    - mental health: early detection, service provision and community support
    - increase outreach services to ensure high coverage of screening services, provision of lifestyle advice and other interventions
    - strengthen supervisory visits to health clinics, especially in the outer island, to ensure good monitoring of supplies, equipment, performance and activities of staff
    - conduct ongoing refresher training for staff and update training as needed

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Appendix 1: Kiribati STEPS Survey Questionnaire

WHO STEPS Q-by-Q Guide
for Noncommunicable Disease Risk Factor Surveillance

Kiribati

Survey Information

Location and Date	Response	Code
Cluster/Centre/Village ID Enter Cluster, Centre or Village ID from list provided.	⌊_⌊_⌊_⌊_⌊_⌊_⌊_⌋	I1
Cluster/Centre/Village name Enter Cluster, Centre or Village name as appropriate.		I2
Interviewer ID Enter interviewer's identification.	⌊_⌊_⌊_⌋	I3
Date of completion of the instrument Enter date when instrument actually completed.	⌊_⌊_⌋ ⌊_⌊_⌋ ⌊_⌊_⌊_⌊_⌋ dd mm year	I4

Consent, Interview Language and Name	Response		Code
Consent has been read and obtained Select relevant response.	Yes	1	I5
	No	2 If NO, END	
Interview Language [Insert Language] Select relevant response.	English	1	I6
	Kiribati	2	
	Others	3	
Time of interview (24 hour clock) Enter time interview started.	⌊_⌊_⌋ : ⌊_⌊_⌋ hrs mins		I7
Family Surname Enter family surname (reassure the participant on the confidential nature of this information and that this is only needed for follow up).			I8

First Name Enter first name of respondent (reassure the participant on the confidential nature of this information and that this is only needed for follow up).		I9
Contact phone number where possible Enter phone number (reassure the participant on the confidential nature of this information and that this is only needed for follow up).	⌊_⌊_⌊_⌊_⌊_⌊_⌊_⌋	I10

Step 1 Demographic Information

CORE: Demographic Information

Question	Response		Code
Sex (Record Male / Female as observed) Select Male / Female as observed.	Male	1	C1
	Female	2	
What is your date of birth? Don't Know 77 77 7777 Enter date of birth of participant. If unknown, select "don't know".	⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ If known, Go to C4 dd mm year		C2
How old are you? If the age is unknown, help participant estimate their age by interviewing them about their recollection of widely known major events.	Years	⌊_⌊_⌋	C3
In total, how many years have you spent at school and in full-time study (excluding pre-school)? Enter total number of years of education (excluding pre-school and kindergarten).	Years	⌊_⌊_⌋	C4

EXPANDED: Demographic Information

What is the highest level of education you have completed? [INSERT COUNTRY-SPECIFIC CATEGORIES] If a person attended a few months of the first year of secondary school but did not complete the year, select "primary school completed". If a person only attended a few years of primary school, select "less than primary school". Select appropriate response.	No formal schooling	1	C5
	Less than primary school	2	
	Primary school completed	3	
	Junior secondary school completed	4	
	Senior Secondary school completed	5	
	College/University completed	6	
	Post graduate degree	7	
	Refused	88	

What is your ethnic group background? Select the relevant ethnic/cultural group to which the participant belongs.	Kiribati	1	C6
	Other	2	
	Refused	88	
What is your marital status? Select the appropriate response.	Never married	1	C7
	Currently married	2	
	Separated	3	
	Divorced	4	
	Widowed	5	
	Cohabitating	6	
	Refused	88	
Which of the following best describes your main work status over the past 12 months? [INSERT COUNTRY-SPECIFIC CATEGORIES] (USE SHOWCARD) The purpose of this question is to help answer other questions such as whether people in different kinds of occupations may be confronted with different risk factors. Select appropriate response.	Government employee	1	C8
	Non-government employee	2	
	Self-employed	3	
	Non-paid	4	
	Student	5	
	Homemaker	6	
	Retired	7	
	Unemployed (able to work)	8	
	Unemployed (unable to work)	9	
	Refused	88	
How many people older than 18 years, including yourself, live in your household? Enter the total number of people living in the household who are 18 years or older.	Number of people	⌊_⌋⌊_⌋	C9

Question	Response			Code
Taking the past year, can you tell me what the average earnings of the household have been? (RECORD ONLY ONE, NOT ALL 3) Enter the average earnings of the household by week, month, or year. If refused to answer, skip to C11.	Per week	⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋	Go to T1	C10a
	OR per month	⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋	Go to T1	C10b
	OR per year	⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋	Go to T1	C10c
	Refused	88		C10RF

	Deleted	

Step 1 Behavioural Measurements

CORE: Tobacco Use

Now I am going to ask you some questions about tobacco use.

Question	Response		Code
Do you currently smoke any tobacco products, such as cigarettes, cigars or pipes? (USE SHOWCARD) Ask the participant to think of any tobacco products he/she is smoking currently.	Yes	1	T1
	No	2 If No, go to T8	
Do you currently smoke tobacco products daily? This question is only for current smokers of tobacco products.	Yes	1	T2
	No	2	
How old were you when you first started smoking? For current smokers only. Ask the participant to think of the time when he/she started to smoke any tobacco products.	Age (years)		T3
	Don't know 77	⌊_⌋⌊_⌋ If Known, go to T5a/T5aw	
Do you remember how long ago it was? (RECORD ONLY 1, NOT ALL 3) Don't know 77 If the participant doesn't remember his/her age when started smoking, then record the time in years, months or weeks as appropriate.	In Years	⌊_⌋⌊_⌋ If Known, go to T5a/T5aw	T4a
	OR in Months	⌊_⌋⌊_⌋ If Known, go to T5a/T5aw	T4b
	OR in Weeks	⌊_⌋⌊_⌋	T4c
On average, how many of the following products do you smoke each day/week? (IF LESS THAN DAILY, RECORD WEEKLY) (RECORD FOR EACH TYPE, USE SHOWCARD) Don't Know 7777 For current smokers only. Specify zero if no products were used in each category instead of leaving categories blank. Record daily consumption for daily smokers. If products are smoked less than daily by daily smokers, enter weekly consumption. Also enter weekly consumption for current, non-daily smokers.		DAILY↓ ⌊_⌋⌊_⌋⌊_⌋⌊_⌋	WEEKLY↓ ⌊_⌋⌊_⌋⌊_⌋⌊_⌋	
	Manufactured cigarettes		T5a/T5aw
	Hand-rolled cigarettes		T5b/T5bw
	Hand rolled rauara		T5c/T5cw
	Deleted		T5d/T5dw
	Deleted		T5e/T5ew
	Other	⌊_⌋⌊_⌋⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ If Other, go to T5other, else go to T6	T5f/T5fw
	Other (please specify):	⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋	T5other/ T5otherw
During the past 12 months, have you tried to stop smoking? For current smokers only. Ask the participant to think of any quit attempt during the past 12 months.	Yes	1	T6
	No	2	

During any visit to a doctor or other health worker in the past 12 months, were you advised to quit smoking tobacco? For current smokers only. Ask the participant to think of visits to a doctor or other health worker during the past 12 months. If no visit, select "no visit during the past 12 months".	Yes	1 If T2=Yes, go to T12; if T2=No, go to T9	T7
	No	2 If T2=Yes, go to T12; if T2=No, go to T9	
	No visit during the past 12 months	3 If T2=Yes, go to T12; if T2=No, go to T9	
In the past, did you ever smoke any tobacco products? (USE SHOWCARD) Ask the participant to think of the time when he/she may have been smoking tobacco products.	Yes	1	T8
	No	2 If No, go to T12	
In the past, did you ever smoke daily? Ask the participant to think of the time when he/she may have been smoking tobacco products on a daily basis.	Yes	1 If T1=Yes, go to T12, else go to T10	T9
	No	2 If T1=Yes, go to T12, else go to T10	

Question	Response		Code
How old were you when you stopped smoking? Ask the participant to think of the time when he/she stopped smoking tobacco products.	Age (years)		T10
	Don't Know 77	⌊_⌊_⌋ If Known, go to T12	
How long ago did you stop smoking? (RECORD ONLY 1, NOT ALL 3) Don't Know 77 If the participant doesn't remember his/her age when they stopped smoking, then record the time in weeks, months or years as appropriate.	Years ago	⌊_⌊_⌋ If Known, go to T12	T11a
	OR Months ago	⌊_⌊_⌋ If Known, go to T12	T11b
	OR Weeks ago	⌊_⌊_⌋	T11c
Do you currently use any smokeless tobacco products such as [chewing tobacco, betel]? (USE SHOWCARD) Ask the participant to think of any smokeless tobacco products that he/she is using currently.	Yes	1	T12
	No	2 If No, go to T15	
Do you currently use smokeless tobacco products daily? For current users of smokeless tobacco products only.	Yes	1	T13
	No	2 If No, go to T14aw	

On average, how many times a day/week do you use …. (IF LESS THAN DAILY, RECORD WEEKLY) (RECORD FOR EACH TYPE, USE SHOWCARD) Don't Know 7777 For current users of smokeless tobacco only. Record for each type of smokeless tobacco products. Specify zero if no products were used in each category instead of leaving categories blank. Record daily consumption for daily users. If products are used less than daily by daily users, enter weekly consumption. Also enter weekly consumption for current, non-daily users.		DAILY↓ WEEKLY↓	
		Deleted	T14a/ T14aw
		Deleted	T14b/ T14bw
	Chewing tobacco	⌊_⌊_⌊_⌊_⌋ ⌊_⌊_⌊_⌊_⌋	T14c/ T14cw
	Betel, quid	⌊_⌊_⌊_⌊_⌋ ⌊_⌊_⌊_⌊_⌋	T14d/ T14dw
	Other	⌊_⌊_⌊_⌊_⌋ ⌊_⌊_⌊_⌊_⌋ If Other, go to T14other, if T13=No, go to T16, else go to T17	T14e/ T14ew
	Other (please specify):	⌊_⌊_⌊_⌊_⌊_⌊_⌋ If T13=No, go to T16, else go to T17	T14other/ T14otherw
In the past, did you ever use smokeless tobacco products such as [chewing tobacco, or betel]? Ask the participant to think of the time when he/she may have been using smokeless tobacco products.	Yes	1	T15
	No	2 If No, go to T17	
In the past, did you ever use smokeless tobacco products such as [chewing tobacco, or betel] daily? Ask the participant to think of the time when he/she may have been using smokeless tobacco products on a daily basis.	Yes	1	T16
	No	2	
During the past 30 days, did someone smoke in your home? Record the number of days. The participant should only think about other people, not about him-/herself. Smokers should exclude themselves. The question is asking about inside the participant's home. This only includes fully enclosed areas of the home.	Yes	1	T17
	No	2	
During the past 30 days, did someone smoke in closed areas in your workplace (in the building, in a work area or a specific office)? Record the number of days. For those not working in a closed area, record "don't work in a closed area". Ask the participant to think of seeing somebody smoke or smelling the smoke in indoor areas at work during the past 30 days.	Yes	1	T18
	No	2	
	Don't work in a closed area	3	

CORE: Alcohol Consumption

The next questions ask about the consumption of alcohol.

Question	Response		Code
Have you ever consumed any alcohol such as beer, wine, spirits or [add other local examples]? (USE SHOWCARD OR SHOW EXAMPLES) Ask the participant to think of any drinks that contain alcohol, with the exception of alcohol-based medication that is taken due to health reasons.	Yes	1	A1
	No	2 If No, go to A16	
Have you consumed any alcohol within the past 12 months? Ask the participant to think of any drinks that contain alcohol, with the exception of alcohol-based medication that is taken due to health reasons.	Yes	1 If Yes, go to A4	A2
	No	2	
Have you stopped drinking due to health reasons, such as a negative impact on your health or on the advice of your doctor or other health worker? This question is for those participants that did not drink during the past 12 months, but that have drunk in their lifetime.	Yes	1 If Yes, go to A16	A3
	No	2 If No, go to A16	
During the past 12 months, how frequently have you had at least one standard alcoholic drink? (READ RESPONSES, USE SHOWCARD) For those that have consumed alcohol in the past 12 months. A "standard drink" is the amount of ethanol contained in standard glasses of beer, wine, fortified wine such as sherry, and spirits. Depending on the country, these amounts will vary between 8 and 13 grams of ethanol. See showcard.	Daily	1	A4
	5-6 days per week	2	
	3-4 days per week	3	
	1-2 days per week	4	
	1-3 days per month	5	
	Less than once a month	6	
Have you consumed any alcohol within the past 30 days? Select the appropriate response.	Yes	1	A5
	No	2 If No, go to A13	
During the past 30 days, on how many occasions did you have at least one standard alcoholic drink? Ask the participant to think of the past 30 days only. Record the number of occasions. Note that there can be more than one occasion in which alcohol is consumed in a given day.	Number Don't know 77	⌊__⌋	A6

During the past 30 days, when you drank alcohol, how many standard drinks on average did you have during one drinking occasion? (USE SHOWCARD) Help the participant to average out the total number of drinks by using the showcard that shows standard alcoholic drinks.	Number Don't know 77	⌊_⌋⌊_⌋	A7
During the past 30 days, what was the largest number of standard drinks you had on a single occasion, counting all types of alcoholic drinks together? Ask the participant to think of the past 30 days only. This question is about the largest number of drinks that the participant had on one single occasion.	Largest number Don't Know 77	⌊_⌋⌊_⌋	A8
During the past 30 days, how many times did you have six or more standard drinks in a single drinking occasion? Ask the participant to think of the past 30 days only, and to report the number of occasions when he/she had six or more standard drinks.	Number of times Don't Know 77	⌊_⌋⌊_⌋	A9
During each of the past 7 days, how many standard drinks did you have each day? (USE SHOWCARD) Don't Know 77 Ask the participant to think of each of the past 7 days. Use the showcard that shows standard alcoholic drinks to help the participant report the number of standard drinks for each of the past 7 days. Record for each day the number of standard drinks. If no drinks record 0.	Monday	⌊_⌋⌊_⌋	A10a
	Tuesday	⌊_⌋⌊_⌋	A10b
	Wednesday	⌊_⌋⌊_⌋	A10c
	Thursday	⌊_⌋⌊_⌋	A10d
	Friday	⌊_⌋⌊_⌋	A10e
	Saturday	⌊_⌋⌊_⌋	A10f
	Sunday	⌊_⌋⌊_⌋	A10g

CORE: Alcohol Consumption, continued

I have just asked you about your consumption of alcohol during the past 7 days. The questions were about alcohol in general, while the next questions refer to your consumption of homebrewed alcohol, alcohol brought over the border/from another country, any alcohol not intended for drinking or other untaxed alcohol. Please only think about these types of alcohol when answering the next questions.

During the past 7 days, did you consume any homebrewed alcohol, any alcohol brought over the border/from another country, any alcohol not intended for drinking or other untaxed alcohol? [AMEND ACCORDING TO LOCAL CONTEXT] (USE SHOWCARD) Ask the participant to only think of homebrewed alcohol, any alcohol brought over the border/from another country, any alcohol not intended for drinking or other untaxed alcohol.	Yes	1	A11
	No	2 If No, go to A13	

On average, how many standard drinks of the following did you consume during the past 7 days? [INSERT COUNTRY-SPECIFIC EXAMPLES] (USE SHOWCARD) Don't Know 77 Ask the participant to think of the past 7 days. Use the showcard that specifies what standard drinks are for each type of alcohol. Alcohol not intended for drinking should be treated like spirits. Record for each type of alcohol the number of standard drinks. If no drinks record 0.	Homebrewed alcohol	⌊_⌋⌊_⌋	A12a
	Fermented toddy	⌊_⌋⌊_⌋	A12b
	Alcohol brought over the border/from another country	⌊_⌋⌊_⌋	A12c
	Alcohol not intended for drinking, e.g. alcohol-based medicines, perfumes, after shaves	⌊_⌋⌊_⌋	A12d
	Other untaxed alcohol in the country	⌊_⌋⌊_⌋	A12e

During the past 12 months, how often have you found that you were not able to stop drinking once you had started? Ask the participant to think of the past 12 months. Read out all the answer options.	Daily or almost daily	1	A13
	Weekly	2	
	Monthly	3	
	Less than monthly	4	
	Never	5	
During the past 12 months, how often have you failed to do what was normally expected from you because of drinking? Ask the participant to think of the past 12 months. Read out all the answer options.	Daily or almost daily	1	A14
	Weekly	2	
	Monthly	3	
	Less than monthly	4	
	Never	5	
During the past 12 months, how often have you needed a first drink in the morning to get yourself going after a heavy drinking session? Ask the participant to think of the past 12 months. Read out all the answer options.	Daily or almost daily	1	A15
	Weekly	2	
	Monthly	3	
	Less than monthly	4	
	Never	5	
During the past 12 months, have you had family problems or problems with your partner due to someone else's drinking? Ask the participant to think of the past 12 months. Read out all the answer options. The participant should not think of his/her own drinking, but of someone else's drinking.	Yes, more than monthly	1	A16
	Yes, monthly	2	
	Yes, several times but less than monthly	3	
	Yes, once or twice	4	
	No	5	

Kava use			
Now I am going to ask you some questions about kava (kawa) or nangkona			
Question	Response		Code
Have you ever tried or drunk kawa/nangkona n the pas 12 months?	Yes No	1 2 If No, skip the rest of this section	X1
During the past 30 days on how many days did you drink kawa or nangkona	Number of days		X2
How long do you usually spend drinking kava in a session?	Number of hours		X3
Do you usually drink alcohol during or after drinking kawa or nangkona?	Yes No		X4
Do you usually smoke during or after drinking kawa or nangkona?	Yes No	1 2	X5
Do you usually eat during or after drinking kawa or nangkona?	Yes No	1 2 if no skip next questions	X6
If yes, what type of food and drink?	Soft drinks Sweets Salted snacks Other	1 2 3 4	X7

CORE: Diet			
The next questions ask about the fruits and vegetables that you usually eat. I have a nutrition card here that shows you some examples of local fruits and vegetables. Each picture represents the size of a serving. As you answer these questions please think of a typical week in the last year.			
Question	Response		Code
In a typical week, on how many days do you eat fruit? (USE SHOWCARD) Ask the participant to think of any fruit on the showcard. A typical week means a "normal" week when the diet is not affected by cultural, religious, or other events. Ask the participant to not report an average over a period.	Number of days Don't Know 77	⌊_⌋⌊_⌋ If Zero days, go to D3	D1
How many servings of fruit do you eat on one of those days? (USE SHOWCARD) Ask the participant to think of one day he/she can recall easily. Refer to the showcard for serving sizes.	Number of servings Don't Know 77	⌊_⌋⌊_⌋	D2
In a typical week, on how many days do you eat vegetables? (USE SHOWCARD) Ask the participant to think of any fruit on the showcard. A typical week means a "normal" week when the diet is not affected by cultural, religious, or other events. Ask the participant to not report an average over a period.	Number of days Don't Know 77	⌊_⌋⌊_⌋ If Zero days, go to D5	D3

How many servings of vegetables do you eat on one of those days? (USE SHOWCARD) Ask the participant to think of one day he/she can recall easily. Refer to the showcard for serving sizes.	Number of servings Don't know 77	⌊_⌊_⌋	D4

Dietary salt

With the next questions, we would like to learn more about salt in your diet. Dietary salt includes ordinary table salt, unrefined salt such as sea salt, iodized salt, salty stock cubes and powders, and salty sauces such as soya sauce or fish sauce (see showcard). The following questions are on adding salt to the food right before you eat it, on how food is prepared in your home, on eating processed foods that are high in salt such as [insert country specific examples], and questions on controlling your salt intake. Please answer the questions even if you consider yourself to eat a diet low in salt.

Read this opening statement out loud. Don't forget to use the showcard which will help the respondent when answering to the questions.

Question	Response		Code
How often do you add salt or a salty sauce such as soya sauce to your food right before you eat it or as you are eating it? (SELECT ONLY ONE) (USE SHOWCARD) Read out all the answer options. Use the showcard that shows salt and salty sauces.	Always	1	D5
	Often	2	
	Sometimes	3	
	Rarely	4	
	Never	5	
	Don't know	77	
How often is salt, salty seasoning or a salty sauce added in cooking or preparing foods in your household? Read out all the answer options. Select the appropriate response.	Always	1	D6
	Often	2	
	Sometimes	3	
	Rarely	4	
	Never	5	
	Don't know	77	
How often do you eat processed food high in salt? By processed food high in salt, I mean foods that have been altered from their natural state, such as packaged salty snacks, canned salty food including pickles and preserves, salty food prepared at a fast food restaurant, cheese, bacon and processed meat [add country specific examples]. [INSERT EXAMPLES] (USE SHOWCARD) Read out all the answer options. Use the showcard that shows processed food high in salt.	Always	1	D7
	Often	2	
	Sometimes	3	
	Rarely	4	
	Never	5	
	Don't know	77	
How much salt or salty sauce do you think you consume? Read out all the answer options and select the appropriate response.	Far too much	1	D8
	Too much	2	
	Just the right amount	3	
	Too little	4	
	Far too little	5	
	Don't know	77	

How important to you is lowering the salt in your diet? Select the appropriate response.	Very important	1	D9
	Somewhat important	2	
	Not at all important	3	
	Don't know	77	
Do you think that too much salt or salty sauce in your diet could cause a health problem? Select the appropriate response.	Yes	1	D10
	No	2	
	Don't know	77	

Do you do any of the following on a regular basis to control your salt intake?
(RECORD FOR EACH)

Select the appropriate response for each option. Ask the participant to only consider actions that he/she undertakes specifically to control salt intake, and not for any other purpose.

Limit consumption of processed foods	Yes	1	D11a
	No	2	
Look at the salt or sodium content on food labels	Yes	1	D11b
	No	2	
Buy low salt/sodium alternatives	Yes	1	D11c
	No	2	
Use spices other than salt when cooking	Yes	1	D11d
	No	2	
Avoid eating foods prepared outside of a home	Yes	1	D11e
	No	2	
Do other things specifically to control your salt intake	Yes	1 If Yes, go to D11other	D11f
	No	2	
Other (please specify)	⌊_⌊_⌊_⌊_⌊_⌊_⌊_⌊_⌋		D11other

What type of oil or fat is most often used for meal preparation in your household? (USE SHOWCARD) (SELECT ONLY ONE) Select the appropriate response.	Vegetable oil	1	D12
	Lard or drippings	2	
	Butter	3	
	Margarine	4	
	Coconut cream	5	
	Coconut oil	6 If Other, go to D12other	
	None in particular	7	
	None used	8	
	Don't know	77	
	Other	⌊_⌊_⌊_⌊_⌊_⌊_⌊_⌊_⌋	D12other

In a typical week how many days do you eat fresh fish?	Number of days		X8
How many servings do you eat on one of those days (use show cards)	Number of servings Don't know		X9
In a typical week how many days do you eat tinned fish	Number of days		X10
How many servings do you eat on one of those days (use show cards)	Number of servings Don't know		X11
On average, how many meals per week do you eat that were not prepared at a home? By meal, I mean breakfast, lunch and dinner. Record the number of meals. Ask the participant to think of meals that were not prepared at a home, including his/her own home, the home of other family members or friends.	Number of meals Don't know 77	⌊_⌋⌊_⌋	D13

In the last week, on how many days did you have a drink containing sugar including fizzy drinks, juice drinks (excluding pure unsweetened fruit juice), cordials/drink mixes, and home made drinks with added sugar (use showcard)	Number of days Don't Know 77	⌊_⌋⌊_⌋ If Zero days, go to	X12
On the days when you had a drink containing sugar, how many serves did you have (use showcard. One serve being one can of drink, one large glass)	Number of servings Don't know 77	⌊_⌋⌊_⌋	X13
In the last week, how often did you have a drink to which you added sugar, like milo, tea or coffee (use showcard). (If had more than one drink a day, please include this eg 10 times in last week)	Number of times Don't Know 77	⌊_⌋⌊_⌋ If Zero days, go to	X14
How many teaspoons of sugar did you add, on average, to each of these drinks	Number of tea spoons Don't know 77	⌊_⌋⌊_⌋	X15

CORE: Physical Activity

Next I am going to ask you about the time you spend doing different types of physical activity in a typical week. Please answer these questions even if you do not consider yourself to be a physically active person.

Think first about the time you spend doing work. Think of work as the things that you have to do such as paid or unpaid work, study/ training, household chores, harvesting food/crops, fishing or hunting for food, seeking employment. [Insert other examples if needed]. In answering the following questions 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.

Read this opening statement out loud. It should not be omitted. The respondent will have to think first about the time he/she spends doing work (paid or unpaid work, household chores, harvesting food, fishing or hunting for food, seeking employment [Insert other examples if needed]), then about the time he/she travels from place to place, and finally about the time spent in vigorous as well as moderate physical activity during leisure time.

Remind the respondent when he/she answers the following questions that 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate. Don't forget to use the showcard which will help the respondent when answering to the questions.

Question	Response		Code
Work			
Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like [carrying or lifting heavy loads, digging or construction work] for at least 10 minutes continuously? [INSERT EXAMPLES] (USE SHOWCARD) Ask the participant to think about vigorous-intensity activities at work only. Activities are regarded as vigorous intensity if they cause large increases in breathing and/or heart rate.	Yes	1	P1
	No	2 If No, go to P 4	
In a typical week, on how many days do you do vigorous-intensity activities as part of your work? "Typical week" means a week when the participant is engaged in his/her usual activities. Valid responses range from 1-7.	Number of days	⌊__⌋	P2
How much time do you spend doing vigorous-intensity activities at work on a typical day? Ask the participant to think of a typical day he/she can recall easily in which he/she engaged in vigorous-intensity activities at work. The participant should only consider those activities undertaken continuously for 10 minutes or more. Probe very high responses (over 4 hrs) to verify.	Hours : minutes	⌊__⌋ : ⌊__⌋ hrs mins	P3 (a-b)
Does your work involve moderate-intensity activity, that causes small increases in breathing or heart rate such as brisk walking [or carrying light loads] for at least 10 minutes continuously? [INSERT EXAMPLES] (USE SHOWCARD) Ask the participant to think about moderate-intensity activities at work only. Activities are regarded as moderate intensity if they cause small increases in breathing and/or heart rate.	Yes	1	P4
	No	2 If No, go to P 7	
In a typical week, on how many days do you do moderate-intensity activities as part of your work? "Typical week" means a week when the participant is engaged in his/her usual activities. Valid responses range from 1-7.	Number of days	⌊__⌋	P5
How much time do you spend doing moderate-intensity activities at work on a typical day? Ask the participant to think of a typical day he/she can recall easily in which he/she engaged in moderate-intensity activities at work. The participant should only consider those activities undertaken continuously for 10 minutes or more. Probe very high responses (over 4 hrs) to verify.	Hours : minutes	⌊__⌋ : ⌊__⌋ hrs mins	P6 (a-b)
Travel to and from places			

The next questions exclude the physical activities at work that you have already mentioned.

Now I would like to ask you about the usual way you travel to and from places. For example to work, for shopping, to market, to place of worship. [Insert other examples if needed]

The introductory statement to the following questions on transport-related physical activity is very important. It asks and helps the participant to now think about how they travel around getting from place-to-place. This statement should not be omitted.

Do you walk or use a bicycle (pedal cycle) for at least 10 minutes continuously to get to and from places? Select the appropriate response.	Yes	1	P7
	No	2 If No, go to P 10	
In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get to and from places? "Typical week" means a week when the participant is engaged in his/her usual activities. Valid responses range from 1-7.	Number of days	⌊__⌋	P8

CORE: Physical Activity, Continued

Question	Response		Code
How much time do you spend walking or bicycling for travel on a typical day? Ask the participant to think of a typical day he/she can recall easily in which he/she engaged in transport-related activities. The participant should only consider those activities undertaken continuously for 10 minutes or more. Probe very high responses (over 4 hrs) to verify.	Hours : minutes	⌊__⌋⌊__⌋ : ⌊__⌋⌊__⌋ hrs mins	P9 (a-b)

Recreational activities

The next questions exclude the work and transport activities that you have already mentioned.

Now I would like to ask you about sports, fitness and recreational activities (leisure) [Insert relevant terms].

This introductory statement directs the participant to think about recreational activities. This can also be called discretionary or leisure time. It includes sports and exercise but is not limited to participation in competitions. Activities reported should be done regularly and not just occasionally. It is important to focus on only recreational activities and not to include any activities already mentioned. This statement should not be omitted.

Do you do any vigorous-intensity sports, fitness or recreational (leisure) activities that cause large increases in breathing or heart rate like [running or football] for at least 10 minutes continuously? [INSERT EXAMPLES] (USE SHOWCARD) Ask the participant to think about recreational vigorous-intensity activities only. Activities are regarded as vigorous intensity if they cause large increases in breathing and/or heart rate.	Yes	1	P10
	No	2 If No, go to P 13	
In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (leisure) activities? "Typical week" means a week when the participant is engaged in his/her usual activities. Valid responses range from 1-7.	Number of days	⌊__⌋	P11

How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day? Ask the participant to think of a typical day he/she can recall easily in which he/she engaged in recreational vigorous-intensity activities. The participant should only consider those activities undertaken continuously for 10 minutes or more. Probe very high responses (over 4 hrs) to verify.	Hours : minutes	⌊_⌊_⌋ : ⌊_⌊_⌋ hrs mins	P12 (a-b)
Do you do any moderate-intensity sports, fitness or recreational (leisure) activities that cause a small increase in breathing or heart rate such as brisk walking, [cycling, swimming, volleyball] for at least 10 minutes continuously? [INSERT EXAMPLES] (USE SHOWCARD) Ask the participant to think about recreational moderate-intensity activities only. Activities are regarded as moderate intensity if they cause small increases in breathing and/or heart rate.	Yes	1	P13
	No	2 If No, go to P16	
In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (leisure) activities? "Typical week" means a week when the participant is engaged in his/her usual activities. Valid responses range from 1-7.	Number of days	⌊_⌋	P14
How much time do you spend doing moderate-intensity sports, fitness or recreational (leisure) activities on a typical day? Ask the participant to think of a typical day he/she can recall easily in which he/she engaged in recreational moderate-intensity activities. The participant should only consider those activities undertaken continuously for 10 minutes or more. Probe very high responses (over 4 hrs) to verify.	Hours : minutes	⌊_⌊_⌋ : ⌊_⌊_⌋ hrs mins	P15 (a-b)

Sedentary behaviour

The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent sitting at a desk, sitting with friends, traveling in car, bus, train, reading, playing cards or watching television, but do not include time spent sleeping.

[INSERT EXAMPLES] (USE SHOWCARD)

How much time do you usually spend sitting or reclining on a typical day? Ask the participant to consider total time spent sitting at work, in an office, reading, watching television, using a computer, doing hand craft like knitting, resting etc. The participant should not include time spent sleeping.	Hours : minutes	⌊_⌊_⌋ : ⌊_⌊_⌋ hrs mins	P16 (a-b)

CORE: History of Raised Blood Pressure

Question	Response		Code
Have you ever had your blood pressure measured by a doctor or other health worker? Ask the participant to only consider measurements done by a doctor or other health worker.	Yes	1	H1
	No	2 If No, go to H6	
Have you ever been told by a doctor or other health worker that you have raised blood pressure or hypertension? Select the appropriate response.	Yes	1	H2a
	No	2 If No, go to H6	

Have you been told in the past 12 months? Only for those that have previously been diagnosed with raised blood pressure.	Yes	1	H2b
	No	2	
In the past two weeks, have you taken any drugs (medication) for raised blood pressure prescribed by a doctor or other health worker? Ask the participant to only consider drugs for raised blood pressure prescribed by a doctor or other health worker.	Yes	1	H3
	No	2	
Have you ever seen a traditional healer for raised blood pressure or hypertension? Select the appropriate response.	Yes	1	H4
	No	2	
Are you currently taking any herbal or traditional remedy for your raised blood pressure? Select the appropriate response.	Yes	1	H5
	No	2	

CORE: History of Diabetes

Question	Response			Code
Have you ever had your blood sugar measured by a doctor or other health worker? Ask the participant to only consider measurements done by a doctor or other health worker.	Yes	1		H6
	No	2	If No, go to H12	
Have you ever been told by a doctor or other health worker that you have raised blood sugar or diabetes? Select the appropriate response.	Yes	1		H7a
	No	2	If No, go to H12	
Have you been told in the past 12 months? Only for those that have previously been diagnosed with diabetes.	Yes	1		H7b
	No	2		
In the past two weeks, have you taken any drugs (medication) for diabetes prescribed by a doctor or other health worker? Ask the participant to only consider drugs for diabetes prescribed by a doctor or other health worker.	Yes	1		H8
	No	2		
Are you currently taking insulin for diabetes prescribed by a doctor or other health worker? Ask the participant to only consider insulin that was prescribed by a doctor or other health worker.	Yes	1		H9
	No	2		
Have you ever seen a traditional healer for diabetes or raised blood sugar? Select the appropriate response.	Yes	1		H10
	No	2		
Are you currently taking any herbal or traditional remedy for your diabetes? Select the appropriate response.	Yes	1		H11
	No	2		

CORE: History of Raised Total Cholesterol			
Questions	Response		Code
Have you ever had your cholesterol (fat levels in your blood) measured by a doctor or other health worker? Ask the participant to only consider measurements done by a doctor or other health worker.	Yes	1	H12
	No	2 If No, go to H17	
Have you ever been told by a doctor or other health worker that you have raised cholesterol? Select the appropriate response.	Yes	1	H13a
	No	2 If No, go to H17	
Have you been told in the past 12 months? Only for those that have previously been diagnosed with raised total cholesterol.	Yes	1	H13b
	No	2	
In the past two weeks, have you taken any oral treatment (medication) for raised total cholesterol prescribed by a doctor or other health worker? Ask the participant to only consider drugs for raised total cholesterol prescribed by a doctor or other health worker.	Yes	1	H14
	No	2	
Have you ever seen a traditional healer for raised cholesterol? Select the appropriate response.	Yes	1	H15
	No	2	
Are you currently taking any herbal or traditional remedy for your raised cholesterol? Select the appropriate response.	Yes	1	H16
	No	2	

CORE: History of Cardiovascular Diseases			
Question	Response		Code
Have you ever had a heart attack or chest pain from heart disease (angina) or a stroke (cerebrovascular accident or incident)? Select the appropriate response.	Yes	1	H17
	No	2	
Are you currently taking aspirin regularly to prevent or treat heart disease? "Regularly" means on a daily or almost daily basis.	Yes	1	H18
	No	2	
Are you currently taking statins (Lovastatin/Simvastatin/ Atorvastatin or any other statin) regularly to prevent or treat heart disease? "Regularly" means on a daily or almost daily basis.	Yes	1	H19
	No	2	

CORE: Lifestyle Advice			
Questions	Response		Code
During the past three years, has a doctor or other health worker advised you to do any of the following? (RECORD FOR EACH) Select the appropriate response. Ask the participant to only consider advice from a doctor or other health worker.			
Quit using tobacco or don't start	Yes	1	H20a
	No	2	

Reduce salt in your diet	Yes	1	H20b
	No	2	
Eat at least five servings of fruit and/or vegetables each day	Yes	1	H20c
	No	2	
Reduce fat in your diet	Yes	1	H20d
	No	2	
Start or do more physical activity	Yes	1	H20e
	No	2	
Maintain a healthy body weight or lose weight	Yes	1 If C1=1 go to M1	H20f
	No	2 If C1=1 go to M1	

CORE (for women only): Cervical Cancer Screening

The next question asks about cervical cancer prevention. Screening tests for cervical cancer prevention can be done in different ways, including Visual Inspection with Acetic Acid/vinegar (VIA), pap smear and Human Papillomavirus (HPV) test. VIA is an inspection of the surface of the uterine cervix after acetic acid (or vinegar) has been applied to it. For both pap smear and HPV test, a doctor or nurse uses a swab to wipe from inside your vagina, take a sample and send it to a laboratory. It is even possible that you were given the swab yourself and asked to swab the inside of your vagina. The laboratory checks for abnormal cell changes if a pap smear is done, and for the HP virus if an HPV test is done.

Read this opening statement out loud. It should not be omitted.

Question	Response		Code
Have you ever had a screening test for cervical cancer, using any of these methods described above? Select the appropriate response.	Yes	1	CX1
	No	2	
	Don't know	77	

Mental health / Suicide

Mental health / Suicide

The next questions ask about thoughts, plans, and attempts of suicide. Please answer the questions even if no one usually talks about these issues.

Question	Response		Code
During the past 12 months, have you seriously considered attempting suicide?	Yes	1	MH1
	No	2 If No, go to MH3	
	Refused	88	
Did you seek professional help for these thoughts?	Yes	1	MH2
	No	2	
	Refused	88	
During the past 12 months, have you made a plan about how you would attempt suicide?	Yes	1	MH3
	No	2	
	Refused	88	
Have you ever attempted suicide?	Yes	1	MH4
	No	2 If No, go to MH9	
	Refused	88	

During the past 12 months, have you attempted suicide?	Yes	1	MH5
	No	2	
	Refused	88	
What was the main method you used the last time you attempted suicide? (SELECT ONLY ONE)	Razor, knife or other sharp instrument	1	MH6
	Overdose of medication (e. g. prescribed, over-the-counter)	2	
	Hanging	3	
	Poisoning with pesticides (e.g. rat poison, insecticide, weed-killer)	4	
	Other poisoning (e.g. plant/seed, household product)	5	
		6	
	Other	7 If Other, go to MH6other	
	Refused	88	
	Other (specify)	_____	MH6other
Did you seek medical care for this attempt?	Yes	1	MH7
	No	2 If No, go to MH9	
	Refused	88	
Were you admitted to hospital overnight because of this attempt?	Yes	1	MH8
	No	2	
	Refused	88	
Has anyone in your close family (mother, father, brother, sister or children) ever attempted suicide?	Yes	1	MH9
	No	2	
	Refused	88	
Has anyone in your close family (mother, father, brother, sister or children) ever died from suicide?	Yes	1	MH10
	No	2	
	Refused	88	

Appendix 2: Supplementary Tables from the Data Book

Demographic information

Table 1: Highest level of education, by men

Age Group (years)	Highest level of education							
	Men							
	n	% Never attended school	% Less than primary school	% Primary school completed	% Junior secondary school completed	% Senior Secondary School completed	% College/ University completed	% Post graduate degree
18-29	316	0.9	2.8	10.1	45.6	36.4	4.1	0.0
30-44	333	2.7	3.0	35.1	29.1	24.6	5.1	0.3
45-69	320	3.8	7.5	48.1	24.7	14.4	0.9	0.6
18-69	969	2.5	4.4	31.3	33.0	25.1	3.4	0.3

Table 2: Highest level of education, by women

Age Group (years)	Highest level of education							
	Women							
	n	% Never attended school	% Less than primary school	% Primary school completed	% Junior secondary school completed	% Senior Secondary School completed	% College/ University completed	% Post graduate degree
18-29	361	0.6	1.1	10.2	36.0	49.9	2.2	0.0
30-44	430	2.1	2.1	34.4	29.1	28.6	3.0	0.7
45-69	368	5.2	11.4	50.0	19.8	10.9	2.7	0.0
18-69	1159	2.6	4.7	31.8	28.3	29.6	2.7	0.3

Table 3: Marital status, by men

Age Group (years)	Marital status						
	Men						
	n	% Never married	% Currently married	% Separated	% Divorced	% Widowed	% Cohabiting
18-29	320	45.9	47.5	0.9	1.6	0.6	3.4
30-44	334	9.6	82.9	1.8	0.6	0.0	5.1
45-69	324	4.3	80.6	1.5	2.5	7.1	4.0
18-69	978	19.74	70.6	1.4	1.5	2.6	4.2

Table 4: Marital status, by women

Age Group (years)	Marital status						
	Women						
	n	% Never married	% Currently married	% Separated	% Divorced	% Widowed	% Cohabiting
18-29	360	30.8	56.7	1.9	1.7	1.9	6.9
30-44	433	3.5	83.1	3.0	1.4	4.2	4.8
45-69	373	2.7	68.1	2.1	2.1	22.5	2.4
18-69	1166	11.7	70.2	2.4	1.7	9.3	4.7

Table 5: Employment status, by men

Employment status					
Age Group (years)	Men				
	n	% Government employee	% Non-government employee	% Self-employed	% Unpaid
18-29	314	8.9	14.6	8.3	68.2
30-44	333	23.1	23.4	7.5	45.9
45-69	324	12.3	12.0	8.3	67.3
18-69	971	14.9	16.8	8.0	60.2

Table 6: Employment status, by women

Employment status					
Age Group (years)	Women				
	n	% Government employee	% Non-government employee	% Self-employed	% Unpaid
18-29	358	7.8	9.8	8.1	74.3
30-44	432	15.3	11.8	9.3	63.7
45-69	372	7.8	4.8	8.1	79.3
18-69	1162	10.6	9.0	8.5	71.9

Table 7: Unpaid work and enemployed, by men

Unpaid work and unemployed							
Age Group (years)	Men						
	n	% Non-paid	% Student	% Home-maker	% Retired	Unemployed	
						% Able to work	% Not able to work
18-29	214	13.1	15.0	29.9	0.9	33.2	7.9
30-44	153	12.4	1.3	45.8	0.7	28.8	11.1
45-69	218	10.1	0.0	33.5	25.7	20.6	10.1
18-69	585	11.8	5.8	35.4	10.1	27.4	9.6

Table 8: Unpaid work and enemployed, by women

Unpaid work and unemployed							
Age Group (years)	Women						
	n	% Non-paid	% Student	% Home-maker	% Retired	Unemployed	
						% Able to work	% Not able to work
18-29	266	12.0	15.4	41.4	0.0	23.7	7.5
30-44	275	10.89	0.4	51.3	0.7	26.5	10.2
45-69	295	10.8	0.0	50.8	8.8	20.0	9.5
18-69	836	11.2	5.0	48.0	3.3	23.3	9.1

Tobacco Use

Table 9: Mean amount of tobacco used by daily smokers by type, by men

Mean amount of tobacco used by daily smokers by type									
Age Group (years)	Men								
	n	Mean # of manu-factured cig.	95% CI	n	Mean #of hand-rolled cig.	95% CI	n	Mean # Cigs, cheroots, cigarilos	95% CI
18-29	148	2.9	0.0-6.0	147	0.1	0.0-0.3	75	7.5	1.0-13.9
30-44	210	3.7	0.8-6.5	210	0.4	0.1-0.7	89	9.4	4.2-14.7
45-69	180	2.2	0.6-3.8	181	0.3	0.0-0.5	67	8.2	5.2-11.2
18-69	538	2.9	1.8-4.1	538	0.3	0.1-0.4	231	8.5	5.9-11.1

Table 10: Mean amount of tobacco used by daily smokers by type, by women

Mean amount of tobacco used by daily smokers by type									
Age Group (years)	Women								
	n	Mean # of manu-factured cig.	95% CI	n	Mean #of hand-rolled cig.	95% CI	n	Mean # Cigs, cheroots, cigarilos	95% CI
18-29	75	0.8	0.3-1.3	76	0.3	0.1-0.4	23	2.9	2.1-3.6
30-44	148	1.5	0.2-2.8	148	0.1	0.0-0.3	55	5.0	1.4-8.5
45-69	153	1.4	0.4-2.5	152	0.3	0.1-0.5	54	4.3	3.4-5.2
18-69	376	1.3	0.5-2.1	376	0.3	0.1-0.4	132	4.2	2.1-3.6

Table 11: Percentage of daily smokers smoking given quantities of manufactured or hand-rolled cigarettes per day, by men

Age Group (years)	Men										
	n	% <5 cigs.	95% CI	% 5-9 cigs.	95% CI	% 10-14 cigs.	95% CI	% 15-24 cigs.	95% CI	% ≥ 25 cigs.	95% CI
18-29	75	50.5	29.4-71.6	28.3	12.1-44.5	3.3	0.0-8.9	1.2	0.0-3.2	16.7	0.0-46.8
30-44	89	32.1	12.4-51.8	30.4	7.6-53.3	9.1	2.3-15.9	24.3	0.0-58.7	4.1	0.0-11.1
45-69	67	38.1	16.3-59.9	23.2	7.6-38.8	24.6	0.0-56.0	11.3	0.0-27.7	2.8	0.0-8.7
18-29	231	39.6	26.9-52.3	27.8	18.0-37.6	11.4	3.9-18.9	13.4	1.8-25.0	7.8	0.0-18.0

Table 12: Percentage of daily smokers smoking given quantities of manufactured or hand-rolled cigarettes per day, by women

Age Group (years)	Men										
	n	% <5 cigs.	95% CI	% 5-9 cigs.	95% CI	% 10-14 cigs.	95% CI	% 15-24 cigs.	95% CI	% ≥ 25 cigs.	95% CI
18-29	23	93.2	81.0-100	5.7	0.0-16.8	0.0	0.0	0.8	0-2.9	0.3	0-0.9
30-44	55	75.4	53.9-96.8	5.4	0.2-10.7	7.2	0-20.4	11.5	0-30.4	0.5	0-1.4
45-69	54	75.4	59.9-91.0	16.3	0.0-33.8	3.1	0-6.6	5.3	0-10.9	0.0	0-0.0
18-29	132	79.6	66.1-93.2	10.8	0.7-20.8	3.5	0-7.5	5.9	0-14.1	0.2	0-0.6

Table 13: Mean years since cessation, both sexes combined

Age Group (years)	Men			Women			Both Sexes		
	n	Mean years	95% CI	n	Mean years	95% CI	n	Mean years	95% CI
18-29	17	6.5	3.8-9.2	16	-2.3	0.0-5.1	33	0.9	0.0-7.3
30-44	16	12.6	8.3-17.0	15	13.1	8.0-18.3	31	12.8	9.1-16.4
45-69	19	22.3	16.2-28.4	21	14.4	5.8-23.1	40	17.9	11.1-24.7
18-69	52	15.2	10.9-19.6	52	8.4	2.2-14.7	104	11.9	7.7-16.1

Table 14: Current users of smokeless tobacco, both sexes combined

Age Group (years)	Men			Women			Both Sexes		
	n	% Current users	95% CI	n	% Current users	95% CI	n	% Current users	95% CI
18-29	316	17.2	8.6-25.8	360	3.8	0.6-7.0	676	10.1	4.9-15.4
30-44	330	2.8	0.6-5.0	431	0.3	0.0-0.7	761	1.4	0.4-2.4
45-69	324	2.7	0.0-7.2	372	0.3	0.0-0.9	696	1.4	0.0-3.5
18-69	970	7.6	5.2-10.1	1163	1.4	0.3-2.5	2133	4.2	2.7-5.7

Table 15: Smokeless tobacco use, by men

Age Group (years)	Men						
	n	Current user				% Does not use smokeless tobacco	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
18-29	316	13.1	6.6-19.6	4.1	0.9-7.3	82.8	74.2-91.4
30-44	330	1.5	0.0-3.2	1.4	0.0-2.8	97.2	95.0-99.4
45-69	324	0.1	0.0-0.4	2.6	0.0-7.1	97.3	92.8-100.0
18-69	970	5.0	2.7-7.2	2.7	1.6-3.8	92.4	89.9-94.8

Table 16: Smokeless tobacco use, by women

Age Group (years)	Women						
	n	Current user				% Does not use smokeless tobacco	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
18-29	360	3.5	0.4-6.6	0.3	0.0-0.8	96.2	93.0-99.4
30-44	431	0.2	0.0-0.6	0.1	0.0-0.2	99.7	99.3-100.0
45-69	372	0.0	0.0-0.0	0.3	0.0-0.9	99.7	99.1-100.0
18-69	1163	1.2	0.2-2.2	0.2	0.0-0.5	98.6	97.5-99.7

Table 17: Current tobacco users includes smoking and smokeless tobacco use, both sexes combined

Age Group (years)	Men			Women			Both Sexes		
	n	% Current users	95% CI	n	% Current users	95% CI	n	% Current users	95% CI
18-29	303	67.9	50.5-85.3	349	24.8	17.2-32.3	652	49.1	36.3-61.9
30-44	305	72.4	64.2-80.6	421	27.6	18.8-36.5	726	47.2	39.9-54.5
45-69	301	64.2	53.5-74.8	355	44.3	37.6-50.9	656	53.8	46.7-60.8
18-69	909	68.2	58.9-77.5	1125	31.8	26.6-37.1	2034	49.9	44.3-55.5

Table 18: Stop smoking for health reasons, both sexes combined

Age Group (years)	Men			Women			Both Sexes		
	n	% Advised to quit	95% CI	n	% Advised to quit	95% CI	n	% Advised to quit	95% CI
18-29	106	11.1	0.0-25.1	64	45.3	17.9-72.8	170	24.0	2.0-46.1
30-44	169	28.1	16.6-39.7	124	53.0	32.9-73.0	293	37.0	22.9-51.2
45-69	136	35.2	27.1-43.4	122	48.6	29.0-68.2	258	41.1	32.1-50.1
18-69	411	25.9	16.7-35.2	310	49.1	30.1-68.0	721	35.1	21.1-49.0

Alcohol Consumption

Table 19: Stopping drinking due to health reasons, both sexes combined

Age Group (years)	Men			Women			Both Sexes		
	n	% stopping due to health reasons	95% CI	n	% stopping due to health reasons	95% CI	n	% stopping due to health reasons	95% CI
18-29	61	26.0	4.7-47.2	27	47.7	31.8-63.7	88	37.1	16.0-58.1
30-44	45	53.2	27.6-78.8	41	12.0	0.0-27.4	86	30.9	15.8-46.0
45-69	53	18.8	1.5-36.2	19	19.0	0.0-47.2	72	18.9	5.9-31.9
18-69	159	30.7	13.0-48.4	87	28.5	14.2-42.7	246	29.7	16.4-42.9

Table 20: High-end, intermediate, and lower-end level drinking among current (past 30 days) drinkers, men

Age Group (years)	Men						
	n	% high-end (≥60g)	95% CI	% intermediate (40-59.9g)	95% CI	% lower-end (<40g)	95% CI
18-29	63	14.1	3.9-24.3	4.4	0.0-11.0	81.6	70.3-92.8
30-44	41	19.7	3.5-35.9	8.3	0.0-20.3	72.0	52.5-91.5
45-69	33	35.3	14.5-56.2	0.0	0.0-0.0	64.7	43.8-85.5
18-69	137	22.5	15.0-29.9	4.2	0.0-9.4	73.3	64.4-82.3

Table 21: High-end, intermediate, and lower-end level drinking among current (past 30 days) drinkers, women

Age Group (years)	Women						
	n	% high-end (≥40g)	95% CI	% intermediate (20-39.9g)	95% CI	% lower-end (<20g)	95% CI
18-69	37	-	-	-	-	-	-

**n<50, n is too small.

Table 22: Frequency of alcohol consumption in the past 7 days, by men

Age Group (years)	Men										
	n	% Daily	95% CI	% 5-6 days	95% CI	% 3-4 days	95% CI	% 1-2 days	95% CI	% 0 days	95% CI
18-29	62	2.4	0.0-6.2	1.5	0.0-3.8	6.3	0.0-14.0	77.1	53.9-100.0	12.7	0.0-27.4
30-44	41	6.2	0.0-16.9	12.7	0.0-29.8	23.7	0.0-61.5	40.3	23.4-57.3	17.1	3.7-30.6
45-69	33	9.1	0.0-21.2	0.0	0.0-0.0	22.5	0.0-53.6	33.1	23.3-42.8	35.3	6.0-64.6
18-69	136	5.7	0.0-12.1	4.5	0.0-10.6	16.7	10.1-23.3	52.0	41.8-62.2	21.1	10.4-31.8

Table 23: Frequency of alcohol consumption in the past 7 days, by women

Age Group (years)	Women										
	n	% Daily	95% CI	% 5-6 days	95% CI	% 3-4 days	95% CI	% 1-2 days	95% CI	% 0 days	95% CI
18-69	36	-	-	-	-	-	-	-	-	-	-

**n<50, n is too small.

Table 24: Frequency of not being able to stop drinking once started during the past 12 months among past 12 month drinkers, by men

Age Group (years)	Men						
	n	% monthly or more frequently	95% CI	% less than monthly	95% CI	% never	95% CI
18-29	116	17.2	0.0-34.8	61.8	31.0-92.5	21.0	4.8-37.2
30-44	95	19.8	2.0-37.6	33.8	16.0-51.6	46.4	34.2-58.6
45-69	55	34.9	6.0-63.9	29.9	0.0-66.2	35.2	15.8-54.6
18-69	266	22.2	3.5-40.8	44.8	16.7-72.9	33.0	20.4-45.7

Table 25: Frequency of failing to do what was normally expected from you during the past 12 months among past 12 month drinkers, by men

Age Group (years)	Men						
	n	% monthly or more frequently	95% CI	% less than monthly	95% CI	% never	95% CI
18-29	116	13.4	0.0-26.9	59.6	38.7-80.6	26.9	13.8-40.1
30-44	95	23.8	1.0-46.5	35.7	16.3-55.2	40.5	28.2-52.7
45-69	55	32.3	4.4-60.3	31.3	0.0-65.7	36.4	16.7-56.0
18-69	266	21.3	2.4-40.3	44.9	21.4-68.3	33.8	22.3-45.3

Table 26: Frequency of needing a first drink in the morning to get going during the past 12 months among past 12 month drinkers, by men

Age Group (years)	Men						
	n	% monthly or more frequently	95% CI	% less than monthly	95% CI	% never	95% CI
18-29	116	12.4	0.0-25.1	12.0	0.0-25.1	75.6	50.2-100.0
30-44	95	20.6	4.0-37.2	9.3	1.6-16.9	70.1	49.1-91.2
45-69	55	17.8	1.2-34.3	6.0	1.2-10.8	76.3	62.1-90.4
18-69	266	16.5	2.2-30.7	9.7	3.0-16.4	73.8	53.4-94.3

Table 27: Frequency of needing a first drink in the morning to get going during the past 12 months among past 12 month drinkers, by women

Age Group (years)	Women						
	n	% monthly or more frequently	95% CI	% less than monthly	95% CI	% never	95% CI
18-29	48	7.9	0.0-18.4	7.9	0.0-21.4	84.2	65.3-100.0
30-44	31	18.3	1.0-35.7	24.4	0.0-63.7	57.3	29.1-85.5
45-69	9	5.1	0.0-13.6	22.2	0.0-59.7	72.7	26.7-100.0
18-69	88	11.9	6.3-17.6	15.7	0.0-40.2	72.3	50.8-93.8

Table 28: Frequency of family/partner problems due to someone else's drinking during the past 12 months among all respondents, by men

Age Group (years)	Men						
	n	% monthly or more frequently	95% CI	% less than monthly	95% CI	% never	95% CI
18-29	316	4.4	0.5-8.3	18.7	11.0-26.4	76.9	67.8-86.0
30-44	329	1.9	0.0-3.8	19.3	7.8-30.9	78.8	67.9-89.7
45-69	324	0.2	0.0-0.6	19.4	7.8-31.0	80.4	68.8-92.0
18-69	969	2.2	0.8-3.6	19.1	10.0-28.3	78.7	69.5-87.9

Table 29: Frequency of family/partner problems due to someone else's drinking during the past 12 months among all respondents, by women

Age Group (years)	Women						
	n	% monthly or more frequently	95% CI	% less than monthly	95% CI	% never	95% CI
18-29	360	1.0	0.0-2.4	11.6	1.8-21.3	87.4	77.9-97.0
30-44	431	1.7	0.0-3.6	11.1	2.4-19.8	87.2	79.6-94.8
45-69	372	2.9	0.0-7.2	8.8	5.2-12.4	88.3	83.0-93.6
18-69	1163	1.9	0.0-3.8	10.5	7.5-13.5	87.6	83.6-91.7

Expanded Questions: KAVA

Table 30: Percentage of food and drinks consumed during/after drinking kava, men

Age Group (years)	Men								
	n	% Soft drinks	95% CI	% Sweets	95% CI	% Salted Snacks	95% CI	% Others	95% CI
18-29	135	3.4	0.0-8.1	27.2	2.0-52.4	13.3	1.2-25.5	56.1	23.8-88.4
30-44	166	1.6	0.0-3.2	17.1	4.8-29.4	20.2	10.0-30.3	61.1	52.0-70.3
45-69	95	1.7	0.0-3.8	18.4	6.7-30.1	28.7	9.8-47.6	51.2	30.9-71.5
18-69	396	2.3	0.0-4.9	21.4	6.5-36.2	18.8	11.4-26.3	57.4	39.6-75.3

Table 31: Percentage of food and drinks consumed during/after drinking kava, by women

Age Group (years)	Women								
	n	% Soft drinks	95% CI	% Sweets	95% CI	% Salted Snacks	95% CI	% Others	95% CI
18-29	21	0.0	0.0-0.0	39.0	31.8-46.2	53.8	40.8-66.8	7.2	0.0-20.6
30-44	35	7.8	0.0-18.2	20.0	1.9-38.1	20.2	1.7-38.7	52.1	21.8-82.3
45-69	19	0.0	0.0-0.0	36.1	0.0-75.1	0.6	0.0-1.9	63.3	23.9-100.0
18-69	76	3.2	0.0-7.7	29.7	15.7-43.8	24.3	4.9-43.6	42.8	14.1-71.5

Fruit and Vegetable Consumption

Table 32: Mean number of servings of fruit on average per day, both sexes combined

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
18-29	301	0.6	0.2-0.9		332	0.4	0.3-0.6		633	0.5	0.3-0.7
30-44	317	0.5	0.3-0.6		409	0.5	0.3-0.6		726	0.5	0.3-0.6
45-69	299	0.4	0.3-0.6		356	0.4	0.3-0.6		655	0.4	0.3-0.5
18-69	917	0.5	0.3-0.6		1097	0.4	0.3-0.6		2014	0.5	0.3-0.6

Table 33: Mean number of servings of vegetables on average per day, both sexes combined

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
18-29	291	0.5	0.1-0.9		329	0.4	0.2-0.7		620	0.5	0.1-0.8
30-44	317	0.3	0.2-0.4		403	0.4	0.2-0.5		720	0.3	0.2-0.4
45-69	293	0.4	0.3-0.6		345	0.5	0.3-0.7		638	0.4	0.3-0.6
18-69	901	0.4	0.2-0.6		1077	0.4	0.3-0.6		1978	0.4	0.3-0.6

Table 34: Mean number of servings of fruit and/or vegetables on average per day, both sexes combined

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
18-29	302	1.1	0.3-1.8		338	0.8	0.5-1.2		640	0.9	0.4-1.5
30-44	320	0.8	0.6-0.9		414	0.8	0.5-1.1		734	0.8	0.6-1.0
45-69	302	0.9	0.6-1.1		357	0.9	0.6-1.2		659	0.9	0.6-1.1
18-69	924	0.9	0.6-1.2		1109	0.8	0.6-1.1		2033	0.9	0.6-1.1

Table 35: Percentage of servings of fruit and/or vegetables on average per day, by men

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
18-29	302	72.1	57.0-87.2	19.5	9.2-29.8	5.2	0.0-10.5	3.2	0.0-6.7
30-44	320	69.5	59.7-79.3	27.2	18.1-36.4	2.2	0.2-4.3	1.0	0.0-2.2
45-69	302	65.9	52.4-79.4	31.2	17.5-44.9	1.6	0.3-3.0	1.3	0.0-3.3
18-69	924	69.2	62.0-76.4	25.9	19.6-32.1	3.1	0.3-5.8	1.9	0.6-3.2

Table 36: Percentage of servings of fruit and/or vegetables on average per day, by women

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
18-29	338	79.3	67.7-90.8	16.4	8.2-24.5	2.6	0.1-5.0	1.8	0.0-4.3
30-44	414	76.7	64.9-88.5	19.6	9.4-29.7	2.6	0.3-4.9	1.1	0.0-2.3
45-69	357	74.2	64.7-83.8	20.6	13.6-27.6	3.8	1.2-6.5	1.3	0.2-2.5
18-69	1109	76.7	66.7-86.7	18.9	11.3-26.5	3.0	1.0-5.0	1.4	0.2-2.6

Dietary salt

Table 37: Percentage of Self-reported quantity of salt consumed, by men

Self-reported quantity of salt consumed											
Age Group (years)	Men										
	n	% Far too much	95% CI	% Too much	95% CI	% Just the right amount	95% CI	% Too little	95% CI	% Far too little	95% CI
18-29	309	0.6	0-1.4	10.4	2.9-17.9	71.1	62.2-80.0	14.2	10.1-18.3	3.7	0-10.2
30-44	324	0.9	0-2.0	16.8	7.7-25.8	63.7	55.0-72.4	14.7	9.0-20.4	4.0	0.9-7.0
45-69	319	0.6	0-1.4	8.0	3.1-12.8	57.7	46.0-69.4	32.4	19.6-45.3	1.4	.0-2.9
18-69	952	0.7	0.2-1.2	11.7	6.8-16.7	64.1	57.6-70.6	20.4	15.5-25.4	3.0	0.2-5.8

Table 38: Percentage of Self-reported quantity of salt consumed, by women

Self-reported quantity of salt consumed											
Age Group (years)	Men										
	n	% Far too much	95% CI	% Too much	95% CI	% Just the right amount	95% CI	% Too little	95% CI	% Far too little	95% CI
18-29	359	0.6	0.0-1.3	34.2	19.8-48.7	51.5	37.6-65.4	13.7	6.4-21.0	0	0
30-44	426	1.6	0.3-2.9	26.0	15.3-36.8	56.4	46.8-66.1	14.9	8.6-21.1	1.0	0.-1.9
45-69	364	0.2	0.0-0.6	12.8	3.9-21.7	50.3	32.4-68.3	27.9	6.2-49.7	8.6	4.6-12.7
18-69	1149	0.9	0.4-1.3	24.4	17.8-31.0	52.9	40.4-65.5	18.7	12.4-25.0	3.1	1.9-4.4

Table 39: Importance of lowering salt in diet, by men

Importance of lowering salt in diet							
Age Group (years)	Men						
	n	% Very important	95% CI	% Somewhat important	95% CI	% Not at all important	95% CI
18-29	275	51.6	30.4-72.8	28.0	11.2-44.7	20.5	9.9-31.0
30-44	264	50.1	34.6-65.6	29.3	21.3-37.4	20.6	8.2-33.0
45-69	274	54.8	36.6-72.9	33.2	22.3-44.1	12.0	0.0-25.4
18-69	813	52.2	36.4-68.0	30.3	20.6-40.0	17.5	8.7-26.3

Table 40: Importance of lowering salt in diet, by women

Importance of lowering salt in diet							
Age Group (years)	Women						
	n	% Very important	95% CI	% Somewhat important	95% CI	% Not at all important	95% CI
18-29	303	51.7	29.4-74.1	21.8	13.9-29.6	26.5	7.3-45.7
30-44	374	58.2	48.6-67.7	26.5	16.7-36.4	15.3	7.9-22.7
45-69	320	59.0	45.1-72.9	23.4	12.8-34.0	17.6	5.6-29.6
18-69	997	56.6	43.7-69.4	24.1	15.9-32.4	19.3	8.0-30.7

Table 41: Limit consumption of processed foods, both sexes combined

Limit consumption of processed foods										
Age Group (years)	Men			Women			Both Sexes			
	n	%	95% CI	n	%	95% CI	n	%	95% CI	
18-29	315	30.6	15.2-46.0	360	30.3	18.6-42.0	675	30.4	17.7-43.1	
30-44	328	37.6	25.3-49.8	430	39.2	27.8-50.6	758	38.5	28.1-48.9	
45-69	324	39.2	16.4-62.0	371	35.1	21.8-48.4	695	37.0	19.9-54.1	
18-69	967	35.8	21.8-49.7	1161	35.1	24.5-45.7	2128	35.4	23.8-46.9	

Table 42: Look at the salt or sodium content on food labels, both sexes combined

Look at the salt or sodium content on food labels										
Age Group (years)	Men				Women				Both Sexes	
	n	%	95% CI		n	%	95% CI		n	%	95% CI
18-29	315	13.3	3.2-23.3		360	12.3	3.1-21.5		675	12.7	4.2-21.3
30-44	328	21.8	12.4-31.2		430	14.9	3.2-26.6		758	17.9	9.2-26.6
45-69	324	29.6	10.2-49.0		371	15.8	6.2-25.3		695	22.1	8.6-35.7
18-69	967	21.5	10.8-32.2		1161	14.4	4.9-23.8		675	12.7	4.2-21.3

Table 43: Buy low salt/sodium alternatives, both sexes combined

Buy low salt/sodium alternatives										
Age Group (years)	Men				Women				Both Sexes	
	n	%	95% CI		n	%	95% CI		n	%	95% CI
18-29	315	12.3	2.0-22.7		360	14.0	6.5-21.4		675	13.2	5.4-21.0
30-44	328	22.2	13.3-31.1		430	16.3	3.4-29.3		758	18.9	9.5-28.3
45-69	324	22.2	9.3-35.2		371	18.3	7.3-29.3		695	20.1	8.7-31.5
18-69	967	18.9	10.0-27.8		1161	16.2	6.6-25.9		2128	17.4	8.5-26.4

Table 44: Look at the salt or sodium content on food labels, both sexes combined

Use spices other than salt when cooking										
Age Group (years)	Men				Women				Both Sexes	
	n	%	95% CI		n	%	95% CI		n	%	95% CI
18-29	315	30.9	14.6-47.1		360	46.0	32.7-59.2		675	38.8	28.8-48.9
30-44	328	40.9	27.5-54.3		430	39.3	24.6-53.9		758	40.0	29.6-50.3
45-69	324	45.3	26.0-64.6		371	41.8	21.5-62.1		695	43.4	25.2-61.6
18-69	967	39.0	27.1-50.8		1161	42.2	29.9-54.4		2128	40.7	29.1-52.3

Table 45: Avoid eating foods prepared outside of a home, both sexes combined

Avoid eating foods prepared outside of a home										
Age Group (years)	Men				Women				Both Sexes	
	n	%	95% CI		n	%	95% CI		n	%	95% CI
18-29	315	38.0	30.2-45.7		360	38.6	28.4-48.7		675	38.3	29.7-46.9
30-44	328	33.7	24.5-42.8		430	39.0	26.8-51.1		758	36.7	27.3-46.0
45-69	324	44.8	29.2-60.5		371	31.5	16.6-46.4		695	37.6	22.7-52.6
18-69	967	38.8	29.8-47.8		1161	36.4	27.2-45.7		2128	37.5	28.7-46.3

Table 46: Do other things specifically to control your salt intake, day, by both sexes

Do other things specifically to control your salt intake										
Age Group (years)	Men				Women				Both Sexes	
	n	%	95% CI		n	%	95% CI		n	%	95% CI
18-29	315	5.1	1.1-9.1		360	8.2	2.1-14.2		675	6.7	2.0-11.4
30-44	328	9.5	1.4-17.5		430	10.5	2.7-18.4		758	10.1	3.2-16.9
45-69	324	4.8	0.6-9.1		371	14.1	4.2-24.0		695	9.8	3.2-16.5
18-69	967	6.4	2.0-10.9		1161	10.9	3.7-18.2		2128	8.9	3.3-14.5

Table 47: Median minutes of work-related physical activity on average per day, by both sexes

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)	
18-29	303	45.0	15.7-124.3	345	10.0	0.0-58.6	648	25.7	0.0-85.0	
30-44	320	17.1	0.0-77.1	419	0.0	0.0-42.9	739	10.7	0.0-51.4	
45-69	317	14.1	0.0-85.7	360	0.0	0.0-17.1	677	0	0.0-38.6	
18-69	940	28.6	0.0-90.0	1124	0	0.0-32.1	2064	12.9	0.0-60.0	

Table 48: Median minutes of transport-related physical activity on average per day, by both sexes

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)	
18-29	303	12.9	0.0-40.0	345	6.4	0.0-30.0	648	8.6	0.0-32.1	
30-44	320	12.9	0.0-25.7	419	10.0	0.0-21.4	739	10.7	0.0-21.4	
45-69	317	14.3	0.0-14.3	360	0.0	0.0-21.4	677	4.3	0.0-32.1	
18-69	940	12.9	0.0-38.6	1124	6.4	0.0-21.4	2064	8.6	0.0-30.0	

Table 49: Median minutes of recreation-related physical activity on average per day, by both sexes

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)	
18-29	303	0.0	0.0-45.0	345	0.0	0.0-0.0	648	0.0	0.0-25.7	
30-44	320	0.0	0.0-8.6	419	0.0	0.0-0.0	739	0.0	0.0-0.0	
45-69	317	0.0	0.0-0.0	360	0.0	0.0-0.0	677	0.0	0.0-0.0	
18-69	940	0.0	0.0-12.9	1124	0.0	0.0-0.0	2064	0.0	0.0-0.0	

Table 50: Median minutes of recreation-related physical activity on average per day, by men

Minutes spent in sedentary activities on average per day					
Age Group (years)	Men				
	n	Mean minutes	95% CI	Median minutes	Inter-quartile range (P25-P75)
18-29	313	146.2	120.9-171.5	120.0	80.0-180.0
30-44	326	179.4	151.8-206.9	150.0	120.0-240.0
45-69	323	185.2	150.2-220.1	150.0	90.0-240.0
18-69	962	170.1	154.4-185.9	150.0	90.0-180.0

Table 51: Median minutes of recreation-related physical activity on average per day, by women

Minutes spent in sedentary activities on average per day					
Age Group (years)	Women				
	n	Mean minutes	95% CI	Median minutes	Inter-quartile range (P25-P75)
18-29	359	169.0	154.1-183.9	150.0	60.0-240.0
30-44	429	150.6	134.7-166.4	120.0	90.0-180.0
45-69	369	173.2	127.8-218.6	180.0	60.0-240.0
18-69	1157	163.7	144.2-183.2	150.0	60.0-240.0

Diabetes History

Table 52: Currently taking insulin prescribed for diabetes among those previously diagnosed, by both sexes

Currently taking insulin prescribed for diabetes among those previously diagnosed										
Age Group (years)	Men				Women				Both Sexes		
	n	% taking insulin	95% CI		n	% taking insulin	95% CI		n	% taking insulin	95% CI
18-69	58	-	-		95	-	-		153	15.1	5.8-24.5

Table 53: Currently taking oral drugs prescribed for diabetes among those previously diagnosed, by both sexes

Currently taking oral drugs prescribed for diabetes among those previously diagnosed										
Age Group (years)	Men				Women				Both Sexes		
	n	% taking meds	95% CI		n	% taking meds	95% CI		n	% taking meds	95% CI
18-69	58	-	-		95	-	-		153	43.5	19.2-67.9

Table 54: Seen a traditional healer for diabetes among those previously diagnosed, by both sexes

Seen a traditional healer for diabetes among those previously diagnosed									
Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18-69	58	-	-	95	-	-	153	-	-

Table 55: Currently taking herbal or traditional treatment for diabetes among those previously diagnosed, by both sexes

Currently taking herbal or traditional treatment for diabetes among those previously diagnosed										
Age Group (years)	Men				Women				Both Sexes		
	n	%	95% CI		n	%	95% CI		n	%	95% CI
18-69	58	-	-		95	-	-		153	28.7	19.5-37.9

Physical Measurements

Table 56: Mean heart rate (beats per minute), both sexes combined

Mean heart rate (beats per minute)										
Age Group (years)	Men				Women				Both Sexes		
	n	mean	95% CI		n	mean	95% CI		n	mean	95% CI
18-29	178	71.4	68.6-74.2		226	75.7	72.5-78.8		404	74.0	71.4-76.5
30-44	189	72.2	70.1-74.3		258	74.9	72.7-77.1		447	73.8	72.3-75.3
45-69	201	73.3	71.8-74.7		238	72.6	70.5-74.7		439	72.9	71.5-74.4
18-69	568	72.4	71.7-73.2		722	74.3	73.1-75.5		1290	73.5	72.7-74.3

Biochemical Measurements

Table 57: Mean fasting blood glucose (mg/dl), both sexes combined

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
18-29	170	86.7	78.7-94.7		212	90.7	85.6-95.8		382	88.7	82.4-95.1
30-44	183	107.5	98.0-117.0		249	106.8	87.2-126.3		432	107.1	97.7-116.4
45-69	188	110.4	100.7-120.1		225	134.1	121.5-146.8		413	122.6	115.2-130.1
18-69	541	101.9	97.7-106.1		686	111.3	104.7-118.0		1227	107.1	102.3-111.9

Table 58. Mean HDL (mmol/L)

Mean HDL (mmol/L)									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18-29	164	0.6	0.4-0.7	208	0.7	0.6-0.9	372	0.7	0.5-0.8
30-44	176	0.6	0.6-0.7	237	0.7	0.5-0.9	413	0.7	0.6-0.8
45-69	182	0.6	0.6-0.7	212	0.7	0.6-0.8	394	0.6	0.6-0.7
18-69	522	0.6	0.5-0.7	657	0.7	0.6-0.8	1179	0.7	0.6-0.8

Table 59. Percentage of eligible persons receiving drug therapy and counseling** to prevent heart attacks and strokes

Percentage of eligible persons receiving drug therapy and counseling to prevent heart attacks and strokes									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
40-54	16	45.8	0.0-95.2	29	21.2	3.7-38.7	45	27.0	9.0-45.0
55-69	5	76.6	30.4-100.0	10	10.3	0.0-27.2	15	36.9	0.0-80.7
40-69	21	55.8	10.5-100.0	39	19.2	4.4-34.1	60	29.2	10.8-47.5

**Counseling is defined as receiving advice from a doctor or other health worker to quit using tobacco or not start, reduce salt in diet, eat at least five servings of fruit and/or vegetables per day, reduce fat in diet, start or do more physical activity, maintain a healthy body weight or lose weight.