BAHAMAS STEPS 2019 REPORT

Non-communicable Diseases and Risk Factors in the Bahamian Society

Ministry of Health & Wellness

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BAHAMAS NCD RISK FACTOR REPORT

MINISTRY OF HEALTH & WELLNESS

STEPS

Pan American Health Organization

World Health Organization

Regional Office for the Americas

The Bahamas 2019 Report of the Pan American STEPS NCD Risk Factor Surveillance Survey

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SPECIAL NOTES

This publication of the STEPS 2019 Survey findings is presented in two complementary volumes.

Volume I	Executive Summary	Cost of Inaction and Nat'l Policies	Policy Considerations
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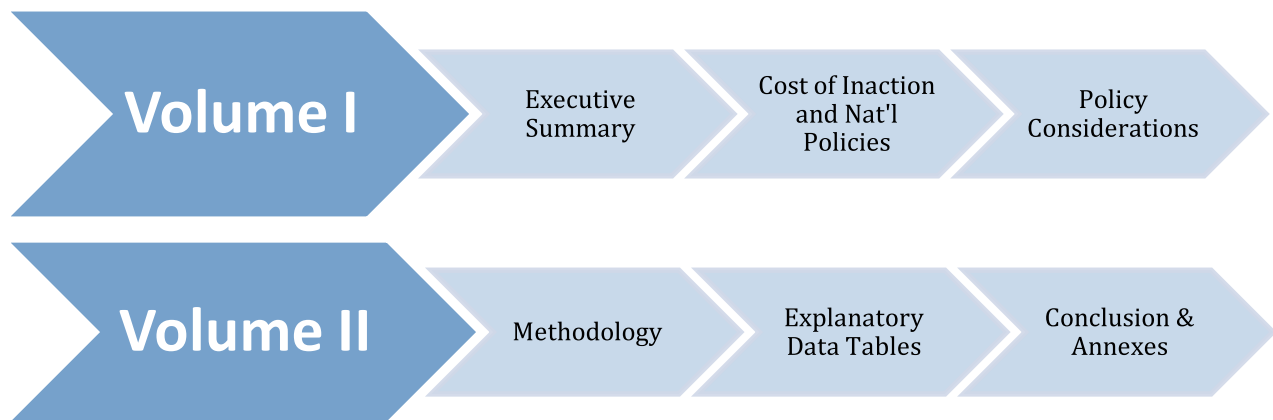
The study was executed in 2019 and Report published in 2022. This delay was the result of shifting priorities due to Hurricane Dorian and the Covid-19 pandemic.

2019 BAHAMAS NCD RISK FACTOR REPORT

Message From
The Minister of Health & Wellness

Non-Communicable diseases (NCDs) continue to be a challenge both globally and regionally and constitute a significant burden for populations across the globe. Data from The World Health Organization (WHO) has identified obesity, chronic heart disease, hypertension, diabetes, and some cancers as the top five causes of death in the region over the past decade.

NCDs have become a major burden on the Bahamian health system with significant economic impact on the public purse. Not only has the burden of NCDs has been exacerbated during the Covid-19 pandemic, but the implications of the increased vulnerabilities and health risks associated with NCDs in individuals have been highlighted through an increased mortality rate. These realities have once again attracted new attention to NCDs and the need to re-orientate health and other systems to intentionally address the prevention and mitigation of morbidity associated with them.

The United Nations' Sustainable Development Goal 3 focuses on ensuring healthy lives and well-being for all. One of the targets of this goal includes reducing by one-third by the year 2030, premature mortality from NCDs through prevention, early identification, and treatment. Knowing one's family's health history, adopting healthy habits such as more water, engaging in daily physical activity and getting regular health screenings are just some of the practices that can mitigate the risks of NCDs occurring or progressing to complications, including death.

The health and wellness of the people of the Commonwealth of The Bahamas remains a priority of this Government, and this stewardship has been entrusted to the Ministry of Health & Wellness. In the 2022-2023 Budget, 2.5 million dollars was allocated to the Ministry to specifically address health and wellness and will be directed at decreasing the incidence of NCDs in this country. Additionally, improved health infrastructure and the expansion of technology in the public health system will auger well for improved access to quality health services, offering a good return on investment in the pursuit of achieving an overall healthier lifestyle.

The Government is committed to making the decisions, crafting the necessary legislation, and guiding the implementation of the policies that are necessary to reduce the occurrence of NCDs. The foregoing notwithstanding, the Government can only improve the environment to facilitate a change to healthier personal lifestyle choices. It is incumbent on individuals to make a determined choice for a healthier existence, and for stakeholders to work collaboratively and cooperatively to reduce NCDs and improve health and wellness across the archipelago.

The conclusions presented in this 2019 STEPS Survey Bahamas Report are fundamental for our country and will guide the way forward for the implementation and sustainability of the strategies, initiatives, and programmes to promote health and wellness and enhance our modalities for healthcare delivery.

The Hon. Dr. Michael R. Darville, M.P.
Minister of Health & Wellness

Message From
The Chief Medical Officer

Individual and collective health are without doubt the fuel for our pressing onward and marching together to loftier goals. Attaining these goals, are in peril to a magnitude never contemplated nor seen. As decades passed, more and more of our people are experiencing and at risk for potentially developing a non-communicable disease (NCD), resulting in disability, reduced quality of life and premature death due to hypertension, diabetes, cardiovascular disease, cancer, and mental health illnesses.

Unhealthy lifestyles are categorically implicated; and are being perpetuated to across generations. These lifestyle choices include, but are not exclusive to, excess consumption of salt, sugars, and fats; over-indulgence in ultra-processed foods and simple carbohydrates; as well as the harmful use of alcohol and tobacco use.

Addressing lifestyle behaviors do not rest solely with the health sector. In fact, the co-occurrence of multiple risk factors demands urgent, meaningful, and coordinated action across all sectors to effectively address the social determinants of health, while simultaneously innovating to redesign our health systems. The new order of the day, to keep more of our people in better states of health and wellness, must also address root causes, or the structural determinants of the social determinants of health inequities. This requires adopting the Health in All Policies (HiAP) approach with infusion of health considerations in the development of policy in every sector which can potentially affect health and inequities in health. Diminished quality of life and increasing premature deaths, that often accompany NCDs will then be in our reach.

The statistics revealed in the STEPS 2019 Report underscore that our nation is at a critical and perilous crossroad. It is clear, inaction is no longer an option if we are to realize the great potential of our land and our people. The revelations contained in these pages, are envisioned to catalyze a revolution to sharply bend the trajectory of non-communicable diseases and their risk factors in our country.

I commend the work that produced the STEPS 2019 Report. Profound appreciation is extended to the nearly thirty-nine hundred STEPS survey participants across seven islands; and the almost eighty fieldworkers and supervisors whose work has borne fruit. Ministry of Finance and the Pan American Health Organization (PAHO) are acknowledged for being trusted partners with the Ministry of Health & Wellness (MoHW) on this and many other endeavors.

I close by paraphrasing the words of William James, we must act as if what we do 'now' makes a difference, because it does. It takes all of us – assuming individual and collective responsibility – to press forward, upward onward together to those loftier goals of better health and well-being for all

Dr. Pearl McMillan
Ministry of Health & Wellness

Message From
PAHO/WHO Country Representative

Non-communicable diseases (NCDs) are a major health burden, causing much morbidity, mortality and disability globally. NCDs are estimated to be responsible for over 70% of all deaths in the world. NCDs also threaten to overwhelm health systems, and have high socio-economic costs associated with them. As such the prevention and control of NCDs is vital to sustainable development in all countries.

NCDs tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors. However, the rise of NCDs has been driven by primarily four major risk factors: tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets. Persons throughout the life course, from children, to adults, to the elderly are all vulnerable to these risk factors. The control of these risk factors is therefore an important focus for the prevention and control of NCDs.

Surveillance, particularly measuring and monitoring trends, of these common risk factors for NCDs is essential for guiding policy, priorities and programmes aimed at reducing these common modifiable risk factors. The World Health Organization (WHO) STEPwise approach to NCD risk factor surveillance (STEPS) is a simple, standardized method for collecting, analysing and disseminating data on key NCD risk factors. It facilitates routine monitoring of the risk factors within a country over time, as well as comparisons among countries.

The Pan American Health Organization (PAHO)/WHO was pleased to provide technical assistance to The Bahamas when it conducted its first STEPs survey in 2011-2012 and is equally pleased to have been able to provide support for this survey conducted in 2019.

PAHO/WHO congratulates The Bahamas on completing this second STEPS survey and publishing the survey report, which provides important information on the key risk factors for NCDs in the country. The findings and recommendations will be essential to the development of evidence-based policies, programmes and interventions to combat the increasing health, economic and development burden due to NCDs. PAHO/WHO is committed to continuing to provide technical cooperation to The Bahamas in this regard and to raising political and public awareness and understanding of the burden of the most common NCDs and their related risk factors. We look forward to working together with the country across sectors, and in collaboration with other partners, to reduce the risks and burden of NCDs to improve the physical, mental, and social wellbeing for the people of The Bahamas.

Eldonna Boisson
PAHO/WHO

ACKNOWLEDGEMENTS

ABBREVIATIONS

ACS	American Cancer Society
ASI	Age-standardized incidence
BAC	Blood (or breath) alcohol concentration
BBSQ	Bahamas Bureau of Standards
BMI	Body Mass Index
CPI	Consumer price index
CVD	Cardiovascular disease
CWD	Caribbean Wellness Day
DALY	Disability-adjusted life years
DRE	Digital rectal examination
DM	Diabetes
DSP	Diastolic blood pressure
ESRD	End-stage renal disease
FCTC	Framework Convention on Tobacco Control
GDP	Gross domestic product
HBC	Healthy Bahamas Coalition
HiAP	Health-In-All Policies
HPV	Human papillomavirus
HTN	Hypertension
mg/dL	Milligrams per deciliter
MI	Myocardial infarction
mmHg	Millimeters of mercury
MoHW	Ministry of Health & Wellness
NIB	National Insurance Board
NCDs	Non-communicable diseases
NPDP	National Prescription Drug Plan
NHI	National Health Insurance
PAHO	Pan American Health Organization
PSA	Prostate specific antigen
RBPF	Royal Bahamas Police Force
RTA	Road traffic accident
RR	Risk ratio

SBP	Systolic blood pressure
SDH	Social determinants of health
SDGs	Sustainable Development Goals
SSBs	Sugar-sweetened beverages
STEMI	ST elevation myocardial infarction
TV	Television
UN	United Nations
WHO	World Health Organization
WHR	Waist-to-hip ratio

RATIONALE

Non-communicable diseases (NCDs) continue to plague societies worldwide, despite the fact that eighty percent of these diseases can be prevented[1]. NCDs have a long duration and progress slowly; and its burden is increasing rapidly and has significant social, economic, and health consequences – disproportionately so in developing countries. Every minute globally, 28 lives between the ages of 30 and 70 years are cut short because countries have not taken policy, legislative and regulatory measures to respond to the needs of people living with or at risk of cardiovascular diseases, cancers, diabetes, chronic respiratory diseases, or mental health conditions, including preventive, curative, palliative, and specialized care[2].

The evidence is clear. In 2005, the major NCDs accounted for 60% of all deaths globally, and 47% of the global burden of disease[3]. By 2019 this rose to 71%[4] of all deaths. And by 2030, is expected to jump to 75%. In fact, deaths due to NCDs and their risk factors have increased by 30.8% in the two-decade span between 2000 and 2019[5]. This upward trend is mirrored in The Bahamas with the proportion of major NCD deaths (such as diseases of the heart, cancer, cerebrovascular disease, diabetes and chronic lower respiratory disease) compared to all other deaths moved from 51.5% to 55.1% (a 7% increase) for the period 2000 to 2015[6].

Not only are more Bahamians dying today from NCDs than any other disease category, they are dying at younger ages. There is a twenty percent chance of a Bahamian dying early or prematurely from an NCD. In fact, for 2019, The Bahamas was identified among the countries in the Region of the Americas with the highest probability of dying too young from an NCD. The probability in The Bahamas is 19.9% compared to the Regional probability average of 14% (Costa Rica, 9.5% at low end and Haiti, 31.3% at the high end)[7].

From a quality of life perspective, the evidence is equally clear. When examined in the context of disability-adjusted life years (DALY), NCDs in 2019 were responsible for 1·62 billion DALYs, an increase from 43.2% in 1990 to 63.8% of total DALYs in 2019[8]. DALY combines information about morbidity and mortality to give a measure of health burden, including both reduction in healthy years (due to disease or disability) and diminished quality of life. One DALY is equivalent to the loss of one healthy year of living. It is estimated that, for a person with an NCD, three out of every four years lived with the disease will be lived with a disability due to the disease[9].

NCDs also carry economic and societal costs, which are borne by the whole of society. Research contends that the cost of NCDs conservatively represents 48% of the global gross domestic product (GDP) of countries[10].

To address the societal threat of NCDs and change

1 https://ncdalliance.org/why-ncds/NCDs#:~:text=An%20estimated%20 80%25%20of%20NCDs,are%20a%20sustainable%20development%20 issue.
2 https://www.who.int/teams/noncommunicable-diseases/on-the-road-to-2025
3 WHO StepWise Implementation Guide
4 https://www.who.int/data/gho/data/themes/topics/topic-details/GHO/ncd-mor tality#:~:text=Noncommunicable%20diseases%20(NCDs)%20kill%2041,71%25%20 of%20all%20deaths%20globally.
5 Source: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/ gho-ghe-ncd-deaths-in-thousands
6 Health Information and Research Unit, Ministry of Health & Wellness.

7 https://www.paho.org/en/enlace/risk-dying-prematurely-ncds#:~:text=Saint%20 Vincent%20and%20the%20Grenadines,Bahamas%3A%2019.9%25
8 https://www.healthdata.org/results/gbd_summaries/2019/non-communica ble-diseases-level-1-cause#:~:text=Summary%20Non%2Dcommunicable%20dis eases%20(NCDs,of%20total%20DALYs%20in%202019.
9 https://ncdalliance.org/why-ncds/NCDs?gclid=Cj0KCQjwvZCZBhCiARIsAPXbajuX 7Mq04panWR06pL0Ke_-S5BTpDox2PaiMeDHuMUfWIiTGn_s0jkAaArJgEALw_wcB
10 https://www3.weforum.org/docs/WEF_Harvard_HE_GlobalEconomicBurdenNon- CommunicableDiseases_2011.pdf

course towards improved health and well-being of a nation, targeted unapologetic interventions and policies driven by current and country-specific evidence is key. The population-based STEPwise survey conducted in 2019 serves as a gateway to understanding the burden of NCDs in The Bahamas, track NCD risk-factor trends and inform NCD policies as well as strengthen linkages from data to action on NCDs at the country level.

SIGNIFICANCE OF STEPS 2019

The WHO STEPwise approach to non-communicable disease risk factor surveillance provides a standardize framework for collecting and reporting on 25 key indicators outlined in the Global NCD Monitoring Framework, ratified in 2013 by Member States with the goal to achieve those indicators by 2025. STEPS serves to quantify the direction (trends), magnitude (impact) and rate of progress on these and other indicators, which can catalyze the integration of relevant regulatory, legislative, policy and multi-sectoral actions. It also provides insight to the appropriateness and adequacy of the response; as well as the scope, comprehensiveness and applicability of health service delivery along with the effectiveness of NCD policies and interventions.

a) Executions of NCD risk factor surveys in The Bahamas have been cyclical, conducted in 2005, 2012 and the latest 2019. The goal across cycles is consistently to assess the prevalence of selected NCD risk factors among adults living in The Bahamas. Specific survey objectives include:

b) To describe the current levels of selected behavioural risk factors in the population such as harmful alcohol consumption, unhealthy diets, physical inactivity, and tobacco use and expo-

sure.

c) To measure the prevalence of biological risk factors (body mass index and sodium intake as well as raised blood pressure, blood glucose and cholesterol)

d) To assess effectiveness of the national health system response in terms of early detection, and treatment of targeted CVD risk.

e) To assess coverage, availability and use of screening for breast, cervical, prostate and colorectal cancers.

f) To assess oral health practices among the adult population.

g) To assess key suicide-specific indicators.

h) To assess prevalence and types of violence and injury.

To support targeted planning and objective evaluating of NCD policy and programme interventions.

METHODOLOGY

The STEPwise Framework to NCD risk-factor surveillance (abbreviated to STEPS) methodology was used and adapted. STEPS is a WHO-developed, cross-sectional, population-based, standardized but flexible framework for countries to monitor the main NCD risk factors through socio-demographic and behavioural risk factors (STEP 1); physical measurements (STEP 2); and bio-chemical measurements (STEP 3). Each step consisted of core mandatory components, which were augmented by expanded questions to capture more nuanced information specific to the Bahamian context.

The 2019 survey cycle of STEPS in The Bahamas was carried out from January 2019 to April 2019, across seven (7) islands – New Providence, Grand Bahama, Ex-

uma, Abaco, Eleuthera (North), Cat Island, and Inagua. There was compliance with standard ethical principles, including informed consent for the sample population. Data management principles were incorporated; and collected data was weighted and analyzed in accordance with the established methodology, using SPSS and programmes developed in EpiInfo version 3.5.4 by WHO for STEPS.

The 2019 execution of the STEPwise Framework was the first survey cycle to undertake a more detailed exploration of the Bahamian diet relative to the prior cycles. It was also the first time intimate partner violence (IPV) related questions were featured. However, and unfortunately, the IPV-specific questions attracted the lowest responses.

RESPONSE RATE

There were 2,365 respondents participating in the STEPS 2019 Survey in The Bahamas (the sample size was 3,840). The combined response rate for this population-based survey was 61.6% for STEPS 1, 2 and 3. For STEPS 1 and 2 alone, the response rate was 77% for households. These rates coupled with the weighting of the data confer generalizability of the findings to the Bahamian population.

SYNPOSIS OF KEY SURVEY FINDINGS

Non-communicable diseases (NCDs) were flagged as a public health threat from the mid-2000s; and by 2009 had attracted the attention of regional (Port of Spain Declaration on NCDs) and international (UN resolution on NCDs) health communities. By 2014, NCDs had overtaken HIV/AIDS, accounting for fifty percent of the global disease burden compared to four percent HIV/

AID global disease burden at that time[11]. Since that time, the assault of NCDs (cardiovascular diseases, diabetes, cancer, chronic respiratory, diseases and mental health problems) has been unrelenting. Now, NCDs account for 71% of all deaths globally[12]. The NCD epidemic is fueled primarily by lifestyle choices such as physical inactivity, unhealthy diets, tobacco use and harmful alcohol use.

Of all these lifestyle choices, The Bahamas is showing promising strides in being sufficiently physically active – with almost 70% meeting the sufficiently active criteria. Notwithstanding this, for The Bahamas, the combination of lifestyle choices has catapulted our health standing to levels comparable with the more unhealthy populations in the world. With the STEPS 2019 findings, The Bahamas now exceeds the regional prevalence (Region of the Americas) for overweight and obesity prevalence (71.1% versus 62.4%), and hypertension prevalence (38.2% versus 18%). The national prevalence of diabetes is 11.5%, but an additional 6.8% are pre-diabetic.

Although tobacco use trends are decreasing in 150 countries around the globe[13], in The Bahamas tobacco use is an increasing trend – rising by 145% over the almost twenty-year period from 2000 (7.1%) to 2019 (17.4%). This current tobacco smoking prevalence also exceeds the regional average of 16.8%.

Diet is a potent driver of health. Poor diet pave the pathway to malnutrition (in all its forms – including underweight, overweight and obesity); to the main NCDs; and

11 Luna F, Luyckx VA. Why have Non-communicable Diseases been Left Behind? Asian Bioeth Rev. 2020 March 20;12(1):5-25. doi: 10.1007/s41649-020-00112-8. PMID: 33717328; PMCID: PMC7747415

12 https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseas es#:~:text=Noncommunicable%20diseases%20(NCDs)%20kill%2041,%2D%20 and%20middle%2Dincome%20countries.

13 https://www.who.int/about/accountability/results/who-results-rport-2020-2021

promulgating the obesogenic environment that exists in The Bahamas. In contrast, healthy diets pave a pathway to longer lives lived in optimal health without disability and with the desired quality; and serves a potent cautery of premature death from NCDs.

- STEPS 2019 showed that the Bahamian diet is driving the population towards more unhealthy states, consuming too little fibre, and too much sugar and salt. Concretely,
- 85.3% of the population does not meet the minimum daily intake/consumption of fruits and vegetables;
- There are high rates of fried food consumption, with more than 50% of the population eating fried foods up to three times each week, and another 13% eating four or more days each week. There is a three-times higher frequency in the daily consumption of fried foods for males (6.9% C.I 2.6 – 11.2) compared to females (2.7% C.I 1.1 – 4.3);
- The consumption of free (added) sugars is alarming, with 60% of the population drinking at least 2 cans/bottles of a sugary beverage each day. This is compounded by the practice of adding sugar to tea and/or coffee. Specifically, 53% of the population add between 2 to 3 spoonfuls of sugar; and
- On average, Bahamians consume double (10.5 grams) the daily recommended (5 grams) amount of salt.

In addition to consuming diets that are more harmful to health, Steps 2019 revealed that a sizeable share (44%) of the population engages in the use of alcohol to the point of being harmful to health and well-being. Of added interest, females were two-times more likely to engage in the harmful use of alcohol, while males were more likely to engage in heavy episodic drinking.

Taken together, there is significant co-occurrence of NCD risk factors within the Bahamian population. Specifically, 60.6% have between 1 to 2 NCD risk factors and an alarming 38.8% (or more than one-third of the population) have 3 to 5 NCD risk factors. The co-occurrence of risk factors for NCDs is more harmful to health than the presence of an individual risk factor. These data lend to The Bahamas' population ranking high among countries whose population have a greater probability of dying too young from NCDs. The Bahamian population also exceeded the regional average likelihood of dying early or prematurely from a NCDs (19.9% versus 14%).

When disease was already present, STEPS 2019 highlighted that compliance with prescribed medication is low. Looking across adherence to medication regimes for diabetes, hypertension and hypercholesterolemia, the average compliance rate was 43%. Females are more compliant than males. A revelation of concern was that among previously diagnosed diabetics and hypertensives, and average of 60% sometimes substitute their prescribed medication for bush/herbal remedies. This may contribute to the low control rates for hypertension – less than 20% of known hypertensives on medication are controlled. It is appreciated though that health system integration, continuity of care, efficacy of pharmaceuticals and the role of the social determinants of health may be confounders influencing control rates.

The strength of the health system may also bear insight to the finding that 38% of respondents had clinical hypertension on physical measurement in STEP 2, but had gone undiagnosed/undetected (that is, they have hypertension but don't know). For respondents with diabetics that had also gone undiagnosed/undetected prior to the biochemical measurements in STEPS 3, it was 6%. STEPS 2019 underscores that there is room for improvement within the health sector to close the gaps between risk detection and disease confirmation to ensure early detection where prevention was not possible; and best control or management of disease. Room for improvement was also noted in maximizing medical visits to potential influence health. On average and across multiple lifestyle modification themes (e.g. advise to reduce sugar, salt and fat intake; advise to maintain a healthy weight; advises to quit or not start smoking), less than 35% of STEPS survey respondents reported receiving any lifestyle advise from their health care professional during any visit in the last 12-months.

Health screening plays a pivotal component of a healthy lifestyle and developing healthy habits, as it serves as one mechanism to assessing health status and thereby signaling when corrective action is needed to prevent onset of disease or for early detection of disease when it has already presented. Unfortunately, despite the increasing burden of hypertension, diabetes and cancer in the population, health screening practices do not match the burden.

- 91% of respondents between ages 45 to 69 years never had a colonoscopy and a similarly high pre-

cent never had a faecal occult blood test;
- Almost 80% of males between ages 45 to 69 years never had a prostate exam. Admittedly, the survey did not explore PSA testing prevalence; and
- 43% of females age 45 – 69 years have not had their breasts examined by a health professional in the 24-month period preceeding the survey. For this same age group and time period, 71% of females had not had a mammogram.

From a mental health perspective, the findings show that males were twice as likely to contemplate suicide, but females were four times more likely than males to make a suicide attempt.

Oral health, though a paramount actor in overall health, had areas of neglect. Case in point, in the year preceding the STEPS survey, only 30% of the population visited a dentist; and of those that did, only 45% was for a routine dental check-up. Other reasons for the visit related to some acute dental problem. And, although daily flossing is strongly recommended to maintain good oral and gum health, less than 50% of the population flossed daily.

The window that STEPS 2019 provided into health literacy was small, suggesting a mismatch between health knowledge and healthy behaviour practices. The survey however did shed significant light in on the magnitude of health inequities in the country. NCDs risk factors were disproportionately prevalent in the lower income quintiles as well as among the less educated, unemployed and married. By way of example, statistical relation-

ships were found between biological sex and number of NCD risk factors. Females (44.3%) more so than males (32.8%) have the co-existence/co-occurrence of 3 to 5 NCD risk factors. More males (66.4%) than females (55.2%) have 1 to 2 NCD risk factors.

Based on risk calculation from the STEPS 2019 data, nearly 10% of the Bahamian population between ages 40 to 69 years have a 30% or higher chance of a cardiovascular event (heart attack or stroke) in the next 10 years. This, coupled with the NCD risk factor profile and trends, makes clear that the health of the nation is off course and headed in the wrong direction.

Using current-state disease prevalence rates, preliminary cost scenarios estimate a conservative lifetime price tag of $8.6 billion to manage NCDs and their downstream complications. This price tag along with the indirect costs, mortality and reduced quality of life associated with NCDs represent real threats to national development. The STEPS 2019 survey findings give the evidentiary footing to prioritize upstream strategies to prevent the onset of NCDs. Prevention through bold and targeted policies and interventions is a more cost-effective and sustainable approach to disrupt the trajectory of NCDs in The Bahamas.

This report is being published at a time when inflationary pressures in the country are at an all-time high, and the country is recovering from two historical shocks – Hurricane Dorian and the COVID-19 pandemic.

KEY STUDY FINDINGS AND IMPLICATIONS

SOCIODEMOGRAPHIC CHARACTERISTICS

The average respondent was an employed, never married, Bahamian female between the ages of 18 to 44 years who has achieved at least a high school/secondary education. 85.5% of respondents indicated The Bahamas as country of birth. Key demographic data are presented in Image 1.

The male to female sex distribution in the study population is 1 :1.5. In the general population this distribution is approximately 1:1. Of note, more males (62.5%) than females (57.9%) reported 'high school' as the highest level of educational achievement. The study did not further distinguish between high school diploma versus high school leaving certificate.

01 Sex
Females, 60.6%
Males, 39.4%

02 Age
18-44 years, 52.4%
45-69 years, 47.4%

03 Highest Education
Junior High, 6.1%
Senior High, 59.8%
Tertiary, 31%

04 Marital Status
Never Married, 49.4%
Currently Married, 29.7%
Other, 20.9%

05 Employment
Employed, 75.8%
Unpaid Work, 24.2%

06 Median Household Income
$15'0001-$20'000, 15%
$20'001 - $40'000, 25.4%
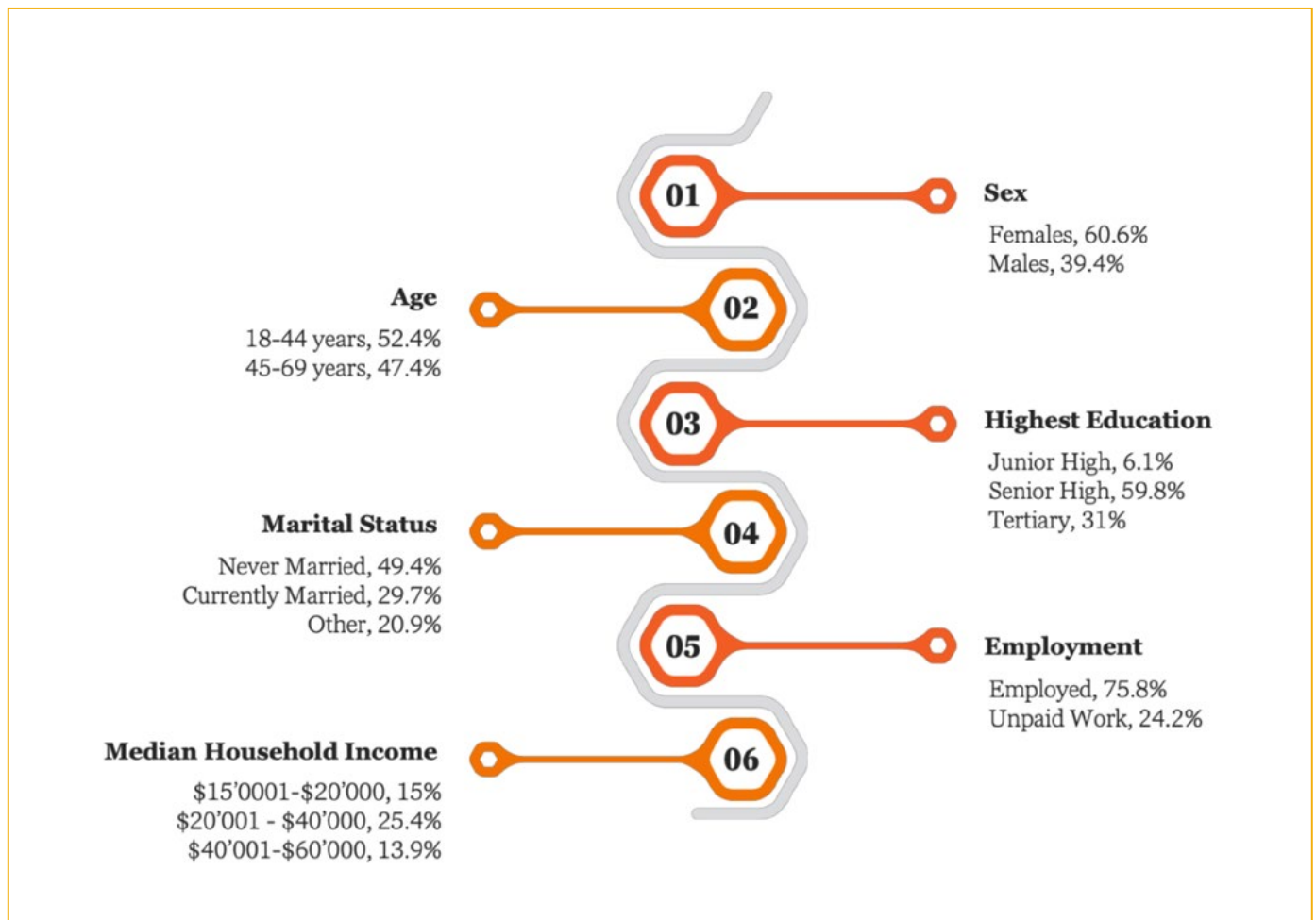$40'001-$60'000, 13.9%

Image 1: Socio-demographic Characteristics of STEPS Respondents

The majority of respondents had never been married. Marriage in the Bahamian society is not as common as it once was, and this is borne out in the STEPS 2019 data. An examination of marriage and divorce by notable psychologist, Barrington Brennen, highlighted that the number of people getting married each year from 1975 to 2005 had not grown despite population growth. During this period, the marriage rate was incrementally declining (from 5.6 per 1,000 to 5.3 per 1,000). The divorce rate was travelling in the opposite direction – from 0.5 per 1,000 in 1975 to 2.1 per 1,000 in 2005[14]. In 2010, twenty percent of marriages ended in divorce. This family dynamic reality may have implications for household income; stability of support systems; availability of time for food preparation and physical activity and so much more.

Three-quarters (75.8%) of respondents are employed (in 2019, the Department of Statistics reported a national employment rate of 82.9%). Seventy percent of respondents self-reported annual household incomes of $40,000 or less. The paradox and confounder is, The Bahamas is one of the most expensive countries to live in worldwide. It is widely accepted that the higher the cost of living, the lower the purchasing power. Cost-of-living index for The Bahamas is 100.68. Meaning, it is 68% more expensive to live in The Bahamas than a typical city. And, the purchasing power is 71.40 – meaning persons living in The Bahamas with average salaries can expect to buy approximately 30% less goods and services. This coupled with the year-on-year increases in the national consumer price indices (a measure of infla

tion), from 92.46 in 2009 to 108.17 in 2019[15], suggests that even employed persons may have reduced discretionary income and financial capacity to afford healthier food options; co-pay or deductible for the cost of medication to manage their diagnosed NCD conditions; or to afford life-saving procedures – to name a few.

A little over a third (34.1%) of respondents have private health insurance – more females (35.4%) than males (32.7%). To ensure a wider segment of the population has access to health services they need, when and where they need them and without financial hardship, National Health Insurance (NHI) – the national equivalent of universal health coverage – was legislatively introduced in 2017. From enrolment to the date of this report, about 30% of the population has enrolled with NHI and has access to a standard package of health benefits.

The study sample drew from seven islands across the archipelago, representing the northern, central and southern Bahamas aligned with island poverty groupings and the population density distribution of the country.

LIFESTYLE HEALTH RISKS

Bahamians engage in health behaviours that carry higher risks for disease. The leading four behavioral (also called modifiable or lifestyle) risk factors for NCDs are tobacco use, harmful alcohol consumption, physical inactivity, unhealthy diet (including low nutritional intake and poor dietary habits) which can lead to overweight and obesity. These behaviours are predictable and proven precursors to raised blood pressure (hypertension), raised blood glucose (diabetes), and abnormal blood

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14 The Bahamas Department of Statistics, re-named the Bahamas National Statistical Institute

15 The Bahamas Department of Statistics Consumer Price Index Report (2019).

lipid profile (dyslipidemia). It is well established that up to eighty percent of CVD, Type 2 Diabetes Mellitus, and over one-third of cancers can be prevented by reducing or eliminating these four modifiable shared risk factors[16].

The extent to which these health-risk behaviours are being practiced make the Bahamian adult population more unhealthy than healthy. Findings from STEPS 2019 support this claim. Less than one percent (0.7%) of the population have no NCD risk factor, while 60.6% have between 1 to 2 NCD risk factors; and 38.8% (more than one-third of the population) have 3 to 5 NCD risk factors. The data confirms that, for the Bahamian population, the older one gets the more likely he/she is to develop multiple NCD risk factors. The greater share (51.9%) of those with 3 to 5 NCD risk factors was 45 to 69 years. This is compared to those 18 to 44 years who bear the greater share (69%) of those with 1 to 2 NCD risk factors. Statistical relationships are demonstrated between number of NCD risk factors and education levels and employment (see Health Equity section).

Dietary Risk Factors

In the Region of the Americas there has been a rapid replacement of unprocessed or minimally processed foods and freshly prepared dishes by ultra-processed products. For example, the relative contribution of ultra-processed products to the overall energy supply of families increased from 19% to 32% in Brazil between 1987 and 2008[17]; and from 24% to 55% in Canada between 1938 and 2001[18]. These changes parallel the

simultaneous increases in the population's average body mass index (BMI) across the region[19,20]. A recent survey[21] in the Region shows that 50%–60% of respondents who reported consuming ultra-processed snacks in the past month did so for meal replacement, suggesting displacement of traditional diets. This is worrisome because population-based studies undertaken in the Region show that traditional diets (based on fresh or minimally processed foods, and dishes made from those foods, plus culinary ingredients) have a lower content of sodium, unhealthy fats, and free sugars and a higher content of fiber, vitamins, and minerals than average ultra-processed products. Additionally, traditional diets tend to have better nutrient profiles than processed and ultra-processed food products.

An inverse relationship between dietary risk factors and NCDs[22]. Diets low in fibre, whole grains, legumes, fruits and vegetables as well as diets high in salt/sodium, unhealthy fats, added (free) sugars and processed foods are considered high dietary risks.

Fruits and vegetables are deemed good sources of fibre and other essential minerals and vitamins. To achieve the benefits of these food items, it is recommended that a minimum of 5 servings be incorporated into daily meals. Very few Bahamians come close to this. Specifically,

16   World Health Organization . *Action Plan for the Global Strategy for the Prevention and Control of Non-communicable Diseases The six objectives of the 2008-2013.* 2008. p. 48.
17   Martins AP, Levy RB, Claro RM, Moubarac JC, Monteiro CA. Increased contribution of ultra-processed products in the Brazilian diet (1987–2009). Rev Saude Publica.2013;47(4):656–65.
18   Monteiro CA, Levy RB, Claro RM, de Castro IR, Cannon G. Increasing consump-

tionof ultra-processed foods and likely impact on human health: evidence from Brazil. Public Health Nutr. 2011;14(1):5–13.
19   Moubarac JC, Martins AP, Claro RM, Levy RB, Cannon G, Monteiro CA. Consumption of ultra-processed foods and likely impact on human health. Evidence from Canada. Public Health Nutr. 2013;16(12):2240–8.
20   Crovetto MM, Uauy R, Martins AP, Moubarac JC, Monteiro C. [Household availability of ready-to-consume food and drink products in Chile: impact on nutritional quality of the diet]. Rev Med Chil. 2014;142(7):850–8.
21   Nielsen. Snack attack: what consumers are reaching for around the world [Internet]. New York: Nielson; 2014. Available from: http://www.nielsen.com/us/en/insights/reports/2014/snack-attack-what-consumers-are-reaching-for-around-the-world.html
22   https://onlinelibrary.wiley.com/doi/epdf/10.1111/jhn.12904

- 23.2% of respondents eat no fruits and/or vegetables
- 45.6% of respondents eat 1 to 2 servings daily
- 16.5% of respondents eat 3 to 4 servings daily
- 14.7% of respondents eat at least 5 servings daily.

In other words, 85.3% of respondents do not meet the daily recommendation for eating at least 5 servings of fruits and/or vegetables. There was age disparity in this finding. Younger respondents (those 18 – 44 years) eat less daily servings when compared to older respondents who eat at least 3 to 4 servings of fruits and/or vegetables each day.

STEPS 2019 found that a statistical relationship exists between income and adequacy of fruit and vegetable intake. Ninety-two percent (92%) of persons with income less than or equal to $20,000 eat fewer than 5 servings of fruits and vegetables per day, compared to 80% of persons with income over $60,000. Additionally, there was an observed statistical relationship between income and average number of meals eaten each day. As income level increase so did the likelihood of eating three meals per day. Those who earn $20,000 or less eat on average two meals each day. More important than the number of meals is the nutritional quality of the meal(s) eaten. However, this was not assessed in the survey.

Most of the sodium consumed comes from salt. Seventy percent (70%) of respondents self-reported consuming 'just the right amount' of dietary salt, while 24.8% reported consuming far too much and too much salt. Respondents also self-reported taking measures to control salt intake/consumption. These measures included

limiting consumption of processed foods (52.8%); and using spices other than salt when cooking (61.2%). A component of STEPS 3 entailed the collection of 24-hour urinary samples to analyze urinary sodium levels (an objective biochemical measured). Although the sample was small, the test revealed that the average amount of salt consumed by each person, each day was 10.5 grams of salt. This is double the WHO recommended daily consumption of 5 grams of salt (2 grams of sodium) per day per person. This equates to less than one (1) teaspoon of salt per day. The physiologic requirement for salt is less than one (1) gram per day[23].

Latin American and Caribbean (LAC) countries consume excess dietary sodium. The major food culprits were identified in a 2019 study[24] within selected LAC countries. Specifically, the highest median sodium levels in packaged foods were among condiments (7778 mg/100 g), processed meats (870 mg/100 g), mayonnaise (755 mg/100 g), bread products (458 mg/100 g), cheese (643 mg/100 g), and snack foods (625 mg/100 g). Diets high in sodium and low in potassium are linked with greater incidence of hypertension, heart disease and stroke.

23   Webster J, Trieu K, Dunford E, Hawkes C. Target salt 2025: a global overview of national programs to encourage the food industry to reduce salt in foods. Nutrients. 2014 Aug 21;6(8):3274-87. doi: 10.3390/nu6083274. PMID: 25195640; PMCID: PMC4145308.

24   Arcand J, Blanco-Metzler A, Benavides Aguilar K, L'Abbe MR, Legetic B. Sodium Levels in Packaged Foods Sold in 14 Latin American and Caribbean Countries: A Food Label Analysis. Nutrients. 2019 Feb 11;11(2):369. doi: 10.3390/nu11020369. PMID: 30754646; PMCID: PMC6412284.

Not all dietary fats are created equal – some are healthy and others are harmful. Good fats include monounsaturated and polyunsaturated fats (e.g. avocado, fish, sardine, and nuts are good sources of omega 3 fats). Saturated fats (e.g. red meat, cheese and coconut oil) fall somewhere in the middle. Bad fats include industrially made trans fats[25] (e.g. solid margarines and partially hydrogenated vegetable oils). Trans fats can be naturally occurring or can be industrially-produced. Industrially-produced trans fats are formed when fats or oils are modified by partial hydrogenation and, hence, occur in partially hydrogenated fats or oils (PHOs). PHOs are used by manufacturers to enhance the texture and to increase the shelf life of processed foods in an inexpensive way.

Trans fats is characterized as the single most harmful fat in our diets[26], and can harm health even in small amounts. Consumption of trans fats significantly increases the risk of death from coronary heart disease by 28 percent[27] because trans fats impact cholesterol level, through the primary mechanism of increasing LDL (bad cholesterol) and decreasing HDL (good cholesterol). For every 1% increase in daily energy obtained from TFAs, coronary heart disease mortality rises by 12%[28].

In addition, studies have associated the consumption of TFAs with an increased risk for other noncommunicable diseases (NCDs) and related conditions such as ovarian cancer[29], infertility, endometriosis, Alzheimer's disease, diabetes, and obesity[30]. Although the STEPS survey did not investigate these specific types of dietary fats, it did exam the frequency with which fried foods were consumed. Fifty-five percent (55%) report eating fried foods 1 to 3 times each week compared to 8.3% who eat it 4 to 6 times each week; and 4.7% who eat fried foods daily. What is also known is that healthy fat options can be price prohibitive for the vast majority of the society. The measured average total blood cholesterol level of STEPS respondents was 153.1 mg/dL (discussed further under cardiovascular diseases).

The Bahamas is net importer of goods, importing more than 90% of its food supply. The alarm in this statistic is not only around food security and sovereignty, but also a food quality. Imported foods are currently not subject to routine standard controls for quality, acceptability nor nutritional value. This current state, may compromise public assurances. A recent independent study conducted in Jamaica tested for industrially produced transfat and saturated fats in foods. The results of 300

25   Trans fats are harmful because they increases the amount of harmful LDL cholesterol in the bloodstream and reduces the amount of beneficial HDL cholesterol. Trans fats create inflammation, which is linked to heart disease, stroke, diabetes, and other chronic conditions. They contribute to insulin resistance, which increases the risk of developing type 2 diabetes.

26   http://www.wphna.org/htdocs/downloadsaug2012/12-08%20WN3%20Govt%20 action%20pdf.pdf

27   https://www.health.harvard.edu/staying-healthy/the-truth-about-fats-bad-and-good#:~:text=For%20long%2Dterm%20health%2C%20some,fall%20somewhere%20in%20the%20middle.

28   Pearson-Stuttard J et al. Cost-effectiveness analysis of eliminating industrial and all trans fats in England and Wales: modelling study. *J Pub Health* 2017;39(3):574-582. doi: 10.1093/pubmed/fdw095.

29   Yammine S et al. Dietary and circulating fatty acids and ovarian cancer risk in the European Prospective Investigation into Cancer and Nutrition. *Cancer Epidemiol Biomarkers Prev* 2020;29:1739-49. doi: 10.1158/1055-9965.EPI-19-1477.

30   Downs SM, Bloem MZ, Zheng M, et al. The Impact of Policies to Reduce trans Fat Consumption: A Systematic Review of the Evidence. Curr Dev Nutr. 2017;1(12):cdn.117.000778. Published 2017 Nov 13. doi:10.3945/cdn.117.000778.

samples tested showed that 40% had trans fats, and half of those with trans fats were labelled by the manufacturers as trans-fat free.

Globally, 63 countries have adopted iTFA regulations, of which 46 are best practice policies (dark green areas in Image 2) – indicating that the elimination of iTFAs is economically, politically and technically feasible. The Bahamas currently has no iTFA regulation or policy.

1. **National policy commitment to eliminate TFA**: National policies, strategies or action plans that express a commitment to reduce industrially produced TFA in the food supply

2. **Other complementary measures**: Legislative or other measures that encourage consumers to make healthier choices about industrially produced TFA or mandatory limits on industrially produced TFA in foods in specific settings

3. **Less restrictive TFA limits**: Legislative or regulatory measures that limit industrially produced TFA in foods in all settings, but are less restrictive than the recommended approach

4. **Best-practice TFA policy**: Legislative or regulatory measures that limit industrially produced TFA in foods in all settings, and are in line with the recommended approach

Best-practice TFA policy passed but not yet in effect

Monitoring mechanism for mandatory TFA limits

Missing data

Image 2: Map of Countries with iTFA Regulations. Source: WHI TFA Country Scorecard[31]

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31   https://extranet.who.int/nutrition/gina/en/scorecard/TFA

In exploring dietary sugar intake, the STEPS 2019 gave important insights on quantity and frequency of added (free) sugar[32] consumption – that is, sugar not naturally occurring in foods.

- 53.1% of respondents added between 2 to 3 kitchen spoons of sugar when preparing a hot beverage (e.g. tea and coffee); and an additional 7% added four or more spoons;
- 33.2% of respondents eat sweets (e.g. baked goods, pastries, chocolate, candies, ice-cream) a minimum of two days each week;
- 92.7% of respondents consume sugary sweetened beverages (SSBs). This consumption occurs with varying frequency – 30.7% of respondents drink SSBs everyday, and an additional 28.5% drink SSBs between 2 to 3 days each week; and
- Between 1 to 3 bottles or cans of a sugary drink are consumed on a daily by 92% of respondents.

SSBs are a leading source of added (free) sugars and accounts for at least half of the discretionary calories in today's diet[33,34]. Generally, every 8 ounce of an sugary drink contains 26 grams of added sugar. It is worth noting that the SSB cans/bottle sizes predominantly available in the Bahamian market are at minimum of 12 ounce, which approximates 39 grams of added sugar for each 12 ounce can/bottle.

The national sugar consumption pattern emerging from the STEPS data becomes worrisome particularly in view of WHO recommendations that sugar consumption in adults (from all sources) should be no more than 10% of total energy (or calories) consumed each day (which is equivalent to no more than 10 teaspoons). The Ameri-

can Heart Association has an even lower threshold:

- For men, no more than 9 teaspoons (36 grams or 150 calories) per day
- For women, no more than 6 teaspoons (25 grams or 100 calories) per day

Just one (1) sugary drink easily puts an individual at or over this 10% threshold[35]. Given that the Bahamian diet is traditionally energy (calorie) dense and nutrient poor, it begs that many far exceed this recommended 10% threshold. Literature creates a profile of adults and adolescents who are more likely to be frequent consumers of sugary drinks. The profile that emerges is adults and adolescents who smoke, don't get enough sleep, don't exercise much, eat fast foods often and who do not eat fruits regularly drink more sugary beverages[36].
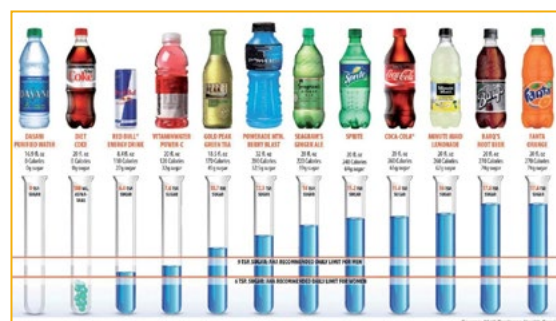
Data from the Department of Customs brings further illumination on SSBs in The Bahamas. Between 2007 and 2018, the annual average import volume of

- Non-alcoholic beverages (specifically, fruit juices, malt beverages and other fermented beverages such as cidar) was 5.31 million gallons. This means every individual in the Bahamian society consumed an average of 14 gallons (or 1,792 ounces) of SSBs

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32 Free sugar refers to all sugar added to foods or beverages (WHO).
33 https://www.cdc.gov/nutrition/data-statistics/sugar-sweetened-beverages-in-take.html
34 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7228983/

35 WHO recommended energy (calorie) intake for males is 2,500 and females is 2,000.
36 Park S, Pan L, Sherry B. Consumption od sugar-sweetened beverages among US adults: Behavioural Risk Factor Surveillance, 2011. Prev Chronic Disease 2014;11:E65.

each year which equates to 5,824 grams of added sugar[37] to the dietary intake. This per person yearly volume may be lower given the country's tourist numbers.
- Breads, pastry and cookies was 2.51 million pounds;
- Candy and gum were 1.32 million pounds; and
- Chocolate bars were 385,093 pounds.

Notwithstanding SSB consumption and consumption of other food items with added sugar, water intake among STEPS respondents was encouraging with 79.1% of respondents drinking at least seven glasses of water daily.

There was noteworthy contrast in data available on meals prepared in the home versus meals eaten from a fast-food or restaurant. Respondents in STEPS 2019 indicated that 87% of their meals eaten are prepared at home – there were no age or sex variances. This was an unexpectedly high percentage given the visibly mushrooming fast-food industry, road-side and pop-up food vendors. The Bahamas Household Expenditure Survey (2013) reflected 64.1% of the population ate from a fast-food eatery between 1 to 3 times per week – the poor (77.9%) more so than the non-poor (62.4%).

Diets (what we eat) are potent drivers of health. Poor diets pave pathways to malnutrition and disease; while healthy diets pave pathways to enhanced quality of life and cauterizes premature death. What comes into sharp focus from the STEPS 2019 data is that Bahamians have unhealthy/poor dietary habits characterized by too little fruits and vegetables, too much salt, too much fat and too much consumption of sugar-laden beverages and 'sweets'. These habits are disproportionately skewed more towards males than females.

Nutritional practices as early as infancy and through childhood and adolescence are shapers of one's health profile in adulthood. Breastfeeding, though not explored in STEPS, have been associated in cohort studies with reduced adult serum cholesterol concentrations, ischaemic heart disease mortality and Helicobacter pylori infection[38]. Breastfed babies have a reduced likelihood of obesity, type-2 diabetes[39] and reduced odds of having more severe depressive symptoms in adulthood[40]. Globally, only 38% of infants aged 0 to 6 months are exclusively breastfed[41]. The global target is to reach 50% by 2025. In the Bahamas, the exclusive breastfeeding rate for the first four months of life was 2% in 1998; and 7% in 2001. In 2022, the national breastfeeding rate (whether exclusive or not) was 18.7%[42].

Tobacco Use As A Risk Factor
Although the Region is observing that smoking is no longer a male-dominated practice, in The Bahamas ten times more males (32.4%) smoke than females (3.6%). The prevalence of current tobacco smoking among STEPS 2019 respondents was 17.5%. In 2005 (STEPS 2005) the current tobacco prevalence of 7.1%. There are only five (5) countries in the Region of the Americas with higher current tobacco smoking prevalences than The Bahamas – United States (20.3), Argentina (21.9), Uruguay (22.5), Cuba (27.8) and Chile (49.0)[43].

37   One (1) gram of sugar contains four (4) calories and no nutritional value.
38   https://fn.bmj.com/content/87/3/F193
39   Kelishadi R., Farajian S. The protective effects of breastfeeding on chronic non-communicable diseases in adulthood: a review of evidence. *Adv. Biomed. Res.* 2014;**3**:3.
40   https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4957542/
41   Exclusive breastfeeding is defined as the practice of only giving an infant breast-milk for the first 6 months of life (no other food or water).
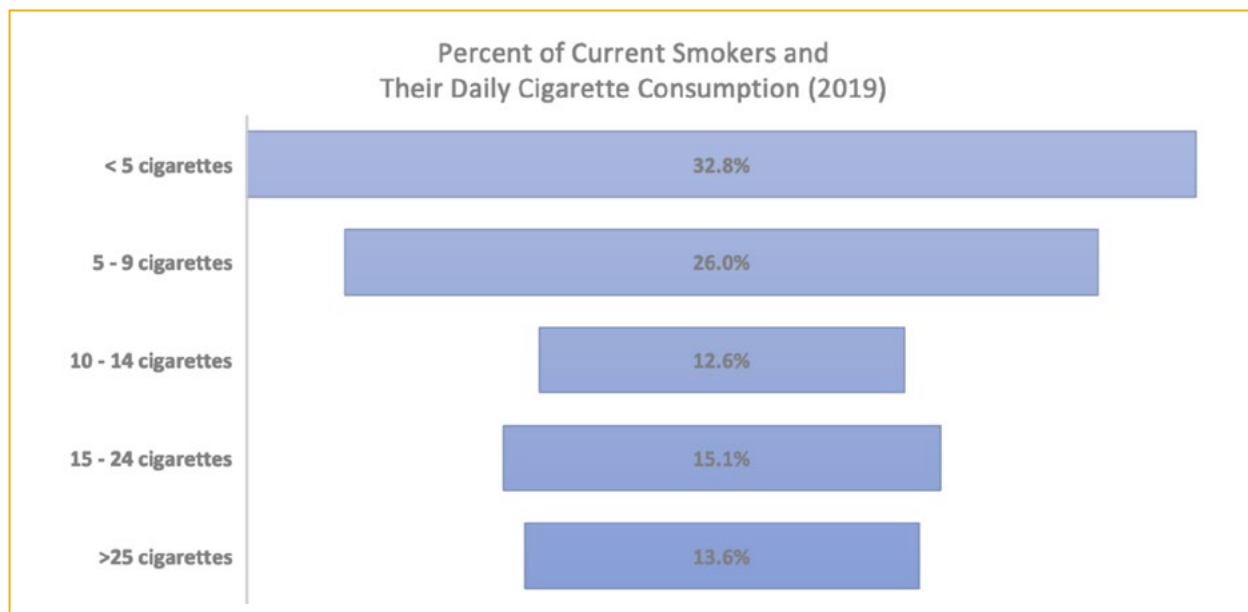42   https://bit.ly/3s4lMWH
43   PAHO Core Indicators 2019

Among current smokers participating in the STEPS 2019 survey, smoking initiation was at age 19 years; and 44% smoke everyday. Almost seventy percent (67.3%) of current smokers smoke at least five (5) cigarettes on a daily basis; and 32.8% smoke four or less cigarettes each day (Image 2). The literature points to increased risk of ischemic heart disease, cancers oral disease, death and other health consequences with smoking 1 to 2 cigarettes per day. Relative risk increases with the amount smoked, duration of smoking, earlier starting age and tar level[44].The highest proportion of current daily smokers was in the lowest income level. However, the difference by income level was not statistically significant. Forty-five percent of current smokers have tried to quit smoking but have not yet achieved success.

In the 1930's, the electronic cigarette (e-cigarettes) was patented but not commercialized. E- cigarettes were introduced to the China, U.K. and U.S. markets in 2003, 2006 and 2007, respectively. Although e-cigarette smoking has become increasingly more popular than conventional/combustible cigarettes (c-cigarettes) in these markets, uptake has been slower in the Bahamian adult population. Almost two percent (1.5%) of respondents report using e-cigarettes and/or vaporizers (males,2.5%; females,0.5%). This low prevalence may be a reflection of the age range of the sample population (18 to 69 years) given that global studies suggest that e-cigarette smoking is more popular among person 18 years or less.

Percent of Current Smokers and Their Daily Cigarette Consumption (2019)

< 5 cigarettes	32.8%
5 - 9 cigarettes	26.0%
10 - 14 cigarettes	12.6%
15 - 24 cigarettes	15.1%
>25 cigarettes	13.6%

Image 3: Daily Quantity of Cigarettes Smoked

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44   https://bmccancer.biomedcentral.com/articles/10.1186/1471-2407-12-385#citeas

Seventy-one percent (71%) of respondents report have never smoked tobacco or tobacco products. Yet, an increasing number of persons are being exposed to SHS. In The Bahamas, secondhand smoke (SHS) exposure between 2012 and 2019, increased from 7.7% to 12.1% in homes; and from 11.3% to 17.4% in workplaces. Numerous studies have concluded that SHS is harmful to non-smokers. Using statistical modeling, estimates of relative risk of the health consequences from SHS have been documented. Pregnant women exposed to SHS are at 57% higher risk of premature delivery; and if the pregnancy is carried to term, at 38% higher risk of delivering a low birth weight newborn. Infants exposed to SHS are at a 55% increased risk for developing acute lower respiratory infections requiring hospitalized in the first two years of life. Non-smoking females exposed to SHS are at a 68% increased risk of developing breast cancer before menopause; and for any breast cancer type, the risk is 25% higher. In the adult non-smoking population exposed to SHS there is a 82% increased risk of stroke and 27% increased risk of ischemic heart disease. SHS worldwide contributes to 0.7% of the total burden of disease, and represents about 12% of deaths and 19% of DALYs[45].

The Bahamas signed the Framework Convention for Tobacco Control (FCTC) on 29th June 2004 and ratified it on 3rd November 2009. The Tobacco Control Bill was initial drafted in 2014 and underwent revisions in 2018; it remains in draft.

Harmful Alcohol Use As A Risk Factor

Those who have ever consumed alcohol (65.6%) are more than double those who are life abstainers (29.3%). Almost half (49.5%) of those who have consumed alcohol classify as current alcohol drinkers[46]. This represents an 8.8 percent point increase from the STEPS 2012 findings for current alcohol drinkers. Major shocks such as Hurricane Dorian, public health threats and life crises could impact this prevalence in future studies.

Current drinkers convey drinking a maximum of four standard drinks on each occasion they consumed alcohol. One standard drink is 10 grams of pure alcohol, which is equivalent to 250ml of beer, 230ml of alcoholic cider or 100ml wine or 31ml of distilled spirits.

Current drinkers were grouped as follows depending on their reports of alcohol consumption –
• Category I[47] drinkers accounted for 56% of current drinkers,
• Category II[48] drinkers accounted for 33.6%, and
• Category III[49] drinkers accounted for 10.5%.

Categories II and III are associated with harmful use of alcohol. This means that 44.1% of current drinkers consume alcohol to a point it is considered harmful. Although a male is 1.4-times more likely to be current drinker than a female, a female is 2-times more likely to consume alcohol to the point it is considered harmful (males, 29.9%; females, 62.6%).

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45 https://apps.who.int/iris/bitstream/handle/10665/44426/9789241564076_eng.pdf

46 'Current' the last 30 days.
47 Category I, low-level drinking, is defined as drinking <40g of pure alcohol on average per day for men and <20 for women.
48 Category II, intermediate-level drinking, is defined as drinking 40-59.9g of pure alcohol on average per day for men and 20-39.9g for women.
49 Category III, high-level drinking, is defined as drinking ≥60g of pure alcohol on average per day for men and ≥40g for women.

Eighteen percent of drinkers meet the definition of a heavy episodic drinker (they drink at least 5 drinks per occasion at least monthly). The sex variance is reversed for heavy episodic drinking (males, 23.1%; females, 12.5%).

Of all drinkers, 85.7% reported being able to self-regulate and control the amount of alcohol consumed; and with the vast majority (94.7%) never needing a first drink during the morning hours to get their day started. Only 6% indicated that on a weekly or monthly bases they were unable to do expected tasks/responsibilities because of their alcohol intake, compared to 92.4% who were able to perform and do what was expected despite their intake. But, alcohol consumption has the potential to impact more than just the user. One-fifth (21.6%) of respondents drove a vehicle under the influence of alcohol. Between 2017 and 2018, fatal road traffic accidents (RTAs) in The Bahamas rose by 29%[50]. In this period, more than three times more males were killed than females. Local studies to describe role of alcohol in fatal RTAs were constrained by the lack of breath and/or blood alcohol level testing at the time of the accident[51].

Respondents reported relationship problems never arose (95.5%), arose on frequencies less than monthly (4.1%) and arose monthly or more frequently (0.5%) because of someone else's drinking problem.

Physical Inactivity As A Risk Factor

To maintain good health, WHO recommends adults consistently engage a certain level of activity[52] each week:
- 150 minutes of moderate-intensity physical activity; OR
- 75 minutes of vigorous-intensity physical activity.

STEPS 2019 revealed that 30.2% of respondents did not engage in sufficient physical activity (i.e. were not active or active for less than 150 minutes) to promote good health. There was a noted sex variance – females (39.5%) compared to their male counterparts (20%). The usual amount of time (median) engaged in physical activity each day by males was almost 5-times that of the median for females – 180 minutes (males) versus 40 minutes (females). The vast majority of the physical activity done was work-related, accounting for 49.4% of total activity. A large proportion of respondents (74.3%) were employed as public servants, which represents an opportunity for government agencies to set the pace and be forerunners in creating workplace policies that are conducive to health and well-being.

A similar performance is mirrored for vigorous-intensity activity, with 57.9% of respondents (males, 40.4% compared to females 73.9%) not meeting the recommended threshold. This performance category represents a 20% improvement over the STEPS 2012 level of 72.6%.

Respondents reported sleeping an average of 7.1 hours each day[53], leaving 16 waking hours. In those waking hours, they spent up to 24% of that time (or 231.4 minutes of the total 960 minutes) engaged in sedentary

50   https://ewnews.com/29-increase-in-traffic-fatalities
51   https://journals.sfu.ca/cob/index.php/files/article/view/59/91

52   This is the combination of all activity including work, organized sports, exercise routines, activities during transport and leisure time.
53   STEPS 2019 Databook

activities. Sedentary behaviour is defined as the amount of time spent sitting at work, during recreation and while commuting. Sedentary behaviour is inversely proportionate to health and well-being. It has been documented by Australian researchers that every hour spent watching TV is linked to an 18% increased risk of dying from cardiovascular disease. In a 2011 meta-analysis relative risks (RR) of 1.20 for Type 2 Diabetes, 1.15 for cardiovascular disease, and 1.13 for all-cause mortality were observed for every 2-hour increase in TV viewing per day. In other words, every 2-hours of TV watching (sedentary behaviour) increases the risk of Type 2 Diabetes and premature death by 20%, cardiovascular disease by 13%, and all-cause mortality by 20%[54]. Further research underscored those who watched more than 4-hours of TV per day were at greatest risk for heart disease, regardless of risk score and genetic predisposition[55]. The Bahamas' Household Expenditure Report (2013) noted that persons in The Bahamas spent on average 3.1 hours per day during weekdays watching TV; and 3.7 hours per day on weekends. It is possible that these amounts may have increased since 2013 with the increasing appeal and popularity of other screen-time activities such as gaming, YouTube, TikTok and online self-help tutorials.

Unhealthy Weight As A Risk Factor

Obesity prevalence in The Bahamas for 1989 and 2001 were 21.3% and 30.9%, respectively[56]. Twenty years later, the obesity prevalence has more than doubled.

Unhealthy body mass index (BMI) is another known contributing risk to poor health and poor health outcomes. Height and weight, inputs for calculating BMI, were measured in STEP 2. And, an average BMI of 29.8 kg/m^2 was recorded. A BMI equal to or greater than 30 kg/m^2 is classified as obese. Further disaggregation shows:
- 4.6% respondents being underweight
- 23.8% respondents with normal body weight
- 27.9% respondents overweight (BMI 25 to 29.9 kg/m^2)
- 43.7% respondents obese (BMI greater than or equal to 30 kg/m^2).

Interestingly, sex variances were observed among the BMI categories. For the overweight category, more males (30.2%) than females (25.8%) were overweight. The converse was true for the obese category – females (54.8%) versus males (31.8%). The combined prevalence of overweight and obesity in adults for The Bahamas is 71.7% which exceeds the average prevalence of 62.4% for the Region of the Americas[57].

Waist and hip circumferences were also measured in STEP 2. For males, these measured 36.7 inches and 40.9 inches, respectively. And, for females these measured 37.6 inches and 43.6 inches, respectively. The waist-to-hip ratio (WHR), a modifier for cardiovascular heart disease risk, averaged at 0.9 for both sexes. Given that a healthy WHR for males is 0.9 or less; and for females 0.85 or less, female respondents were at a nominally higher risk for a cardiovascular event than male respondents.

54   https://jamanetwork.com/journals/jama/fullarticle/900893
55   Medical Research Council and Universities of Cambridge and Hing Kong - https://scitechdaily.com/one-in-ten-cases-of-coronary-heart-disease-could-be-prevented-by-watching-tv-less-than-one-hour-a-day/
56   Ministry of Health. The National Health and Nutrition Survey (1988-1989).
57   Pan American Health Organization Core Health Indicators Data Tables, 2019.

Co-occurrence of NCD Risk Factors

Taking all risk factors together, the image emerging is that a healthy Bahamas remains a conceptual ideal with only 0.7% having no NCD risk factors. The co-occurrence of risk factors for NCDs is more harmful to health than that of individual risk factor effects when they are added independently[58]. There is a high prevalence of co-occurrence of NCD risk factors in The Bahamas with 60.6% having 1 to 2 risk factors; and 38.8% having 3 to 5 NCD risk factors.

The presence of 3 or more lifestyle risk factors was more frequent in women, older age groups (45-69 years), the unemployed and those with a secondary education or less. From STEPS 2019, the co-occurence of 3 or more NCD risk factors was higher in females (44.3%) than for males (32.8%). This finding is inconsistent with what has been described in other countries, where men have more combined (or co-occurrent) risk factors[59,60].

The higher prevalence of co-occurrent NCD risk factors among females is interesting, especially when Bahamian women live longer than Bahamian men. In the study year, life expectancy for females in The Bahamas was 76.1 years, compared to 71.7 years for males[61]. A confluence of factors may account for this. First, and as a sweeping generalization, females have better health-seeking behaviours than males; and tend to be more compliant with NCD management regimes

than male counterparts, with resultant better disease control. Second, females tend to engage in less risky behaviours. Third, estrogen is a protective factor. Fourth, death due to violence is higher for males than females.

Regarding females, it is important to note that the single most prevalent risk factor was overweight/obesity. This is particularly alarming as obesity has been observed as a strong risk factor for multi-morbidity.

As an overview of all NCD risk factors, The Bahamas is outpacing the Regional average for many of these behavioural risk factors (Image 3).

58   https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6647087/
59   Kelley, E. *et al*. Cardiorespiratory fitness is inversely associated with clustering of metabolic syndrome risk factors: The ball state adult fitness program longitudinal lifestyle study. *Mayo Clin. Proc. Innov. Qual. Outcomes* **2**, 155–164 (2018).
60   Zwolinsky, S., Raine, G. & Robertson, S. Prevalence, co-occurrence and clustering of lifestyle risk factors among UK men. *J. Mens. Health* **12**, 15–24 (2016).
61   PAHO Core Health Indicators (2019)

COMPARISON OF NCD RISK FACTOR
Prevalence 2019

| A | The Bahamas | VS | Region of the Americas | B |

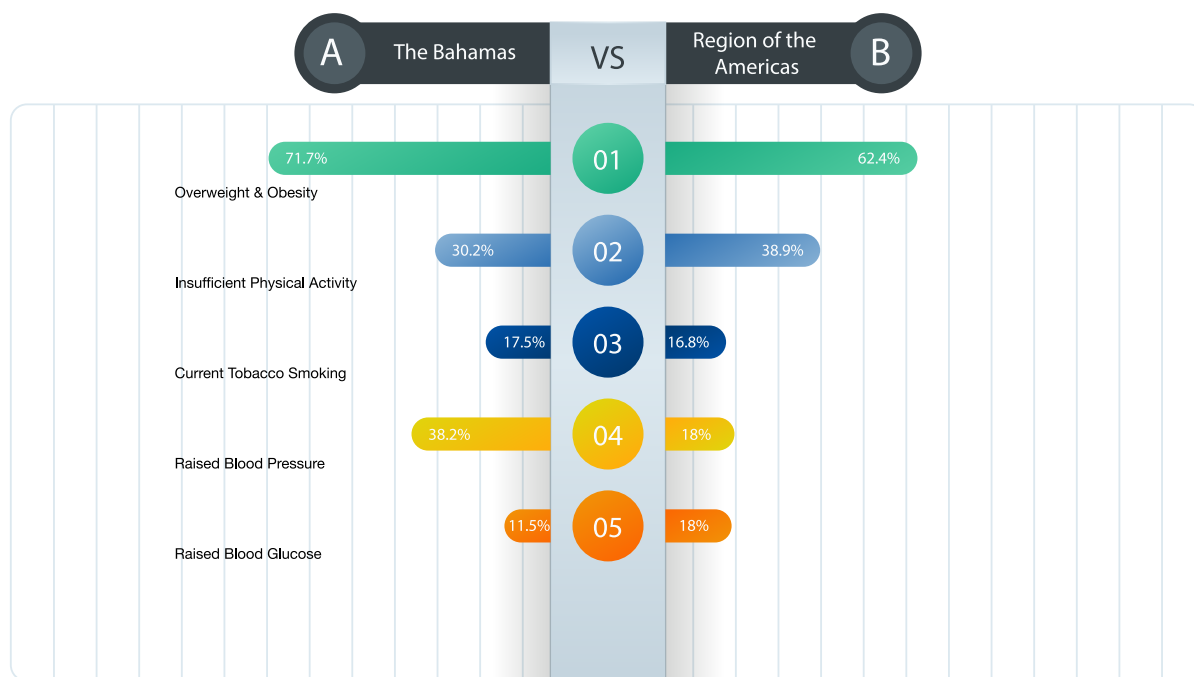| Overweight & Obesity | 71.7% | 01 | 62.4% |
Insufficient Physical Activity	30.2%	02	38.9%
Current Tobacco Smoking	17.5%	03	16.8%
Raised Blood Pressure	38.2%	04	18%
Raised Blood Glucose	11.5%	05	18%

Image 4: Overview of NCD Risk Factor Prevalence in The Bahamas Compared to the Region of the Americas

NON-COMMUNICABLE DISEASES PROFILE

The constellation of NCD conditions are commonly referred to as the 5x5 diseases – cancer, cardiovascular disease, diabetes, chronic respiratory diseases and mental health. Insights on all, except chronic respiratory diseases, will be elaborated on in this section.

Cardiovascular Disease [Raised Blood Pressure and Raised Blood Cholesterol]
Sodium is essential to human life., but its overconsumption (primarily through salt) carries substantial public health complications. Recall, on 24-hour urinary sodium collection, readings showed that participants consumed double the amount of recommended salt in any given day. Layered on this, is the admission by 25.7% of respondents to 'always or often' eating processed, high salt content foods. The additive effect likely contributes to the combined raised blood pressure prevalence[62] of 38.2% - disaggregated as:

- 29.4% have reading of SBP ≥ 140mmHg and/or DSP ≥ 90 mmHg, and are classified as Stage I Hypertension. The sex variance is males 33.1% to females 26%.

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62 The JNC7 definition of hypertension (greater than 140/90 mmHg) was use in this survey. It is appreciated that the ACC (American Academy of Cardiology) has a lower definition threshold for hypertension which is greater than 130/80 mmmHg.

- 8.8% have readings of SBP ≥ 160mmHg and/or DSP ≥ 100 mmHg, and are classified as Stage II Hypertension. The sex variance is males 9.4% to females 8.3%.

The direct and indirect costs of increasd blood pressure are estimated to consume 5–15% of the gross domestic product in high-income countries and 2.5–8.0% in Latin America and the Caribbean[63].

The average total blood cholesterol level among respondents measured 153.1 mg/dL. The ideal total cholesterol targets levels lower than 200 mg/dL. Twenty-four percent (24.2%) of respondents have levels ≥ 190 mg/dL; and another 4.3% have levels ≥ 240 mg/dL. More meaning could have been derived had the study budget permitted the measurements of LDL and HDL levels.

CVD accounts for 31 percent of all global deaths. Poor cardiovascular health can cause heart attacks, strokes, heart failure, chronic kidney disease, peripheral arterial disease, and the onset of vascular dementia. Nowadays, there is broad scientific consensus that high intakes of trans fats increase the risk of CVD which can eventually cause heart attacks, stroke and death. Trans fat is an artificial compound that can be found in cakes, cookies, biscuits, packaged foods, cooking oils and spreads. WHO estimates that consumption of these fats cause around 500,000 deaths per year due to coronary heart disease.

Almost ten percent (9.8%) of respondents had a personal history of a heart attack or stroke – males, 12.2% and females, 7.6%. This history was more prevalent in the 18 to 44 age group than the 45 to 69 age group.

In addition to those who have already had a cardiovascular disease (CVD) event, there are those at risk for experiencing a CVD event in the future. STEPS 2019 calculated (using the WHO/ISH risk prediction) the 10-Year CVD risk ≥ 30%. Nearly ten percent (8.2%) of respondents between 40 to 69 years have a predicted 30% or more chance of having a fatal or non-fatal cardiovascular event (heart attack or stroke) in the next 10 years. This risk is higher for males (10.4%) than females (6.8%). But, only 5.6% of respondents take aspirin regularly to prevent or treat heart disease. A little more than half (57.6%) of persons eligible[64] for receiving drug therapy and counselling to prevent heart attacks and strokes are actually receiving it.

Diabetes

This survey examined and gave insight to impaired fasting glycaemia and raised blood glucose levels among participants. Respectively, these are 6.8% and 11.5% - with no significant male to female differences. Impaired fasting glycaemia (IFG) signals that the body may not be using the available glucose as efficiently as it should. IFG is also known as pre-diabetes – a prelude to diabetes if corrective lifestyle changes are not employed. The average fasting blood glucose reading among participants is 88.1 mg/dL. Normal fasting levels blood glucose level is between 70 mg/dL to 100 mg/dL. Raised blood glucose is consistent with the disease diabetes mellitus.

Cancer

STEPS 2019 explored cancer from a screening (discussed later) and family history perspective rather than from a prevalence perspective. Data from the National

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63   World Health Organization. Scaling up Action against NCDs: How much will it cost? [Internet]. WHO; 2011, p. 17. [cited 28 May 2021]. Available from: http://apps.who.int/iris/bitstream/ handle/10665/44706/9789241502313_eng.pdf

64   Eligible is defined as age 40-69 years with a 10-year CVD risk ≥ 30%, including those with existing CVD.

Cancer Registry informs that the combined cancer prevalence (2019) was 182.4 per 100'000. Stated differently, approximately 1 in every 500 Bahamians have been diagnosed with a cancer. The individual prevalence of nationally tracked cancers is listed in Table 1.

CANCER	PREVALENCE (per 100'000)
Breast (female)	99.6
Prostate	41.3
Colorectal	22.6
Cervical	10.6
Stomach	4.9
Lung, Trachea, Bronchus	3.4

Table 1: Cancer Prevalence in The Bahamas

In The Bahamas, deaths from cancers (all types) have been increasing year-over-year. In 2000, the cancer mortality rate was 71.5 per 100,000 (or 13.6% of deaths). In 2015, this rate stood at 111.7 per 100,000 (or 18.6%). Cancer mortality rates are not available for 2019.

Special note is made of cervical cancer, which carries an unacceptable and disproportionately high disease burden[65] considering 92% HPV-associated cancers are preventable[66]. In the Bahamas in 2018, the age-standardized incidence (ASI) of cervical cancer was 10.9 per 100,000, compared to an ASI of 13.1 per 100,000 for

the rest of the world[67]. WHO admonishes all countries to accelerate action toward eliminating cervical cancer and to reach an incidence rate not greater than 4 per 100,000 population.

A ready tool to eradicate cervical cancer is the HPV vaccine, which was introduced into the Bahamian immunization schedule since 2015. The vaccine is documented to have exceptional protection (high efficacy and effectiveness) against HPV infection, genital warts, high-grade cervical lesions (CIN2+ and CIN3+)[68] and invasive adenocarcinoma, more so when the vaccine is administered before sexual debut[69]. The HPV virus does

not only cause health problems in females, it can also cause genital, anal and oropharyngeal cancers in males.

Mental Health

Human flourishing is a multi-variant theoretical construct based on five central domains – happiness and life satisfaction; mental and physical health; meaning and purpose; character and virtue; and close social relationships[70]. Stressors such as emotional exhaustion, relationship strain and financial woes, among others, can manifest as new and exacerbate existing mental health illness, thereby diminishing the human flourishing index.

65   Cervical cancer is the second most common female cancer in the Bahamas among those 15 to 44 years of age.

66   http://www.tribune242.com/news/2020/feb/25/hpv-guide-men-bahamas/

67   George C, Roberts R, Brennen D, Deveaux L, Read SE. Knowledge and awareness of Human Papillomavirus (HPV) and HPV vaccines among Caribbean youth: the case of the Bahamas. Hum Vaccin Immunother. 2020 Mar 3;16(3):573-580. doi: 10.1080/21645515.2019.1661205. Epub 2019 Sep 23. PMID: 31464555; PMCID: PMC7227632.

68   https://www.nejm.org/doi/full/10.1056/NEJMoa1917338

69   Kamolratanakul S, Pitisuttithum P. Human Papillomavirus Vaccine Efficacy and Effectiveness against Cancer. Vaccines (Basel). 2021 Nov 30;9(12):1413. doi: 10.3390/vaccines9121413. PMID: 34960159; PMCID: PMC8706722.

70   https://hfh.fas.harvard.edu/measuring-flourishing

STEPS 2019 gives a small window into mental and physical health domain; and an even smaller peak into the social relationships domain. Six percent (6.3%) of respondents reported seriously contemplating suicide within the 12-month period preceding the study. Of these, 34.4% sought professional help. More males (8.7%) than females (4.1%) contemplated suicide. In other words, for every one female who considers suicide, there are two males with a similar consideration. However, in moving from contemplation/consideration to making a plan to commit suicide, the observation is reversed and for every one male who makes a plan, there are seven females who do the same. Once planned, females are four times more likely to make a suicide attempt than males. Overall, 1.8% of STEPS respondents (or close to 7,000 persons) shared having attempted suicide at some point during their lives. And, the same percentage had a close family member who died as the result of suicide.

WHO's Suicide In the World (2019) reports a global age-standardized suicide rate of 10.5 per 100,000 population. The crude suicide rate in Bahamian society for 2019 was 3.5 per 100,000[71]. Generally, males have been found to have a disproportionately lower rate of suicide attempts and an excessively higher rate of suicides compared to females[72]. The global age-standardized suicide rate was 1.8 times higher in males than in females[73]. According to the RBPF statistics, in 2020 the male to female suicide ratio was 10:1[74].

Although there was a weak statistical relationship between educational level and having either considered, planned or attempted suicide, a stronger relationship exists between income and having a history of planned or attempted suicide. Weighted analysis indicates that 5.6% of persons with income level of $20,000 or less have had these suicidal tendencies compared to 1.4% of persons with income greater than $60,000.

Additional light is shed on mental states in the context of binge or uncontrolled alcoholic drinking. Respondents who engaged in this practice cited an array of moods/feelings before taking the first drink on the binge occasion – felt fine (63.2%), felt stressed/overwhelmed (27.4%) and lonely/unimportant (7.7%). None of the respondents selected the 'hopeless' response option.

The quality and frequency of social relationships and interactions (e.g. family) impact mental well-being. Family meal times should not simply be an event where food is prepared and consumed, but also a time for talk, bonding with and interaction between family members. Having regular family meals has consistently been associated with emotional health (e.g., lower depressive symptoms) as well as better dietary intake (e.g., increased fruit and vegetable intake), weight-related outcomes (e.g., lower weight status, less unhealthy weight control behaviors) in children and adolescents[75]. Additionally, a recent literature review on family meals

71 https://www.macrotrends.net/countries/BHS/bahamas/suicide-rate
72 Freeman A, Mergl R, Kohls E, Székely A, Gusmao R, Arensman E, Koburger N, Hegerl U, Rummel-Kluge C. A cross-national study on gender differences in suicide intent. BMC Psychiatry. 2017 Jun 29;17(1):234. doi: 10.1186/s12888-017-1398-8. PMID: 28662694; PMCID: PMC5492308.
73 https://apps.who.int/iris/bitstream/handle/10665/326948/WHO-MSD-MER-19.3-eng.pdf
74 https://thenassauguardian.com/suicides-rose-by-38-percent-in-2020/

75 Fulkerson Ja, Larson N, Horning M, Neumark-Sztainer D. A review of associations between family or shared meal frequency and dietary and weight status outcomes across the lifespan. J Nutr Educ Behav. 2014;46(1):2–19. doi: 10.1016/j.jneb.2013.07.012.

suggested that people benefit from family meals across the lifespan[76].

STEPS 2019 uncovered that respondents eat meals with other household members on average three (3) days each week. This finding may give an indirect qualitative dimension to shifts in intergenerational family meal practices. Opportunities for families to have meals together have been negatively affected by changes in our society and the frequency of family meals may be declining[77], likely due to changes in parenting styles, limited time/busy schedules[78] and low enjoyment of cooking[79] - to name a few.

Family History of Chronic Diseases

Family history (or health status of close relatives) reflects social, behavioural, and environmental factors that influence health; and provides insights into the genetic risk of disease [as well as knowledge, attitude and practice predispositions][80]. Epidemiological studies show that a family history is a strong and independent risk factor for cardiovascular diseases, Type 2 Diabetes, and many cancers.

Data from STEPS 2019 show that a family history of hypertension ranked highest (72.1%) among respondents followed by family history of diabetes (51.6%), and

then cancer (43.1%), stroke (28.9%), raised cholesterol (28.8%) and early[81] heart attack (9.5%).

HEALTH-SEEKING BEHAVIOURS

Theories on health seeking behaviours have evolved from the original focus of how the individual engages with services to how the individual engages with the system. A widely held premise is that providing knowledge about causes of ill health and choices available, will go a long way towards promoting a change in individual behaviour – towards more beneficial health seeking behaviour. However, there is growing awareness, in both developed and developing countries, that providing education and knowledge at the individual level is not sufficient in itself to promote a change in behaviour.

Preventive health screening is an example of health seeking behaviour. Screenings (along with vaccinations) have long been advocated as one of the most important (and effective) health care strategies to facilitate early diagnosis and treatment, improve quality of life, and prevent premature death. Case in point, some of the most common cancer types, such as breast cancer, cervical cancer and colorectal cancer, are largely curable if they are detected early and treated appropriately. STEPS 2019 sheds new knowledge on health-seeking (screening) behaviours in the Bahamian population.

Cancer Screening

Forty-three percent (43%) of female respondents in STEPS 2019 between the ages of 45 – 69 years either never had a breast exam by a health professional or haven't had one in more than two years (between 2018

76 Skeer MR, Ballard EL. Are family meals as good for youth as we think they are? A review of the literature on family meals as they pertain to adolescent risk prevention. *J Youth Adolesc.* 2013;42(7):943–963. doi: 10.1007/s10964-013-9963-z.

77 https://southbahamasconference.org/newsblogpost.php?permalink=logos-get-your-kids-moving-1665156629634046154ebfd634046154ec10

78 Fulkerson Ja, Kubik MY, Rydell S, et al. Focus groups with working parents of school-aged children: what's needed to improve family meals? *J Nutr Educ Behav.* 2011;43(3):189–193. doi: 10.1016/j.jneb.2010.03.006.

79 Neumark-Sztainer D, MacLehose R, Loth K, Fulkerson Ja, Eisenberg ME, Berge J. What's for dinner? Types of food served at family dinner differ across parent and family characteristics. *Public Health Nutr.* 2014;17(1):145–155. doi: 10.1017/S1368980012004594.

80 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5257240/

81 Early is defined as less than 55 years for males, and less than 65 for females.

and 2019). For this same age group, 70.9% have either never had a mammogram or the last mammogram was more than two years ago.

For cervical cancer, two-thirds (67.5%) of all female respondents (18 to 69 years) had been screened for cervical cancer. For those specifically between the ages 30 – 49 years, the rate for ever screened is 76.6%. Though cervical cancer screening rates are the highest of all cancer screening rates. The uptake of the HPV vaccine in The Bahamas among males and females, is not as encouraging. The HPV vaccine was developed in 2006; and introduced into the national vaccine schedule in 2015. The availability and efficacy of this vaccine means that cervical cancer can be essentially eliminated and that death from cervical cancer can be a thing of the past.

Nearly 80% of male respondents aged 45 – 69 years never had a prostate exam (DRE or digital rectal examination). Of the 21.5% that had the exam, many report the exam was performed within the last two years. Underlying this observation may be issues related to acceptability of DRE among men as well as the existence of other clinical screening options, specifically PSA blood testing. Regarding acceptability, a systematic review found that men (3,029 men aged 18-89 years) are willing to participate in prostate cancer screening to prevent cancer and gain reassurance about their health, particularly when supported or prompted by their social networks or healthcare providers. However, to do so they needed to mentally overcome fears of losing their masculinity and accept the intrusiveness of screening, the ambiguities about the necessity and the potential for substantial costs. Addressing the concerns and priorities

of men may facilitate informed decisions about prostate cancer screening and improve patient satisfaction and outcomes[82].

Regarding alternate screening options for prostate cancer, STEPS 3 methodology did not require PSA measurements, but it is believed to be more effective at prostate cancer detection than DREs, though nuances do apply. A meta-analysis showed overall sensitivity, specificity, and positive predictive value for PSA were higher (72.1%, 93.2% and 25.1%, respectively) than those for DRE (53.2%, 83.6% and 17.8%, respectively) when used as a screening tool to detect prostate cancer[83].

Colon cancer screening rate among respondents aged 45 – 69 years is 8.6% (males, 5.3% and females, 12.5%). Faecal occult blood screening prevalence for the same age group is 20.8% (males, 22% and females, 19.5%). Dimensions related to awareness of and cost accessibility for colonoscopy screening would need interrogating.

Collectively, these sub-optimal cancer screening rates could reflect a disconnection between current lifestyle practices and the risk they pose as well as a disconnection between one's family history and personal genetic predisposition; or health system accessibility challenges (which are discussed later).

82 James LJ, Wong G, Craig JC, Hanson CS, Ju A, Howard K, Usherwood T, Lau H, Tong A. Men's perspectives of prostate cancer screening: A systematic review of qualitative studies. PLoS One. 2017 Nov 28;12(11):e0188258. doi: 10.1371/journal.pone.0188258. PMID: 29182649; PMCID: PMC5705146.

83 Mistry K, Cable G. Meta-analysis of prostate-specific antigen and digital rectal examination as screening tests for prostate carcinoma. J Am Board Fam Pract. 2003 Mar-Apr;16(2):95-101. doi: 10.3122/jabfm.16.2.95. PMID: 12665174.

Biochemical Screening

Taking into account the total study sample,

- 40% (equates 152,196 adults) never had their blood cholesterol measured (male, 44.1% and females, 36.1%);

- 22.7% (equates 86,371 adults) never had their blood glucose measured (males, 27.6% and females, 18.2%);

- 6.9% (equates 22,254 adults) never received dental care (males, 7.4%; females, 6.5%);

- 6.6% (equates 25,112 adults) never had their blood pressure measured (males, 10.5% and females, 3%).

Taken together, the screening data for cancers and biomarkers suggest there is room for improvement. The data bolster the claim that men are less likely than women to seek help from health professionals for diverse health problems. The study was not designed to explore factors that may impede men's acceptability of or nor accessibility to available health screening services.

STRENGTH OF THE HEALTH SYSTEM TO DETECT AND APPROPRIATELY MANAGE NCDs

Preventing disease onset is the guarantor of good physical health. In scenarios where disease is present, premature deaths and disability from NCDs can be mitigated through timely disease detection, treatment and care. It reasons then that gaps in care are a prominent factor for undetected or poorly controlled disease conditions.

Translating the STEPS 2019 prevalence rates, there are 43,756 adults living with diabetes currently living in The

Bahamas; 145,347 adult hypertensives; 37,288 at risk increased for a stroke or heart attack; and a significant number who remain undiagnosed or, if diagnosed, not in care or adequately managed[84]. Of males whose blood pressure measured and recorded at or above 140/90 mmHg (as per STEPS 2 protocol of clinical diagnosis), 41.7% had no clue – they had not been previously diagnosed with hypertension. For females, this was 34.6%.

Data on NCD detection rate show that 5.9% of respondents with diabetes went undetected/undiagnosed, and were only alerted to having raised fasting glucose because of the biochemical tests done as part of the STEPS 2019 survey. A significantly higher percentage (38%) of respondents with hypertension went undetected/undiagnosed prior to physical blood pressure measurements done as part of the study (18-44 years, 53.9% and 45-69 years, 28.7%). This means that almost 4 in 10 persons with raised blood pressure level had gone undetected.

Complications of disease are more likely to manifest when there are delays in diagnosis and/or control is not achieved. Thirty percent (32.5%) of respondents diagnosed with diabetes and/or hypertension experience complications, including circulation problems and limb amputations as well as kidney, eye, heart and sexual problems.

Data on compliance with NCD medication regime established by a doctor or other health provider show that 44.7% of known diabetics currently follow the regime. For previously diagnosed hypertensives, the compliance

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[84] The Department of Statistics Projected Mid-Year Population Estimate (Low Estimate) for 2019 of 380,490 was used in this calculation.

rate with prescription medication is 57.9%. For those previously diagnosed with high cholesterol levels, 25.1% were compliant with medication prescribed by a doctor or health worker. In all three disease conditions, females are 1.5-times and 2-times, respectively, more likely to be compliant than males.

The degree of compliance with prescription medication may be influenced by advice sought from traditional healers and/or the use of bush/herbal remedies in lieu of prescription medicines. 12.8%, 13.7% and 7% of previously diagnosed (known) diabetics, hypertensives and persons with raised cholesterol, respectively, have actively sought the advice of a traditional healer for managing these conditions. Whether advice was sought from a traditional healer or not, 54.5% of known diabetics and 66% of known hypertensives sometimes take bush/herbal remedies instead of medication(s) prescribed by a doctor.

Revelations from the STEPS 2019 survey on the degree of clinical control show that of the known hypertensives 15.3% are not taking any medication, and 26.9% are taking prescribed medication but their blood pressure is not controlled. This could be a reflection of sub-optimal medication adherence, medication quality and/or even interactions with other medicines and bush remedies. Only 19.8% of known hypertensives on medication have their blood pressure controlled. Clinical blood pressure control among both sexes was glaringly low. What causes even more disquiet is that, for known hypertensives on medication, almost triple the amount of females compared to males achieved control (females, 28.3%; males, 10.6%). That is, for every three females achieving blood pressure control, only one male achieved control.

A multiplicity of factors can converge to result in uncontrolled blood pressure levels. But, a strengthened, integrated health system may be at the core of addressing many (not all) of those factors.

HbA1c levels were not measured in the study. Nonetheless, the presence or absence of NCD sequelae is a reasonable indicator of disease control. Thirty-two percent (32%) of known diabetics and hypertensives self-report complications of their illness, including diabetic retinopathy and peripheral neuropathy. Best practice guidelines recommend that all patients with diabetes have yearly screening of feet and eyes to reduce the risk of blindness and avoidable limb amputations. STEPS 2019 data show that among known diabetics, 32.7% had an eye examination; and 23.9% had a diabetic foot screening in the last 12-months.

There are greater personal and societal gains when NCD can be prevented. When this is not the prevailing reality, health maintenance and management of NCDs and their risk factors become essential to minimizing negative sequalae including disability, reduced quality of life and premature death. Health and care providers have a role to play in lifestyle, awareness management and health maintenance. STEPS 2019 explored whether providers advised respondents on any of the NCD risk factors during any visit in the 12-month period prior to the study. Image 4 shows the findings. In general, less than 35% of respondents received any advice.
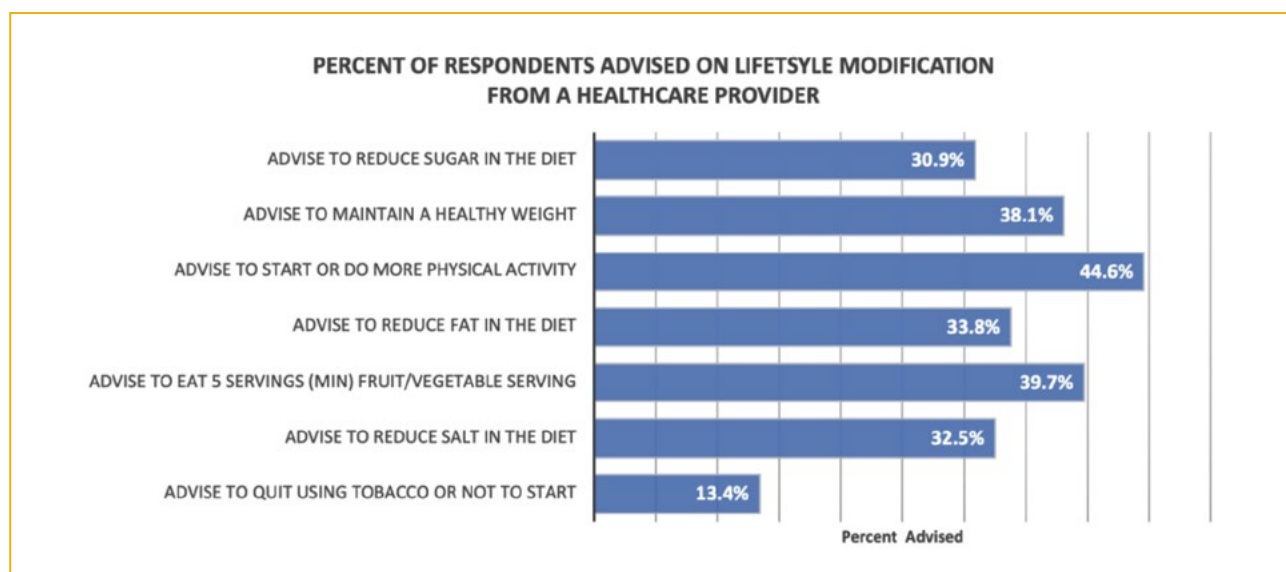
Image 5: Lifestyle Advise from A Healthcare Provider

ORAL HEALTH

A significant proportion of respondents (66.2%) meet the ADA's recommendation of brushing teeth twice a day. Twenty-three percent 22.8% brushed 3 or more time per day. Less than 50% (46.3%) flossed daily (males, 39.8% and females, 50.7%).

Seven percent (6.9%) of respondents have never received dental care. Of those who have visited a dentist, only 30.3% had a visit in the last year – with top three reasons for the visit being routine dental check-up (45%), pain in teeth or gums (27.5%) and follow-up for a recent treatment/procedure (13.9%). The majority (97.9%) of respondents perceive the state of their gums to be 'very good' or 'good'. However, 56.8% have natural teeth missing; 10.9% have dentures or dental implants; and 35.8% teeth filling. Generally, the most popular reason for fillings are tooth decay/cavity (others

could be tooth fracture or teeth grinding). Noteworthy are the primary reasons for missing natural teeth – periodontal disease and cavities.

HEALTH LITERACY

The STEPS study was not explicitly designed to measure/assess health literacy in the population. Nonetheless, the study provided for proxies to gain some preliminary understanding on the level of health literacy in society. Health literacy is the ability to obtain, read/process, understand, and use healthcare information in order to make appropriate health decisions and follow instructions for treatment[85].

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85 https://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison/clear-communication/health-literacy

The data highlights that almost all respondents (98%) believe too much sugar in the diet could cause a health problem; and 94.3% believe that too much salt in the diet can cause a health problem. These beliefs however, did not parallel with the practice of reading nutrition facts on food labels when shopping. In fact, 42.7% of respondents never read nutrition labels compared to 17.7% who often read them and 16.6% who always read them. Reading food labels is only one component of health literacy. Whether respondents understood what was read was not examined, especially noting that not all products available in local grocery stores are printed in English or in units that are familiar. For those who do read nutrition labels, 68.8% relay that the information on salt and/or sugar content does influence purchasing decisions (females more than males).

In May 2019, The Bahamas Department of Statistics reported households were predominantly headed by males – 58% compared to the 42% headed by females. In that same report, the Department noted that the greatest share of household income came from males (64%) versus females (36%). An implication of this data is, although females exhibit promising health behaviours, they may not be sufficiently financially empowered to act on their nutrition knowledge.

On the flip side, 61.2% use spices other than salt when cooking. But when asked how often salt, salty seasoning or a salty sauce is added when cooking or preparing meals at home, 64.9% responded 'always' or 'often'.

HEALTH INEQUITIES AND NCDs

Equity is critically important for health, as both a principle and as an outcome. Health inequity refers to avoid-

able difference(s) in health status or health resources between different social groupings of people. Social factors (equity stratifiers) such as sex, age, education, employment status and income have discernible effect on how healthy a person is. The lower an individual's socio-economic status, the higher their risk of poor health[86].

Income

There was no statistical relationship between blood pressure status and income. However, a relationship was indicated between high BMI and income. Specifically, 78.3% of persons with annual income $20,000 or less had high BMI, compared to 53.9% of persons with annual income over $60,000. Similarly, there was a relationship between insufficient physical activity and income – insufficient physical activity levels were observed in 34% of persons with income less than or equal to $20,000, compared to 45% with income above $60,000. This observation is contrary to intuition. But, it is appreciated that those who earn more can afford more conveniences that promote a sedentary lifestyle such as a vehicle. And therefore, walking to public transportation, food supply, work, school et cetera is not a routine and necessary element of a day. Also, persons with income over $60,000 were 2.5 times more likely to approach the recommended 5 or more servings of fruits and vegetable each day, compared to those with income $20,000 or less.

Education

Lower educational attainment was associated with the presence of more NCD risk factors. Expressly, among

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86   https://www.who.int/news-room/facts-in-pictures/detail/health-inequi-ties-and-their-causes

persons with the highest attainment level at senior high or lower, the largest proportion (51.3%) had 3 to 5 NCD risk factors. This contrasts with persons having a tertiary education or higher, where the largest proportion (55.5%) of persons in this group had 1 to 2 NCD risk factors. Educational attainment was also associated with the reported average number of meals eaten a day. Those with lower attainment ate two meals, compared with those attaining tertiary education who at 3 meals.

Unemployment

Unemployment was also associated with the presence of more NCD risk factors. Among persons unemployed, the largest percentage (55.5%) had 3 to 5 NCD risk factors, compared with the employed who for the largest percentage (52.4%) had 1 to 2 NCD risk factors. Super-imposed on this the sex variance – an unemployed male and an unemployed female are more likely to have more NCD risk factors than their employed counterpart.

Sex

Sex is another equity stratifier. In 2019, the age-adjusted mortality rate from NCDs was 525.4 per 100 000 population (623.8 per 100 000 in men and 446.5 per 100 000 in women).

The STEPS 2019 data reveals a statistical relationship between biological sex and having a history of at least one NCD. Forty-seven percent (47%) of males had a history of at least one NCD, compared to 43% of females. The probability of dying prematurely from an NCD in The Bahamas is 19.9% - with significant sex variance for males and females being 23.6% and 16.6%[87],

respectively. It is worth repeating that males are more likely than females to having a fatal or non-fatal cardio-vascular event (heart attack or stroke).

Marital Status

A statistical relationship was found between marital status and having at least one NCD. Fifty-four percent (54%) of married persons had at least one NCD, compared to 41% of non-married persons.

Needless to say, when multiple equity stratifiers are at play for any one person, the degree of health inequity experienced by that person is compounded.

NCDS AND GLOBAL THREATS

Political instabilities, economic crises and public health threats negatively correlate with NCD prevention and control. Post-STEPS 2019, the world was shaken by Hurricane Dorian, and the COVID-19 pandemic which has been prolonged, problematic and paused the delivery of essential health services. From these, coupled with disruptions to supply chains and reduced purchasing powers, there is a yet realized NCD toll of death, disability and reduced quality of life. Subsequent national NCD studies may reveal the magnitude of this impact.

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87 https://www.who.int/data/gho/data/indicators/indicator-details/GHO/proba-bility-of-dying-between-exact-ages-30-and-70-from-any-of-cardiovascular-dis-ease-cancer-diabetes-or-chronic-respiratory-(-)

INACTION, TOO COSTLY A PROPOSITION

VALUE PROPOSITION FOR ACTION ON NCDs

Non-communicable diseases (NCDs) are the invisible epidemic which has become a mounting threat – effecting everyone, everywhere. They have human, social, and economic consequences that are felt by all. NCDs continue to be the biggest killers worldwide and in The Bahamas. Globally, NCDs are responsible for 71% [88]of all deaths. Regionally, they are responsible for 81%[89] of all deaths. Nationally, they are responsible for 74% of all deaths.

A singular message from the STEPS 2019 data is that The Bahamas is headed in the wrong direction in its NCD trajectory. Additionally, in the study year, the adjusted rate of potentially avoidable premature mortality in The Bahamas was 324.5 deaths per 100,000 population, a decrease of 26.9% from a rate of 443.9 in 2000. This meant that, in 2019, the avoidable mortality in the country was 43.1% higher than the average rate reported for the Region of the Americas as a whole. Among potentially avoidable premature mortality, the rate for preventable causes was 171.5 per 100 000 population in 2019, which is 25.1% higher than the regional average rate; and the rate for treatable causes was 153 per 100 000 population, above the regional average of 89.6[90]. These data reflect the ultimate toll of NCDs, death. There are however, other tolls that NCDs exert.

Health is an indispensable precursor for a number of economic outcomes. Over time, NCDs reduce the quality and quantity of a country's labour force (both skilled and unskilled), which lowers the national income[91]. The ripple effect is, workers with NCDs are more likely to get regularly sick and have NCD-related disabilities, which in turn reduce their efficiency and productivity as well as influence early labour force exits. NCD mortality will reduce the size of skilled and unskilled labour essential for long run economic growth[92]. Additionally, NCD-related morbidity will reduce the capital stock since potential savings will be re-directed to the treatment of NCDs instead of investment purposes. Consequently, NCDs have the effect of widening the health iinequality gap (World Health Organization, 2013); and hindering the potential achievement of the SDGs.

Gross domestic products (GDP) do not go untouched. Global studies reveal that NCDs comprise a significant proportion of a country's GDP. In 2010, that projection was calculated at 48% of the global GDP. Simply put, NCDs are growth-retarding factors.

The global economic cost of NCDs (including mental health) is estimated at US$ 30 trillion for the period 2011 – 2030[93] (or US$ 1.55 trillion annually). This starkly contrasts with the estimated cost of US$ 2 billion annually (equivalent to less than US$ 0.30 per person) to implement a set of cost-effective interventions to address NCD risk factors. Moreover, every US$ 1 invested in these interventions will yield a return of at least US$ 7 by 2030 (Image 5).

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88   WHO Key NCD Facts (2018)

89   PAHO NCDs At-A-Glance (2019)

90   https://hia.paho.org/en/countries-22/bahamas-country-profile

91   Bloom D, Chen S, McGovern M. The economic burden of noncommunicable diseases and mental health conditions: results for Costa Rica, Jamaica, and Peru. *Revista Panamericana de Salud Pública*. 2018;42(18):1–27.

92   Abegunde D, Mathers C, Adam T, Ortegon M, Strong K. The burden and costs of chronic diseases in low-income and middle-income countries. *The Lancet*. 2007;370(9603):1929–38.

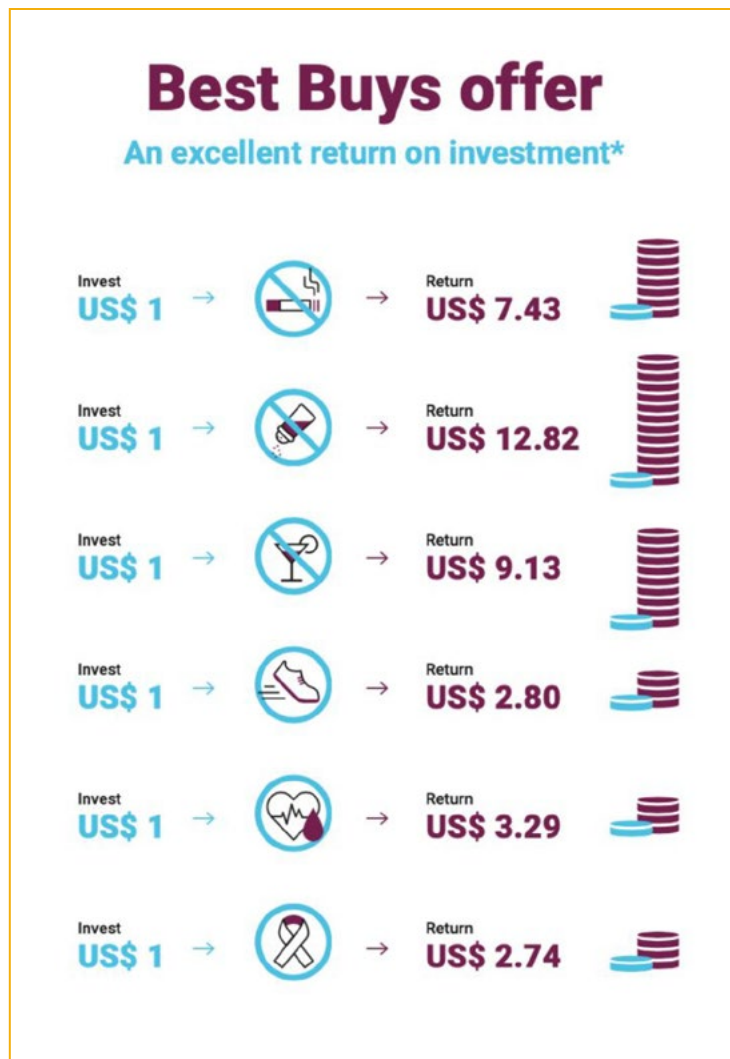93   https://www.paho.org/en/topics/economics-ncds

Image 6: Return on Investment for Investing in NCDs. Source: WHO website

These 'Best Buys' seek to combat the common and preventable risk factors which underlie most NCDs – all of which set in motion cascades that lead to unhealthy weight, hypertension, high cholesterol and the known 5x5 NCD diseases. Altogether, these are responsible for an increasing burden of disability, premature death, poverty and ill health. Reducing their burden should be an overriding priority and necessary condition for sustainable development (World Health Organization, 2014).

The more healthy a people, the greater their social participation; the more productive they are; the more they are able to contribute to the development of the nation's economy across generations. The degree to which The Bahamas is able to successfully implement the 'Best Buys' and make in-roads in its health promotion and disease prevention strategies, will have explicit implications on counteracting the costs (direct[94], indirect[95] and intangible[96]) of delayed action or inaction at the individual, societal and national levels.

Whether viewed through the Sub-regional, Regional, or global lens, it is apparent that the non-communicable diseases (NCDs) continue to apply an exacting and increasing burden on individuals, families, societies, systems and economies. The Global Status Report on Non-Communicable Diseases (2014) compared 53 high-income countries on many of the modifiable NCD risk factors. Despite its developing nation status, The Bahamas ranked high – 4th , 12th and 36th in its prevalence of obesity, diabetes and hypertension.

Buys' were implemented in 2016. Sobering is that in 2015 alone, 1,222 persons died from an NCD in The Bahamas.

COST SCENARIOS

International studies have been undertaken to quantify the lifetime cost specific NCDs and risk factor. The average lifetime cost after diagnosis[98] for:

- heart failure (hospital care) is US$ 73,762 per person
- heart failure (outpatient care) is US$ 22,032 per person
- stroke is US$ 103,576 (an average of the three stroke types)
- overweight is US$8,120. Current estimates reveal that total annual medical expenditures would be 9% lower in the absence of overweight and obesity
- obesity is US$ 25,505[99]

These estimations form the bases for cost scenarios the context of The Bahamas (Table 2).

Condition	Lifetime Cost (p/p)	Bahamians Impacted	Total Lifetime Cost (US$)
Heart Failure (Hospital)	$ 73,762.00	31,200	$ 2,301,387,677.16
Heart Failure (Outpatient)	$ 22,032.00	31,200	$ 687,402,365.76
Stroke	$ 103,576.00	4,946	$ 512,325,219.12
Overweight	$ 8,120.00	106,157	$ 861,992,485.20
Obesity	$ 25,505.00	166,274	$ 4,240,821,685.65
Total (US$)			$ 8,603,929,432.89

Table 2: Cost Scenarios for Selected Conditions

In 2016, WHO statistical modelling estimated that 2,000 Bahamian lives could be saved by 2025[97] if the 'Best

The US$ 8.6 billion probably represents a starting and likely under-estimated lifetime cost of persons impacted by these four selected conditions reflected in Table

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94 Direct costs refer to costs falling on the health sector in relation to prevention, diagnosis and treatment.

95 Indirect costs typically measure the lost productivity potential of patients who are too ill to work or who die prematurely. There is no concise on the measurement to be applied for estimating indirect cost.

96 Intangible costs capture the psychological dimensions of the illness to the individual (and their family) – particularly pain, bereavement, anxiety and suffering; and is usual hard to measure.

97 https://cdn.who.int/media/docs/default-source/country profiles/ncds/bhs_en.pdf?sfvrsn=5c3e9988_38&download=true

98 https://onlinelibrary.wiley.com/doi/epdf/10.1038/oby.2008.290

99 Although obesity increases the likelihood of diseases and treatment that results in higher annual medical spending, for the same reasons it also results in a shorter life expectancy, especially for high BMI values (4–6). Depending on which effect is larger, the expenditure effect or the mortality effect, some levels of obesity may actually reduce lifetime medical spending.

2. Primarily because the cost of living in The Bahamas is high with resultant higher healthcare cost and other indirect costs in the Bahamian context. Notwithstanding the limitations and imperfect parallel, the value of these scenarios is the rudimentary understanding it lends to the cost of inaction or stagnated action in The Bahamas' fight on NCDs; and doubles down on the reality that the Bahamian economy will be challenged to support expenditure even at this level in the long run. All-in-all, investing in the 'Best Buys' is a much more attractive proposition.

A CARICOM initiative to develop a strategy[100] to reduce mortality due to acute myocardial infarction (MI) events in the sub-region quantified the average annual cases of MI for participating countries. The report noted that on average The Bahamas had 236 STEMI cases per year at a cost of $25,399 per case.

End-stage renal failure (ESRD) becomes an unfortunate reality for many persons with longstanding and/or uncontrolled hypertension and diabetes mellitus. Part of the clinical management of ESRD involves dialysis. In the Bahamian public health sector, an average of 474 persons required dialysis in each year between 2017 and 2020[101]. The attended cost was $388.67 per person per treatment[102]. Typically, treatment guidelines for ESRD call for at least three (3) treatment sessions each week (or 156 treatment sessions per person each year). On an annual basis then the direct cost for dialysis for these persons is in excess of $28.7 million (or $60,632.52 per patient per year). This cost of dialysis is another financial outlay to consider in the case for no action or sluggish action.

It is contended that with a lower and decreasing chronic disease burden, resources could be available for other national and health issues.

GLOBAL THOUGHTS
Global Thinking On Proper Nutrition And Healthy Diets As A Best Buy

Over the last century, there has been a substantial change in the lifestyle and dietary habits of people worldwide, creating an imbalance between calorie intake and energy expenditure. Clear evidence of this is that obesity is almost tripled since 1975[103]. Unhealthy diets are drivers of malnutrition and NCDs. In a study that looked at global deaths from 1990 to 2017, it was found that one in every five deaths were the result of poor nutrition[104].

High intake of sodium coupled with low intake of whole grains and fruits are leading risks for deaths and DALYs worldwide. In 2019, almost 8 million deaths (28% of all deaths) and 190 million DALYs were attributable to dietary risk factors[105]. Now, more than ever, nutrition interventions are essential in managing the risk of NCDs.

Generally, healthy diets contain:

- Total fat intake of less than 30% of total energy. These should be mainly unsaturated fats, with less from saturated fats (less than 10%). Trans fats should not be consumed, but if consumed, less than 1% of total energy intake which translates to less than 2.2 grams per day with a 2,000 calorie diet[106].

100 Dr. Ronald Henry serves as focal point for this initiative.
101 Source: Public Hospital's Authority Statistics Unit
102 Source: Princess Margaret Hospital Finance Department

103 Nutrients. 2019 May; 11(5): 1074
104 https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)30041-8/fulltext
105 https://onlinelibrary.wiley.com/doi/epdf/10.1111/jhn.1290
106 https://www.who.int/news/item/09-09-2020-more-than-3-billion-people-protected-from-harmful-trans-fat-in-their-food

• Free sugar intake of less than 10% of total energy, but preferably less than 5%.

• Salt intake of less than 5g per day.

• Fruit and vegetables intake at least 400g per day.

Evidence is mindful though of current challenges population's face in enjoying healthier diets. Chief among these:

1. The high availability of low-cost foods and beverages that are also high in calories, fat, salt and sugar by commercial food industry;

2. The easy access to modern technology;

3. Nutritional information that is difficult to understand and apply;

4. Misleading health claims on foods;

5. Eating patterns have shifted to eating out, and increased food portion sizes, combined with a lower intake of fruit, vegetables, and high-fibre foods; and

6. Healthy diets are less affordable for the poor in every region of the world and people are increasingly exposed to ultra-processed, unhealthy foods and diets that lead to poorer health.

Researchers also contend that food choices aren't just about health. A host of different factors, from health to convenience to habit, taste and price drive the consumer mind. And while researchers are finding that health is one driver, especially in the grocery store, it's far from the only one. Coupled with these socio-cultural factors along gender lines relating to cultural expectations about the body and beauty ideals[107] also play a role.

All these dimensions must therefore be contemplated in the implementation of healthy diets as a 'Best Buy'.

Global Thinking On Reducing Harmful Alcohol Use As A Best Buy

Globally, the harmful use of alcohol contributes to 3 million deaths yearly or 5.3% of all deaths.[99] Besides premature mortality, behavioural disorders (e.g. alcohol dependence), liver cirrhosis, cancers and cardiovascular diseases, unintentional injuries, violence, road traffic accidents, and suicide are health concerns of harmful alcohol use. Fetal alcohol syndrome and complications with pre-term birth are also of concern. Harmful alcohol consumption is also linked to the transmission of infectious diseases like HIV/AIDS.[108] The impact that alcohol has on health outcomes are determined by the total consumer volume and the pattern of drinking. Risk factors for harmful alcohol consumption are age, gender, familial context, and socioeconomic status. Societal risk factors include the culture of drinking, availability of alcohol, and the extent of comprehensive alcohol policies and their enforcement.[25]

In the Americas in 2016, persons age 15 and over consumed 8 litres of alcohol per capita, and in The Bahamas, persons age 15 and over consumed 4.4 litres of alcohol per capita. Additionally, in 2016 in the Americas, 8.2% and 4.1% of persons over age 15 had an alcohol use disorder and alcohol dependence respectively. This is compared to The Bahamas where 6.7% and 2.8% of persons over age 15 had an alcohol use disorder and alcohol dependence respectively.[109]

107 Poitier F, Kalliecharan R, Ebenso B. Impact of sustained health policy and population-level interventions on reducing the prevalence of obesity in the Caribbean Region. Frontiers in Public Health (2019).

108 Alcohol Fact Sheet https://www.who.int/news-room/fact-sheets/detail/alcohol
109 WHO Global Alcohol Report: Bahamas Country Profile https://www.who.int/substance_abuse/publications/global_alcohol_report/profiles/bhs.pdf

The WHO emphasizes the country's responsible for formulating, implementing, monitoring and evaluating public polices to reduce the harmful consumption of alcohol. The recommended strategies include regulating the marketing of alcoholic beverages, particularly in youth; restricting availability; implementing taxing and price mechanisms; raise awareness of the harmful use of alcohol; provision of treatment for people with alcohol use disorders; and implementing screening and intervention programs in health services.[9999]

The WHO best buys for reduction of harmful alcohol use are increased excise taxes, enactment of bans on advertising across multiple media platforms, and enactment and enforcement of regulations on availability.[101] The health sector has the responsibility to detect, prevent and treat those suffering from or impact by alcohol-related disorders. It also plays a pivotal role in community education, advocacy and support to reduce the harmful use of alcohol particularly among youth, unemployed and other vulnerable populations. Governments may also facilitate mass media campaigns on drink-driving and introduce and enforce legislation for: blood alcohol concentration retail licensing; location requirements; hours of sale; age; regulation of content, volume, sponsorship, promotion, marketing; and public consumption.[110] These policies must be sufficiently funded and with intersectoral responsibility and support to be effective.

Global Thinking On Smoking Cessation As A Best Buy

Globally, tobacco smoke contributes to more than 5 million deaths per year and without radical intervention by 2030, could rise to more than 8 million deaths annually.[111] Tobacco smoking gradually kills half of its users[13] and contributes to the development of ischaemic heart disease, cerebrovascular diseases, lower respiratory infections, chronic obstructive pulmonary disease, tracheal, bronchial and lung cancers and increases susceptibility of developing tuberculosis.[112] Second-hand smoke is similarly harmful as it can result in cardiovascular and respiratory health challenges in adults, sudden death in infants, and low birth weight for pregnant women.[102] In the Americas the prevalence of current tobacco smoking in adults in 2017 was 16.8% and 11% in The Bahamas.

Tobacco smoke continues to be a major public health concern because of the increasing attractiveness of products to new and existing users through enhanced palatability, increases in addictive properties, and increases in toxicity levels.[113] The tobacco industry has interfered with tobacco control measures by using misleading messages, funding political campaigns in exchange for legislative favours, lobbying to influence political processes, funding

research to create doubt about the evidence of health effects of tobacco, and employing tactics of philanthropy and intimidation among others.[114]

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110 10 Areas Governments could work with to Reduce the Harmful use of Alcohol https://www.who.int/news-room/feature-stories/detail/10-areas-for-national-action-on-alcohol

111 Tobacco Fact Sheet https://www.paho.org/sur/index.php?option=com_content&view=article&id=151:tobacco-factsheet&Itemid=477

112 PAHO/WHO 2018 Report on Tobacco Control in the Region of the Americas file:///C:/Users/jonesbri/Downloads/9789275120156_eng%20(1).pdf

113 WHO Factsheet on Tobacco Ingredients https://www.who.int/tobacco/industry/product_regulation/factsheetingredients/en/

114 Tobacco Industry interference with tobacco control https://www.who.int/tobacco/publications/industry/interference/en/ https://apps.who.int/iris/bitstream/handle/10665/83128/9789241597340_eng.pdf?sequence=1

The WHO best buys recommend taxation on tobacco products; printing of graphic health warnings on packages; banning of tobacco advertisements, promotions and sponsorships; promoting smoke-free environments; and implementing mass media educational campaigns on the health hazards of tobacco smoke exposure[115].

In 2003, the World Health Organization adopted the Framework Convention on Tobacco Control (FCTC) the first global public health evidence-based treaty developed in response to the global tobacco epidemic. It calls for the raising of political commitment for multisectoral and coordinated action to implement taxation measures to reduce tobacco demand, protect populations from exposure in indoor and public settings, and to raise public awareness on health effects among other actions.[116] Global progress since implementation of each FCTC Article is illustrated in Image. Generally, implementation rates of 65% or greater were obtained in Articles 8 (protection from exposure); Article 11 (packaging and labelling tobacco products); Article 12 (education and communication); Article 16 (sales to and by minors); Article 5 (establishment of focal points and national coordinating mechanisms); and Article 6 (price and tax measures to reduce demand). The lowest implementation rates are Articles for protection of the environment and the health of persons; and liability

and support for economically viable alternative activities. The Bahamas has not achieved any of the Articles. It has drafted a Tobacco Control Bill in 2014, which was revised in 2018; and still awaits enactment.

In 2019 the Bahamas' Ministry of Health developed a policy that designated all its premises smoke-free environments, with appropriate signage and entrances and exits of buildings.[117] While the ban demonstrates necessary action that should be replicated in other government buildings, there is no legislation for smoke-free health centres, schools, universities, offices, casinos, restaurants, bars and public transportation. Additionally, although the country levies import taxes (customs duty and 33.52% excise tax) and 12% value added sales tax on tobacco products[118] there is a need to pass the Tobacco Control legislation. The price for a pack of 20 cigarettes in 2018 in The Bahamas was $8.97 which is higher than $8.12 maximum price for the region of the Americas in the same year[119].

Global Thinking On Mental Health As A Best Buy

Mental health conditions represent a significant cause of morbidity and premature mortality in the Americas. Depressive disorders and anxiety disorders are the 2nd and 4th leading causes of years lived with disability respectively, and suicide mortality, which rose 17% between 2000 and 2019 in the Region, claims nearly 100,000 lives annually.

One in five adults experience some form of mental illness. However, the vast majority of people with mental health conditions will not received treatment; the Region's mental health treatment gap reaches as high as 90% for some conditions, with marginalized pop-

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115 https://apps.who.int/iris/bitstream/handle/10665/259232/WHO-NMH-NVI-17.9-eng.pdf;jsessionid=477FEB7F701DDCB28EB17E92A69767E0?sequence=1
116 The WHO Framework Convention on Tobacco Control: An Overview https://www.who.int/fctc/about/WHO_FCTC_summary_January2015.pdf?ua=1&ua=1

117 The Nassau Guardian https://thenassauguardian.com/2019/11/15/sugary-drinks-ban-at-all-min-of-health-facilities/
118 At the time of this report writing, VAT had been reduced to 10% for all goods and services.
119 PAHO WHO 2018 Report on Tobacco Control in the Region of the Americas

ulations and people living in conditions of vulnerability experiencing significant barriers to care. Unaddressed poor mental health compromises the overall health and well-being of individuals and is linked to broader health and social consequences for communities and society. This is magnified and exacerbated in times of crises – be they disasters, political unrest or tragedy.

POLICY
CONSIDERATION

POLICY CONSIDERATION HIGHLIGHTS

It is worth underscoring that NCDs represent more than just a health problem. NCDs are a sustainable development issue[120], as well as a social, economic and political issue. The Bahamas is not only 'off course', but headed in the wrong direction relative to its health and well-being. The country is likely not to meet the global nutrition targets and the health-related SDG targets if the urgency for action does not gain traction at the highest political levels and at the grass roots. STEPS 2019 gives the justification for bold action to accelerate and bridge the gap between promise to priority to progress.

demic, save thousands of Bahamian lives and bolster the economy by redirecting dollars that would have been spent on healthcare to other economy-expanding programmes. While prevention is the holy grille, systems and policies must simultaneously provide a response to those with NCDs.

Superimposed on this, is the reality that the Bahamian population is an aging one (Image 6), which brings unique opportunities to implement health-promoting strategies across the life cycle.
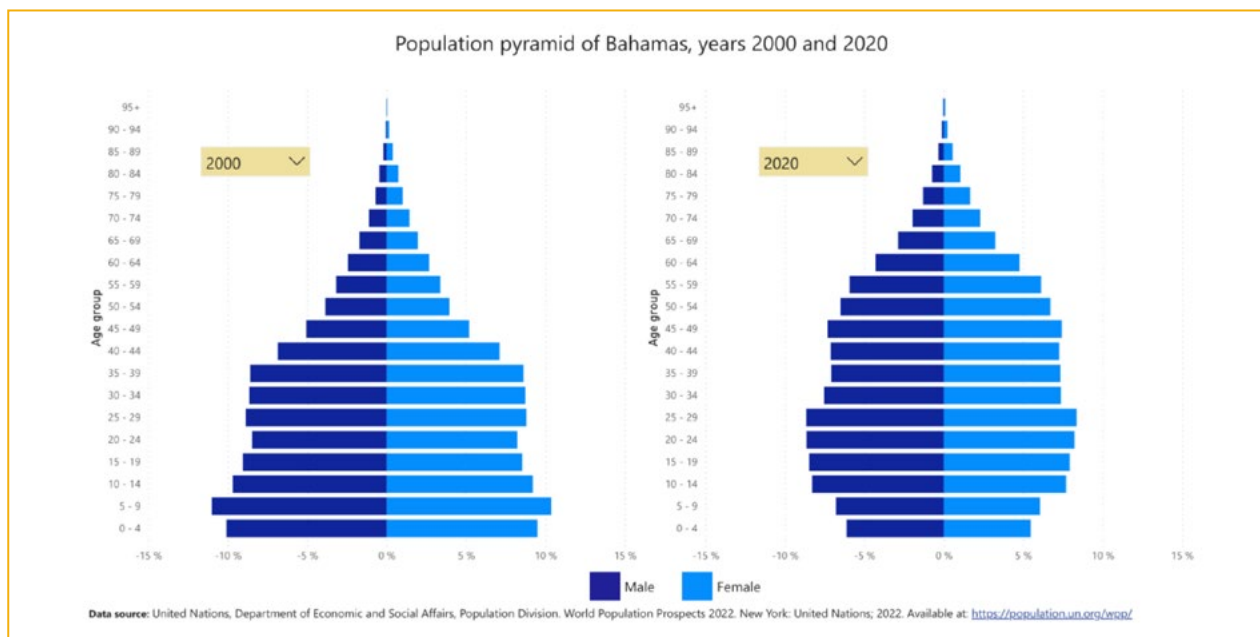
Image 7: Population Pyramid of The Bahamas

Given 80% of NCDs can be prevented, early, evidence-based and coordinated action can mitigate the common modifiable lifestyle drivers of the NCD epi-

Given the preponderance of the evidence; recognizing that NCDs have their origin at young ages with an unhealthy childhood being fertile ground for unhealthy adult years; and appreciating that action taken to reduce NCD risk factors can save lives and prevent 80% of prema-

120 https://ncdalliance.org/why-ncds/NCDs?gclid=Cj0KCQjwvZCZBhCiARIsAPX-bajuX7Mq04panWR06pL0Ke_-S5BTpDox2PaiMeDHuMUfWIiTGn_s0jkAaArJ-gEALw_wcB

ture heart disease, stroke and diabetes, policy consider-ations are proposed under four thematic areas to get the country back on course:

1. Proactive Policy Innovation
2. System Enabling Environments
3. Community Empowerment and Innovation
4. Research Innovation

Upstream Health Policy Innovation

Health policy goes beyond health care policy. By addressing the drivers of health, public health policies can have significant positive health impact. There is urgency in addressing economic diversity, the learning gap and climate change. Successes on these fronts will be irreversibly diluted if the health of our people is not elevated to a similar level of urgency. Change comes when a sense of urgency is present.

a. The highest political commitment expressed through a proclamation declaring NCDs a national emergency.

b. Enact legislation that are health enabling and reduce demand for unhealthy food products. Specifically, elimination of trans fats legislation (REPLACE strategy) and taxation of sugary beverages; and earmarking these taxes to support wellness. Example, evidence shows that a tax on SSBs that increases retail price by 20% can reduce consumption by approximately 20%.

c. Review, table and enact the draft Tobacco Control Bill.

d. Revisit and modernize legislation on access to as well as sales and promotion of alcohol with increased penalties and fines for infractions, with fines earmarked for programmes geared at harmful alcohol use reduction.

e. Mandate nutrition and caloric information for all meals sold in restaurants as well as fast foods, pop-up, side-of-the-road franchises.

f. Require grocery stores to organize/group products and erect visible shelf markers such as green for healthy, yellow for less healthy and red for not healthy; as a precursor to legislation on front-of-package labelling.

g. Prohibit children from purchasing junk food and outlaw junk food in schools and vending machines. Lessons can be learnt from Mexico who implemented this in 2020[121].

h. Complete the work of the Breadbasket revision initiative to remove grossly unhealthy items and include more healthy options and mitigate sub-optimal dietary intake, particularly for the vulnerable.

i. Renew, cost and implement the Wellness in The Nation: National NCD Strategy and Plan of Action (2023 – 2030). The current plan expires December 2022.

j. Formalize health-in-all-policies and intersectoral strategy with explicit objectives and goals to address social determinants of health to reduce social inequities for better health outcomes.

k. Fashion legislation similar to Food Labeling Modernization Act of 2021, to set quality standards for an array of food imports; and to strengthen regulatory mechanisms to identify and prohibit entry of food products with substandard quality and/or misleading health claims. The legislation should speak t properly resourcing a food laboratory for sample analyses.

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121 https://youtu.be/cgbxCJ_ZxJ4

l.   Modernize, with practical age-specific application, the National Dietary Food-based Guidelines.

m.   Require all public policies to apply the Health Impact Assessment tool (HIA) – a practical approach used to judge the potential health effects of a policy, programme or project on a population.

System Enablers

Enabling environments are required across all ministries and sectors to address the complex and multi-variant issues of NCDs.

a.   Prioritize the integration of behavioural sciences, through the engagement of behavioural change specialists, into work on health promotion and NCD prevention, recognizing that health-related (and other) decision-making process are multi-variant and complex; and that health-related behaviours (at individual, community and national levels) are essential for achieving desired health outcomes.

b.   Fund and execute a well-conceived, nationwide public education campaigns to promote wellness and to magnify the harms of unhealthy lifestyle practice, which are diversified and take into account the socio-demographic variations in health risks.

c.   Implement cardiovascular disease risk screening using validated and agreed scoring instrument(s)/calculators in the NHI benefits package and at the primary care level.

d.   Advocate for the implementation of the PAHO Nutrient Profile Model within BBSQ to de-

fine and publicize which locally available food products are high in sugars, fats, saturated fats, trans fats and salt.

e.   Develop, where needed, and update clinical management guidelines for primary health care settings; and conduct training sessions for healthcare professionals.

f.   Develop and cost national action plans along with defined performance indicators for mental health, elimination of cervical cancer, salt reduction, oral health and a national alcohol plan/policy.

g.   Re-orient health and care providers to their role in disease prevention and early detection.

h.   Complement passive NCD screening (done within the walls of medical facilities and offices) with proactive screening through systemized community screening strategies.

i.   Expand NHI's standard benefits package to include nutrition education and counselling; and pre-qualified medical wearable devices for continuous monitoring of HbA1c, total cholesterol, LDL and blood pressure[122]. The latter recognizing that patient engagement in chronic disease self-management is an essential component of chronic disease models of health care.

j.   Prioritize the introduction and implementation of Innov8 in national health programmes, Healthy Bahamas Coalition, and other relevant stakeholders. Innov8 is a WHO approach involving an 8-step review process aimed towards supporting health programmes better address equity, human rights and SDH.

k.   Fast-track implementation of telemedicine and

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122 https://www.frontiersin.org/articles/10.3389/fendo.2022.848695/full

an information system for health.

l. Employ an intermediary NCD surveillance and monitoring system to facilitate mandatory reporting by all providers, clinics and laboratories to Ministry of Health & Wellness.

m. Conduct a mid-point evaluation of progress on the National Food Security and Nutrition Policy; and devise strategies to recover progress on the lines of action that are lagging.

n. Deepen collaborations between MOHW and the Ministry of Agriculture and Marine Resources to leverage, optimize and catalyze synergies on common touchpoints for accelerating movement toward food security.

o. Revitalize and make impactful media campaigns to increase awareness on benefits of breastfeeding.

p. Create built environments and policies that promote breastfeeding in the society.

q. Accelerate action to scale-up HPV vaccination and screening for HPV infection and cervical cancer through effective programming, surveillance, monitoring and evaluation; and well as public awareness campaigns targeted at males and females.

r. Engage a collaborative process with Ministry of Education and other stakeholders to strengthen the Family Life; and Consumer Science curricula with an intentional and deepened focus on cultivating healthy habits at early ages and throughout the formative educational years.

s. Achieve buy-in for the 'Health-Promoting School' framework. Identify schools (public, private and home schools) to pilot the 'Health-Promoting School' framework. Use lessons from the pilot to guide accelerated implementation of the framework in all schools by 2025.

t. Scale-up and resource in-country capacity for food quality analysis.

u. Augment capacity and resource law enforcement and healthcare settings to perform and document breath and blood alcohol testing in these respective settings; and especially at the time of all RTAs.

v. Sufficiently capacitate the Price Commission to proactively regulate and set standardization of food pricing.

w. Explore the utility and implementation of WHO Innovation Scaling Framework to guide the in-country scaling up of NCD prevention and control

Community Empowerment and Innovation

Complex health problems require actions beyond the Ministry of Health and the health sector, that extend to the wider community, through intersectoral and inter-ministerial action and a Health in All Policies (HiAP) approach. This requires a commitment that goes beyond specific government administrations and political cycles, creating, strengthening, and institutionalizing existing intersectoral mechanisms, organizational structures, and alliances.

a. Increase health literacy and foster health citizenship.

b. Formalize and resource institutional structures to lead the charge, coordinate and implement a comprehensive approach to tackling NCDs.

c. Re-envisage new leadership models within and beyond the health sector that favor collaboration and that recognize that the leading role can

lie with the health sector or with other sectors (academia, civil society, and the private sector) depending on the nature of the problem to be addressed. This requires joint work in planning and evaluation based on a shared analysis of the health situation.

d. Re-imagine and re-introduce the community health council concept.

e. Develop interventions to target co-occurrences of risk factors rather than emphasizing individual risk factors for NCDs

f. Engage persons affected by NCDs to serve as champions in the fight against NCDs.

g. Advocate for workplace policies that encourage wellness and opportunities for being physically active during the work-day.

h. Design and launch a 'Live Well Bahamas' campaign. Features of this campaign may include Podcast and YouTube ready 'Well-Being Lessons' aimed at teaching the population how to plan for and prepare healthy meals; tips on navigating food labels; de-mystifying the back-yard garden; and mental health check-in tips.

i. Collaborate with faith-based organizations to develop a Bible Study Series on Health & Nutrition to be incorporated into mid-week, chil-dren's church and other teaching opportunities.

j. Incorporate Pahola, PAHO's digital health tool to facilitate better access to strategies for reducing harmful alcohol consumption.

k. Engage key stakeholders to maximize the power of media to mainstream conversations on intimate partner violence and empower the voices of those impacted.

Research Innovation

Social determinants of health (SDH) influence these health problems and as such deliberate action should be taken to link these SDH to well-being through research and innovation.

a. Undertake a national study to give novel and baseline data on nutritional deficiencies among children between 5 and 10 years; and to inform tailored nutrition catch-up programmes for this age grouping across the country.

b. Encourage and allocate funding for research that will address unmet questions arising from STEPS 2019 as well as add new knowledge to the NCD space.

c. Engage in-depth health equity analyses to understand both the magnitude and gradient of equity gaps.

d. Augment capacity to better position the MoHW to take advantage of grant funding for priority NCD-related research, inclusive of grant writing capacitation.

e. Establish a knowledge repository on NCDs.
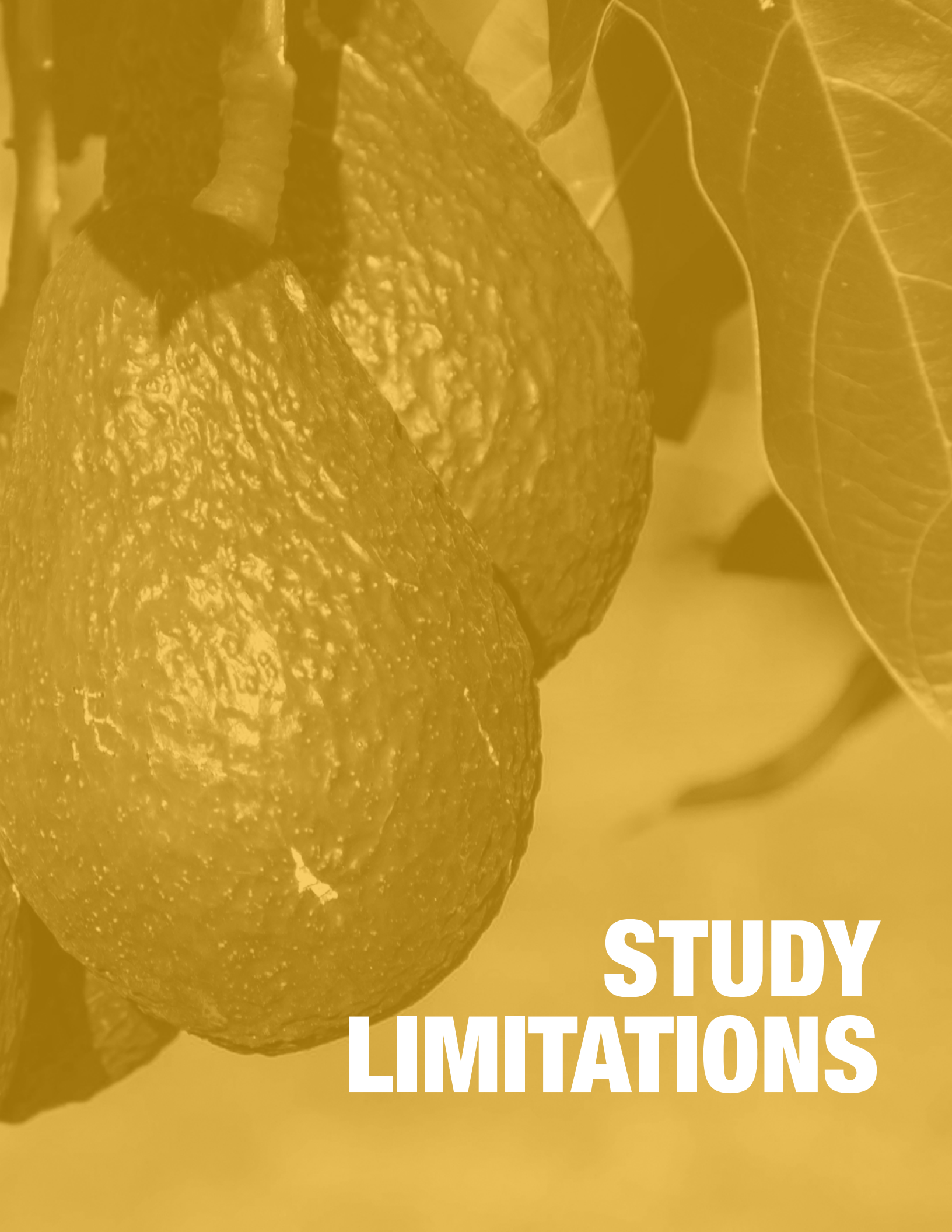
STUDY
LIMITATIONS

STUDY LIMITATIONS

1. Reliance on persons to provide information on their own health behaviours and conditions. Respondents may have been reluctant to report behaviours that are considered undesirable such as drinking, smoking and poor nutritional practices; or behaviours associated with shame and discrimination such as sexual abuse and intimate partner violence. Consequently, the prevalence of these behaviours may be under-estimated by the survey. Respondents may also have had limited recall about past behaviours or may recall them imprecisely.

2. The culturally pervasive belief that confidentiality is not as valued as it should be, may have influenced respondents' candor with some questions. In contrast, the close-knit communities within the country may have given the impression that confidentiality could be preserved and may have influenced the level of truthfulness on some questions.

3. Inclusion of country-specific questions extended to overall length of the questionnaire and time respondents needed to be engaged, which may have resulted in some degree of rushed responses or less thought-out responses – particularly towards the end of the question period.

4. Both competing priorities of some respondents as well as less conducive household settings for others negatively impacted participation in STEPS 3.

5. Budget constrained the number of enumerators engaged for the administration of the survey which contributed to the 4-month fieldwork period.

6. Cost was a limiting factor to the inclusion of HbA1c, LDL and HDL measurements.

7. Data on intimate partner violence should be interpreted with caution as respondents were less likely to respond to the more sensitive questions in that section.

8. In assessing salt intake, the study question was not formulated to quantify salt added during the cooking process.

9. Island-specific risk prevalence was not analyzed.

10. The new digital data collection platform necessitated a steep learning curve for field enumerators.

11. The inconsistent public relations may have negatively impacted the ground swell needed to secure public enthusiasm, support for and participation in the survey field work.

NATIONAL
NCD ACTION

NATIONAL NCD ACTION

SNAPSHOT ON NATIONAL ACTIONS TO PREVENT AND CONTROL NCDS

The public health policy responses to NCDs have adapted to the changing heath landscape of the country. Between 1970 and 1989, policy responses primarily focused on the issue of undernutrition in all age groups. In contrast, between 1990 and 2000, the focus was intelligence gathering on population nutritional status and promotion of breastfeeding[123]. Between 2000 to 2019, policy interventions were fashioned to address climbing obesity and physical inactivity to stem the tide of the ever-increasing threat of NCDs.

A hallmark of national action on NCDs is the development in 2017 of the Ministry of Health's National Non-Communicable Diseases Strategic Plan 2017-2022 entitled Wellness in the Nation. This work was the culmination of a series of planning meetings, workshops and consultations with various partner agencies and stakeholdersacross the private, public, civil, health and non-health sectors. An accompanying implementation plan was crafted and costed by the summer of 2019. Unfortunately, The Bahamas has had a cascade of national disasters since then which has significantly impacted the availability of funds and personnel to ap propriately engage the plan. Several initiatives have been
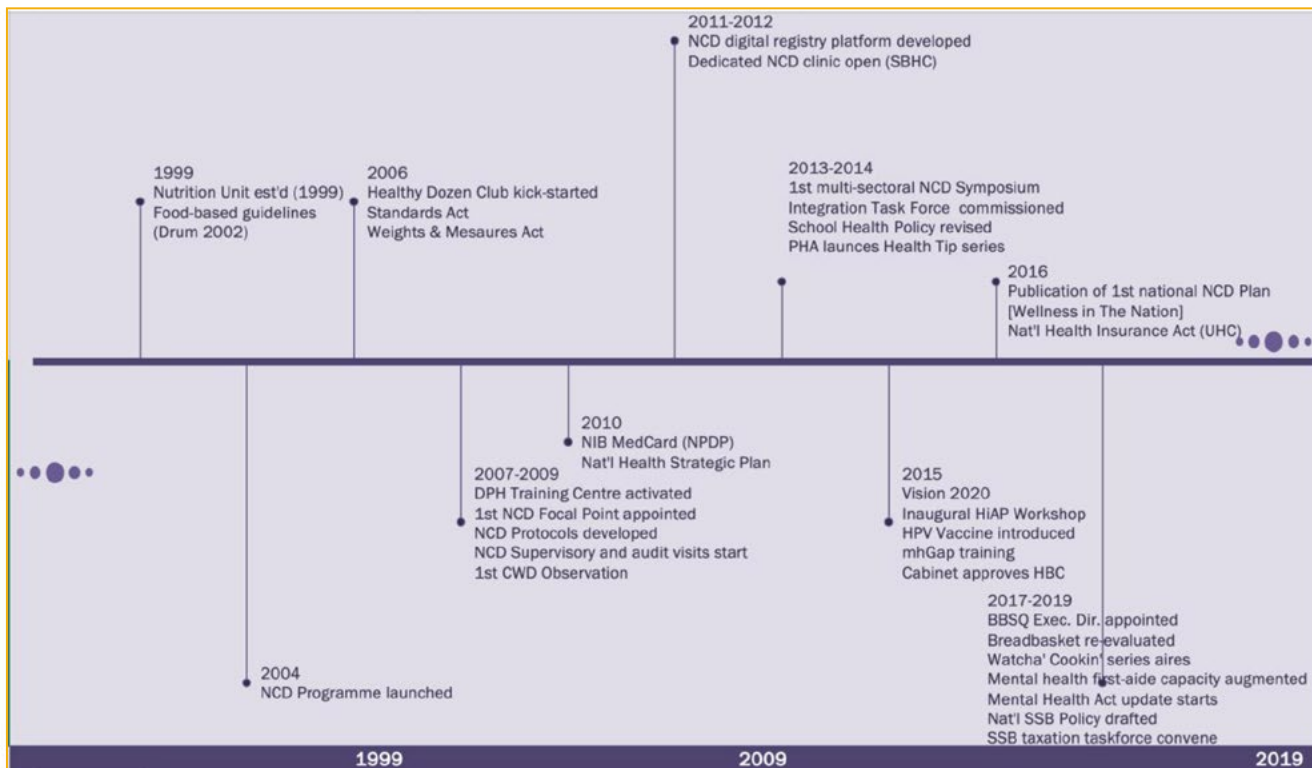

Image 8: Milestones for National NCD Policies and Initiatives

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123 Poitier F, Kalliecharan R, Ebenso B. Impact of sustained health policy and population-level interventions on reducing the prevalence of obesity in the Caribbean Region. Frontiers in Public Health (2019).

implemented at the programme level, and through bilateral discussions and arrangement with responsible executing agencies. But without an organizational structure to appropriately administer the Plan, and to endow the necessary authority required to successfully advance the ideals included therein, there is suboptimal progress been made with respect to the implementation on the strategies envisioned.

Throughout this time (1999 – 2019) the Ministry has relied on clinical and population-based data to shape its NCD-related policies and initiatives. For the latter, three population-based NCD risk factor surveys have been conducted. Namely, in 2005, 2012 and 2019. The results of these three surveys are not automatically comparable for two main reasons. First, the STEPS methodology has been modified over the years, with changes in the age range of the target for each cycle. Specifically,

- In 2005, the study targeted individuals between ages 15 and 74 years;
- In 2012, the study targeted individuals between ages 25 and 65 years;
- In 2019, the study targeted individuals between ages 18 and 69 years.

Second, response rates met or exceeded the WHO threshold to allow generalizability of findings for only the 2005 (79.4%) and 2019 (61.6%) cycles of the STEPS study. Therefore, although insights into keys findings from each of these years/cycles are reflected in Annex IV (Graphs 1 to 6), caution is advised in making direct comparisons; and particularly for the 2012 cycle when the response rate threshold was not acheived. That said, the salient points that may be drawn are from these three population-based risk factor cycles are:

1. Greater shifts toward normal weight should be prioritorized (Annex IV – Graph 1);
2. The pre-diabetic portion of the population can benefit from more aggressive screening, lifestyle interventions and public education (Annex IV – Graph 3) to prevent the transition to diabetes;
3. Exposure to secondhand smoke is a real phenomenon in The Bahamas (Annex IV – Graph 4);
4. Inadequate physical activity may not be the core issue or contributor to ill-health in the country (Annex IV – Graph 5); and
5. The risk of having a stroke or heart attack has doubled from 2005 to 2019 (Annex IV – Graph 6).

NATIONAL PROGRESS ON GLOBAL INDICATORS AND BENCHMARKS

There have been a series of political commitments made to curb the NCD epidemic These include the landmark Declaration of Port-of-Spain (2007), the United Nations High Level Political Declaration on NCD Prevention and Control (2011), and the WHO Global NCD Action Plan 2013-2020 and NCD targets, as well as Sustainable Development Goals (2015). Annex I (Port-of-Spain indicators), Annex II (WHO indicators) and Annex III (SDG targets) sheds light on The Bahamas' progress.

ANNEXES

ANNEX I – The Bahamas' Performance (2018) on Port-of-Spain Declaration Indicators

POS NCD Summir Evaluation GA-CDRC, UWI

	NCD Progress Indicator	ANG	ANT	BAH	BAR	BEL	BER	BVI	CAY	DOM	GRE	GUY	HAI	JAM	MON	SKN	STL	SVG	SUR	*TRT	TCI
	PHYSICAL ACTIVITY																				
PS	In the past year, Govt provided additional support for physical activity in schools	+	+/-	+/-	-	+	+	+	-	+	+	+/-		+	+/-	+	+/-	+	+	+	-
PS	MoEd implementing policy requiring 150 minutes of PA/wk for all students	+/-	-	-	+	-	+	-	-	-		-		+		+/-		-	-	+/-	-
PS	Mandatory provision for physical activity spaces in new housing developments	-	+	+	+	-	-	-	-	-	+	+/-		+	-	-	-	-	-	-	+/-
PS	Government promotes or incentivices Workplace wellness programmes	+/-	-	+	-	+/-	+	+	+	-	+	+		+/-	+	-	+/-	-	-	+/-	+/-
PS PAHO	Population access to "open streets" programs. (closed to vehicular traffic)	+	-	-	+/-	-	+	-	+	+/-	+	+/-		+/-	-	-	+/-	-	-	+	+
	EDUCATION / PROMOTION																				
PS	National wellness TV/radio/social media campaign in last 12 mnths	+	+	+	+	+/-	+	+	+	+	+/-	+		+	+	+	+	+	-	-	+
PS	CWD multi-sectoral, multi-focal	+	+	+	+	+/-	+	+	+	+	+	+		+	+/-	+	+	+	+	+	+
	Local NCD researchs in peer reviewed journal in past 12 mnths	-	-	-	+	-	-	-	-		+/-			+		-	+	-	-	-	-
	SURVEILLENCE																				
PS	STEPS/equiv NCD risk survey in past 7 yrs	+	-	+	+	-	+	+/-	+	+	+	-		+	-	-	+	+	+	+	+/-
PS	Minimum data Set reporting in past 2 yrs		+	+/-	+	+/-	+	-	+	+	+	+/-		+	+/-	+/-	+/-	+	-	+	+
PS	Global Youth Tobacco Survey in last 5 yrs	-	+	+	+	-	+	-	+	-	+	+		+	-	-	+	-	+	+	-
PS	Global School Health Survey in last 5 yrs	+	+	+	-	-	-	+/-	+	-	+	+		+		-	+	-	+	+	-
PS	WHO Country capacity survey in last 5 yrs	+		+	+	-	+	+	+	-	+	+		+		+	+	+	+	+	-
	TREATMENT																				
PS CC	Availability of evidenced-based national guidelines for management of major NCDs	+	+	+	+/-	+/-	+/-	+	+	+/-	+	+		+	+	+	+	+	+	+	+/-
PS PAHO	National Drug Formulary revised in last 3 yrs to include high quality generics	+	+	-	+	+	-	+/-	+	-	+	-		+	+	+	+	+	-	+	+
CC	Utilize PAHO Strategic Fund for NCD medicines & tech-lgies	+	-	+/-	-	+/-	+	-	+/-	-		+		+	-		+	-	+		
	Universl Health Coverge, no user fee in	-	+	+/-	+	+/-	-	+	+/-	+	-	+		+	+/-	+/-	+/-	+/-	+	+	+
	Electronic medical records in Primary Care	-	-	+/-	+	+	-	+	+		+	-		-	-	-	+	+/-	-	-	+/-

*TBC

Sources of Indicators

PS — Port of Spain NCD Summit Declaration;
Hds16 — Mandates from CARICOM Heads of Govt Summit 2016;
CC — WHO Country Capacity Survey;
FCTC — Framework Convention on Tobacco Control;
PAHO — PAHO Regional NCD Plan

TBC — To be confirmed

+ Implemented
+/- Partially implemented; in process
- Not implemented
    no information

☐ Change since last year

ANNEX II – The Bahamas' Performance (2020) on WHO NCD Indicators

1	**National NCD targets and indicators**	●
2	**Mortality data**	●
3	**Risk factor surveys**	◑
4	**National integrated NCD policy/strategy/action plan**	◑
5	**Tobacco demand-reduction measures:**	
A	increased excise taxes and prices	NR
B	smoke-free policies	○
C	large graphic health warnings/plain packaging	○
D	bans on advertising, promotion and sponsorship	○
E	mass media campaigns	○
6	**Harmful use of alcohol reduction measures:**	
A	restrictions on physical availability	◑
B	advertising bans or comprehensive restrictions	○
C	increased excise taxes	◑
7	**Unhealthy diet reduction measures:**	
A	salt/sodium policies	○
B	saturated fatty acids and trans-fats policies	○
C	marketing to children restrictions	○
D	marketing of breast-milk substitutes restrictions	○
8	**Public education and awareness campaign on physical activity**	●
9	**Guidelines for management of cancer, CVD, diabetes and CRD**	◑
10	**Drug therapy/counselling to prevent heart attacks and strokes**	DK

● fully achieved ◑ partially achieved ○ not achieved
NR No Response **DK** Don't know

World Health Organization - Noncommunicable Diseases Progress Monitor 2020

ANNEX III – The Bahamas's Performance on Health-Related SDGs[124]

THE BAHAMAS

Performance by Indicator

SDG1 – No Poverty

	Value	Year	Rating	Trend
Poverty headcount ratio at $1.90/day (%)	* NA	NA	●	●
Poverty headcount ratio at $3.20/day (%)	* NA	NA	●	●

SDG2 – Zero Hunger

	Value	Year	Rating	Trend
Prevalence of undernourishment (%)	* 1.2	2019	●	●
Prevalence of stunting in children under 5 years of age (%)	* 2.6	2019	●	↑
Prevalence of wasting in children under 5 years of age (%)	* 0.7	2019	●	↑
Prevalence of obesity, BMI ≥ 30 (% of adult population)	31.6	2016	●	↓
Human Trophic Level (best 2–3 worst)	2.3	2017	●	↗
Cereal yield (tonnes per hectare of harvested land)	8.7	2018	●	↑
Sustainable Nitrogen Management Index (best 0–1.41 worst)	1.1	2015	●	↓
Exports of hazardous pesticides (tonnes per million population)	NA	NA	●	●

SDG3 – Good Health and Well-Being

	Value	Year	Rating	Trend
Maternal mortality rate (per 100,000 live births)	70	2017	●	↑
Neonatal mortality rate (per 1,000 live births)	6.6	2020	●	↑
Mortality rate, under-5 (per 1,000 live births)	12.3	2020	●	↑
Incidence of tuberculosis (per 100,000 population)	9.1	2020	●	↑
New HIV infections (per 1,000 uninfected population)	0.3	2020	●	●
Age-standardized death rate due to cardiovascular disease, cancer, diabetes, or chronic respiratory disease in adults aged 30–70 years (%)	19.9	2019	●	↓
Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 population)	20	2016	●	●
Traffic deaths (per 100,000 population)	7.8	2019	●	↑
Life expectancy at birth (years)	73.2	2019	●	→
Adolescent fertility rate (births per 1,000 females aged 15 to 19)	29.0	2013	●	●
Births attended by skilled health personnel (%)	99.0	2016	●	●
Surviving infants who received 2 WHO-recommended vaccines (%)	83	2020	●	↓
Universal health coverage (UHC) index of service coverage (worst 0–100 best)	70	2019	●	↗
Subjective well-being (average ladder score, worst 0–10 best)	NA	NA	●	●

SDG4 – Quality Education

	Value	Year	Rating	Trend
Participation rate in pre-primary organized learning (% of children aged 4 to 6)	37.6	2018	●	●
Net primary enrollment rate (%)	86.5	2006	●	●
Lower secondary completion rate (%)	92.2	2010	●	●
Literacy rate (% of population aged 15 to 24)	NA	NA	●	●

SDG5 – Gender Equality

	Value	Year	Rating	Trend
Demand for family planning satisfied by modern methods (% of females aged 15 to 49)	NA	NA	●	●
Ratio of female-to-male mean years of education received (%)	102.6	2019	●	↑
Ratio of female-to-male labor force participation rate (%)	90.5	2020	●	↑
Seats held by women in national parliament (%)	12.8	2020	●	↓

SDG6 – Clean Water and Sanitation

	Value	Year	Rating	Trend
Population using at least basic drinking water services (%)	98.9	2019	●	↑
Population using at least basic sanitation services (%)	94.9	2019	●	→
Freshwater withdrawal (% of available freshwater resources)	NA	NA	●	●
Anthropogenic wastewater that receives treatment (%)	1.4	2018	●	●
Scarce water consumption embodied in imports (m³ H₂O eq/capita)	11758.3	2018	●	●

SDG7 – Affordable and Clean Energy

	Value	Year	Rating	Trend
Population with access to electricity (%)	100.0	2019	●	↑
Population with access to clean fuels and technology for cooking (%)	100.0	2019	●	↑
CO₂ emissions from fuel combustion per total electricity output (MtCO₂/TWh)	1.0	2019	●	●
Share of renewable energy in total primary energy supply (%)	NA	NA	●	●

SDG8 – Decent Work and Economic Growth

	Value	Year	Rating	Trend
Adjusted GDP growth (%)	-5.9	2020	●	●
Victims of modern slavery (per 1,000 population)	NA	NA	●	●
Adults with an account at a bank or other financial institution or with a mobile-money-service provider (% of population aged 15 or over)	NA	NA	●	●
Unemployment rate (% of total labor force)	12.9	2022	●	↓
Fundamental labor rights are effectively guaranteed (worst 0–1 best)	0.6	2020	●	↑
Fatal work-related accidents embodied in imports (per 100,000 population)	0.4	2015	●	↑

SDG9 – Industry, Innovation and Infrastructure

	Value	Year	Rating	Trend
Population using the internet (%)	87.0	2020	●	↑
Mobile broadband subscriptions (per 100 population)	93.0	2019	●	↑
Logistics Performance Index: Quality of trade and transport-related infrastructure (worst 1–5 best)	2.4	2018	●	↓
The Times Higher Education Universities Ranking: Average score of top 3 universities (worst 0–100 best)	* 0.0	2022	●	●
Articles published in academic journals (per 1,000 population)	0.2	2020	●	↗
Expenditure on research and development (% of GDP)	NA	NA	●	●

SDG10 – Reduced Inequalities

	Value	Year	Rating	Trend
Gini coefficient	NA	NA	●	●
Palma ratio	NA	NA	●	●

SDG11 – Sustainable Cities and Communities

	Value	Year	Rating	Trend
Proportion of urban population living in slums (%)	NA	NA	●	●
Annual mean concentration of particulate matter of less than 2.5 microns in diameter (PM2.5) (μg/m³)	16.3	2019	●	↑
Access to improved water source, piped (% of urban population)	NA	NA	●	●
Satisfaction with public transport (%)	NA	NA	●	●

SDG12 – Responsible Consumption and Production

	Value	Year	Rating	Trend
Municipal solid waste (kg/capita/day)	1.9	2015	●	●
Electronic waste (kg/capita)	17.2	2019	●	●
Production-based SO₂ emissions (kg/capita)	78.1	2018	●	●
SO₂ emissions embodied in imports (kg/capita)	6.8	2018	●	●
Production-based nitrogen emissions (kg/capita)	3.6	2015	●	↑
Nitrogen emissions embodied in imports (kg/capita)	9.6	2015	●	→
Exports of plastic waste (kg/capita)	0.0	2018	●	●

SDG13 – Climate Action

	Value	Year	Rating	Trend
CO₂ emissions from fossil fuel combustion and cement production (tCO₂/capita)	5.9	2020	●	→
CO₂ emissions embodied in imports (tCO₂/capita)	2.9	2018	●	↑
CO₂ emissions embodied in fossil fuel exports (kg/capita)	0.0	2017	●	●

SDG14 – Life Below Water

	Value	Year	Rating	Trend
Mean area that is protected in marine sites important to biodiversity (%)	30.3	2020	●	→
Ocean Health Index: Clean Waters score (worst 0–100 best)	61.8	2020	●	→
Fish caught from overexploited or collapsed stocks (% of total catch)	30.9	2018	●	↑
Fish caught by trawling or dredging (%)	0.0	2018	●	↑
Fish caught that are then discarded (%)	0.0	2018	●	↑
Marine biodiversity threats embodied in imports (per million population)	1.7	2018	●	●

SDG15 – Life on Land

	Value	Year	Rating	Trend
Mean area that is protected in terrestrial sites important to biodiversity (%)	29.8	2020	●	→
Mean area that is protected in freshwater sites important to biodiversity (%)	0.0	2020	●	→
Red List Index of species survival (worst 0–1 best)	0.7	2021	●	↓
Permanent deforestation (% of forest area, 5-year average)	0.2	2020	●	↑
Terrestrial and freshwater biodiversity threats embodied in imports (per million population)	0.4	2018	●	●

SDG16 – Peace, Justice and Strong Institutions

	Value	Year	Rating	Trend
Homicides (per 100,000 population)	18.6	2020	●	↑
Unsentenced detainees (% of prison population)	58.7	2019	●	↓
Population who feel safe walking alone at night in the city or area where they live (%)	NA	NA	●	●
Property Rights (worst 1–7 best)	NA	NA	●	●
Birth registrations with civil authority (% of children under age 5)	NA	NA	●	●
Corruption Perception Index (worst 0–100 best)	64	2021	●	↑
Children involved in child labor (% of population aged 5 to 14)	NA	NA	●	●
Exports of major conventional weapons (TIV constant million USD per 100,000 population)	0.0	2020	●	●
Press Freedom Index (best 0–100 worst)	NA	NA	●	●
Access to and affordability of justice (worst 0–1 best)	0.6	2020	●	→

SDG17 – Partnerships for the Goals

	Value	Year	Rating	Trend
Government spending on health and education (% of GDP)	5.5	2020	●	→
For high-income and all OECD DAC countries: International concessional public finance, including official development assistance (% of GNI)	NA	NA	●	●
Other countries: Government revenue excluding grants (% of GDP)	NA	NA	●	●
Corporate Tax Haven Score (best 0–100 worst)	100.0	2019	●	●
Statistical Performance Index (worst 0–100 best)	50.1	2019	●	↑

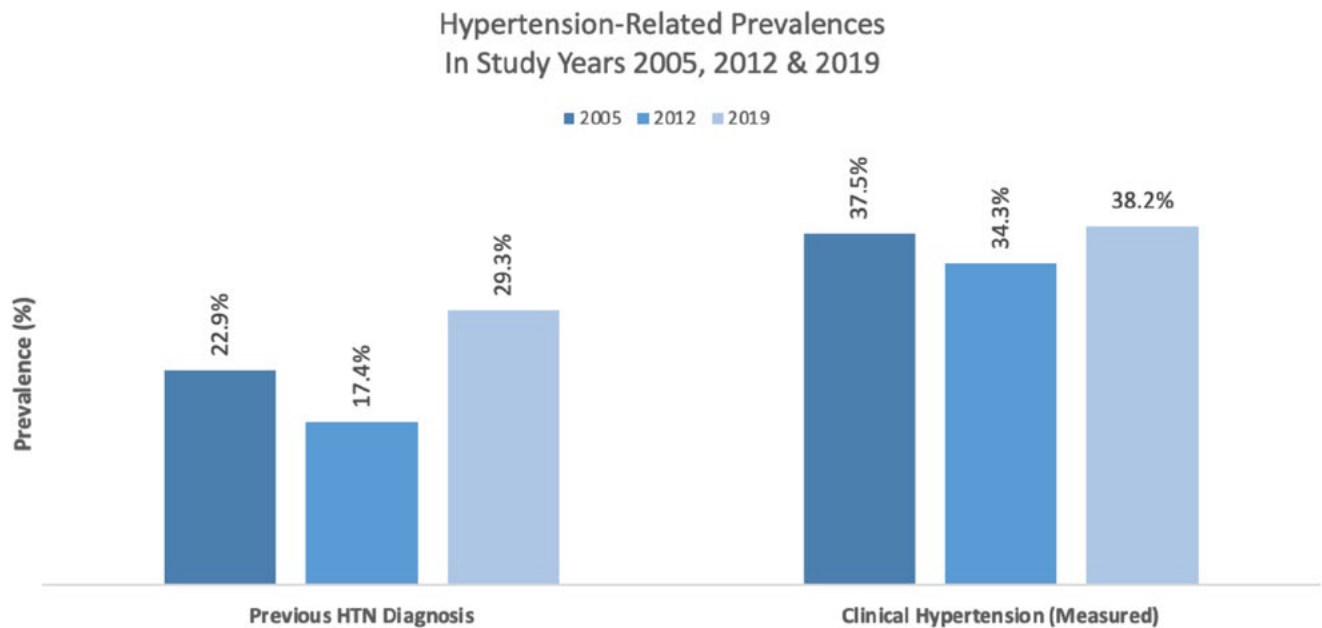*5. Country Profiles*

* Imputed data point

Dashboards: ● SDG achieved ● Challenges remain ● Significant challenges remain ● Major challenges remain ● Information unavailable

Trends: ↑ On track or maintaining SDG achievement ↗ Moderately improving → Stagnating ↓ Decreasing •• Trend information unavailable

124 https://dashboards.sdgindex.org/profiles/bahamas-the/indicators
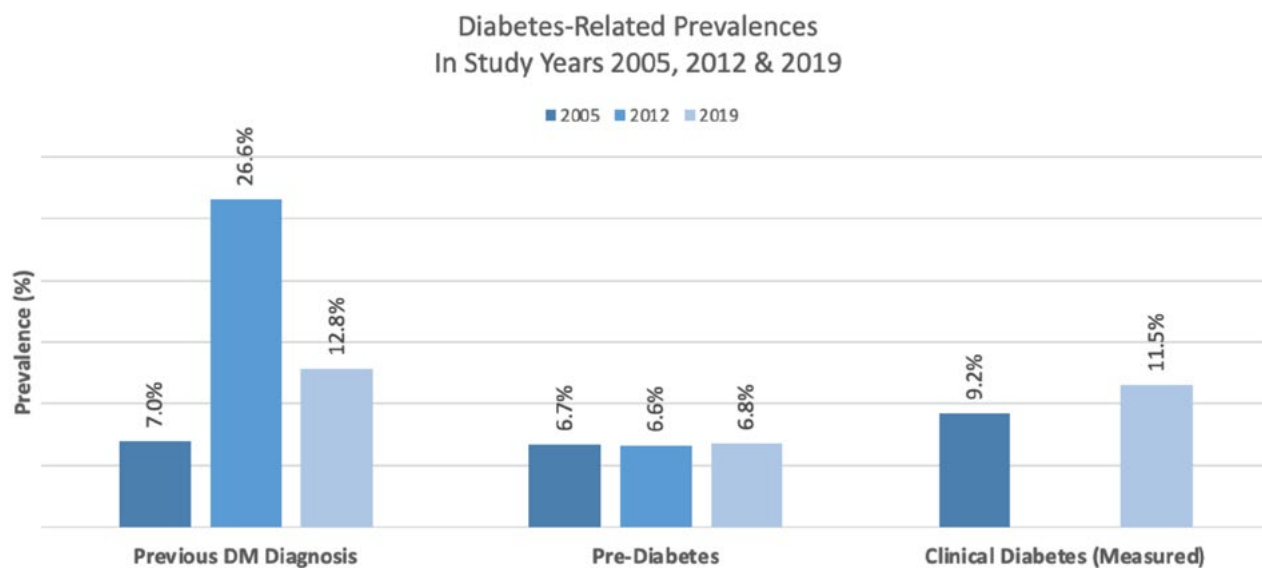
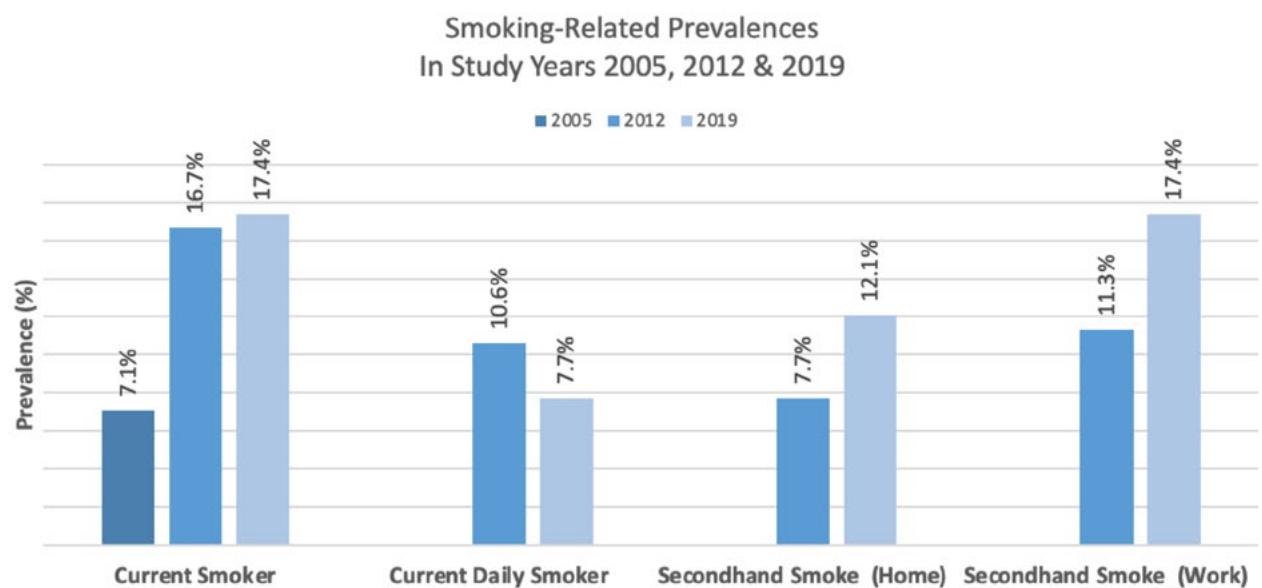## ANNEX IV – NCD Risk Factor Profile at Three Points In Bahamian History
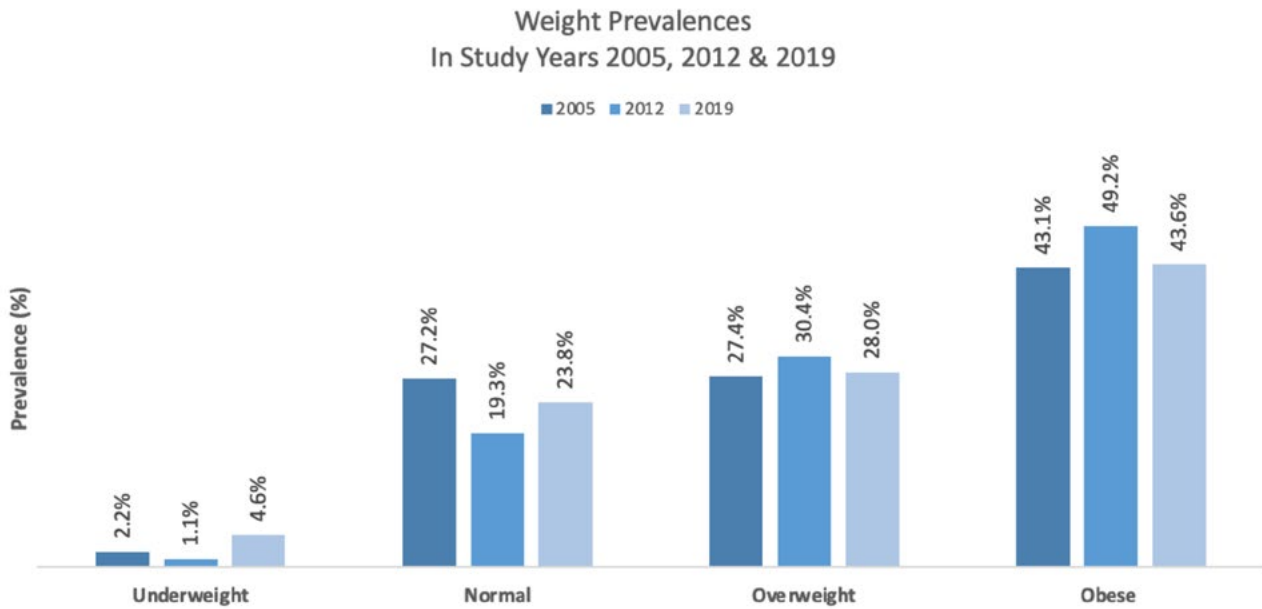
Graph 1: Graph Showing BMI Prevalence Obtained From Periodic Studies
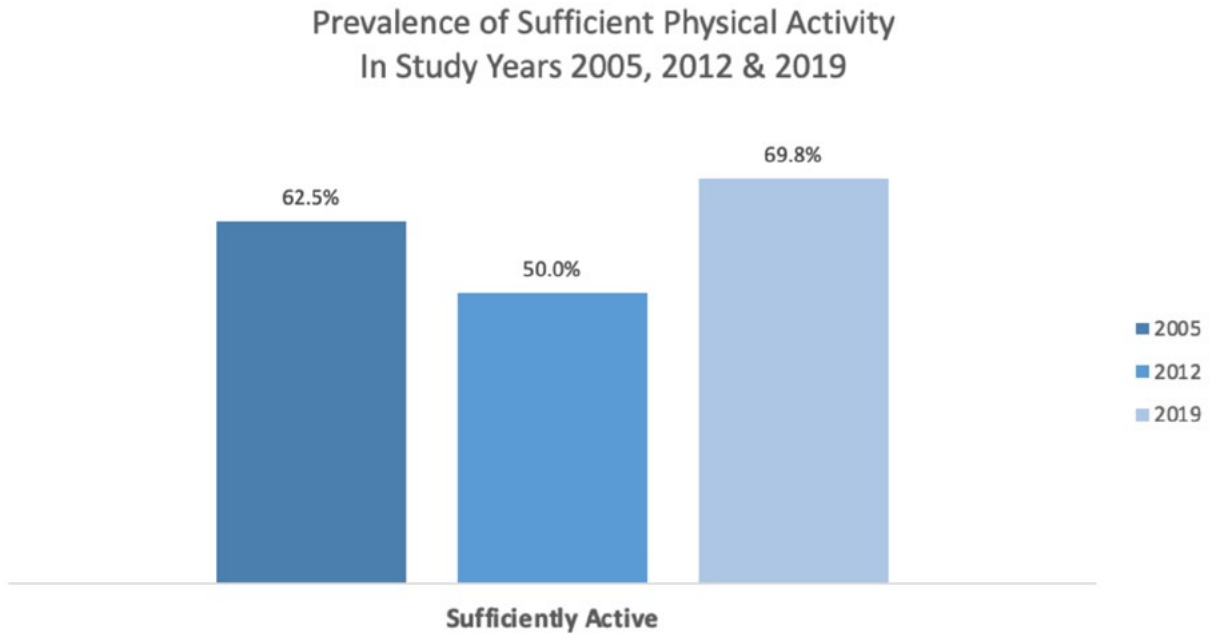

Graph 2: Graph Showing Hypertension Prevalence Obtained From Periodic National Studies

55

Diabetes-Related Prevalences
In Study Years 2005, 2012 & 2019

■ 2005 ■ 2012 ■ 2019

- Previous DM Diagnosis: 7.0%, 26.6%, 12.8%
- Pre-Diabetes: 6.7%, 6.5%, 6.8%
- Clinical Diabetes (Measured): 9.2%, 11.5%

Graph 3: Graph Showing Diabetes Prevalence Obtained From Periodic Studies

Smoking-Related Prevalences
In Study Years 2005, 2012 & 2019

■ 2005 ■ 2012 ■ 2019

- Current Smoker: 7.1%, 16.7%, 17.4%
- Current Daily Smoker: 10.6%, 7.7%
- Secondhand Smoke (Home): 7.7%, 12.1%
- Secondhand Smoke (Work): 11.3%, 17.4%

Graph 4: Graph Showing Smoking Prevalence From Periodic Study

Prevalence of Sufficient Physical Activity
In Study Years 2005, 2012 & 2019

62.5%

50.0%

69.8%

■ 2005
■ 2012
■ 2019

Sufficiently Active

Graph 5: Graph Showing Prevalence of Sufficient Physical Activity From Periodic Studies

Stroke and Heart Attack Prevalence
In Study Years 2005 & 2019

12.0%

10.0%

9.80%

8.0%

Prevalence (%)

6.0%

4.3%

4.0%

2.0%

0.0%

■ 2005
■ 2019

Stroke or Heart Attack
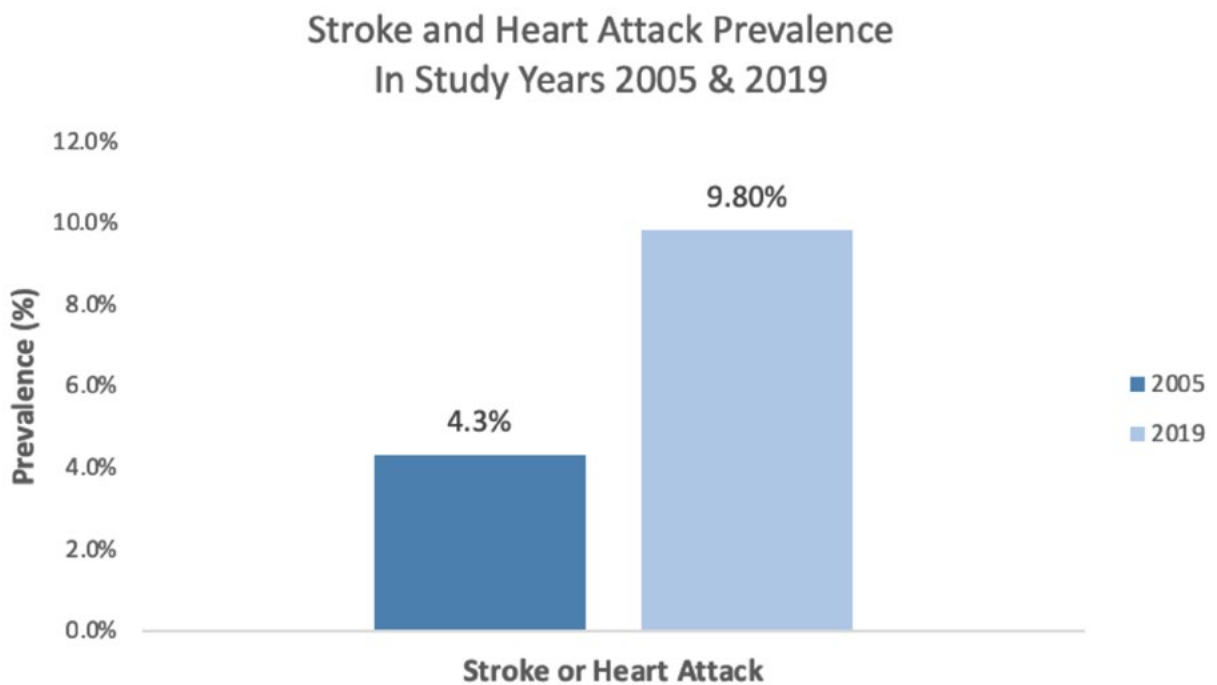
Graph 6: Changes in Stroke and Heart Attack Prevalence Between 2002 and 2019

AT-A-GLANCE: BAHAMAS STEPS 2019 FACTSHEET

The STEPS survey of noncommunicable disease (NCD) risk factors in The Bahamas was carried out from January 2019 to April 2019. The Bahamas carried out Step 1, Step 2 and Step 3. Socio demographic and behavioural information was collected in Step 1. Physical measurements such as height, weight and blood pressure were collected in Step 2. Biochemical measurements were collected to assess blood glucose, cholesterol and urinary salt levels in Step 3. The survey was a population-based survey of adults aged 18-69. A stratified multi-stage cluster sample design was used to produce representative data for that age range in The Bahamas. The total sample size was 3,840 adults. The overall response rate was 61.6%. The next iteration of STEPS is expected in 2024.

Results for adults aged 18-69 years (incl. 95% CI)	Both Sexes	Males	Females
Step 1 Tobacco Use			
Percentage who currently smoke tobacco	17.4% (13.8 – 21.1)	32.4% (26.7 – 38.1)	3.6% (0.7 – 6.5)
Percentage who currently smoke tobacco daily	7.7% (5.6-9.7)	14.7% (10.6-18.8)	1.2% (0.5-1.9)
Average age started smoking (years) among current smokers	19.0 (18.5-19.5)	18.8 (18.2-19.4)	21.2 (20.0-22.4)
Percentage of current smokers who smoke manufactured cigarettes	49.4% (37.4-61.4)	50.6% (36.3-64.9)	38.9% (21.2-56.7)
Step 1 Alcohol Consumption			
Percentage who are lifetime abstainers	29.3% (24.1-34.5)	21.6% (16.2-27.1)	36.4% (29.4-43.4)
Percentage who are past 12 month abstainers	9.5% (5.8-13.2)	9.9% (4.4-15.3)	9.2% (5.9-12.5)
Percentage who currently drink (drank alcohol in the past 30 days)	49.6% (45.3-53.7)	59.0% (51.7-66.4)	40.7% (35.4-46.0)
Percentage who engage in heavy episodic drinking (6 or more drinks on any occasion in the past 30 days)	17.6% (11.2-23.9)	23.1% (13.3-32.9)	12.5% (6.3-18.6)
Step 1 Diet			
Mean number of days fruit consumed in a typical week	3.6 (3.3-3.9)	3.3 (2.9-3.7)	3.8 (3.4-4.3)
Mean number of servings of fruit consumed on average per day	1.2 (1.0-1.3)	1.1 (0.8-1.3)	1.3 (1.0-1.5)
Mean number of days vegetables consumed in a typical week	4.3 (4.0-4.7)	4.4 (4.0-4-8)	4.3 (3.8-4.7)
Mean number of servings of vegetables consumed on average per day	1.5 (1.1-1.9)	1.5 (1.0-2.0)	1.5 (1.1-1.9)
Percentage who ate less than 5 servings of fruit and/or vegetables on average per day	85.3% (78.9-91.7)	85.3% (77.1-93.5)	85.4% (79.2-91.6)
Percentage who always or often add salt or salty sauce to their food before eating or as they are eating	16.4% 10.7-22.0	15.3% 8.0-22.6	17.4% 11.8-23.0
Percentage who always or often eat processed foods high in salt	25.7% (21.5-30.0)	25.0% (19.4-30.7)	26.4% (21.0-31.8)
Step 1 Physical Activity			
Percentage with insufficient physical activity (defined as < 150 minutes of moderate-intensity activity per week, or equivalent)*	30.2% (20.6-39.8)	20.0% (10.9-29.1)	39.5% (28.8-50.2)
Median time spent in physical activity on average per day (minutes) (presented with inter-quartile range)	77.1 (1.4-315.0)	180.0 (31.4-412.0)	40.0 (0.0-205.7)
Percentage not engaging in vigorous activity	57.9% (49.0-66.9)	40.4% (33.3-47.5)	73.9% (61.3-86.5)
Step 1 Cervical Cancer Screening			
Percentage of women aged 30-49 years who have ever had a screening test for cervical cancer			76.6% (69.9-83.3)

* For complete definitions of insufficient physical activity, refer to the GPAQ Analysis Guide (http://www.who.int/chp/steps/GPAQ/en/index.html) or to the WHO Global recommendations on physical activity for health (http://www.who.int/dietphysicalactivity/factsheet_recommendations/en/index.html)

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Results for adults aged 18-69 years (incl. 95% CI)	Both Sexes	Males	Females
Step 2 Physical Measurements			
Mean body mass index - BMI (kg/m^2)	**29.8** (29.1-30.5)	**27.6** (26.6-28.5)	**31.9** (30.7-33.0)
Percentage who are overweight (BMI ≥ 25 kg/m^2)	**71.6%** (66.8-76.4)	**62.0%** (53.4-70.7)	**80.6%** (74.6-86.6)
Percentage who are obese (BMI ≥ 30 kg/m^2)	**43.6%** (39.9-47.4)	**31.8%** (25.4-38.2)	**54.8%** (48.0-61.6)
Average waist circumference (cm)		**93.6** (91.1-96.1)	**95.4** (92.2-98.5)
Mean systolic blood pressure - SBP (mmHg), including those currently on medication for raised BP	**125.4** (123.1-127.7)	**128.8** (125.0-132.6)	**122.4** (120.7-124.0)
Mean diastolic blood pressure - DBP (mmHg), including those currently on medication for raised BP	**81.3** (79.4-83.1)	**81.6** (78.9-84.4)	**80.9** (79.3-82.5)
Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP)	**36.7%** (32.7-40.6)	**37.1%** (31.9-42.2)	**36.3%** (31.9-40.6)
For those with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP)			
Percentage with raised BP, not previously diagnosed	**38.0%** (29.8-46.3)	**41.7%** (30.5-52.9)	**34.6%** (23.6-45.6)
Percentage with raised BP, previously diagnosed, not currently on medication	**15.3%** (10.2-20.5)	**21.1%** (12.1-30.1)	**9.9%** (4.0-15.9)
Percentage with raised BP, previously diagnosed, currently on medication, not controlled	**26.9%** (23.6-30.1)	**26.6%** (17.9-35.3)	**27.1%** (21.6-32.7)
Percentage previously diagnosed, currently on medication, controlled (SBP < 140 and DBP < 90 mmHg)	**19.8%** (14.8-24.7)	**10.6%** (4.0-17.2)	**28.3%** (21.4-35.3)
Step 3 Biochemical Measurements (unweighted) **			
Mean fasting blood glucose, including those currently on medication for raised blood glucose (mg/dl)	**88.1**	**87.8**	**88.2**
Percentage with impaired fasting glycaemia (plasma venous value ≥110 mg/dl and <126 mg/dl)	**6.8%**	**5.4%**	**7.6%**
Percentage with raised fasting blood glucose or currently on medication for raised blood glucose (plasma venous value ≥ 126 mg/dl)	**11.5%**	**12.1%**	**11.2%**
Mean total blood cholesterol, including those currently on medication for raised cholesterol (mg/dl)	**153.1**	**151.9**	**153.7**
Percentage with raised total cholesterol (≥ 190 mg/dl or currently on medication for raised cholesterol)	**25.3%**	**28.5%**	**23.5%**
Mean intake of salt per day (in grams)	**10.5**	**12.7**	**9.2**
Cardiovascular disease (CVD) risk (unweighted)**			
Percentage aged 40-69 years with a 10-year CVD risk ≥30%, or with existing CVD***	**8.2%**	**10.4%**	**6.8%**
Summary of combined risk factors • current daily smokers • less than 5 servings of fruits or vegetables per day • insufficient physical activity	• overweight (BMI ≥ 25 kg/m^2) • raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP)		
Percentage with none of the above risk factors	**0.7%** (0.2-1.2)	**0.8%** (0.0-1.7)	**0.5%** (0.0-1.0)
Percentage with three or more of the above risk factors, aged 18 to 69 years	**38.8%** (31.2-46.3)	**32.8%** (26.9-38.6)	**44.3%** (34.2-54.5)

** Tables for biochemical measurements and CVD risk are presented unweighted, given that the response rate for Step 3 was lower than 60%

*** 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 126 mg/dl.

For additional information, please contact:
Dr. Cherita Moxey
cheritamoxey@bahamas.gov.bs

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