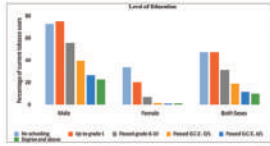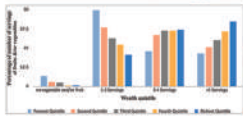# NON COMMUNICABLE DISEASES

Risk Factor Survey (STEPS)

Sri Lanka 2021

Ministry of Health

Non Communicable Deseases Unit
Ministry of Health

Department of Census &
Statistics

Non Communicable Diseases Risk Factor Survey

(STEPS Survey)

Sri Lanka 2021

Ministry of Health

in collaboration with

Department of Census and Statistics

Cover page designed by Anuththara Hapuarachchi, Creative Director, Elvero Creative

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Acronyms

BMI	Body Mass Index
BP	Blood Pressure
CI	Confidence Interval
COPD	Chronic Obstructive Pulmonary Disease
CRD	Chronic Respiratory Diseases
CVD	Cardiovascular Disease
DBP	Diastolic Blood Pressure
DHS	Demographic and Health Survey
GATS	Global Adult Tobacco Survey
GSHS	Global School Health Survey
Hg	Mercury
HLC	Healthy Lifestyle Centers
ICD	International Classification of Diseases
IHD	Ischemic Heart Disease
IMMR	Indoor Morbidity and Mortality Return
MET	Metabolic Equivalents of Task
mmol/l	Millimoles Per Litre
MSU	Medical Statistics Unit
NCD	Non-Communicable Disease
PDA	Personal Digital Assistant
PPS	Probability Proportionate to Size
PSU	Primary Sampling Unit
SARA	Service Availability and Readiness Assessment
SBP	Systolic Blood Pressure
SDG	Sustainable Development Goals
SEARO	South-East Asia Regional Office
SSU	Secondary Sampling Unit
WHO	World Health Organization

Message of Secretary, Ministry of Health

It is with great pleasure to send a short message on publication of the results of STEPS survey of Sri Lanka 2021 by the Ministry of Health. The survey was much awaited by national and international stakeholders. This report fills the data gap in reporting the progress of the non communicable diseases programme at the end of the first ever policy cycle of the non communicable diseases, 2010 - 2020. The results will also be the baseline for the next NCD policy cycle starting from 2021.

Over the years, the Government of Sri Lanka has invested immense amount of funds to prevention and control of non communicable diseases. This report shows us the areas where our investments have worked, where we have to invest more and what should be our new ventures to invest.

I take this as an opportunity to thank all the persons and agencies including the Department of Census and Statistics and World Health Organization who helped in making this survey a success. The commitment of the survey teams which comprised of officials from the Department of Census and Statistics and Ministry of Health, who visited individual households to collect data in the middle of the COVID-19 outbreak, was commendable.

I hope all the healthcare workers and agencies who work in prevention and control of non communicable diseases within and outside the Ministry of Health will consider the results and recommendations of this report seriously in planning and implementing their respective programmes and contribute to achieve the vision of the National Policy and Strategic Framework for Prevention and Control of Chronic Non-Communicable Diseases in Sri Lanka, which is "a country free of avoidable burden of Chronic Non Communicable Diseases".

S. Janaka Sri Chandraguptha

Secretary
Ministry of Health

Message of Director General of Health Services

I am indeed happy to write this message to the report of the STEPS survey of Sri Lanka 2021, which is a combined work of Ministry of Health, Department of Census and Statistics, World Health Organization and the Provincial Departments of Health. At the outset, I would like to congratulate all those who contributed to this survey despite various challenges which included the Easter Sunday attack, and lockdown of the country due to COVID-19 outbreak. As the survey was done during a period of difficulty the results may not be comparable with a normal situation.

The report shows that the behaviours of tobacco use, and alcohol intake have increased though not significantly. It is of concern that the use of dietary salt has increased to three fold of the recommended amount. One in three adults have high blood pressure while the blood sugar is high in more than one tenth of the adults.

Controlling Non Communicable Diseases is the business of every citizen. If everyone concentrates in improving his/ her diet, exercise and also undergo screening for NCDs I believe our efforts to mitigate the risk factors associated with NCDs will be successful. In Sri Lanka we have a Healthy Lifestyle Center in every primary care institution dedicated to screen those above 35 years for Non Communicable Diseases. Using this free service will make you aware of your cardiovascular risk and your other parameters like blood pressure, blood sugar, total cholesterol, BMI etc. If needed, people will be referred from Healthy Lifestyle Center for treatment and others will get an appointment for a repeat screening in 1-3 years based on their risk profile. I would urge all you use this service and prevent or identify early Non Communicable Diseases thus improving the quality of life.

Dr. Asela Gunawardena

Director General of Health Services
Ministry of Health

Message of the Director General, Department of Census and Statistics

The Ministry of Health, Nutrition, and Indigenous Medicine sought DCS assistance in completing the STEPS survey effectively in 2018. Despite its increasingly hectic schedules, DCS happily agreed to work with the Ministry of Health, Nutrition, and Indigenous Medicine on this vital survey for the county. The STEPS Survey provides vital information for developing prevention measures for non-communicable diseases, which account for the bulk of fatalities in the nation.

I'm glad the DCS and Ministry of Health were able to carry out the survey in spite of a number of challenges in the nation. Although the survey's fieldwork was intended to begin in 2019, it was delayed due to the Easter Attack. The survey was subsequently postponed again in 2020 due to the country's lockdown situation used to control spread of COVID. However, the survey field work was completed by the end of December 2021, thanks to the efforts of the DCS and Medical staff.

DCS took considerable care to maintain the survey's quality in spite of several challenging conditions. DCS was to choose a sample repeatedly while the survey was delayed in order to collect current data. Additionally, DCS paid close attention to maintaining a high response rate for the survey. I am therefore happy to learn that a response rate of more than 80% at STEP-1 was attainable, and that 90% of those who completed STEP-1 continued on to STEP-2 without dropping off. Furthermore, nearly 75% of STEP-2 participants progressed to STEP 3.

Achieving such a remarkable result would not have been possible without the efforts of all DCS staff members and Ministry of Health staff who participated in survey operations. The survey was developed and carried out by the officers of sample surveys division of the DCS in conjunction with the Ministry of Health under the guidance of Mrs. K.M.D.S.D. Karunarathna, Additional Director General (Statistics-II), and direction of Mrs. K.A.S. Kodikara, Director Sample Surveys Division. Mr. A.K.D.CN.S. Karunarathna, Statistician-Sample Surveys Division, was in charge of overseeing the survey's overall coordination. The ICT division, guided by Mr. P.M.R. Frenando, Additional Director General (ICT), also contributed significantly to the success of the survey. I'd like to take this opportunity to express my heartfelt gratitude to every survey participant, as DCS would not have had such a high response rate without your help.

Although the Ministry of Health of Sri Lanka has previously undertaken STEPS surveillance, this is the first time the survey has been conducted in collaboration with the DCS. I believe that both sides and the country have benefited from this. Experience sharing extended capabilities to officials in the DCS as well as the Ministry of Health, and it may use limited resources more efficiently.

The STEPS Survey-2021 primarily gathered data on "NCD risk factors in Sri Lanka," which provides crucial knowledge for addressing the health needs of the target population aged 18 to 69, and this report gives the survey results. May this information help policymakers create better strategies to reduce the prevalence of NCDs across the country!

P.M.P. Anura Kumara

Director General
Department of Census and Statistics

Message of Deputy Director General (Non Communicable Diseases)

STEPS survey provides information needed to compare the prevalence of high risk behaviours for non communicable diseases among countries and among the same populations at different times. This is the main surveillance activity in non communicable diseases.

The STEPS survey 2021/2022 was carried out among many challenges. The biggest challenge was posed by the Covid Epidemic which forced the survey to be delayed and then temporarily stopped three times. But due to the dedication and hard work of the staff of the Ministry of Health and Department of Census and statistics we managed to successfully complete the STEPS survey.

STEPS survey 2021/2022 was conducted by the Department of Census and Statistics with the support of the staff of the Ministry of Health in conducting anthropometric measurements, blood studies and laboratory investigations. The funding for the survey was provided by the Government of Sri Lanka.

The survey was conducted using CAPI technology and I am grateful to the World Health Organization for providing the necessary study instruments, investigation facilities and advise on data analysis. WHO was with us all the time and supported us all through the survey.

The officers from Directorate of Non-Communicable Diseases and other relevant stakeholders (WHO Country office for Sri Lanka, National Authority on Tobacco and Alcohol, Medical Research Institute, Nutrition coordination unit, Narahenpita, National Cancer Control Programme, Mental Health Unit) worked hard in adopting the questionnaires to Sri Lankan situation. Medical Research Institute has helped us in analyzing urinary sodium, potassium and creatinine. The Public Health Staff of selected MoH areas assisted us in taking anthropometric measurements, blood testing for total cholesterol and fasting blood sugar and measurement of urine Cotinine level using rapid urine cotinine test kits.

The staff of Department of Census and Statistics helped in calculating the sample size and in selecting the sample and worked hard in difficult times to complete the field survey. They also helped in cleaning and analyzing of data.

The staff of DDG/NCD office has coordinated the survey and completed the writing of the survey report with the assistance of the staff of the Directorate of NCD.

Finally, the STEPS report 2021 / 2022 was released with the support of many officers while facing many challenges. I hope this report will throw light on the current challenges faced by us so suitable strategies can be formulated.

Dr. S.C. Wickramasinghe
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E.M.K.G. Nissansala Dilrukshi Ekanayake, SKS, Medagama , Monaragala

E.M.K.G. Nissansala Dilrukshi Kumari, SKS, Medagama , Monaragala

E.M.M.Nayeem, SPHM, Muthur, Trincomalee

E.M.T.D.Ekanayake, PHNS, Chillow, Puthlam

E.R.H.Susantha, Tranee, Kekanadura, Mathara

EA Sujeewa Dilhanie, Public Health Nirsing Sister, Galle

EASM Jayathilaka, Public Health Midwife, Vavuniya

EG Lakshika Kumari, Public Health Midwife, Kandy

EG Sudharma Sandamala Piyasena, Health Care Assistant, Kandy

EG Sudharma Sandamala Piyasena, Health Care Assistant, Rathnapura

ELMC Podimenike, Public Health Nursing Sister, Kurunegala

EM Upula Kumari Ranasinha, Public Health Midwife, Rathnapura

EMM Dammika Kanthi Edirisinghe, Public Health Midwife, Kandy

EMRD Ekanayaka, Public Health Midwife, Kandy

EPC Madushani, Public Health Midwife, Rathnapura

ET Kumari, S. Public Health Midwife, Galle

F Rosalit Thamilini, Public Health Midwife, Kandy

Francis Pirema, Health Care Assistant, Mannar

G Pawan Chathuranga Gamlath, Health Care Assistant, Rathnapura

G Sharada Madushani, Health Care Assistant, Galle

GADS Karunarathne, Public Health Nursing Officer, Gampaha

GCP Kumara, Health Assistant, Galle

GD Samanmali, Health Care Assistant, Jaffna

GG Danushka Ranthima, Health Care Assistant, Polonnaruwa

GG Jayasekara Banda, Spray Machine Operator, Kandy

GG Thilak , Health Care Assistant , Nuwaraeliya

GGCJ Lakshmi Kumari, Health Care Assistant, Rathnapura

GGD Subashini, Public Health Midwife, Kurunegala

GKCK Dilshan, Health Care Assistant, Galle

GKG Rupa Ramya Kumari Sarathchandra, Public Health Nursing Sister, Kandy

GNN De Soysa, Public Health Nirsing Sister, Galle

GNN De Zoysa, Public Health Nirsing Sister, Galle

GW Navodya de Silva, Public Health Midwife, Galle

GWSB Rambukwella, Health Care Assistant, Kandy

H Sivatharsini, Public Health Midwife, Jaffna

H.A.Anoma padmaseeli, PHNS, Ukuwela, Mathale

H.B.Lalani Damayanthi, SKS, Hambanthota, Hambanthota

H.B.Lalani Damayanti, SKS, Hambanthota, Hambanthota

H.C.M.Perera, PHNS, Kalmunei South, Ampara

H.G.C,N.Wijerathna, Driver, Mathale, Mathale

H.G.D.D.Akila Santhusa Nandasena , SKS, Katuwana, Hambanthota

H.K.V.Roshan Sripal, Health Care Assistant , DGH Embilipitiya , Rathnapura

H.M.L.H.Kusum kumari, SKS, Uhana, Ampara

H.M.L.Kusum Kumari, SKS, Uhana, Ampara

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H.M.S.Wijayamala, PHNS, Buththala, Monaragala

H.R.D.Herath, KKS, RDHS Kurunagala, Kurunagala

H.S.Adikari, Nursing officer, RDHS -Kurunegala , Kurunegala

HA Dammika Alles, Field Assistant, Colombo

HA Shanika, Health Care Assistant, Colombo

HA Shiromi, Health Care Assistant, Galle

Harshani Maheshika Weerarathna, SKS, Hambanthota, Hambanthota

HG Pushpa Chandani, Public Health Midwife, Galle

HGCD Jothirathna, Public Health Midwife, Rathnapura

HGK Menike, Supervising Public Health Midwife, Rathnapura

HGN Chandima, Health Care Assistant, Anuradapura

HGN Sanjeewani, Public Health Nursing Sister, Kurunegala

HGS Nawarathne, Public Health Midwife, Kandy

HGTP Silva, Public Health Nursing Sister, Kurunegala

HHS Charles, Health Care Assistant, Galle

HK Priyangani Subashini, Health Care Assistant, Puttalam

HKNK Fernando, Health Care Assistant, Kaluthara

HKVR Sripal, Health Care Assistant, Rathnapura

HLU Erandanie, Public Health Midwife, Galle

HM Malkanthi Herath, Health Care Assistant, Puttalam

HM Pemalatha Herath, Supervising Public Health Midwife, Rathnapura

HM Pramalatha, Public Health Midwife, Anuradapura

HM Rajarathne, SMO, Puttalam

HM Wijesuriya, Public Health Nursing Officer, Badulla

HM Wijesuriya, Public Health Nursing Officer, Rathnapura

HMA Pubuduni Herath, Public Health Nursing Sister, Nuwaraeliya

HMD Priyangika, Public Health Nursing Sister, Kandy

HMDSK Wijerathne, Supervising Public Health Midwife, Polonnaruwa

HMKG Monika Ruwan Pathirana, Public Health Midwife, Kandy

HMM Herath, Health Care Assistant, Kurunegala

HMNIK Herath, Health Care Assistant, Kandy

HMNK Herath, Public Health Midwife, Anuradapura

HMS Herath, Health Care Assistant, Kurunegala

HMS Nadeeshani, Public Health Midwife, Kandy

HMTD Herath, Public Health Nursing Sister, Kandy

HMV Malkanthi, Health Care Assistant, Kaluthara

HMW Herathmenike, Public Health Midwife, Kurunegala

HNAW Mila Kumarihami, Health Care Assistant, Rathnapura

HP Rasika Malkanthi Wimalasena, Health Care Assistant, Puttalam

HPNM Pathirana, Public Health Midwife, Puttalam

HPP Dharshani, Public Health Nursing Officer, Galle

HR Chamila Kumari, Public Health Midwife, Rathnapura

HRD Herath (Team 12), Health Care Assistant, Kurunegala

HRKS Lalani Dharmasena, Nursing Officer - Grade I, Gampaha

HS Adikari, Public Health Nursing Officer, Kurunegala

HTC Sandeepa Wickramasingha, Health Care Assistant, Nuwaraeliya

I Umesha kaushalya, Public Health Midwife, Puttalam

I.M.M.Nayeem, O/L, Muthur, Trincomalee

IGS Aberathna, Health Care Assistant, Nuwaraeliya

ILSD Bambarabotuwa, Health Care Assistant, Kurunegala

IMM Fairoos, Health Care Assistant, Puttalam

IMM Kanthilatha, Public Health Midwife, Rathnapura

J Christabel Thuram, Public Health Midwife, Mannar

J Mathura, Public Health Midwife, Jaffna

J Sasikala, Public Health Midwife, Jaffna

J Vasanthamathy, Public Health Midwife, Jaffna

J.A.S.Jayasinghe, SKS, Bibile, Monaragala

J.A.W.Sandeepani Samarajeewa, PHNS, Rideemaliyadda, Badulla

JA Jeen Jaxcy Fernando, Public Health Midwife, Jaffna

JADL Sumanadasa, Public Health Midwife, Puttalam

JASM Jayakody, Health Care Assistant, Puttalam

JAWS Samarajeewa, Public Health Nursing Sister, Badulla

Jeyanthy Nakulan, Health Care Assistant, Jaffna

Jeyanthy Nakulan, Health Care Assistant, Mullative

JH Anusha Kumari, Public Health Nursing Sister, Nuwaraeliya

JJSP Jayawardhane, Public Health Nursing Officer, Anuradapura

JLWS Menike, Public Health Nursing Sister, Kandy

JMAI Jayasundara, Health Care Assistant, Puttalam

JMBD Jayasinghe, Public Health Midwife, Puttalam

JMK Udeshika Kumari, Public Health Midwife, Kandy

JN Ekanayaka, Public Health Midwife, Galle

JVM Damayanthi, Public Health Midwife, Anuradapura

JW Justin Logu, Public Health Midwife, Mannar

K Hansaka Tharindu, Health Care Assistant, Colombo

K Kanchana, Driver, Rathnapura

K Loshana, Public Health Midwife, Jaffna

K Nishanthi, Health Care Assistant, Galle

K Pushparajah, Public Health Midwife, Jaffna

K Sarmini, Public Health Midwife, Jaffna

K Sasitha, Public Health Midwife, Jaffna

K Sathiyaruby, Health Care Assistant, Jaffna

K Sivananthiny, Public Health Midwife, Jaffna

K Upul Premathilaka, Health Care Assistant, Rathnapura

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K.A.N.D.Manoji, PHNO, PMCU Pannipitiya, Colombo

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K.A.Wijedeera, SKS, MOH Pasgoda , Mathara

K.Aloka Sanjaya Silva, Care Giver (Tranee), D.H.Moratuwa

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K.G.R. Thushari, PHNS, Padukka, Colombo

K.G.R.Thushari, PHNS, Padukka, Colombo

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K.M.Chandralatha, SKS, Ampara

K.M.S.M.Sirisoma , Health Care Assistant , MOH Ayagama , Rathnapura

K.M.Sumanawathie, SKS, Buttala, Monaragala

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K.P.Anuja Dinoshika , SKS, STD Unit-Hakota , Hambanthota

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K.R.S.Jayarathna, SKS , RDHS Gampaha , Gampaha

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K.Sarojadevi, SPHM, Thampalakamam, Trincomalee

K.Sivamalar, PHNS, Akkaraipattu, Ampara/Kalmunai

KA Ashya Manori Abhayadasa, Public Health Nursing Officer, Badulla

KAAN Abeyratne, Health Care Assistant, Rathnapura

KAND Manoji, Public Health Nursing Officer, Colombo

KCC Ananda, Health Care Assistant, Kaluthara

KDM Kumudini, Public Health Nursing Sister, Gampaha

KG Sudarshika, Health Care Assistant, Galle

KGD kariyawasam, Health Care Assistant, Gampaha

KGDKJ Jayasingha, Public Health Nursing Sister, Polonnaruwa

KGN Rathnasiri, Health Care Assistant, Gampaha

KHM Podimenike, Health Care Assistant, Kurunegala

KJ Vinothan Coonghe, Supervising Public Health Midwife, Mannar

KJCD Kumari, Health Care Assistant, Kaluthara

KKR Udayanga, Field Assistant, Galle

KKRN Madhushani, Public Health Midwife, Kandy

KM Nilusha Kasthuri, Public Health Nursing Sister, Kurunegala

KM Susantha Senaka, Health Care Assistant, Kurunegala

KMAS Ariyarathna, Health Care Assistant, Anuradapura

KMCS Kasthuri, Health Care Assistant, Kurunegala

KMSM Sirisoma, Health Care Assistant, Rathnapura

KRS Jayarathne, Health Care Assistant, Gampaha

KVB Samanmali, Health Care Assistant, Polonnaruwa

KVD Karunathilake, Public Health Midwife, Puttalam

KW Champika Nayana Kanthi, Health Care Assistant, Colombo

KWV Kalpage, Dengue Control Assistant, Kandy

KYRY Perera, Health Care Assistant, Colombo

L Nirmala Sandamali Herath, Public Health Midwife, Kurunegala

L Pushparani, Health Care Assistant, Jaffna

L Pushparani, Health Care Assistant, Mullative

L.A.Nishantha Liyanarachchi, KKS, Dambulla, Mathale

L.Pemalatha, PHNS, Weeraketiya, Hambanthota

LAA Liyanaarachchi, Public Health Midwife, Kandy

LND Udagama, Health Care Assistant, Rathnapura

LP Udara Madushanka, Health Care Assistant, Colombo

LRW Sriya Kumari, Public Health Midwife, Rathnapura

LURS Dayananda, Public Health Nursing Sister, Rathnapura

M Arulmany, Public Health Midwife, Mullative

M Jasotha, Public Health Midwife, Jaffna

M Manokaran, Health Care Assistant, Jaffna

M Sandya Ramani, Public Health Midwife, Rathnapura

M Ushanathini, Public Health Midwife, Mullative

M Vijayasorupan, Health Care Assistant, Jaffna

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M.M.U.Shareena, PHNS, Pottuwil, Ampara

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M.Ramanathan, H/A, Trincomalee, Trincomalee

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M.W.Manori Wathsala, SKS, Chillow, Puthlam

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MAC Navajerogini, Family Health Officer, Anuradapura

Mahismathy Sritharatheesan, PHNS, Valachchenai, Batticaloa

Mahismathy Sritharatheesan, PHNS, Valachchene, Bstticalo

MALV Karunarathne, Public Health Midwife, Rathnapura

MAN Lakshmi, Public Health Nursing Officer, Gampaha

MANC Kumari, Public Health Midwife, Rathnapura

MAPS Makawita, Public Health Nursing Sister, Rathnapura

MAR Madushan, Health Care Assistant, Kaluthara

MAR Sandaruwan, Health Care Assistant, Kaluthara

MBAM Marasinghe, Public Health Nursing Officer, Gampaha

MDIS Nissanka, Public Health Nursing Sister, Kurunegala

MDLI Kularathne, Public Health Nursing Sister, Kandy

MDM Nishshanka, Public Health Nursing Officer, Kaluthara

MDN Lakmali, Public Health Midwife, Puttalam

Meenadchi Ratheeskumar, SKS, Valachchenai, Batticaloa

Meenadchi Ratheskumar, SKS, Valachchenai, Batticaloa

MG Iruthayanathan Lambert, Public Health Midwife, Mannar

MG Rathnamali, S. Public Health Midwife, Galle

MGMC Kumari, Public Health Midwife, Anuradapura

MGN Kumara, Health Care Assistant, Galle

MGP Maheshwari Gunarathn, Public Health Nursing Sister, Mannar

MGWK Pinto, Supervising Public Health Midwife, Anuradapura

MHJ Gunaseeli, Public Health Midwife, Galle

MHL Sagarika Maddehetti, Health Care Assistant, Kaluthara

MHM Asmi, Health Care Assistant, Nuwaraeliya

MLDSP Gunathilaka, Public Health Nursing Officer, Kaluthara

MLK Anoja Dananjani, Public Health Midwife, Colombo

MLM Priyangani, Health Care Assistant, Kaluthara

MM Gunaratne Menike, Health Care Assistant, Rathnapura

MM Indrani, Supervising Public Health Midwife, Rathnapura

MMD Menike, Health Care Assistant, Anuradapura

MMIK Bandara, Public Health Nursing Sister, Nuwaraeliya

MR Chandra Kumari, Health Care Assistant, Galle

MR Chandrani, Public Health Nursing Officer, Galle

MRG Menike, Public Health Midwife, Kurunegala

MRN Nisanthi, Public Health Midwife, Anuradapura

Mrs. G.G.Kanchana Priyadharshani, PHNS, Damana, Ampara

MRV Podimanike, Public Health Midwife, Rathnapura

N Champika Nawarathna, Public Health Midwife, Rathnapura

N Karunanayake, Public Health Nirsing Sister, Gampaha

N Karunanayake, Public Health Nursing Sister, Gampaha

N Manjula, Public Health Nursing Sister, Mullative

N Niroshan, Health Care Assistant, Jaffna

N. Niranjana, Public Health Midwife, Mullative

N.D.Mallikarachchi, Watcher, MOH, Mathalee

N.K.Indrani, PHNS, Hakmana , Mathara

N.Sepalika , SKS, Walasmulla , Hambanthota

ND Hewanayake, Public Health Midwife, Kandy

NE Manodara, Nursing Officer, Rathnapura

NE Manodara, Public Health Nursing Officer, Anuradapura

NGIS Nuwarapaksha, Health Care Assistant, Kandy

NGIT Wijesuriya, Health Care Assistant, Kandy

NMIPK Nawarathna, Health Care Assistant, Rathnapura

NN Danwatta, Public Health Midwife, Kandy

NNM Nadeesha Kumari Nawarathna, Health Care Assistant, Galle

NPNJ Nuwarapaksha, Health Care Assistant, Kegalle

NT Jayasundara, Public Health Nursing Officer, Kandy

NT Jayasundara, Public Health Nursing Officer, Rathnapura

NVDM Somarathna, Health Care Assistant, Rathnapura

O.M.Weerasingha, S.K.S, M.O.H.Weeraketiya, Rathnapura

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P Chamila Udayanganee, Health Care Assistant, Anuradapura

P Siyamaladevi, Health Care Assistant, Mannar

P Sujeepa, Public Health Midwife, Jaffna

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P.Rahunathan, AMC O/L, Akkaraipattu, Ampara/ Kalmunai

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P.Shamila Fernando, PHNO, PMCU Korawella, Colombo

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Paramanathan Anetta, Supervising Public Health Midwife, Jaffna

Paramanathan Anetta, Supervising Public Health Midwife, Mullative

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PD Kumudu Udani Pathirage, Health Care Assistant, Galle

PG Priyanthie, Public Health Midwife, Anuradapura

PG Sisilawathie, Supervising Public Health Midwife, Puttalam

PGAR Hemamali, Public Health Midwife, Galle

PGKG Wijerathne, Public Health Nursing Officer, Galle

PGKG Wijerathne, Public Health Nursing Officer, Kaluthara

PGKM Pushpa Ranjani, Health Care Assistant, Polonnaruwa

PGN Hemalatha, Health Care Assistant, Kandy

PGN Hemalatha, Health Care Assistant, Rathnapura

PGRM Podimenike, Public Health Midwife, Kandy
PGRPP Bandara, Health Care Assistant, Colombo
PH Ranaweera, Public Health Midwife, Galle
PH Udayangani Wijerathna, Health Care Assistant, Polonnaruwa
PHAK Hemachandra, Public Health Nirsing Sister, Galle
PHMGAS Herath, Public Health Midwife, Kandy
Pirakasi Antony Figurado, Public Health Midwife, Mannar
Piriyani Sarmilan, Public Health Midwife, Mullative
PKGM Samuddika, Public Health Nursing Sister, Rathnapura
PKS Nawarathna, Public Health Nursing Sister, Badulla
PKS Nawarathna, Public Health Nursing Sister, Rathnapura
PM Payagalage, Public Health Midwife, Galle
PPGIP Sirisena, Health Care Assistant, Kandy
PS Shanthakumari, Public Health Nursing Sister, Nuwaraeliya
PSP Fernando, Public Health Nursing Officer, Kaluthara
Pushpa kugasothy, PHNS, Kalawanchikudy, Batticaloa
R Mariya Rani, Health Care Assistant, Mannar
R Marydelsika, Public Health Midwife, Mannar
R Nithiya, Health Care Assistant, Vavuniya
R Sinthuja, Health Care Assistant, Jaffna
R Yogaveny, Public Health Nursing Sister, Jaffna
R. Pakinthan, Health Care Assistant, Mullative
R.A.Sarath premachandra, Isim yanthra kriyakaru, Wilgamuwa, Mathale
R.Chanthirrakumar, PHNS, Alayativembu, Kalmunai
R.Chanthirrakumara, PHNS, Alayativembu, Kalmunai
R.K.G.Sarath bandara , SKS, Wilgamuwa, Mathale
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R.N.Muthubanda, Isina yanthra kriyakaru, Giradurukotte , Badulla
R.P.C.Ranaweera, PHNS, DH. Pelmadulla, Rathnapura
R.Vanaja, PHNS, Addalachchenai, Ampara
RA Dayawathie, Public Health Midwife, Galle
RA Frerick, Public Health Midwife, Vavuniya
RA Jayanthi, Supervising Public Health Midwife, Polonnaruwa
RAA Karunarathne, Health Care Assistant, Rathnapura
RAA Niroshani, Health Care Assistant, Rathnapura

RAGDK Ranaweera, Nursing Officer, Rathnapura
RAPK Hasintha, Nursing Officer (PH), Colombo
RAPK Hasintha, Public Health Nursing Officer, Colombo
RARR Perera, Health Care Assistant, Kandy
RASC Ranasinghe, Public Health Midwife, Rathnapura
RC Rupassara, Public Health Midwife, Kandy
RGNS Subadasa, Public Health Nursing Sister, Kandy
RKPK Randeni, Public Health Midwife, Kurunegala
RM Abemenike, Health Care Assistant, Kandy
RM Chalitha Dewantha Rathnayaka, Health Care Assistant, Colombo
RMCDPK Rathnayake, Health Care Assistant, Nuwaraeliya
RMHH Ranathunga, Public Health Midwife, Kandy
RMNP Rajanayake, Health Care Assistant, Polonnaruwa
RMRU Rajakaruna, Public Health Midwife, Rathnapura
RMS Rathnayaka, Supervising Public Health Midwife, Anuradapura
RMT Chathurangani Menike, Public Health Midwife, Kandy
RND Wijayanthi, Public Health Nursing Officer, Rathnapura
RPC Ranaweera, Public Health Nursing Officer, Rathnapura
RPM Iroshi Rajapaksha, Public Health Nursing Sister, Mannar
RPS Rasika, Public Health Nursing Sister, Nuwaraeliya
RPSK Rupasinghe, Public Health Nursing Sister, Kurunegala
RPVT Rajapaksha, Public Health Nursing Sister, Vavuniya
RRI Darshani Rasnaka, Public Health Nursing Sister, Kandy
RRPWSU Palihawadana, Public Health Midwife, Anuradapura
RS Priyadharshani, Health Care Assistant, Badulla
RS Priyadharshani, Health Care Assistant, Rathnapura
RVC Renuka Kumari, Health Care Assistant, Colombo
RW Ranasinghe, Public Health Nursing Sister, Kandy
RW Wijerathna Banda, Health Care Assistant, Anuradapura
S Glod Camy Sosai, Public Health Midwife, Mannar
S Jancy, Health Care Assistant, Vavuniya
S Jansi, Health Care Assistant, Jaffna
S Kajenthini, Public Health Midwife, Jaffna
S Kirubakaran, Health Care Assistant, Vavuniya
S Nagalatchumy, Family Health Officer, Vavuniya

S Nathiya, Health Care Assistant, Vavuniya

S Pathmasri, Health Care Assistant, Jaffna

S Priyanthy, Public Health Midwife, Jaffna

S Rubiga, Public Health Midwife, Mullative

S Santhiya, Public Health Midwife, Vavuniya

S Selvarani, Public Health Midwife, Mannar

S Shiran, Health Care Assistant, Kaluthara

S Sivarasan, Public Health Midwife, Mannar

S Sumana, Health Care Assistant, Jaffna

S Vimalananthi, Health Care Assistant, Jaffna

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S. Steffygraf, Public Health Midwife, Mullative

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S.Sivakumary, SKS, BH Kalawanchikudy, Batticaloa

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Sasitha Velauthapillai, Health Care Assistant, Jaffna

SD Madakumbura, Health Care Assistant, Kurunegala

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Shironmane Thiruchelvam, PHNS, Batticaloa, Batticaloa

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SL Ranasinghe, Public Health Midwife, Jaffna

SLM Sathar, SKS, Ariyampathi, Batticaloa

SM Indrani Amarasinghe, Health Care Assistant, Kurunegala

SM Nimali Erandika, Public Health Midwife, Rathnapura

SMD Samarathunga, Public Health Midwife, Anuradapura

SMMK Sakalasooriya, Public Health Nursing Sister, Kandy

SNDK Perera, Health Care Assistant, Galle

SP Colambage, Public Health Nursing Officer, Colombo

SP Priyanthi, Health Care Assistant, Vavuniya

SPDNP Abeyrathna , Public Health Midwife, Puttalam

SPND Preethilal, Health Care Assistant, Rathnapura

SPNS Pahalawatte, Public Health Midwife, Colombo

ST Mariyajoy Thatcroos, Health Care Assistant, Mannar

SU Deniyage, Public Health Nursing Sister, Nuwaraeliya

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T Ketharagowry , Public Health Midwife, Jaffna

T L Abeyratna, Health Care Assistant, Rathnapura

T Lalith Priyantha, Health Care Assistant, Galle

T Sugirthagunanayaki, Public Health Midwife, Jaffna

T Vijayabarathy, Public Health Midwife, Jaffna

T. Luxsana, Public Health Midwife, Mullative

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TANP Wasala, Public Health Midwife, Rathnapura

TAPM Thambugala, Public Health Midwife, Rathnapura

TDSE Somarathne, Health Care Assistant, Kegalle

TGSCK Weerasooriya, Public Health Nursing Sister, Rathnapura

THL Padmasiri Gunawardhana, Development Officer, Galle

TM Anoma Kumari Thennakoon, Public Health Midwife, Kandy

TM Priyadarshani, Public Health Midwife, Kandy

TMA Erandathi Bandara, Public Health Midwife, Kandy

TMAS Thilakarathe, Public Health Nursing Sister, Kurunegala

TMCS Thennakoon, Public Health Midwife, Kandy

TMED Senarathne, Public Health Nursing Officer, Kurunegala

TMSSK Ilangarathna, Public Health Midwife, Kandy

TPW Abeysuriya, Public Health Midwife, Galle

TWD Kanthi, Health Care Assistant, Kaluthara

U Manorathani, Health Care Assistant, Jaffna

U Ranjinidevi, Health Care Assistant, Jaffna

U Sagurathy, Public Health Midwife, Jaffna

U. Shanthaloginy, Public Health Nursing Sister, Mullative

U. Yalini, Public Health Midwife, Mullative

UC Sanath kumara, Health Care Assistant, Rathnapura

UDW Wickramarathne, Health Care Assistant, Badulla

UGRN Priyadarshani, Public Health Midwife, Kandy

UHSP Samaradasa, Public Health Midwife, Galle

UJC Sampath, Health Care Assistant, Rathnapura

UK Shyama Pradeepika Kumari Uduwella, Public Health Nursing Sister, Nuwaraeliya

UNS Somarathna, Public Health Nursing Sister, Nuwaraeliya

UR Priyanganie, Public Health Midwife, Kurunegala

Uthayarany Nishanthakumar, Health Care Assistant, Jaffna

UTK Karunarathna, Public Health Nursing Sister, Kandy

UV Ranjanie, S. Public Health Midwife, Kegalle

UVN Chathurika, Public Health Midwife, Galle

UWTS Wimalasena, Health Care Assistant, Rathnapura

V Premalatha, Public Health Midwife, Kegalle

V. Jenila, Public Health Midwife, Mullative

V.Thulasirajan, Health Assistant, Kattankudy, Batticaloa

VMD Damayanthi, Public Health Midwife, Kurunegala

VS Padmini, Public Health Nursing Sister, Kandy

W.A.N Buddika, PHNS, Udawalawa, Rathnapura

W.G.Kusuma , PHNS, MOH Mulathiyana , Mathara

W.G.Kusuma , PHNS, MOH Pasgoda , Mathara

W.G.S.A.Priadarshanai, SKS, Monaragala , Monaragala

W.H.Wimalasooriya, PHNS, Dambulla, Mathale

W.M.A.K.Karunarathna, PHNS, Dehiattakandiya, Ampara

W.M.I.U.Karunarathna , PHNS, Pallepola , Mathale

W.M.N.N.Weerasingha, Health Asistant, Dehiattakandiya, Ampara

W.M.P.D.Wanasinghe, SKS, RDHS -Kurunegala , Kurunegala

W.P.Anoja, SKS, MOH Morawaka, Mathara

W.Roshni malkanthi, PHNS, MOH Morawaka, Mathara

W.S.Lakmali, Upasthayaka, Lahugala, Ampara

W.T.M. Fernando, SKS, CD Kochchikade, Gampaha

W.W.E.M.B.K.Ekanayake, PHNS, Mathale, Mathale

W.W.Priadarshanai, PHNS, Kekanadura, Mathara

WA Jayanthi Peris, Public Health Nursing Sister, Rathnapura

WACN Weragoda, Public Health Nursing Sister, Kegalle

WAIP Wanasingha, Health Care Assistant, Rathnapura

WAKJJ Darmasena, Public Health Nursing Officer, Rathnapura

WALMK Somasingha, Public Health Nursing Sister, Rathnapura

WANDD Kumari, Public Health Nursing Sister, Colombo

WANP Weerakkody, Health Care Assistant, Badulla

WAV Saman Prasanna Kumara, Health Care Assistant, Galle

WAW Priyadharshani, Public Health Midwife, Rathnapura

WD Deepika Warnakulasinghe, Public Health Midwife, Anuradapura

WD Dilrukshi, Public Health Nursing Officer, Colombo

WDCH Thilakarathna, Health Care Assistant, Polonnaruwa

WDLND Kumarasinhge, Public Health Midwife, Rathnapura

WG Inoka Sandamali, Health Care Assistant, Galle

WGNS Kumari, Multi-Purpose Development Task Force - Trainee, Rathnapura

WGPS De Silva, Public Health Nursing Sister, Anuradapura

WGWS Wattegama, Public Health Midwife, Kandy

WKBSI Fernando, Health Care Assistant, Galle

WKBSI Fernando, Health Care Assistant, Kaluthara

WKS Waduwatta, Public Health Nursing Sister, Mannar

WL Nilani Wathsala Perera, Public Health Nursing Sister, Kurunegala

WM Rayeesa, Public Health Midwife, Mannar

WM Shanthi Kumari, Health Care Assistant, Kurunegala

WMAK Wijebahu, Health Care Assistant, Nuwaraeliya

WMAN Wijerathna, Public Health Nursing Sister, Badulla

WMCE Wanninayaka, Public Health Midwife, Puttalam

WMGNK Wanninayake, Public Health Nursing Officer, Anuradapura

WMJJ Herath, Public Health Midwife, Anuradapura

WMKD Weerasekara, Health Care Assistant, Kurunegala

WML Anoma Wijekoon, Public Health Nursing Sister, Kurunegala

WMP Damayanthi Wanasingha, Health Care Assistant, Kurunegala

WMR Sanjeewani, Public Health Midwife, Galle

WMUD Wimalasena, Health Care Assistant, Anuradapura

WMVK Nawarathne, Public Health Nursing Officer, Gampaha

WMWP Karunarathne, Public Health Midwife, Anuradapura

WN Sandamali Fernando, Public Health Midwife, Puttalam

WND Warnakulasuriya, Public Health Midwife, Puttalam

WO Malani, Public Health Midwife, Galle
WPDM Perera, Dengue Field Assistant, Colombo
WR Atthanayaka, Public Health Midwife, Galle
WUM Priyangika Kumari, Health Care Assistant, Kegalle
WWAP Dimuthu Niranjala, Public Health Nursing Sister, Jaffna
Y Pathma, Health Care Assistant, Vavuniya
Y Rajiny, Health Care Assistant, Mullative
Y S Priyanka, Public Health Nursing Sister, Galle
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YG Shymali Wickramasinghe, Public Health Midwife, Kandy
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All the respondents who voluntarily gave their time and information

Sri Lanka STEPS Survey 2021
Fact Sheet

Executive Summary

The STEPS survey of noncommunicable disease (NCD) risk factors was carried out in April, November, and December 2021 in Sri Lanka. NCD Bureau, Ministry of Health and Department of Census and Statistics (DCS) has conducted the survey with the participation of staff of the provincial public health, Medical Research Institute and Department of Census and Statistics. This was a population-based survey of adults aged 18-69 and the survey was carried out in three steps. Sociodemographic and behavioural data were 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 and cholesterol levels in Step 3. A multi-stage stratified cluster sample design was used to select the sample for that age range. A total of 6267 adults participated in the survey. The overall response (step 1) rate was 81%, step 2 response rate was 73% and step 3 response rate was 61%. This survey is usually carried out every five years and the repeat survey will be planned in 2026.

Results for adults aged 18-69 years (incl. 95% CI)	Both Sexes	Males	Females
Step 1 Tobacco Use			
Percentage who currently smoke tobacco	**14.1%** (13.0– 15.3)	**30.2%** (27.9– 32.4)	**0.2%** (0.0– 0.4)
Percentage who currently smoke tobacco daily	**10.0%** (9.0-11.0)	**21.3%** (19.3-23.4)	**0.1%** (0.0-0.2)
Percentage who currently use smokeless tobacco	**17.5%** (16.2-18.8)	**30.3%** (28.0-32.6)	**6.4%** (5.4-7.3)
Percentage who currently use smokeless tobacco daily	**10.9%** (9.9-11.9)	**19.7%** (17.7-21.6)	**3.2%** (2.5-3.9)
Percentage who currently use tobacco (smoked/smokeless)	**26.2%** (24.7-27.7)	**48.9%** (46.4-51.5)	**6.5%** (5.5-7.4)
Percentage who currently use tobacco daily (smoked/smokeless)	**18.5%** (17.3-19.8)	**36.0%** (33.6-38.4)	**3.4%** (2.6-4.1)
Percentage of Cotinine 200 test positive (urine nicotine)	**27.3%** (25.6-28.9)	**47.6%** (44.9-50.3)	**9.9%** (8.5-11.4)
For those who smoke tobacco daily			
Average age started smoking (years)	**20.6** (20.0-21.1)	**20.5** (19.9-21.0)	--
Percentage of daily smokers smoking manufactured cigarettes	**70.5%** (65.7-75.3)	**70.9%** (66.1-75.7)	--
Mean number of manufactured cigarettes smoked per day (by smokers of manufactured cigarettes)	**3.7** (3.4-4.1)	**3.7** (3.4-4.1)	--
Step 1 Alcohol Consumption			
Percentage who are lifetime abstainers	**65.1%** (63.4-66.7)	**34.2%** (31.7-36.6)	**91.9%** (90.7-93.1)
Percentage who are past 12-month abstainers	**8.2%** (7.4-9.1)	**11.5%** (10.1-12.9)	**5.4%** (4.4-6.3)

Results for adults aged 18-69 years (incl. 95% CI)	Both Sexes	Males	Females
Percentage who currently drink alcohol (drank alcohol in the past 30 days)	20.7% (19.5-22.0)	43.3% (40.9-45.6)	1.2% (0.7-1.6)
Percentage who engage in heavy episodic drinking (6 or more drinks on any occasion in the past 30 days)	7.1% (6.2-7.9)	15.1% (13.3-16.8)	0.3% (0.1-0.5)
Step 1 Diet			
Mean number of days fruit consumed in a typical week	3.4 (3.4-3.5)	3.4 (3.3-3.5)	3.5 (3.4-3.6)
Mean number of servings of fruit consumed on average per day	1.2 (1.2-1.3)	1.2 (1.2-1.3)	1.3 (1.2-1.3)
Mean number of days vegetables consumed in a typical week	6.5 (6.5-6.6)	6.5 (6.4-6.5)	6.6 (6.5-6.6)
Mean number of servings of vegetables consumed on average per day	3.3 (3.2-3.5)	3.3 (3.2-3.4)	3.4 (3.2-3.5)
Percentage who ate less than 5 servings of fruit and/or vegetables on average per day	67.8% (66.1-69.6)	68.1% (65.7-70.5)	67.6% (65.5-69.7)
Percentage who always or often add salt or salty sauce to their food before eating or as they are eating	3.5% (2.8-4.2)	3.4% (2.6-4.3)	3.6% (2.8-4.4)
Percentage who always or often eat processed foods high in salt	8.2% (7.2-9.2)	8.1% (6.7-9.4)	8.3% (7.2-9.5)
Percentage who put salt into rice during cooking	55.3% (53.7-56.9)	57.8% (55.6-60.1)	53.1% (51.1-55.1)
Mean intake of salt per day (in grams) (Levels of sodium and creatinine in spot urine samples are used in STEPS to estimate population 24 hour salt intake, using the **Kawasaki equation**)	14.2 (14.0-14.4)	15.1 (14.8-15.4)	13.5 (13.3-13.7)
Mean intake of salt per day (in grams) (Levels of sodium and creatinine in spot urine samples are used in STEPS to estimate population 24 hour salt intake, using the **INTERSALT equation**)	8.5 (8.5- 8.6)	9.7 (9.5- 9.8)	7.6 (7.5- 7.7)
Step 1 Physical Activity			
Percentage with insufficient physical activity (defined as < 150 minutes of moderate-intensity activity per week, or equivalent) *	34.8% (33.1-36.4)	24.2% (22.1-26.3)	43.9% (41.8-46.0)
Median time spent in physical activity on average per day (minutes) (presented with inter-quartile range)	64.3 (2.9-257.1)	154.3 (21.4-385.7)	30.0 (0.0-130.0)
Percentage not engaging in vigorous activity	73.4% (71.8-74.9)	55.4% (53.0-57.9)	88.9% (87.6-90.2)
Percentage with no recreational physical activities	87.2% (86.1-88.4)	82.2% (80.2-84.2)	91.6% (90.5-92.7)

* For complete definitions of insufficient physical activity, refer to the GPAQ Analysis Guide (https://www.who.int/teams/noncommunicable-diseases/surveillance/systems-tools/physical-activity-surveillance) or to the WHO Global recommendations on physical activity for health (https://www.who.int/news-room/fact-sheets/detail/physical-activity).

-- : Numbers insufficient to make a meaningful presentation

Results for adults aged 18-69 years (incl. 95% CI)	Both Sexes	Males	Females
Step 1 Cervical and Breast Cancer Screening			
Percentage of women aged 30-49 years who have ever had a screening test for cervical cancer			**40.2%** **(37.3-43.1)**
Percentage of women aged 35-45 years who have ever had a screening test for cervical cancer			**51.7%** **(48.0-55.4)**
Percentage of women aged 30-49 years who have ever done a breast self-examination to detect any lumps in the breast			**36.6%** **(33.9-39.2)**
Step 2 Physical Measurements			
Mean body mass index - BMI (kg/m^2)	**24.2** **(24.0-24.3)**	**23.1** **(22.9-23.3)**	**25.1** **(24.8-25.3)**
Percentage who are overweight (BMI ≥ 25 kg/m^2)	**39.4%** **(37.9-40.9)**	**30.0%** **(27.7-32.3)**	**47.6%** **(45.5-49.6)**
Percentage who are obese (BMI ≥ 30 kg/m^2)	**11.0%** **(10.0-12.0)**	**6.3%** **(5.1-7.4)**	**15.2%** **(13.6-16.7)**
Average waist circumference (cm)		**85.3** **(84.6-86.0)**	**86.4** **(85.8-87.1)**
Mean systolic blood pressure - SBP (mmHg), including those currently on medication for raised BP	**128.5** **(127.9-129.2)**	**130.3** **(129.4-131.3)**	**127.0** **(126.1-127.9)**
Mean diastolic blood pressure - DBP (mmHg), including those currently on medication for raised BP	**80.5** **(80.1-81.0)**	**81.9** **(81.3-82.6)**	**79.3** **(78.8-79.9)**
Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP)	**34.8%** **(33.3-36.3)**	**35.8%** **(33.4-38.2)**	**34.0%** **(32.0-35.9)**
Percentage who were already diagnosed with hypertension **among entire population (self-reported)**	**18.6%** **(17.4-19.7)**	**15.1%** **(13.5-16.7)**	**21.6%** **20.1-23.2)**
Percentage **newly detected** with raised BP among those with **raised blood pressure or currently on medication** for raised BP	**54.7%** **(52.0-57.4)**	**62.0%** **(58.1-65.8)**	**48.1%** **(44.7-51.5)**
Percentage having blood pressure **controlled among those with raised blood pressure or currently on medication** for raised BP	**14.1%** **(12.3-15.9)**	**10.7%** **(8.4-13.0)**	**17.3%** **(14.7-19.9)**
Percentage having blood pressure **controlled among those who were taking treatment** for raised blood pressure**.**	**39.1%** **(35.2-43.0)**	**37.2%** **(30.7-43.7)**	**40.3%** **(35.3-45.4)**
Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP) who are not currently on medication for raised BP.	**63.9%** **(61.4-66.4)**	**71.2%** **(67.7-74.7)**	**57.2%** **(53.9-60.5)**
Step 3 Biochemical Measurement			
Mean fasting blood glucose, including those currently on medication for raised blood glucose [mg/dl]	**104.0** **(102.4-105.6)**	**103.1** **(100.9-105.4)**	**104.8** **(102.7-106.8)**
Percentage with impaired fasting glycaemia as defined below plasma venous value ≥6.1 mmol/L (110 mg/dl) and <7.0 mmol/L (126 mg/dl) capillary whole blood value ≥5.6 mmol/L (100 mg/dl) and <6.1 mmol/L (110 mg/dl)	**13.0%** **(11.7-14.2)**	**12.8%** **(10.9-14.6)**	**13.1%** **(11.6-14.7)**

Results for adults aged 18-69 years (incl. 95% CI)	Both Sexes	Males	Females
Percentage with raised Fasting Blood Glucose Known and newly reported: Includes respondents aged 18-69 years having plasma venous value ≥ 126 mg/dl or currently on medication for raised blood glucose	14.6% (13.5-15.8)	14.5% (12.7-16.4)	14.7% (13.2-16.2)
Percentage who were already diagnosed with diabetes among entire population (self-reported)	13.9% (12.9- 14.8)	13.4% (11.9- 14.9)	14.3% (13.1- 15.5)
Percentage newly detected with raised fasting blood sugar among those with raised blood sugar or currently on medication for raised blood sugar	38.4% (34.1-42.7)	39.8% (33.0-46.6)	37.2% (31.9-42.4)
Percentage not taking treatment for raised blood sugar among those with raised Blood sugar or currently on medication for raised blood sugar	49.1% (44.7-53.5)	53.2% (46.6-59.8)	45.6% (40.2-51.1)
Percentage of respondents with comorbidity (raised blood pressure and blood glucose)	8.6% (7.7-9.6)	8.5% (6.9-10.0)	8.7% (7.5-9.9)
Mean total blood cholesterol, including those currently on medication for raised cholesterol [mg/dl]	187.2 (185.6- 188.8)	182.0 (179.8- 184.3)	191.7 (189.7- 193.7)
Percentage with raised total cholesterol (≥ 5.0 mmol/L or ≥ 190 mg/dl or currently on medication for raised cholesterol)	48.7% (46.8- 50.6)	42.7% (40.0- 45.4)	54.0% (51.6- 56.4)
Percentage with raised total cholesterol (≥ 6.2 mmol/L or ≥ 240 mg/dl or currently on medication for raised cholesterol): According to Sri Lanka guideline, cut off value of raised total cholesterol is 240 mg/dl.	19.0% (17.5-20.4)	15.6% (13.6-17.7)	21.8% (20.0-23.7)
Cardiovascular disease (CVD) risk			
Percentage aged 40-69 years with a 10-year CVD risk ≥ 20%, or with existing CVD**	14.2% (12.8- 15.8)	16.9% (14.6- 19.6)	11.8% (10.1- 13.8)
Summary of combined risk factors • current daily smokers • overweight (BMI ≥ 25 kg/m²) • less than 5 servings of fruits & vegetables per day • raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP) • insufficient physical activity			
Percentage with none of the above risk factors	8.6% (7.6- 9.6)	9.5% (787- 11.1)	7.8% (6.7- 9.0)
Percentage with three or more of the above risk factors, aged 18 to 44 years	18.2% (16.5- 19.9)	18.9% (16.1- 21.6)	17.6% (15.6- 19.7)
Percentage with three or more of the above risk factors, aged 45 to 69 years	36.3% (34.1- 38.5)	31.4% (28.1- 34.7)	40.5% (37.7- 43.2)
Percentage with three or more of the above risk factors, aged 18 to 69 years	26.5% (25.1- 28.0)	24.6% (22.4- 26.7)	28.2% (26.4- 30.0)

** A 10-year CVD risk of ≥20% is defined according to age, sex, blood pressure, smoking status (current smokers), total cholesterol, and previously diagnosed diabetes.

For additional information, please contact: STEPS Survey Coordinator, Dr. S.C. Wickramasinghe, DDG (Non-Communicable Diseases), Ministry of Health, scwickrama@gmail.com

ශ්‍රී ලංකාවේ STEPS සමීක්ෂණය 2021
තොරතුරු පත්‍රිකාව

ශ්‍රී ලංකාවේ බෝ නොවන රෝග සඳහා වන අවදානම් සාධක පිළිබඳ STEPS සමීක්ෂණය 2021 අප්‍රේල්, නොවැම්බර් සහ දෙසැම්බර් මාස වල සිදු කරන ලදී. පළාත් සෞඛ්‍ය සේවා, වෛද්‍ය පර්යේෂණ ආයතනය සහ ජන හා සංඛ්‍යාලේඛන දෙපාර්තමේන්තුවේ කාර්ය මණ්ඩලයේ සහභාගිත්වයෙන් සෞඛ්‍ය අමාත්‍යාංශයේ බෝ නොවන රෝග කාර්යාංශය සහ ජන හා සංඛ්‍යාලේඛන දෙපාර්තමේන්තුව එක්ව මෙම සමීක්ෂණය පවත්වන ලදී. මෙය වයස 18 සිට 69 දක්වා වන වැඩිහිටි ජනගහනය මත පදනම් වූ සමීක්ෂණයක් වන අතර පියවර තුනකින් පවත්වන ලදී. පළමු පියවරේදී සමාජ ජනවිකාස සහ හුරු පුරුදු පිළිබඳ දත්ත එක්රැස් කරන ලදී. දෙවන පියවරේදී උස, බර සහ රුධිර පීඩනය ආදී භෞතික මිනුම් සඳහා දත්ත එක්රැස් කරන ලදී. රුධිරගත ග්ලූකෝස්, කොලෙස්ටරෝල් ආදිය මැනීම සඳහා වන ජෛවරසායනික මිනුම් තුන්වන පියවරේදී රැස් කරන ලදී. මෙම සමීක්ෂණයට අදාළ නියැදිය, බහු ස්තර, ස්ත්‍රාත, රාශි නියැදි සැලසුම් ක්‍රමය අනුව එක් එක් වයස් පරාස සඳහා තෝරා ගන්නා ලදී. සමීක්ෂණය සඳහා වැඩිහිටියන් 6267 ක් සහභාගිවූහ. සමස්ත සමීක්ෂණය (පළමු පියවර) සඳහා 81% ක් ද, දෙවන පියවර සඳහා 73% ක් ද තුන්වන පියවර සඳහා 61% ක් ද වශයෙන් සහභාගිවන්නන්ගේ ප්‍රතිචාර ලැබිණි. මෙම සමීක්ෂණය සාමාන්‍යයෙන් වසර පහකට වරක් සිදු කරන අතර මීළඟ සමීක්ෂණය 2026 දී සිදු කිරීමට සැලසුම් කර ඇත.

වයස අවුරුදු 18-69 දක්වා වැඩිහිටියන්ගේ ප්‍රතිඵල (95% විශ්වාශ ප්‍රාන්තරය සහිතව)	ගැහැණු පිරිමි දෙපාර්ශවයම	පිරිමි	ගැහැණු
1 පියවර දුම්කොළ භාවිතය			
දැනට දුම්වැටි භාවිතා කරන්නන්ගේ ප්‍රතිශතය	14.1% (13.0– 15.3)	30.2% (27.9– 32.4)	0.2% (0.0– 0.4)
දැනට දිනපතා දුම්වැටි භාවිතා කරන්නන්ගේ ප්‍රතිශතය	10.0% (9.0-11.0)	21.3% (19.3-23.4)	0.1% (0.0-0.2)
දැනට දුම් රහිත දුම්කොළ භාවිතා කරන්නන්ගේ ප්‍රතිශතය	17.5% (16.2-18.8)	30.3% (28.0-32.6)	6.4% (5.4-7.3)
දැනට දිනපතා දුම් රහිත දුම්කොළ භාවිතා කරන්නන්ගේ ප්‍රතිශතය	10.9% (9.9-11.9)	19.7% (17.7-21.6)	3.2% (2.5-3.9)
දැනට දුම්කොළ භාවිතා කරන්නන්ගේ ප්‍රතිශතය (දුම්වැටි/ දුම් රහිත දුම්කොළ)	26.2% (24.7-27.7)	48.9% (46.4-51.5)	6.5% (5.5-7.4)
දැනට දිනපතා දුම්කොළ භාවිතා කරන්නන්ගේ ප්‍රතිශතය (දුම්වැටි/ දුම් රහිත දුම්කොළ)	18.5% (17.3-19.8)	36.0% (33.6-38.4)	3.4% (2.6-4.1)
කොටිනින් 200 පරීක්ෂණය (මුත්‍රා වල නිකොටින් අන්තර්ගත වීම) ධනාත්මක වූ ප්‍රතිශතය	27.3% (25.6-28.9)	47.6% (44.9-50.3)	9.9% (8.5-11.4)
දැනට දිනපතා දුම්වැටි භාවිතා කරන්නන්			
දුම් පානය ආරම්භ කළ සාමාන්‍ය වයස (අවුරුදු)	20.6 (20.0-21.1)	20.5 (19.9-21.0)	--
දිනපතා දුම්පානය කරන්නන් අතරෙන් නිෂ්පාදිත සිගරට් භාවිතා කරන ප්‍රතිශතය	70.5% (65.7-75.3)	70.9% (66.1-75.7)	--
දිනකට භාවිතා කරන නිෂ්පාදිත සිගරට් සංඛ්‍යාවේ මධ්‍යන්‍යය (නිෂ්පාදිත සිගරට් භාවිතා කරන්නන් විසින්)	3.7 (3.4-4.1)	3.7 (3.4-4.1)	--
1 පියවර මධ්‍යසාර භාවිතය			
ජීවිත කාලය පුරාම මධ්‍යසාර භාවිතා නොකළ ප්‍රතිශතය	65.1% (63.4-66.7)	34.2% (31.7-36.6)	91.9% (90.7-93.1)
පසුගිය මාස 12 තුල මධ්‍යසාර භාවිතා නොකළ ප්‍රතිශතය	8.2% (7.4-9.1)	11.5% (10.1-12.9)	5.4% (4.4-6.3)
දැනට මධ්‍යසාර භාවිතා කරන ප්‍රතිශතය (පසුගිය දින 30 තුල මධ්‍යසාර භාවිතා කළ)	20.7% (19.5-22.0)	43.3% (40.9-45.6)	1.2% (0.7-1.6)
දැනට අධික ලෙස මධ්‍යසාර භාවිතා කරන ප්‍රතිශතය (පසුගිය දින 30 තුල එක් වරකදී සම්මත මධ්‍යසාර ඒකක 6ක් හෝ ඊට වැඩියෙන් භාවිතා කළ)	7.1% (6.2-7.9)	15.1% (13.3-16.8)	0.3% (0.1-0.5)

වයස අවුරුදු 18-69 දක්වා වැඩිහිටියන්ගේ ප්‍රතිඵල (95% විශ්වාශ ප්‍රාන්තරය සහිතව)	ගැහැණු පිරිමි දෙපාර්ශවයම	පිරිමි	ගැහැණු
1 පියවර ආහාරය			
සාමාන්‍ය සතියක පළතුරු ආහාරයට ගත් දින ගණනේ මධ්‍යන්‍යය	**3.4** (3.4-3.5)	**3.4** (3.3-3.5)	**3.5** (3.4-3.6)
සාමාන්‍යයෙන් දිනක් තුල ආහාරයට ගත් ගත් සම්මත පළතුරු ප්‍රමාණයේ මධ්‍යන්‍යය	**1.2** (1.2-1.3)	**1.2** (1.2-1.3)	**1.3** (1.2-1.3)
සාමාන්‍ය සතියක එළවළු ආහාරයට ගත් දින ගණනේ මධ්‍යන්‍යය	**6.5** (6.5-6.6)	**6.5** (6.4-6.5)	**6.6** (6.5-6.6)
සාමාන්‍යයෙන් දිනක් තුල ආහාරයට ගත් ගත් සම්මත එළවළු ප්‍රමාණයේ මධ්‍යන්‍යය	**3.3** (3.2-3.5)	**3.3** (3.2-3.4)	**3.4** (3.2-3.5)
සාමාන්‍යයෙන් දිනක් තුල එළවළු සහ/හෝ පළතුරු සම්මත ප්‍රමාණ 5 කට අඩු සංඛ්‍යාවක් ආහාරයට ගත් ප්‍රතිශතය	**67.8%** (66.1-69.6)	**68.1%** (65.7-70.5)	**67.6%** (65.5-69.7)
ආහාර ගැනීමට වහාම පෙර හෝ ආහාර ගන්නා අතරතුර හැම විටම හෝ බොහෝ විට ආහාරයට ලූණු හෝ ලූණු සහිත සෝස් එක් කරන ප්‍රතිශතය	**3.5%** (2.8-4.2)	**3.4%** (2.6-4.3)	**3.6%** (2.8-4.4)
හැම විටම හෝ බොහෝ විට ලූණු අධික, සකස් කළ ආහාර කෑමට ගන්නා ප්‍රතිශතය	**8.2%** (7.2-9.2)	**8.1%** (6.7-9.4)	**8.3%** (7.2-9.5)
බත් පිසින විට එයට ලූණු එක් කරන ප්‍රතිශතය	**55.3%** (53.7-56.9)	**57.8%** (55.6-60.1)	**53.1%** (51.1-55.1)
එක් පුද්ගලයෙක් දිනකට භාවිතා කරන ලූණු ප්‍රමාණයේ මධ්‍යන්‍යය (ග්‍රෑම්) (ජනගහනයේ පැය 24 ක ලූණු භාවිතය ගණනය කිරීම සඳහා සමීක්ෂණයට සහභාගීවූවන්ගෙන් එම අවස්ථාවේදීම ලබා ගත් මූත්‍රා සාම්පලයක සෝඩියම් සහ ක්‍රියැටිනින් ප්‍රමාණය යොදා ගෙන කවසාකි සමීකරණය අනුව ගණනය කරන ලදී)	**14.2** (14.0-14.4)	**15.1** (14.8-15.4)	**13.5** (13.3-13.7)
එක් පුද්ගලයෙක් දිනකට භාවිතා කරන ලූණු ප්‍රමාණයේ මධ්‍යන්‍යය (ග්‍රෑම්) (ජනගහනයේ පැය 24 ක ලූණු භාවිතය ගණනය කිරීම සඳහා සමීක්ෂණයට සහභාගීවූවන්ගෙන් එම අවස්ථාවේදීම ලබා ගත් මූත්‍රා සාම්පලයක සෝඩියම් සහ ක්‍රියැටිනින් ප්‍රමාණය යොදා ගෙන ඉන්ටසෝල්ට් සමීකරණය අනුව ගණනය කරන ලදී)	**8.5** (8.5- 8.6)	**9.7** (9.5- 9.8)	**7.6** (7.5- 7.7)
1 පියවර ශාරීරික ක්‍රියාකාරකම්			
ශාරීරික ක්‍රියාකාරකම් වල අඩුවෙන් යෙදෙන (සතියකට මිනිත්තු 150 කට වඩා අඩුවෙන් මධ්‍යම තීව්‍රතාවයෙන් ශාරීරික ක්‍රියාකාරකම් හෝ සමාන ක්‍රියාකාරකම් වල යෙදෙන) ප්‍රතිශතය*	**34.8%** (33.1-36.4)	**24.2%** (22.1-26.3)	**43.9%** (41.8-46.0)
සාමාන්‍යයෙන් දිනකට ශාරීරික ක්‍රියාකාරකම් වල යෙදෙන වෙලාවේ මධ්‍යස්ථය (මිනිත්තු) (අන්තර්වාතුර්ත්‍රීක අන්තරය සමඟ)	**64.3** (2.9-257.1)	**154.3** (21.4-385.7)	**30.0** (0.0-130.0)
ඉහළ තීව්‍රතාවයෙන් ශාරීරික ක්‍රියාකාරකම් වල නොයෙදෙන ප්‍රතිශතය	**73.4%** (71.8-74.9)	**55.4%** (53.0-57.9)	**88.9%** (87.6-90.2)
විනෝදය සඳහා ශාරීරික ක්‍රියාකාරකම් වල නොයෙදෙන ප්‍රතිශතය	**87.2%** (86.1-88.4)	**82.2%** (80.2-84.2)	**91.6%** (90.5-92.7)

* අඩු ශාරීරික ක්‍රියාකාරකම් යන්නෙහි අර්ථ දැක්වීම් සඳහා ගෝලීය ශාරීරික ක්‍රියාකාරකම් ප්‍රශ්නාවලිය විශ්ලේෂණ මාර්ගෝපදේශය (https://www.who.int/teams/noncommunicable-diseases/surveillance/systems-tools/physical-activity-surveillance) හෝ ලෝක සෞඛ්‍ය සංවිධානයේ සෞඛ්‍ය සඳහා ශාරීරික ක්‍රියාකාරකම් සඳහා වූ ගෝලීය නිර්දේශ (https://www.who.int/news-room/fact-sheets/detail/physical-activity) බලන්න.

-- : අර්ථවත් අගයක් ලබා දීම සඳහා සංඛ්‍යාව ප්‍රමාණවත් නොවේ

වයස අවුරුදු 18-69 දක්වා වැඩිහිටියන්ගේ ප්‍රතිඵල (95% විශ්වාසනීය ප්‍රාන්තරය සහිතව)	ගැහැණු පිරිමි දෙපාර්ශවයම	පිරිමි	ගැහැණු
1 පියවර ගැබ් ගෙල සහ පියයුරු පිළිකා සඳහා පරීක්ෂාව			
වයස අවුරුදු 30 – 49 දක්වා වයස් වල කාන්තාවන්ගෙන් කෙදෙනක හෝ ගැබ් ගෙල පිළිකා සඳහා පරීක්ෂා කර ගත් ප්‍රතිශතය			40.2% (37.3-43.1)
වයස අවුරුදු 35 – 45 දක්වා වයස් වල කාන්තාවන්ගෙන් කෙදෙනක හෝ ගැබ් ගෙල පිළිකා සඳහා පරීක්ෂා කර ගත් ප්‍රතිශතය			51.7% (48.0-55.4)
වයස අවුරුදු 30 – 49 දක්වා වයස් වල කාන්තාවන්ගෙන් කෙදෙනක හෝ පියයුරු වල ඇති ගැටිති සොයා ගැනීම සඳහා ස්වයං පියයුරු පරික්ෂාව සිදු කර ඇති ප්‍රතිශතය			36.6% (33.9-39.2)
2 පියවර භෞතික මිනුම්			
ශරීර ස්කන්ධ දර්ශකයේ මධ්‍යනය (kg/m^2)	24.2 (24.0-24.3)	23.1 (22.9-23.3)	25.1 (24.8-25.3)
අඩි බර සහිත ප්‍රතිශතය (ශරීර ස්කන්ධ දර්ශකය 25 kg/m^2 ට සමාන හෝ වැඩි)	39.4% (37.9-40.9)	30.0% (27.7-32.3)	47.6% (45.5-49.6)
ස්ථූලතාවය සහිත ප්‍රතිශතය (ශරීර ස්කන්ධ දර්ශකය 30 kg/m^2 ට සමාන හෝ වැඩි)	11.0% (10.0-12.0)	6.3% (5.1-7.4)	15.2% (13.6-16.7)
සාමාන්‍ය ඉන වට ප්‍රමාණය (cm)		85.3 (84.6-86.0)	86.4 (85.8-87.1)
සංඛ්‍යාස්ත පීඩනයේ මධ්‍යන්‍ය (රසදිය මිලිමීටර්), අඩි රුධිර පීඩනය සඳහා දැනට ප්‍රතිකාර ලබා ගන්නා අය ද ඇතුලත්ව	128.5 (127.9-129.2)	130.3 (129.4-131.3)	127.0 (126.1-127.9)
විනyාස්ත පීඩනයේ මධ්‍යන්‍ය (රසදිය මිලිමීටර්), අඩි රුධිර පීඩනය සඳහා දැනට ප්‍රතිකාර ලබා ගන්නා අය ද ඇතුලත්ව	80.5 (80.1-81.0)	81.9 (81.3-82.6)	79.3 (78.8-79.9)
රුධිර පීඩනය වැඩි අයගේ ප්‍රතිශතය (සංඛ්‍යාස්ත පීඩනය රසදිය මිලිමීටර් 140 ට සමාන හෝ වැඩි සහ/හෝ විනyාස්ත පීඩනය රසදිය මිලිමීටර් 90 ට සමාන හෝ වැඩි හෝ දැනට අඩි රුධිර පීඩනය සඳහා ප්‍රතිකාර ලබා ගන්නා)	34.8% (33.3-36.3)	35.8% (33.4-38.2)	34.0% (32.0-35.9)
සමස්ත ජනගහනයෙන් දැනට අඩි රුධිර පීඩනය තිබේ යැයි රෝග නිශ්චය කර ඇති ප්‍රතිශතය (ස්වයං වාර්තා කළ)	18.6% (17.4-19.7)	15.1% (13.5-16.7)	21.6% 20.1-23.2)
රුධිර පීඩනය වැඩි අය හෝ දැනට වැඩි රුධිර පීඩනය සඳහා ප්‍රතිකාර ලබා ගන්නා අය අතරෙන් රුධිර පීඩනය වැඩි යැයි අළුතින් හඳුනා ගත් ප්‍රතිශතය	54.7% (52.0-57.4)	62.0% (58.1-65.8)	48.1% (44.7-51.5)
රුධිර පීඩනය වැඩි අය හෝ දැනට වැඩි රුධිර පීඩනය සඳහා ප්‍රතිකාර ලබා ගන්නා අය අතරෙන් රුධිර පීඩනය පාලනය වී ඇති ප්‍රතිශතය	14.1% (12.3-15.9)	10.7% (8.4-13.0)	17.3% (14.7-19.9)
වැඩි රුධිර පීඩනය සඳහා ප්‍රතිකාර ලබා ගන්නා අය අතරෙන් රුධිර පීඩනය පාලනය වී ඇති ප්‍රතිශතය	39.1% (35.2-43.0)	37.2% (30.7-43.7)	40.3% (35.3-45.4)
වැඩි රුධිර පීඩනය (සංඛ්‍යාස්ත පීඩනය රසදිය මිලිමීටර් 140 ට සමාන හෝ වැඩි සහ/හෝ විනyාස්ත පීඩනය රසදිය මිලිමීටර් 90 ට සමාන හෝ වැඩි හෝ දැනට අඩි රුධිර පීඩනය සඳහා ප්‍රතිකාර ලබා ගන්නා) සහිත අය අතරින් දැනට ප්‍රතිකාර ලබා නොගන්නා ප්‍රතිශතය	63.9% (61.4-66.4)	71.2% (67.7-74.7)	57.2% (53.9-60.5)
3 පියවර ජෛවරසායනික මිනුම්			
නිරාහාර රුධිර ග්ලූකෝස් අගයේ මධ්‍යනය [mg/dl] (දැනට රුධිර ගත ග්ලූකෝස් මට්ටම අධික වීම සඳහා ප්‍රතිකාර ලබන්නන්ද ඇතුළුව)	104.0 (102.4-105.6)	103.1 (100.9-105.4)	104.8 (102.7-106.8)
පහත නිර්ණායක අනුව වැඩි නිරාහාර රුධිර ග්ලූකෝස් අගයකට අවදානම සහිත ප්‍රතිශතය • ශිරා ගත රුධිර ප්ලාස්මාවේ ග්ලූකෝස් ප්‍රමාණය 6.1 mmol/L (110 mg/dl) ට සමාන හෝ වැඩි සහ 7.0 mmol/L (126 mg/dl) ට වඩා අඩු • කේශනාලික ගත රුධිරයේ ග්ලූකෝස් ප්‍රමාණය 5.6 mmol/L (100 mg/dl) ට සමාන හෝ වැඩි සහ 6.1 mmol/L (110 mg/dl) ට අඩු	13.0% (11.7-14.2)	12.8% (10.9-14.6)	13.1% (11.6-14.7)
නිරාහාර රුධිර ග්ලූකෝස් ප්‍රමාණය වැඩි අයගේ ප්‍රතිශතය දැනටමත් හඳුනාගෙන ඇති සහ අලුතින් හඳුනාගත්: ශිරා ගත රුධිර ප්ලාස්මාවේ ග්ලූකෝස් ප්‍රමාණය 126 mg/dl ට සමාන හෝ වැඩි හෝ දැනට අධික රුධිරගත ග්ලූකෝස් සඳහා ප්‍රතිකාර ලබා ගන්නා වයස අවුරුදු 18-69 අතර අය	14.6% (13.5-15.8)	14.5% (12.7-16.4)	14.7% (13.2-16.2)
සමස්ත ජනගහනයෙන් දැනට දියවැඩියාව තිබේ යැයි රෝග නිශ්චය කර ඇති ප්‍රතිශතය (ස්වයං වාර්තා කළ)	13.9% (12.9- 14.8)	13.4% (11.9- 14.9)	14.3% (13.1- 15.5)
රුධිර ග්ලූකෝස් ප්‍රමාණය වැඩි අය හෝ දැනට වැඩි රුධිර ග්ලූකෝස් ප්‍රමාණය සඳහා ප්‍රතිකාර ලබා ගන්නා අය අතුරෙන් රුධිර ග්ලූකෝස් ප්‍රමාණය වැඩි යැයි අළුතින් හඳුනා ගත් ප්‍රතිශතය	38.4% (34.1-42.7)	39.8% (33.0-46.6)	37.2% (31.9-42.4)

වයස අවුරුදු 18-69 දක්වා වැඩිහිටියන්ගේ ප්‍රතිඵල (95% විශ්වාස ප්‍රාන්තරය සහිතව)	ගැහැණු පිරිමි දෙපාර්ශවයම	පිරිමි	ගැහැණු
රුධිර ග්ලූකෝස් ප්‍රමාණය වැඩි අය හෝ දැනට වැඩි රුධිර ග්ලූකෝස් ප්‍රමාණය සඳහා ප්‍රතිකාර ලබා ගන්නා අය අතුරෙන් වැඩි රුධිර ග්ලූකෝස් ප්‍රමාණය පාලනය කිරීම සඳහා ප්‍රතිකාර ලබා නොගන්නා ප්‍රතිශතය	49.1% (44.7-53.5)	53.2% (46.6-59.8)	45.6% (40.2-51.1)
අධි රුධිර පීඩනය සහ අධි රුධිර ග්ලූකෝස් ප්‍රමාණය යන රෝග දෙකම සහිත ප්‍රතිශතය	8.6% (7.7-9.6)	8.5% (6.9-10.0)	8.7% (7.5-9.9)
පූර්ණ රුධිර කොලෙස්ටරෝල් අගයේ මධ්‍යන්‍යය [mg/dl] (දැනට ඉහළ කොලෙස්ටරෝල් මට්ටම පාලනය කිරීම සඳහා ප්‍රතිකාර ලබන්නන්ද ඇතුළුව)	187.2 (185.6- 188.8)	182.0 (179.8- 184.3)	191.7 (189.7- 193.7)
පූර්ණ රුධිර කොලෙස්ටරෝල් ප්‍රමාණය වැඩි අයගේ ප්‍රතිශතය (පූර්ණ රුධිර කොලෙස්ටරෝල් ප්‍රමාණය 5.0 mmol/L හෝ 190 mg/dl ට වැඩි හෝ දැනට ඉහළ කොලෙස්ටරෝල් මට්ටම පාලනය කිරීම සඳහා ප්‍රතිකාර ලබන්නන්)	48.7% (46.8- 50.6)	42.7% (40.0- 45.4)	54.0% (51.6- 56.4)
පූර්ණ රුධිර කොලෙස්ටරෝල් ප්‍රමාණය වැඩි අයගේ ප්‍රතිශතය (පූර්ණ රුධිර කොලෙස්ටරෝල් ප්‍රමාණය 6.2 mmol/L හෝ 240 mg/dl ට වැඩි හෝ දැනට ඉහළ කොලෙස්ටරෝල් මට්ටම පාලනය කිරීම සඳහා ප්‍රතිකාර ලබන්නන්) ශ්‍රී ලංකා මාර්ගෝපදේශය වන 240 mg/dl ක පූර්ණ රුධිර කොලෙස්ටරෝල් ප්‍රමාණය නිර්ණායකය ලෙස ගෙන	19.0% (17.5-20.4)	15.6% (13.6-17.7)	21.8% (20.0-23.7)
හෘදකන්තුකවාහිනී රෝග සඳහා අවදානම			
වයස අවුරුදු 40-69 අතර සිටින, ඊළඟ වසර 10 තුළ හෘදකන්තුකවාහිනී රෝග ඇතිවීමේ අවදානම 20% ට සමාන හෝ වැඩි හෝ දැනටමත් හෘදකන්තුකවාහිනී රෝග වැළඳී ඇති ප්‍රතිශතය**	14.2% (12.8- 15.8)	16.9% (14.6- 19.6)	11.8% (10.1- 13.8)
සංයුක්ත අවදානම් සාධක වල සාරාංශය			
• දැනට දිනපතා දුම් පානය කරන • දිනකට පළතුරු සහ එළවළු සම්මත ප්‍රමාණ 5 කට අඩු • ශාරීරික ක්‍රියාකාරකම් වල අඩුවෙන් යෙදෙන	• අධි බර (ශරීර ස්කන්ධ දර්ශකය 25 kg/m² ට සමාන හෝ වැඩි) • රුධිර පීඩනය වැඩි (සංඛ්‍යාස්ථ පීඩනය රසදිය මිලිමීටර් 140 ට සමාන හෝ වැඩි සහ/හෝ විතාන්ස්ථ පීඩනය රසදිය මිලිමීටර් 90 ට සමාන හෝ වැඩි හෝ දැනට අධි රුධිර පීඩනය සඳහා ප්‍රතිකාර ලබා ගන්නා)		
ඉහත අවදානම් සාධක එකක්වත් නොමැති අයගේ ප්‍රතිශතය	8.6% (7.6- 9.6)	9.5% (787- 11.1)	7.8% (6.7- 9.0)
වයස අවුරුදු 18 සිට 44 අතර ඉහත අවදානම් සාධක තුනක් හෝ ඊට වැඩියෙන් ඇති ප්‍රතිශතය	18.2% (16.5- 19.9)	18.9% (16.1- 21.6)	17.6% (15.6- 19.7)
වයස අවුරුදු 45 සිට 69 අතර ඉහත අවදානම් සාධක තුනක් හෝ ඊට වැඩියෙන් ඇති ප්‍රතිශතය	36.3% (34.1- 38.5)	31.4% (28.1- 34.7)	40.5% (37.7- 43.2)
වයස අවුරුදු 18 සිට 69 අතර ඉහත අවදානම් සාධක තුනක් හෝ ඊට වැඩියෙන් ඇති ප්‍රතිශතය	26.5% (25.1- 28.0)	24.6% (22.4- 26.7)	28.2% (26.4- 30.0)

** ඊළඟ වසර 10 තුළ හෘදකන්තුකවාහිනී රෝග ඇතිවීමේ අවදානම 20% ට සමාන හෝ වැඩි ලෙස අර්ථ දක්වා ඇත්තේ වයස, ගැහැණු-පිරිමි බව, රුධිර පීඩනය, දුම් බීමේ තත්ත්වය (දැනට දුම් පානය කරන), පූර්ණ කොලෙස්ටරෝල් ප්‍රමාණය සහ කලින් රෝග නිර්ණය කරන ලද දියවැඩියාව යන නිර්ණායක මතය.

වැඩිදුර තොරතුරු සඳහා කරුණාකර **STEPS** සමීක්ෂණයේ සම්බන්ධීකාරක වන සෞඛ්‍ය අමාත්‍යාංශයේ, නියෝජ්‍ය අධ්‍යක්ෂ ජනරාල් (බෝ නොවන රෝග) වෛද්‍ය එස්.සී. වික්‍රමසිංහ මහත්මිය, **scwickrama@gmail.com** වෙත යොමු වන්න.

இலங்கை   STEPS கணக்கெடுப்பு   2021

துரவு   ஏடு

தொற்றா நோய்களுக்கான காரணிகள் பற்றிய STEPS கணக்கெடுப்பு 2021 **ஆண்டு** ஏப்ரல், நவம்பர் மற்றும் டிசம்பர் **மாதங்களில்** இலங்கையில் மேற்கொள்ளப்பட்டது. தொற்றா நோய்க்கட்டுப்பாட்டிற்கான பணியகம், சுகாதார **அமைச்சு** மற்றும் **தொகை மதிப்பு மற்றும் புள்ளி விபரத் திணைக்களம்** (DCS) என்பன இணைந்து மாகாண பொது சுகாதாரத்துறை , மருத்துவ ஆராய்ச்சி நிறுவனம் மற்றும் **தொகை மதிப்பு மற்றும் புள்ளி விபரத் திணைக்களம்** ஆகியவற்றின் ஊழியர்களின் பங்கேற்புடன் கணக்கெடுப்பை நடத்தியது. இது 18-69 **வயதிற்கு இடைப்பட்ட** வயது வந்தவர்களுக்கான மக்கள்தொகை அடிப்படையிலான கணக்கெடுப்பாகும். கணக்கெடுப்பு மூன்று படிமுறைகளில் மேற்கொள்ளப்பட்டது. சமூக மற்றும் பொருளாதார தரவுகள் மற்றும் **வாழ்க்கை முறை** தரவுகள் படி 1 இல் சேகரிக்கப்பட்டது. உயரம், எடை மற்றும் குருதியழுக்கம் போன்ற உடல் அளவீடுகள் படி 2 இல் சேகரிக்கப்பட்டன. படி 3 இல் இரத்த குளுக்கோஸ் மற்றும் கொழுப்பின் அளவை மதிப்பிடுவதற்கு இரசாயன அளவீடுகள் சேகரிக்கப்பட்டன. பல நிலை அடுக்கு கிளஸ்டர் மாதிரி வடிவமைப்பு **உரிய வயதுகளுக்கான** மாதிரியைத் தேர்ந்தெடுக்கப் **பயன் படுத்தப் பட்டது.** கணக்கெடுப்பில் மொத்தம் (Value) வயது வந்தவர்கள் பங்கேற்றனர். ஒட்டுமொத்த பதிலிறுப்பு விகிதம் (இந்த கணக்கெடுப்பு வழக்கமாக ஒவ்வொரு ஐந்து வருடங்களுக்கு **ஒருமுறை** மேற்கொள்ளப்படும். மீண்டும் கணக்கெடுப்பு 2026 இல் திட்டமிடப்படும்.

கணக்கெடுப்பு முடிவுகள் (95% CI உள்ளடங்கலாக)	இரு பாலாரும்	ஆண்கள்	பெண்கள்
படி 1 புகையிலைப் பாவனை			
தற்போது புகையிலை புகைப்பவர்களின் சதவீதம்	**14.1%** (13.0– 15.3)	**30.2%** (27.9– 32.4)	**0.2%** (0.0– 0.4)
தற்போது தினசரி புகையிலை புகைப்பவர்களின் சதவீதம்	**10.0%** (9.0-11.0)	**21.3%** (19.3-23.4)	**0.1%** (0.0-0.2)
தற்போது புகையற்ற புகையிலை பாவிப்பவர்களின் சதவீதம்	**17.5%** (16.2-18.8)	**30.3%** (28.0-32.6)	**6.4%** (5.4-7.3)
தற்போது தினசரி புகையற்ற புகையிலை பாவிப்பவர்களின் சதவீதம்	**10.9%** (9.9-11.9)	**19.7%** (17.7-21.6)	**3.2%** (2.5-3.9)
தற்போது புகையிலை (புகையற்ற/ புகையுள்ள) பாவிப்பவர்களின் சதவீதம்	**26.2%** (24.7-27.7)	**48.9%** (46.4-51.5)	**6.5%** (5.5-7.4)
தற்போது தினசரி புகையிலை (புகையற்ற/ புகையுள்ள) பாவிப்பவர்களின் சதவீதம்	**18.5%** (17.3-19.8)	**36.0%** (33.6-38.4)	**3.4%** (2.6-4.1)
கொட்டினின் 200 பரிசோதனை நேர்மறையானவர்கள் சதவீதம் (சிறுநீர் நிக்கோட்டின்)	**27.3%** (25.6-28.9)	**47.6%** (44.9-50.3)	**9.9%** (8.5-11.4)
தினமும் புகையிலை புகைப்பவர்களுக்கானது			
புகைபிடிக்கத் தொடங்கிய சராசரி வயது (ஆண்டுகள்)	**20.6** (20.0-21.1)	**20.5** (19.9-21.0)	--
உற்பத்தி செய்யப்பட்ட சிகரெட்டுக்களை தினசரி புகைப்பிடிப்பவர்களின் சதவீதம்	**70.5%** (65.7-75.3)	**70.9%** (66.1-75.7)	--
ஒரு நாளைக்கு புகைக்கப்படும் உற்பத்தி செய்யப்பட்ட சிகரெட்டுகளின் சராசரி எண்ணிக்கை (தயாரிக்கப்பட்ட சிகரெட்டுகள் புகைப்பவர்களினால்)	**3.7** (3.4-4.1)	**3.7** (3.4-4.1)	--
படி 2 மதுபானப்பாவனை			
வாழ்நாள் முழுவதும் விலக்கியவர்களின் சதவீதம்	**65.1%** (63.4-66.7)	**34.2%** (31.7-36.6)	**91.9%** (90.7-93.1)
கடந்த 12-மாதங்களில் விலக்கியவர்களின் சதவீதம்	**8.2%** (7.4-9.1)	**11.5%** (10.1-12.9)	**5.4%** (4.4-6.3)
தற்போது மது அருந்துபவர்களின் சதவீதம் (கடந்த 30 நாட்களில் மது அருந்தியது)	**20.7%** (19.5-22.0)	**43.3%** (40.9-45.6)	**1.2%** (0.7-1.6)

கணக்கெடுப்பு முடிவுகள் (95% CI உள்ளடங்கலாக)	இரு பாலாரும்	ஆண்கள்	பெண்கள்
கடுமையான இடையிட்ட குடிப்பழக்கத்தில் ஈடுபடும் சதவீதம் (கடந்த 30 நாட்களில் எந்த சந்தர்ப்பத்திலாவது 6 அல்லது அதற்கு மேற்பட்ட பானங்கள்)	7.1% (6.2-7.9)	15.1% (13.3-16.8)	0.3% (0.1-0.5)
படி 1 உணவு முறை			
ஒரு வழக்கமான வாரத்தில் பழங்கள் உட்கொள்ளும் நாட்களின் சராசரி எண்ணிக்கை	3.4 (3.4-3.5)	3.4 (3.3-3.5)	3.5 (3.4-3.6)
ஒரு நாளைக்கு உட்கொள்ளும் பழ பரிமாறல் அளவுகளின் சராசரி எண்ணிக்கை	1.2 (1.2-1.3)	1.2 (1.2-1.3)	1.3 (1.2-1.3)
ஒரு வழக்கமான வாரத்தில் காய்கறிகள் உட்கொள்ளும் நாட்களின் சராசரி எண்ணிக்கை	6.5 (6.5-6.6)	6.5 (6.4-6.5)	6.6 (6.5-6.6)
ஒரு நாளைக்கு சராசரியாக உட்கொள்ளும் காய்கறி பரிமாறல் அளவுகளின் சராசரி எண்ணிக்கை	3.3 (3.2-3.5)	3.3 (3.2-3.4)	3.4 (3.2-3.5)
ஒரு நாளைக்கு சராசரியாக 5 பரிமாறல் அளவுகளுக்குக் குறைவான பழங்கள் மற்றும்/அல்லது காய்கறிகளை உண்பவர்களின் சதவீதம்	67.8% (66.1-69.6)	68.1% (65.7-70.5)	67.6% (65.5-69.7)
உண்ணும் முன் அல்லது சாப்பிடும் போது, எப்போதும் அல்லது அடிக்கடி உப்பு அல்லது உப்புச் சுவை கலந்த சோஸ் சேர்ப்பவர்களின் சதவீதம்	3.5% (2.8-4.2)	3.4% (2.6-4.3)	3.6% (2.8-4.4)
உப்பு அதிகம் உள்ள பதப்படுத்தப்பட்ட உணவுகளை எப்போதும் அல்லது அடிக்கடி உட்கொள்பவர்களின் சதவீதம்	8.2% (7.2-9.2)	8.1% (6.7-9.4)	8.3% (7.2-9.5)
சமைக்கும் போது சோற்றுக்கு உப்பு போடுபவர்களின் சதவீதம்	55.3% (53.7-56.9)	57.8% (55.6-60.1)	53.1% (51.1-55.1)
ஒரு நாளைக்கு உப்பின் சராசரி உட்கொள்ளல் (கிராமில்) (கவாசாகி சமன்பாட்டைப் பயன்படுத்தி, ஸ்பாட் சிறுநீர் மாதிரிகளில் உள்ள சோடியம் மற்றும் கிரியேட்டினின் அளவுகள் மக்கள்தொகை 24 மணிநேர உப்பு உட்கொள்ளலை மதிப்பிடுவதற்கு STEPS இல் பயன்படுத்தப்படுகின்றன)	14.2 (14.0-14.4)	15.1 (14.8-15.4)	13.5 (13.3-13.7)
ஒரு நாளைக்கு உப்பின் சராசரி உட்கொள்ளல் (கிராமில்) (INTERSALT சமன்பாட்டைப் பயன்படுத்தி, ஸ்பாட் சிறுநீர் மாதிரிகளில் உள்ள சோடியம் மற்றும் கிரியேட்டினின் அளவுகள், மக்கள்தொகை 24 மணிநேர உப்பு உட்கொள்ளலை மதிப்பிடுவதற்கு STEPS இல் பயன்படுத்தப்படுகிறது)	8.5 (8.5- 8.6)	9.7 (9.5- 9.8)	7.6 (7.5- 7.7)
படி 1 உடற்பயிற்சிகள்			
போதுமான உடற்பயிற்சி செயற்பாடு இல்லாதவர்களின் சதவீதம் (ஒரு வாரத்திற்கு <150 நிமிட மிதமான அல்லது தீவிர செயல்பாடு அல்லது அதற்கு சமமானதாக வரையறுக்கப்படுகிறது)*	34.8% (33.1-36.4)	24.2% (22.1-26.3)	43.9% (41.8-46.0)
ஒரு நாளைக்கு சராசரியாக உடற்பயிற்சி செயற்பாடுகளில் செலவிடப்படும் நேரம் (நிமிடங்கள்)	64.3 (2.9-257.1)	154.3 (21.4-385.7)	30.0 (0.0-130.0)
தீவிரமான உடற்பயிற்சி செயற்பாடுகளில் ஈடுபடாதவர்களின் சதவீதம்	73.4% (71.8-74.9)	55.4% (53.0-57.9)	88.9% (87.6-90.2)
பொழுதுபோக்கு உடல் செயல்பாடுகள் இல்லாத சதவீதம்	87.2% (86.1-88.4)	82.2% (80.2-84.2)	91.6% (90.5-92.7)

* For complete definitions of insufficient physical activity, refer to the GPAQ Analysis Guide (https://www.who.int/teams/noncommunicable-diseases/surveillance/systems-tools/physical-activity-surveillance) or to the WHO Global recommendations on physical activity for health (https://www.who.int/news-room/fact-sheets/detail/physical-activity)
-- : Numbers insufficient to make a meaningful presentation

18-69 வயதுடையவர்களுக்கான கணக்கெடுப்பு முடிவுகள் (95% CI உள்ளடங்கலாக)	இரு பாலாரும்	ஆண்கள்	பெண்கள்
படி 1 கருப்பைக்கழுத்துப் புற்றுநோய்க்கான ஆரம்ப பரிசோதனை			
எப்போதாவது கருப்பைக்கழுத்துப் புற்றுநோய்க்கான ஆரம்ப பரிசோதனையை செய்துகொண்ட 30-49 வயதுடைய பெண்களின் சதவீதம்			**40.2%** (37.3-43.1)
18-69 வயதுடையவர்களுக்கான கணக்கெடுப்பு முடிவுகள் (95% CI உள்ளடங்கலாக)	**இரு பாலாரும்**	**ஆண்கள்**	**பெண்கள்**
எப்போதாவது கருப்பைக்கழுத்துப் புற்றுநோய்க்கான ஆரம்ப பரிசோதனையை செய்துகொண்ட 35-45 வயதுடைய பெண்களின் சதவீதம்			**51.7%** (48.0-55.4)
30-49 வயதுடைய பெண்களில் மார்பகத்தில் கட்டிகள் இருப்பதைக் கண்டறிய மார்பக சுய பரிசோதனை செய்தவர்களின் சதவீதம்			**36.6%** (33.9-39.2)
படி 2 உடல் சார் அளவீடுகள்			
சராசரி உடல் திணிவுக்கூட்டி - BMI (kg/m²)	**24.2** (24.0-24.3)	**23.1** (22.9-23.3)	**25.1** (24.8-25.3)
அதிக எடை கொண்டவர்களின் சதவீதம் (BMI ≥ 25 kg/m²)	**39.4%** (37.9-40.9)	**30.0%** (27.7-32.3)	**47.6%** (45.5-49.6)
உடற்பருமனானவர்களின் சதவீதம் (BMI ≥ 30 kg/m²)	**11.0%** (10.0-12.0)	**6.3%** (5.1-7.4)	**15.2%** (13.6-16.7)
சராசரி இடுப்பு சுற்றளவு (cm)		**85.3** (84.6-86.0)	**86.4** (85.8-87.1)
சராசரி சுருக்க (Systolic) குருதியமுக்கம்(SBP) (mmHg), (தற்போது உயர்குருதியமுக்கத்திற்கு மருந்துகள் பாவிப்பவர்கள் உள்ளடங்கலாக)	**128.5** (127.9-129.2)	**130.3** (129.4-131.3)	**127.0** (126.1-127.9)
சராசரி விரிவு (Diastolic) குருதியமுக்கம்(DBP) (mmHg), (தற்போது உயர்குருதியமுக்கத்திற்கு மருந்துகள் பாவிப்பவர்கள் உள்ளடங்கலாக)	**80.5** (80.1-81.0)	**81.9** (81.3-82.6)	**79.3** (78.8-79.9)
உயர்குருதியமுக்கம் உடையவர்களின் சதவீதம் (SBP ≥ 140 மற்றும்/அல்லது DBP ≥ 90 mmHg அல்லது தற்போது உயர்குருதியமுக்கத்திற்கு மருந்துகள் பாவிப்பவர்கள் உள்ளடங்கலாக)	**34.8%** (33.3-36.3)	**35.8%** (33.4-38.2)	**34.0%** (32.0-35.9)
மொத்த மக்களிடையே ஏற்கனவே உயர் இரத்த அழுத்தம் இருப்பது கண்டறியப்பட்ட சதவீதம் (சுய அறிக்கை)	**18.6%** (17.4-19.7)	**15.1%** (13.5-16.7)	**21.6%** 20.1-23.2)
அதிகரித்த இரத்த அழுத்தம் உள்ளவர்களில் அல்லது தற்போது அதிகரித்த BPக்கான மருந்துகளை உட்கொள்பவர்களிடையே புதிதாகக் கண்டறியப்பட்ட இரத்த அழுத்த சதவீதம்	**54.7%** (52.0-57.4)	**62.0%** (58.1-65.8)	**48.1%** (44.7-51.5)
உயர் இரத்த அழுத்தம் உள்ளவர்கள் அல்லது தற்போது அதிகரித்த BPக்கான மருந்துகளை உட்கொள்பவர்களிடையே இரத்த அழுத்தம் கட்டுப்படுத்தப்பட்டவர்களின் சதவீதம்	**14.1%** (12.3-15.9)	**10.7%** (8.4-13.0)	**17.3%** (14.7-19.9)
உயர் இரத்த அழுத்தத்திற்கு சிகிச்சை எடுத்துக்கொண்டவர்களிடையே இரத்த அழுத்தம் கட்டுப்படுத்தப்பட்டவர்களின் சதவீதம்.	**39.1%** (35.2-43.0)	**37.2%** (30.7-43.7)	**40.3%** (35.3-45.4)
அதிகரித்த இரத்த அழுத்தம் (SBP ≥ 140 மற்றும்/அல்லது DBP ≥ 90 mmHg அல்லது தற்சமயம் அதிகரித்த BPக்கான மருந்தை உட்கொள்பவர்கள்) மருந்து உட்கொள்ளாதவர்களின் சதவீதம்.	**63.9%** (61.4-66.4)	**71.2%** (67.7-74.7)	**57.2%** (53.9-60.5)
படி 3 உயிர் இரசாயன அளவீடுகள்			
சராசரி உணவுத் தவிர்ப்பு குருதி சீனியின் அளவு (தற்சமயம் நீரிழிவுக்கு மருந்து உட்கொள்பவர்கள் உள்ளடங்கலாக) [mg/dl]	**104.0** (102.4-105.6)	**103.1** (100.9-105.4)	**104.8** (102.7-106.8)
பாதிப்பிற்குள்ளான உணவுத் தவிர்ப்பு குருதி சீனியின் அளவுடையவர்களின் சதவீதம் (கீழே வரையறுக்கப்பட்டுள்ளபடி) • எடுக்கப்படும் நாளக்குருதி மாதிரியில் அளவு ≥6.1 mmol/L (110 mg/dl) மற்றும் <7.0 mmol/L (126 mg/dl) •• மயிர்த்துளைக்குழாய் குருதியில் அளவு (விரல் நுனியில் குத்தி பார்க்கப்படும் அளவு) ≥5.6 mmol/L (100 mg/dl) மற்றும் <6.1 mmol/L (110 mg/dl)	**13.0%** (11.7-14.2)	**12.8%** (10.9-14.6)	**13.1%** (11.6-14.7)

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18-69 வயதுடைடயவர்களுக்கான கணக்கெடுப்பு முடிவுகள் (95% CI உள்ளடங்கலாக)	இரு பாலாரும்	ஆண்கள்	பெண்கள்
தற்சமயம் நீரிழிவுக்கு மருந்து உட்கொள்பவர்கள் மற்றும் அதிகரித்த உணவத் தவிர்ப்பு குருதி சீனியின் அளவுடையவர்களின் சதவீதம் (கீழே வரையறுக்கப்பட்டுள்ளபடி) • எடுக்கப்படும் நாளைக்குருதி மாதிரியில் அளவு ≥ 7.0 mmol/L (126 mg/dl) • மயிர்த்துளைக்குழாய் குருதியில் அளவு (விரல் நுனியில் குத்தி பார்க்கப்படும் அளவு) ≥ 6.1 mmol/L (110 mg/dl)	**14.6%** **(13.5-15.8)**	**14.5%** **(12.7-16.4)**	**14.7%** **(13.2-16.2)**
முழு மக்களிடையே ஏற்கனவே நீரிழிவு நோய் கண்டறியப்பட்ட சதவீதம் *(சுய அறிக்கை)*	**13.9%** **(12.9- 14.8)**	**13.4%** **(11.9- 14.9)**	**14.3%** **(13.1- 15.5)**
இரத்தத்தில் சீனி அதிகரிப்பு உள்ளவர்களில் அல்லது தற்போது அதிகரித்த இரத்தச் சீனிக்கான மருந்துகளை உட்கொள்பவர்களிடையே அதிகரித்த உணவுத்தவிர்ப்பு இரத்தச் சீனி உள்ளவர்கள் புதிதாக கண்டறியப்பட்ட சதவீதம்	**38.4%** **(34.1-42.7)**	**39.8%** **(33.0-46.6)**	**37.2%** **(31.9-42.4)**
இரத்தச் சீனி அளவு அதிகரித்திருப்பவர்கள் அல்லது தற்போது இரத்தச் சீனி அதிகரிப்புக்கான மருந்தைப் பயன்படுத்துபவர்கள் மத்தியில் இரத்தச் சீனி குறைப்புக்கான சிகிச்சையை எடுத்துக் கொள்ளாத சதவீதம்	**49.1%** **(44.7-53.5)**	**53.2%** **(46.6-59.8)**	**45.6%** **(40.2-51.1)**
பல நோயுள்ளவர்கள் பதிலளித்தவர்களின் சதவீதம் (உயர்ந்த இரத்த அழுத்தம் மற்றும் இரத்த குளுக்கோஸ்)	**8.6%** **(7.7-9.6)**	**8.5%** **(6.9-10.0)**	**8.7%** **(7.5-9.9)**
இரத்தத்தில் உள்ள சராசரி மொத்த கொலஸ்ட்ரால் அளவு (தற்போது அதிகரித்த கொலஸ்ட்ராலிற்கான மருந்து உட்கொள்பவர்களை யும் உள்ளடக்கியது)	**187.2** **(185.6- 188.8)**	**182.0** **(179.8- 184.3)**	**191.7** **(189.7- 193.7)**
குருதியில் அதிகரித்த மொத்த கொலஸ்ட்ரோல்அளவு உடையவர்களின் சதவீதம். (≥ 5.0 mmol/L அல்லது ≥ 190 mg/dl அல்லது தற்போது அதிகரித்த கொழுப்புக்கான மருந்து எடுப்பவர்கள்)	**48.7%** **(46.8- 50.6)**	**42.7%** **(40.0- 45.4)**	**54.0%** **(51.6- 56.4)**
அதிகரித்த மொத்த கொழுப்புடன் கூடிய சதவீதம் (≥ 6.2 mmol/L அல்லது ≥ 240 mg/dl அல்லது தற்போது அதிகரித்த கொலஸ்ட்ராலுக்கு மருந்து உட்கொள்பவர்கள்): இலங்கை வழிகாட்டுதலின்படி, உயர்த்தப்பட்ட மொத்த கொழுப்பின் மதிப்பு 240 mg/dl ஆகும்.	**19.0%** **(17.5-20.4)**	**15.6%** **(13.6-17.7)**	**21.8%** **(20.0-23.7)**
இதயக்குருதிச்சுற்றோட்டம் சார்ந்த ஆபத்துக் காரணிகள்			
10 வருட CVD ஆபத்து ≥ 20% அல்லது முன்பே இருக்கும் CVD உள்ள 40-69 வயதுடையவர்களின் சதவீதம்**	**14.2%** **(12.8- 15.8)**	**16.9%** **(14.6- 19.6)**	**11.8%** **(10.1- 13.8)**
ஆபத்துக்காரணிகளின் ஒருங்கிணைந்த சுருக்கம்			
• தினசரி புகைப்பிடிப்பவர்கள் • ஒரு நாளைக்கு 5 பரிமாறல் அளவுகளுக்குக் குறைவாக பழம்,மரக்கறிகள் உள்ளெடுத்தல் • போதிய உடற்பயிற்சி இன்மை	• அதிகரித்த உடல் எடை (BMI 25 kg/m2) • உயர் குருதி அழுக்கம் (SBP ≥ 140 மற்றும்/அல்லது DBP ≥ 90 mmHg அல்லது தற்போது உயர்குருதியமுக்கத்திற்கு மருந்துகள் பாவிப்பவர்கள்)		
மேலே உள்ள ஆபத்து காரணிகள் எதுவும் இல்லாதவர்களின் சதவீதம்	**8.6%** **(7.6- 9.6)**	**9.5%** **(787- 11.1)**	**7.8%** **(6.7- 9.0)**
மேலே உள்ள ஆபத்துக்காரணிகளுள் மூன்று அல்லது அதற்கு மேற்பட்ட ஆபத்து காரணிகளைக் கொண்ட 18 முதல் 44 வயதுடையவர்களின் சதவீதம்	**18.2%** **(16.5- 19.9)**	**18.9%** **(16.1- 21.6)**	**17.6%** **(15.6- 19.7)**
மேலே உள்ள ஆபத்துக்காரணிகளுள் மூன்று அல்லது அதற்கு மேற்பட்ட ஆபத்து காரணிகளைக் கொண்ட 45 முதல் 69 வயதுடையவர்களின் சதவீதம்	**36.3%** **(34.1- 38.5)**	**31.4%** **(28.1- 34.7)**	**40.5%** **(37.7- 43.2)**
மேலே உள்ள ஆபத்துக்காரணிகளுள் மூன்று அல்லது அதற்கு மேற்பட்ட ஆபத்து காரணிகளைக் கொண்ட 18 முதல் 69 வயதுடையவர்களின் சதவீதம்	**26.5%** **(25.1- 28.0)**	**24.6%** **(22.4- 26.7)**	**28.2%** **(26.4- 30.0)**

** வயது, பாலினம், உயர்குருதியமுக்கம், புகைபிடிக்கும் நிலை (தற்போதைய புகைப்பிடிப்பவர்கள்), மொத்த கொலஸ்ரோல் அளவு மற்றும் முன்னரே கண்டறியப்பட்ட நீரிழிவு நோய் ஆகியவற்றின் அடிப்படையில் ≥20% என்ற 10 ஆண்டுகளுக்கான இதயக்குருதிச்சுற்றோட்ட நோய்களுக்கான (CVD) ஆபத்து வரையறுக்கப்படுகிறது.

1 Introduction

1.1 Background

Globally, major Non Communicable Diseases (NCD), such as Cardiovascular Diseases (CVDs), cancers, diabetes and Chronic Respiratory Diseases (CRD) are the leading causes of death responsible for 74% of total deaths in 2019 (World Health Organization, 2022). They continue to be an important public health challenge in all countries, including low- and middle-income countries where more than three-quarters of NCD deaths occur (World Health Organization, 2022). More than two-thirds of all deaths in South-East Asia are from NCDs and half of them are premature and occur between the ages of 30 and 70 years in 2021 (WHO SEARO, 2021).

The leading risk factor for NCD globally is raised blood pressure, followed by tobacco use (WHO, 2008). A quarter of the adult population in South-East Asia suffers from hypertension and every twelfth adult has diabetes (WHO SEARO, 2021). All NCDs share common modifiable behavioral risk factors like tobacco use, unhealthy diet, lack of physical activities, and the harmful use of alcohol, which lead to overweight and obesity, raised blood pressure, blood sugar and cholesterol (World Health Organization, 2021b).

Despite the attention paid globally to NCDs over the past two decades, progress toward reducing the burden of NCDs has been slow. In 2020, only 31 Member States were on track to achieve the Sustainable Development Goals (SDG) target 3.4 on NCD: 33% reduction in risk of premature mortality from NCDs by 2030 against the 2015 baseline (World Health Organization, 2021b). Furthermore, with the exception of tobacco use, trends for NCD risk factors across the globe over the past decade have not shown a significant change.

1.2 Sri Lanka: Country Situation

According to WHO estimates, 84% of all deaths in Sri Lanka in 2016 were due to NCDs, with cardiovascular disease being the leading cause of mortality accounting for 34% of all deaths, followed

by cancers (14%), diabetes (9%) and chronic respiratory diseases (8%)(World Health Organization, 2018). Circulatory system diseases have remained the leading cause of hospital deaths in Sri Lanka, while a steady increase is seen in deaths due to diabetes mellitus during the recent past. According to the available hospital data, Ischemic Heart Disease (IHD) has been the number one leading cause of death in government hospitals during the last decade. Neoplasms, chronic respiratory diseases, and cerebrovascular diseases were the 3rd, 4th and 7th among the 10 leading causes of deaths in government hospitals in 2019 (S. L. Ministry of Health, 2020a). However, the inward deaths occurring in government hospitals, account only 40% of deaths in Sri Lanka, whilst 60% deaths occur outside the hospitals, including the deaths at home and deaths on arrival to the hospital. Also, deaths occurring in a majority of private sector hospitals are not captured in the mortality data. Civil death registration system in Sri Lanka has almost 100% completeness but has several limitations that undermine its quality and utility in generating cause specific mortality data (World Health Organization SEARO, 2018).

According to World Health statistics, probability of an individual dying from any of CVD, cancer, diabetes, or CRD below 70 years of age in Sri Lanka was estimated as 13.2% in 2019 with the probability at 17.5% in males compared to 9.8% in females (World Health Organization SEARO, 2019). Although the estimated life expectancy at birth in Sri Lanka is 73.8 years for males, 79.8 years for females and 76.9 years for both sexes, Healthy Life Expectancy at birth is much lower with 65.1 years, and 69.0 years for males and females respectively and 67 years for both sexes.

1.2.1 NCD Related Information

Information on NCDs and lifestyle related factors were generated using different data sources in Sri Lanka. Routinely, indoor morbidity and mortality data are collected by the Medical Statistic Unit from all healthcare institutions using the Indoor Morbidity and Mortality Return. Screening data on NCDs are generated quarterly from all Healthy Lifestyle Centers located at primary care settings and compiled by the NCD Unit, Ministry of Health. The regular surveys include STEPS Survey, Global Adolescent Health Survey, Global Adult Tobacco Survey and Service Availability and Readiness Assessment.

1.2.1.1 National Surveys

1.2.1.2 Data from Indoor Morbidity and Mortality Return (IMMR) of Sri Lanka (S. L. Ministry of Health, 2020b)

- In Sri Lanka, both indoor morbidity and mortality information are collected using the IMMR from each government hospital and processed by the Medical Statistics Unit (MSU). IMMR generates data on the number of admissions according to the diagnostic categories of International Classification of Diseases (ICD) -10.

According to IMMR 2019,

- Among the total deaths reported in the country, around 60% occur in the nonhospital setting.
- An increasing trend is shown in hospitalizations due to ischemic heart disease (455.4 in 2011 and 667.2 in 2019 per 100,000 population) over the last eight years and Ischaemic Heart Disease has been the main leading cause of death in Sri Lanka since 2010.

1.2.1.3 Healthy Lifestyle Centers

Healthy Lifestyle Centers (HLC) were established in 2011 with the main objective of reducing the risk of NCDs of people by early detection of risk factors and improving access to specialized care for those with a higher risk of Cardiovascular Disease (CVD). Currently there are 1016 functioning HLCs mostly at Primary Health Care Institutions.

1.2.1.3.1.1 Criteria for screening at HLCs:

1. All persons aged 35 and above with no history of NCD or,
2. Persons between the age of 20-34 years having following risk factors;
    i. Smoking tobacco during the past one year
    ii. Overweight and obesity (BMI ≥25kg/m2)
    iii. Abdominal Obesity (waist circumference-male >90cm, female>80cm)
    iv. Raised BP (≥140/90mmHg in individuals with or without diabetes)
    v. Symptoms suggestive of Diabetes mellitus

vi.   History of premature cardiovascular disease in first degree relatives (male relative <55years, female relative <65years)

vii. History of Diabetes mellitus in first degree relatives

viii. History of Familial dyslipidemia in first degree relatives.

According to HLC data 2021,

- In the year 2021, only 2.91% (255,333) of the target population was screened which included 66.02% (168,671) females and 33.98% (86,662) males.

- Of the total population screened, 8.04% (n=21,914) were tobacco smokers which included 23.06%(n=21,359) of the eligible male population screened, and 0.31% (n=555) of the eligible female population screened.

- Among the eligible population screened,

  - 16.69% (n=45,508) chewed betel (with or without tobacco),

  - 12.54% (n=34,184) were alcohol users,

  - 29.08% (n=78,744) were over-weight (BMI between 25-29.9 kg/m2),

  - 11.05% (n=29,913) were obese (BMI of 30 kg/m2 or above),

  - 21.69% (n=57,581) had hypertension (Blood Pressure of 140/90 mmHg or above),

  - 11.97% (n=33,742) had high blood sugar (Fasting Blood sugar values >126 mg/dl   or RBS values >200 mg/dl)

  - 18.2% (n=41,701) had high total cholesterol values (Total cholesterol >240 mg/dl).

- The 10 year cardiovascular risk was estimated using 2019 WHO Cardiovascular Risk Prediction Chart and among the participants screened and 2.45% (n=5580) were found to have cardiovascular diseases risk of 20% or more

1.2.1.4 WHO Stepwise Approach to NCD Risk Factor Surveillance (STEPS)

The WHO STEP wise approach to NCD risk factor surveillance (STEPS) is a simple, standardized method for collecting, analyzing and disseminating data on country specific key NCD risk factors. The survey covers key behavioral risk factors: tobacco use, alcohol use, physical inactivity, unhealthy diet, as well as key biological risk factors: overweight and obesity, raised blood pressure, raised blood glucose, and abnormal blood lipids. However, this survey can be expanded to cover a range of topics beyond these risk factors.

1.2.1.4.1.1 STEPS Survey 2015 (Ministry of Health, STEPS Survey 2015)

STEPS Survey 2015 was conducted using a national sample of 5,188.

According to the survey,

- 9.1 % of Sri Lankan adults aged 40-69 years had a 10-year CVD risk of ≥ 30% or had an existing CVD.
- One in four Sri Lankan adults had raised blood pressure levels or were on medication for high blood pressure.
- One in four of Sri Lankan adults had a total cholesterol ≥190mg/dl or were currently on medication for raised cholesterol
- 7.4% of Sri Lankans reported to have raised fasting blood glucose or were currently on medication for raised blood glucose.
- 72.5% of the Sri Lankan adults aged 18-69 years did not consume the recommended 5 servings of fruits and vegetables per day
- 26% of Sri Lankan adults often consumed processed foods high in salt.
- 30.4% of the Sri Lankan adult population did not engage in the recommended 150 minutes of moderate intensity physical activity level per week.
- Around one in three adult females and one in four adult males were found to be overweight with BMI 25 or more
- Among the adult males, one third had consumed alcohol within the past 30 days and 18% were current alcohol users.
- Half of Sri Lankan adult males consumed tobacco, while 29% of them have smoked tobacco.

1.2.1.4.2   Global Adult Tobacco Survey (GATS) (National Authority on Tobacco & Alcohol and CDC, 2020)

The GATS is a global standard for systematically monitoring adult tobacco use (smoking and smokeless) and tracking key tobacco control indicators. It is conducted as a nationally representative survey, using a consistent and standard protocol across countries including Sri Lanka.

A multi-stage, geographically clustered sample design was used to produce nationally representative data. There was a total of 6,770 completed individual interviews.

According to the survey,

- 19.4% overall (3.2 million adults), 36.2% of men, and 4.9% of women currently used tobacco.
- 9.1% overall (1.5 million adults), 19.7% of men, and <0.1% of women currently smoked tobacco.
- 13.4% overall (2.2 million adults), 23.4% of men, and 4.9% of women currently used smokeless tobacco.
- 51.6% of current smokers planned to or were thinking about quitting smoking.
- 47.0% of smokers who visited a healthcare provider in the past 12 months were advised to quit smoking.
- 30.6% of smokeless tobacco users who visited a healthcare provider in the past 12 months were advised to quit.
- 16.7% of adults who worked indoors (0.8 million adults) were exposed to tobacco smoke in enclosed areas at their workplace.
- 8.4% of adults (1.4 million adults) were exposed to tobacco smoke inside their homes.

1.2.1.4.3 Service Availability and Readiness Assessment (SARA)(Ministry of Health, Nutrition and Indigenous Medicine and Department of Census and Statistics, 2018. Service Availability and Readiness Assessment 2017 Sri Lanka)

The 2017 SARA for Sri Lanka was conducted to assist the health sector in assessing and monitoring the service availability and readiness. It was conducted in a nationally representative sample of 755 facilities drawn from a population of 2543 health facilities in Sri Lanka. The sampling technique adopted was a two-stage stratified random sampling. The sample included 41 tertiary care hospitals, 50 secondary care hospitals, 252 primary health care facilities, 344 public clinics and 68 privately owned hospitals.

The Key findings related to Non Communicable Diseases were;

- Services for screening or diagnosis of diabetes were available in 95% of health facilities that are expected to provide this service in Sri Lanka.

- Only 58% of health facilities at national level provided blood glucose testing by venous blood.

- However, the percentages of facilities providing screening services for complications such as diabetic retinopathy, nephropathy and peripheral neuropathy were low at the national level (36% to 49%).

- The services for screening for complications in tertiary care hospitals were high (94% to 97%).

- The overall readiness for diabetes screening and diagnosis services was 50 out of 100 in MOH clinics (service provided through Well Woman Clinics), 68 out of 100 in HLCs, and 52 out of 100 in Primary Medical Care Units (PMCU). The readiness scores in Divisional Hospitals and Private Hospitals were also low (50 to 69 out of 100) compared to secondary and tertiary care hospitals (73 to 80 out of 100).

- The overall readiness score for diabetes management at national level was 68 out of 100. The figure was high in secondary and tertiary care hospitals (80 to 88 out of 100), in comparison to PMCU (57 out of 100) and Private Hospitals with <50 beds (60 out of 100).

- Of all health facilities that are expected to provide the service, 89% offered screening or diagnostic services for cardiovascular disease (CVD), and 69% offered cardiovascular risk assessment using the WHO ISH chart.

- Seventy four percent of health facilities that are expected to provide the service offered services for management of high CVD risk at national level.

- Services for management of cardiovascular disease (myocardial infarction and stroke) were available at all tertiary care and secondary care hospitals, and approximately half of the primary care hospitals and one-third of the Private Hospitals.

- Overall readiness score for screening and diagnosis services for CVD was 74 out of 100 in the health facilities at national level excluding HLCs, and 77 out of 100 for HLCs.

- Readiness with respect to management of clients with CVD risk was 76 out of 100 at national level excluding Divisional Hospitals, PMCU and HLCs.

- The overall readiness score for management of myocardial infarction and stroke was 82 out 100 in hospitals at national level.

- Overall readiness score for screening, diagnosis and management of COPD was high in secondary care hospitals (83 out of 100) and tertiary care hospitals (81 out of 100), and low in Divisional Hospitals (67 out of 100) and PMCU (56 out of 100). The overall readiness score was 75 out of 100 in Private Hospitals.

- Fifty two percent of health institutions in Sri Lanka that are expected to provide the service, offered diagnostic services for chronic kidney disease (CKD). This service is offered by 97% of tertiary care hospitals, 92% of secondary care hospitals, 41% of primary care health facilities and 57% of Private Hospitals.

- Management and/or long-term patient follow up of CKD was available in 49% of all health facilities that are expected to provide the service, and assessment of renal functions in 49% of health facilities.

- The percentage availability of CKD management services by facility type was almost similar to the CKD diagnosis services.

- Overall readiness score for CKD services was 43 out of 100 for Divisional Hospitals, 55 out of 100 for Base Hospitals, 70 out of 100 for tertiary care hospitals and 42 out of 100 for Private Hospitals.

- At the national level, 57% of health facilities that are expected to provide the service, offered clinical oral examination, and 17%, offered oral cancer diagnosis services. These services were available mostly in the secondary care hospitals (92%) and tertiary care hospitals (97%).

- Services for clinical oral examination were available in 55% of the Private Hospitals as well. Services for oral cancer surgery, oral cancer chemotherapy, radiotherapy and palliative care were available in 75%, 62%, 38%, and 66% of tertiary care hospitals, respectively.

- National level overall readiness score for oral cancer services was 42 out of 100 for public sector hospitals in contrast to 30 out of 100 in private sector health hospitals.

- Sixty eight percent of health facilities that are expected to provide the clinical breast examination in Sri Lanka offered the service. The corresponding percentage for breast cancer diagnostic services was 66%. Mammography services were available in 42% of tertiary care and 18% of Private Hospitals. Surgical treatment for breast cancer was provided in all tertiary care, 63% of secondary care hospitals and 50% of Private Hospitals. Overall readiness score for breast cancer services ranged from 30 to 68 out of 100 across public sector hospitals, in contrast to 21 out of 100 in Private Hospitals.

- Thirty six percent of health facilities that are expected to provide the clinical examination of cervix in Sri Lanka, offered the service, and 58%, offered the cervical cancer diagnostic services. The majority of Teaching Hospitals, some secondary hospitals and Private Hospitals provided colposcopy services (83%, 11% and 15% respectively) and surgical treatment for cervical cancer (83%, 46%, and 37% respectively). Chemotherapy services for management of cervical cancer was available in 47% of public sector health facilities and 22% of Private Hospitals.

- Radiotherapy was available only in tertiary care facilities (27%). Overall readiness score for cervical cancer services varied from 84 to 100, out of 100 in tertiary care hospitals. The readiness score was 63 out of 100 in Base Hospitals, 44 out of 100 in Divisional Hospitals and in 41 out 100 in Private Hospitals.

- Availability of outpatient mental health services and in-ward psychiatric services were assessed in all hospitals included in the survey. Seventy three percent of the hospitals offered outpatient mental health services, and 46% of hospitals offered in-ward psychiatric services at national level. Mental health services such as referral of persons who attempted suicide for psychiatric assessment, child and adolescent guidance services, services to address issues related to substance abuse, gender-based violence (GBV), and mental health issues of elderly were available in more than half of the hospitals (59% to 71%). Overall readiness score to offer mental health services was 64 out of 100 and ranged from 53 out of 100 in Private Hospitals to 94 out of 100 in tertiary care hospitals.

1.2.1.4.4 Global School Health Survey (Ministry of Health, Nutrition and Indigenous Medicine and Ministry of Education, Government of Sri Lanka. Report of the 2016 Sri Lanka Global School-Based Student Health Survey. Colombo: Government of Sri Lanka, 2017)

The second Global School-Based Student Health Survey (GSHS 2016) in Sri Lanka was conducted among school children aged 13-17 years attending class 8-12 to assess the trends in the prevalence of key health behaviors and protective factors among adolescents. A two-stage cluster sampling method was used to select a nationally representative sample of 40 schools and 3650 students, out of which all 40 schools and 3263 (3262 usable data) students participated.

The key findings from the survey are the following:

- About 32% of students reported usually eating fruits two or more times per day and a similar percentage of 36% reported usually eating vegetables three or more times a day.

- A quarter of the students (26%) reported drinking carbonated soft drinks one or more times per day.

- Only 28% of students reported being physically active at least 60 minutes per day on 5 or more days during the 7 days before the survey and more than one-third of the students reported spending time sitting.

- Prevalence rates of current alcohol use (3.2%) and current addictive drug use (2.7%) were constant over the years.

- Prevalence of current any tobacco use was 9.2% with current smoking being 3.5% and current smokeless tobacco use being 2.3%. About 55% tried to smoke tobacco before age 14 but encouragingly 71% reported trying to quit in the past year.

- The rates of secondhand smoke exposure were moderately high at 42.3%.

1.2.1.4.5 Demographic and Health Survey 2016 Sri Lanka (DHS) (Department of Census and Statistics (DCS) and Ministry of Health, Nutrition and Indigenous Medicine 2017. Sri Lanka Demographic and Health Survey 2016 Sri Lanka)

The Demographic and Health Survey 2016 used a multistage stratified area probability sample design. A total of 28,800 housing units were selected for the survey, from which 27,455 were occupied at the time of the survey and 27,210 were successfully interviewed.

Key findings of the survey,

- **Heart disease**

  o Two percent of the Sri Lankan population was identified as having heart disease.
  o The disease increases with age and is slightly more prevalent among males, and residents of the urban sector, and among the richest 20 percent and the poorest 20 percent of the households.

- **High blood pressure:**

  - Eight percent of the total population were affected by high blood pressure.
  - Among the sexes, females are more likely to be affected (10 percent) than males (6 percent).
  - Among the sectors, 10 percent of urban household members are suffering from high blood pressure compared to 8 percent of their rural counterparts.
  - According to the wealth quintile, people living in households from the richest 20 percent have the highest prevalence at 11 percent.

- **Diabetes:**

  - Six percent of the population were affected by diabetes.
  - The prevalence of diabetes increases with the age of the person, particularly from ages 30-34 and above (up to 47 percent among the population 60 years old and above).

- **High blood cholesterol:**

  - Five percent of the total populations are affected by high blood cholesterol.
  - Among the sexes, females are more likely to be affected (7 percent) than males (4 percent).
  - Among the sectors, 8 percent of urban household members are suffering from high blood cholesterol compared to 5 percent of their rural counterparts.
  - According to the wealth quintile, people living in households from the richest 20 percent have the highest prevalence at 8 percent.

1.2.1.5 Research / survey related to salt intake

1.2.1.5.1 Estimation of salt intake, potassium intake and sodium-to-potassium ratio by 24-hour urinary excretion: an urban rural study in Sri Lanka (Jayatissa et al., 2020)

Jayatissa et al., (2020) has conducted a community-based study of 328 adults between 30-59 years, including equal numbers from urban and rural sectors in which weight, height, and waist

circumference were measured and 24-hour urine was collected and measured for creatinine, sodium, potassium levels.

Accordingly, to the survey,

- Mean daily salt consumption was 8.3g (95% CI:7.9,8.8), which is 1.6 times higher than WHO recommendation.

- Mean daily potassium intake was 1,265g (95%CI:1191.0,1339.3), which is 2.8 times lower and sodium/potassium ratio was 4.3 (95%CI:4.2,4.5), which is 7 times higher than WHO recommendation.

- Daily salt consumption was significantly higher in males (9.0g;95%CI:8.3,9.8) than females (7.7g;95%CI:7.2,8.2); rural (8.9g;95%CI:8.2-9.6,) than urban (7.7g;95%CI:7.2,8.3) with increasing body mass index.

- Systolic blood pressure was significantly positively correlated with high BMI and waist circumference.

1.2.1.5.2 A method to monitor the national salt reduction efforts in Sri Lanka and status of salt, potassium and iodine intake in an adult Sri Lankan community (Jayatissa et al., 2021)

Jayatissa et al., (2021) has carried out a study to monitor the salt reduction effort in Sri Lanka and status of salt potassium and iodine intake in adult Sri Lankan community. A cross-sectional study was conducted among adults between 25-64 years of age and a multi-stage stratified cluster sampling design was used to select a community-based sample size of 900. 24-hr urine and spot urine samples were collected. This study provided nationally representative 24-hour estimates of dietary salt, potassium, and iodine intake among Sri Lankan adults aged 25–64 years, to support the national salt reduction strategy 2018–2022 (Ministry of Health, 2018).

According to the survey,

- The measured median and mean salt intake for adults aged 25–64 years was 11.4 (IQR 7.7–17.1) and 13.3 (CI 12.5–14.1) g/day respectively.

- Salt intake among men was significantly higher than women (12.5 vs. 10.4 g/day; p < 0.001) as shown in other studies (Huang et al., 2016; Whitton et al., 2016; Santos et al., 2019; Xu et al., 2020).

1.2.1.5.3 Knowledge and practice of dietary salt use before and after implementation of a communication plan using the Communication for Behavioural Impact (combi) methodology in Mahara Divisional Secretariat area (Wickramasinghe, S. W. A. D. A. (2022). Knowledge and practice of dietary salt use before and after implementation of a communication plan using the Communication for Behavioural Impact (COMBI) methodology in Mahara Divisional Secretariat area. (Doctor of Medicine). University of Colombo)

A quasi-experimental study was conducted in Mahara DS area (study area) and Minuwangoda DS area (control area) by Wickramasinghe, S. W. A. D. A. et el., (2022). A household survey was done with four validated study instruments to assess the base line for dietary salt intake knowledge and practice related to dietary salt consumption and the attitudes and perception on dietary salt reduction in a cluster randomized 600 sample. After and implementation of the community plan using the COMBI methodology in Mahara DS area, the same household survey was conducted to assess the knowledge and practice related to dietary salt consumption and attitude and perception on dietary salt reduction.

According to the survey,

- The baseline value for dietary salt for the two areas were estimated using 24-hour urine collections, and median salt intake was 11.23g/day/person (IQR=7.36) in Mahara and 10.46g/day/person (IQR=6.84) in Minuwangoda.
- In Mahara 56.2% (n=145) and in Minuwangoda 41.8% (n=108) added salt to rice in cooking.

The communication plan was implemented for three months from June 2021. After the implementation the end line household survey was carried out with the same participants who participated the baseline survey. The response rate was 95.6% (n=495).

- The knowledge on the risk of dietary salt was increased in Mahara DS area compared to Minuwangoda DS area.
- The percentage of households which added salt to rice significantly decreased in Mahara DS area compared to Minuwangoda DS area.
- The median daily dietary salt intake of Mahara DS area has reduced significantly, and a reduction of smaller proportion is seen in Minuwangoda DS area as well.
- The median systolic and diastolic blood pressure of respondents in Mahara DS was reduced significantly compared to Minuwangoda DS.

1.3   Purpose of the present STEPS Survey

Regular assessment of the NCD risk profile in Sri Lanka utilizing the WHO recommended eSTEP method is essential and justified, for the planning and implementation of preventive and control strategies for NCDs in the future. This survey on common NCDs and risk factors ensure consistent comparable data across and within countries as data is collected using standardized tools. The survey findings will be helpful to plan health services and determine public health priorities. Further this will be beneficial to monitor and evaluate population-wide interventions and for estimating future caseloads of NCDs.

1.4   Objectives

1.4.1   General Objective:

To assess the current prevalence of key behavioral and physiological risk factors and utilization of early detection and treatment services for physiological risk factors of NCD and assess the knowledge and practices related to alcohol control policies among Sri Lankan adults 18-69 years of age in 2021.

1.4.2   Specific Objectives:

1. To describe the current prevalence of lifestyle related risk factors of NCDs (Tobacco use, alcohol consumption, unhealthy dietary habits and physical inactivity) among the target population

2. To describe the prevalence of physiological risk factors of NCDs (Hypertension, hyperglycemia, hyperlipidemia and overweight and obesity) among the target population

3. To assess the knowledge and practice on selected alcohol control policies among the target population

2   Methodology

2.1   Study Design

The WHO stepwise survey protocol (WHO STEPS Surveillance Manual, 2017) was used to conduct the STEPS Survey 2021/2022. Using cross sectional descriptive study design, data was collected from a sample of adults aged 18-69 years in Sri Lanka with the purpose of obtaining nationally representative estimates.

2.2   Study Population

Individuals aged 18-69 years residing in Sri Lanka were selected as the target population.

2.3   Inclusion Criteria

Individuals aged 18-69 years residing in Sri Lanka, who had been residing at a particular address for a period of six months or more were included in the survey.

2.4   Exclusion Criteria

The following category of individuals were excluded from the survey

- Those who had been residing at the current residence for a period of less than six months
- Individuals who were not Sri Lankans living on a temporary basis
- Individuals who were mentally unfit to be included in the study
- Individuals were physically too frail to be included in the study

2.5   Sample Size Calculation

The following formula and assumptions were used to calculate a nationally representative sample size with 95% Confidence Intervals.

$$\text{Sample size (N)} = \frac{Z^2 \times P \times (1-P)}{d^2} \quad \text{(Lwanga \& Lemeshow, 1991)}$$

Z - 1.96 corresponding to a significance level of 95%

P - Expected prevalence of a NCD risk factor: the proportion of males currently using some form of tobacco product (either smoked or smokeless) based on the STEP survey 2014 in Sri Lanka were 46% (Ministry of Health, 2015). This value was considered for the current calculation.

d - Margin of error = 0.05

$$N = \frac{1.96^2 \times 0.46 \times (1-0.46)}{0.05^2} = 382$$

Design effect

Design effect of 1.6 was considered to overcome the loss of effectiveness by the use of complex sampling, instead of simple random sampling method.

Age and sex estimates

The national level statistics published are for selected age and sex groupings.

• Males and Females considered as two groups.

• Age Groups- 18-29 years, 30-44 years,45-59 years and 60-69 years – four groups.

Thus, the sex and age group estimation were 2 x 4 = 8 (WHO, 2018)

Response rate

The response rate of stage three of the STEPS survey 2014 was 63.3% and the same rate was anticipated and used in the final calculation of sample size required for the current survey.

Sample size

$$\frac{382 \times \text{Design effect} \times \text{number of age-sex estimates}}{\text{Anticipated response rate}}$$

Therefore, the required sample size was: $= \frac{382 \times 1.6 \times 8}{0.633} = 7724$ housing units

2.6 Sampling Technique

A multistage stratified cluster sampling method was used to select a nationally representative sample. The sample was stratified based on district and sector (urban, rural, estate) levels. A primary sampling unit was considered as a cluster. The study sample was selected by the Department of Census and Statistics (DCS) using population data available with them.

Primary Sampling Unit (PSU)

The frame of PSUs was based on the census blocks prepared at the Census of Population and Housing – 2011, which was updated for the first quarter Labor Force Survey in 2018. Thus, 644 PSUs were selected using Probability Proportionate Sampling (PPS) method, based on the population of the area.

Secondary Sampling Unit (SSU)

A housing unit was considered as an SSU. From each PSU, twelve SSUs were selected randomly based on a sampling frame of housing units in each PSU which were available with the DCS. Therefore, 7728 housing units were selected as SSUs for the survey. Seven blocks were not done due to COVID 19 lockdown.

Tertiary Sampling Unit (TSU)

One individual from each housing unit was selected at random from all the eligible respondents (persons age 18-69) for the detailed enumeration. For this purpose, all eligible members for the survey in the selected housing unit were listed in the descending order according to the age and fed into an android device Personal Digital Assistants (PDA). One eligible participant for the survey was randomly selected by the PDA using the 'Kish' method.

2.7   Data Collection

2.7.1   Study Instruments

STEPS survey was conducted in three stages, using the modified STEPS instrument version 3.2 of the World Health Organization (please refer the electronic version of the report, and it can be downloaded from the website of the Ministry of Health).

- STEPS 1 used an Interviewer Administered Questionnaire
- STEPS 2 comprise of a check list for anthropometric measurements and Spot urine collection from the study participants
- STEPS 3 is a check list for the measurement of Fasting / Random Blood Sugar and Total Cholesterol

STEP 1

STEP 1 was carried out using an Interviewer Administered Questionnaire (STEPS instrument version 3.2), installed in PDA (Personal Digital Assistant). This method is also called as the 'Computer-Assisted Personal Interviewing' (CAPI) technique. The original WHO STEPS instrument version 3.2

was modified to the Sri Lankan context following several consultative meetings with experts in the relevant fields: Consultant Physicians, Consultant Community Physicians, Nutritionists, Specialists in Sports and Exercise Medicine. Final questionnaire was prepared in English medium and then translated to both Sinhala and Tamil languages and was back translated to English language to ensure consistency of meaning. The questionnaire was pre-tested among a representative sample to assess its clarity and acceptability and necessary amendments were done in the questionnaire accordingly.

Show cards (please refer the electronic version of the report, and it can be downloaded from the website of the Ministry of Health). were developed based on the locally available fruits, vegetables, types of physical activity, tobacco products and types of alcohol for better understanding of the interviewee while the questionnaire was being administered. These show cards were pretested prior to the main survey. Final questionnaire in all three languages was installed into PDA which was used for data collection. Collected data were directly uploaded from the PDAs to the server of the DCS and stored into a Secure Digital (SD) memory card as a back-up.

STEP 2

Physical Measurements

STEP 2 of the survey included the following anthropometry measurements and measurement of the resting blood pressure in the seated position.

- Height was measured using a non-mountable portable stadiometer, to the nearest 0.5cm.
- Weight was measured using a digital flat weighing scale to the nearest 100g
- Waist circumference was measured using a measuring tape to the nearest 0.2cm
- Resting blood pressure was measured using a portable, automated digital upper arm blood pressure monitor, in the seated position (with a universal cuff).

These measurements were taken by the member of the health staff (Public Health Nursing Sister/Public Health Midwife) of the field survey team. Three measurements of the blood pressure and two values of other anthropometric measurements were taken.

Collection of Urine Samples

In addition to the above measurements, urine samples (5ml) from each study participant were collected to the urine sample storage bottles provided by the Medical Research Institute (MRI) for biochemical analysis for urinary sodium and creatinine levels. Urinary Cotinine levels were measured using the same urine sample with the help of Cotinine rapid test kits. Urinary sodium levels were utilized later

to calculate the average daily salt intake of the individual. Urinary creatinine levels were assessed to describe the prevalence of kidney disease in the country.

STEP 3

This step included biochemical measurements of the study participants. Fasting blood glucose level and total cholesterol levels of the participants were measured using portable point of care glucometers and cholesterol monitors using capillary blood.

2.8   Study Variables

Study variables of STEP 1 included:

• Socio-demographic characteristics

• Questions to assess the behavioral risk factors for NCDs such as tobacco use, alcohol consumption, dietary behaviors, physical activity and questions to assess the knowledge and attitudes related to alcohol control policies.

• Questions to assess the factors related to increase in the physiological risk factors e.g.: blood pressure and blood glucose

Study variables of STEP 2 included:

• Blood pressure

• Height

• Weight

• Waist Circumference

• Non-fasting urinary sodium level

• Non-fasting urinary creatinine level

Variables assessed in STEP 3 included:

• Fasting blood glucose level

• Serum total cholesterol level

2.9   Data Collection Period

Data had to be collected in three rounds due to the covid Epidemic.

   1st round: April 2021

   2nd round: November 2021

   3rd round December 2021

Each team completed one PSU per day, and therefore, one team completed STEP 1 and STEP 2 for 60 housing units per week (12 housing units per day). There were 60 respondents per week for STEP 3 measurements. The data collection of the survey was completed within a period of three months.

2.10   Survey Team

A Survey team included

- One (01) Supervisor from the DCS
- Three (03) enumerators from the DCS for STEP stage 1 data collection
- One (01) enumerator from the Medical Officer of Health Office (MOH) for STEP 2 and 3
- One (01) supporter from MOH Office

2.11   Field Management of Data Collection

Meetings were conducted for relevant divisional level and district level managers (MOOH and Medical Officers for NCD - MO NCD) to discuss implementation, monitoring, supervision plans and feedback mechanism of the survey. Necessary equipment received from WHO for data collection and relevant documents were distributed among the enumerators through the relevant district MO NCD.

2.12   Training of Data Collectors

Several training sessions were conducted for data collectors by the experts representing the Ministry of Health, Medical Research Institute (MRI) and the WHO representing WHO Head Quarters and WHO Regional office, South-East Asia.

The enumerators were subjected to intensive training on use of questionnaire of STEPS-2018, including the ethical issues and the importance of obtaining consent from the participant at each step of data collection. The enumerators from the DCS were trained on electronic data collection using the PDA, the selection of study participants using the Kish method. The enumerators from the MOH were

trained on standardized methods of anthropometric measurements (please refer the electronic version of the report, and it can be downloaded from the website of the Ministry of Health), proper techniques on biomedical tests (please refer the electronic version of the report, and it can be downloaded from the website of the Ministry of Health), instructions to be given to the study participants on spot urine sample collection (please refer the electronic version of the report, and it can be downloaded from the website of the Ministry of Health).

2.13 Quality of Data

The supervisors were there to ensure quality of data collected. The detailed training provided to the data collectors, use of pretested questionnaire, cleaning off data improved the quality of data collected.

2.14 Weights Calculation

2.14.1 Base weights are calculated at block level

a) $W1_{ij}$ = Block selection stage weight of ith strata j^{th} block = $\frac{S_i}{m_i \times s_{ij}}$

S_i = Total number of housing units at i^{th} strata

s_{ij} = Total number of housing units at i^{th} strata j^{th} block

m_i = Number of census blocks at i^{th} strata

b) $W2_{ij}$ = Secondary sampling unit selection stage weight of ith strata j^{th} block = $\frac{N_{ij}}{n_{ij}}$

N_{ip} = Total number of housing units listed at i^{th} strata j^{th} block

n_{ip} = Number of housing units selected at i^{th} strata j^{th} block

Base weight of ith strata j^{th} block = $WB_{ij} = W1_{ij}*W2_{ij}$

2.14.2 Adjustment for Household non-response

The occurrence of unit non-response was determined by examining the final result code recorded under control data section of the schedule. Based on the final result codes the households were grouped into the following categories, which were used as a basis for adjusting for the unit non-response.

Category and description	Result code
1. Household Schedule completed	1,8 (No Eligible Person)
2. Housing unit demolished or vacant	6
3. Unable to complete Household schedule, refusal, temporarily away etc.	2, 3, 4, 5

Category 1 and 2

These were considered as fully accounted for as a Household schedule was completed to the extent required by the situation at the time of interview and therefore no adjustment was necessary.

Category 3

This is incomplete therefore, a non-response adjustment was made for this category. The assumption made here for the adjustment of non-response was the proportion of households in category 3 is the same as the corresponding proportion for sample households in category 1. This assumption is applied on a block-by-block basis separately for urban, rural and estate sectors.

The revised weight of ith strata j^{th} block should take the form

$$WBN_{ij} = WB_{ij}\left(\frac{nhu1_{ij} - nhu2_{ij}}{nhu123_{ij}}\right)$$

Where, $nhu1_{ij}$ = Number of sample households in category 1 at i^{th} strata j^{th} block.

$nhu2_{ij}$ = Number of sample households in category 2 at i^{th} strata j^{th} block.

$nhu123_{ij}$ = Total number of households in all categories (category 1, 2 and 3) at i^{th} strata j^{th} block.

STEP1_Base_Fac$_{ijk}$ = STEP1 Base Factor for i^{th} strata j^{th} block k^{th} hosing unit
= WBN_{ij} * Number of Eligible persons in i^{th} strata j^{th} block k^{th} hosing unit

2.14.3 Population Adjustment

Population Adjustment for STEP1, STEP2 and STEP3 was done according to WHO recommendation.

STEP1 Adjustment

	Sri Lanka Labour Force Survey 2021	STEP1 Counts Weights by STEP1_Base_Fac	STEP1 Adjustment
Males, 18-29	1,659,888	938,022	1.7695626
Males, 30-44	1,915,623	1,252,879	1.5289769
Males, 45-59	1,988,079	1,409,271	1.4107140
Males, 60-69	1,089,646	759,064	1.4355135
Females, 18-29	1,766,175	1,179,968	1.4967999
Females, 30-44	2,290,527	1,901,845	1.2043712
Females, 45-59	2,333,005	1,881,103	1.2402328
Females, 60-69	1,273,092	1,010,951	1.2593019

STEP1 Factor for person in p^{th} gender k^{th} age group

STEP1_Fac_Final$_{pk}$ = STEP1 Adjustment$_{pk}$ * STEP1_Base_Fac

Where, **STEP1_Base_Fac** = STEP1 Base Factor for corresponding person.

HU_Fac_Final$_{ijk}$ = Housing Unit Factor of ith strata j^{th} block k^{th} hosing unit
= STEP1_Fac_Final$_{ijk}$ / Number of eligible persons in i^{th} strata j^{th} block k^{th} hosing unit

STEP2 Adjustment

	STEP1 Counts Weights by STEP1_Fac_Final	STEP2 Counts Weights by STEP1_Fac_Final	STEP2 Adjustment
Males, 18-29	1,659,888	1,377,322	1.2051559
Males, 30-44	1,915,623	1,656,380	1.1565122
Males, 45-59	1,988,079	1,812,795	1.0966924
Males, 60-69	1,089,646	1,030,411	1.0574867
Females, 18-29	1,766,175	1,536,393	1.1495592
Females, 30-44	2,290,527	2,034,291	1.1259587
Females, 45-59	2,333,005	2,149,105	1.0855708
Females, 60-69	1,273,092	1,174,852	1.0836193

STEP2 Factor for person in p^{th} gender k^{th} age group

STEP2_Fac_Final$_{pk}$ = STEP2 Adjustment$_{pk}$ * STEP1_Fac_Final

Where, **STEP1_Fac_Final** = STEP1 Final Factor for corresponding person.

STEP2 Adjustment

	STEP1 Counts Weights by STEP1_Fac_Final	STEP3 Counts Weights by STEP1_Fac_Final	STEP3 Adjustment
Males, 18-29	1,659,888	1,026,057	1.6177345
Males, 30-44	1,915,623	1,289,029	1.4860983
Males, 45-59	1,988,079	1,476,689	1.3463085
Males, 60-69	1,089,646	897,825	1.2136516
Females, 18-29	1,766,175	1,250,738	1.4121069
Females, 30-44	2,290,527	1,758,036	1.3028898
Females, 45-59	2,333,005	1,804,031	1.2932178
Females, 60-69	1,273,092	1,037,375	1.2272248

STEP3 Factor for person in p^{th} gender k^{th} age group

STEP3_Fac_Final$_{pk}$ = STEP3 Adjustment$_{pk}$ * STEP1_Fac_Final

Where, **STEP1_Fac_Final** = STEP1 Final Factor for corresponding person.

2.15   Ethical Clearance

Ethical clearance was obtained from the Ethical Review Committee, Sri Lanka Medical Association.

2.16   Data Analysis

Data analysis was completed using EpiInfo version 3.5.4.

3   Results

3.1   Socio Demographic Profile of the Sample

3.1.1   Response Rates

A total of 7728 eligible persons were invited to participate in the 2021 STEPS survey, out of which,

- 6267 participants completed step 1, thus the response rate for step 1 was 81%
- 5633 participants completed step 2, thus the response rate for step 2 was 73%. The non- drop off rate of step 2 was 90% of those who completed step 1.
- 4708 participants completed step 3, thus the response rate for step 3 was 61%. The non- drop off rate of step 3 was 75% of those who completed step 1.

3.1.2   Demographic Information

3.1.2.1 Age and Sex Distribution of Survey Respondents

Of the total 6267 respondents in step 1, 3820 (61.0%) were females and 2447 (39.0%) were males. The distribution of respondents by age and sex is shown in Figure 3.1.
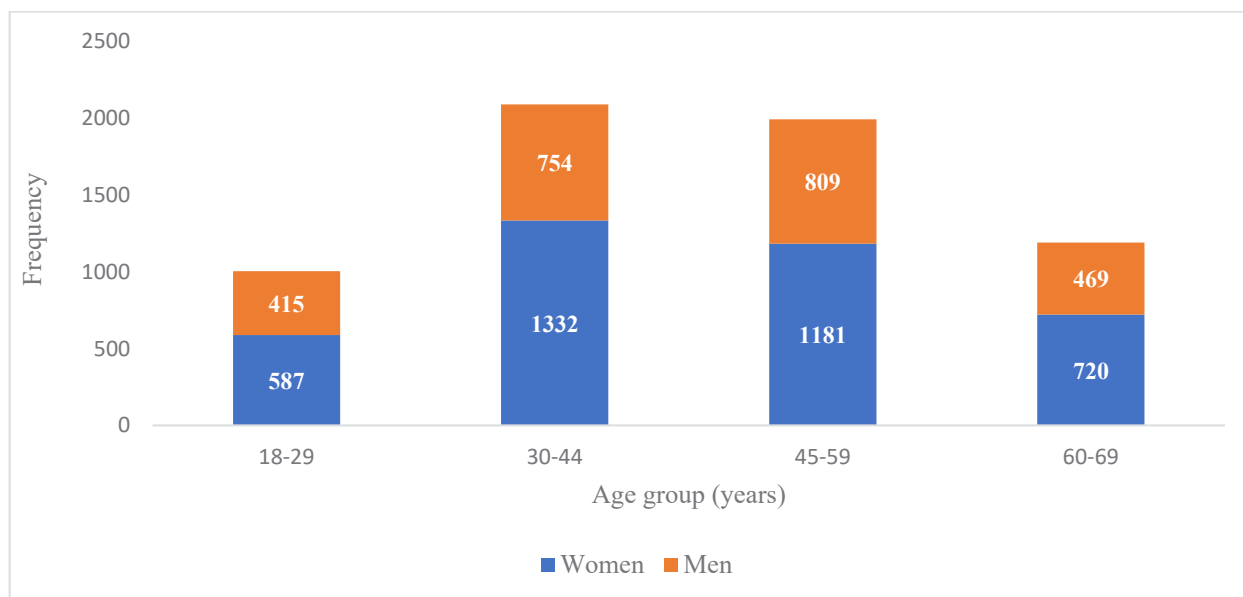
Figure 3.1: Distribution of Respondents by Age and Sex

The proportion of females was more than the proportion of males in all age categories. One third (n=2086) of respondents belonged to the 30–44 year age category and almost one third (31.8%; n=1990) belonged to the 45-59 year age category.

3.1.3   Level of Education of Survey Respondents

Education level was determined by inquiring about the number of years spent in total, at school or in full-time study (excluding pre-school). The distribution of respondents by highest level of education achieved, is shown in Figure 3.2 and Table 3.1.
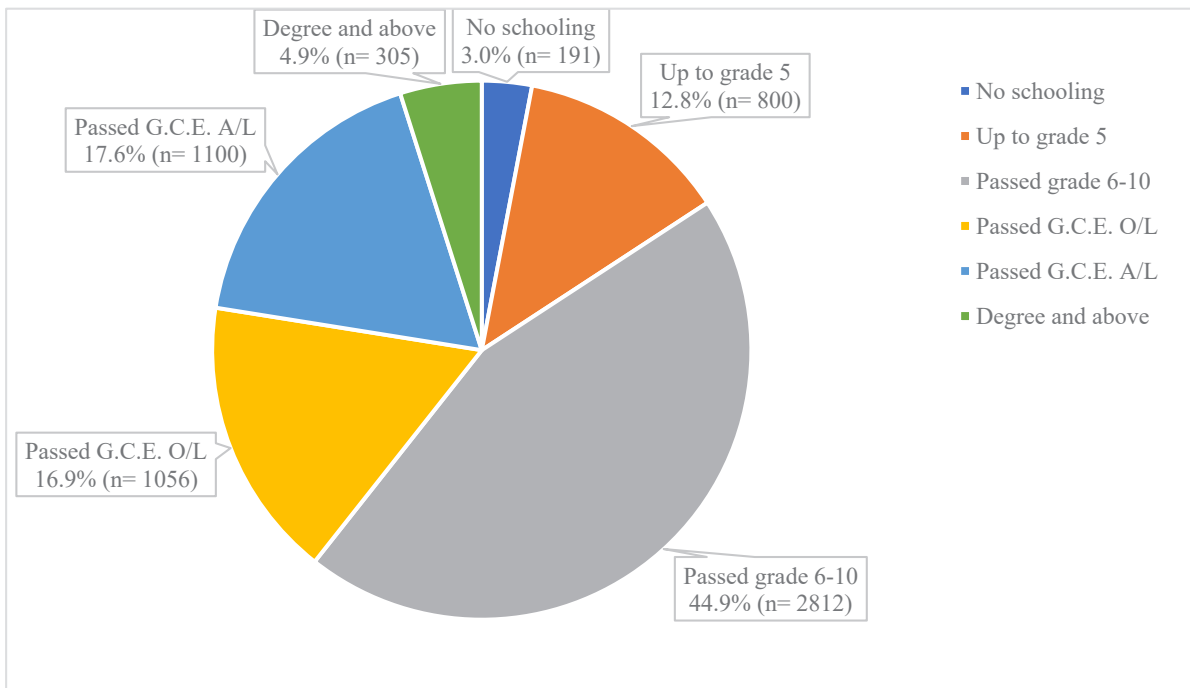
Figure 3.2: Distribution of respondents by highest level of education achieved

Table 3.1 shows distribution of respondents (both sexes) by highest level of education.

Table 3.1: Distribution of Respondents (Both Sexes) by Highest Level of Education Achieved

Age Group (years)	"No schooling" (%)	"Up to grade 5" (%)	"Passed grade 6-10" (%)	"Passed G.C.E. O/L" (%)	"Passed G.C.E. A/L" (%)	"Degree and above" (%)	Total (%)
18-29	4 (0.4)	14 (1.4)	330 (32.9)	279 (27.8)	331 (33.0)	44 (4.4)	1002 (100.0)
30-44	29 (1.4)	113 (5.4)	1035 (49.6)	346 (16.6)	414 (19.8)	149 (7.1)	2086 (100.0)
45-59	88 (4.4)	383 (19.2)	900 (45.2)	288 (14.5)	251 (12.6)	78 (3.9)	1990 (100.0)
60-69	70 (5.9)	290 (24.4)	547 (46.0)	143 (12.0)	104 (8.7)	34 (2.9)	1189 (100.0)

Of the total respondents, 39.4% had completed secondary level education (passed G.C.E. Ordinary Level examinations or higher) and 3.0% had no schooling (Figure 4.3). 65.2 % of respondents belonging to the age group 18-29 years had completed higher level of education and this percentage is more than observed in other age groups. (Table 3.1).

3.1.4 Employment Status of Survey Respondents During the Past 12 Months

The employment status of respondents during the past 12 months is given below in Figure 3.3.
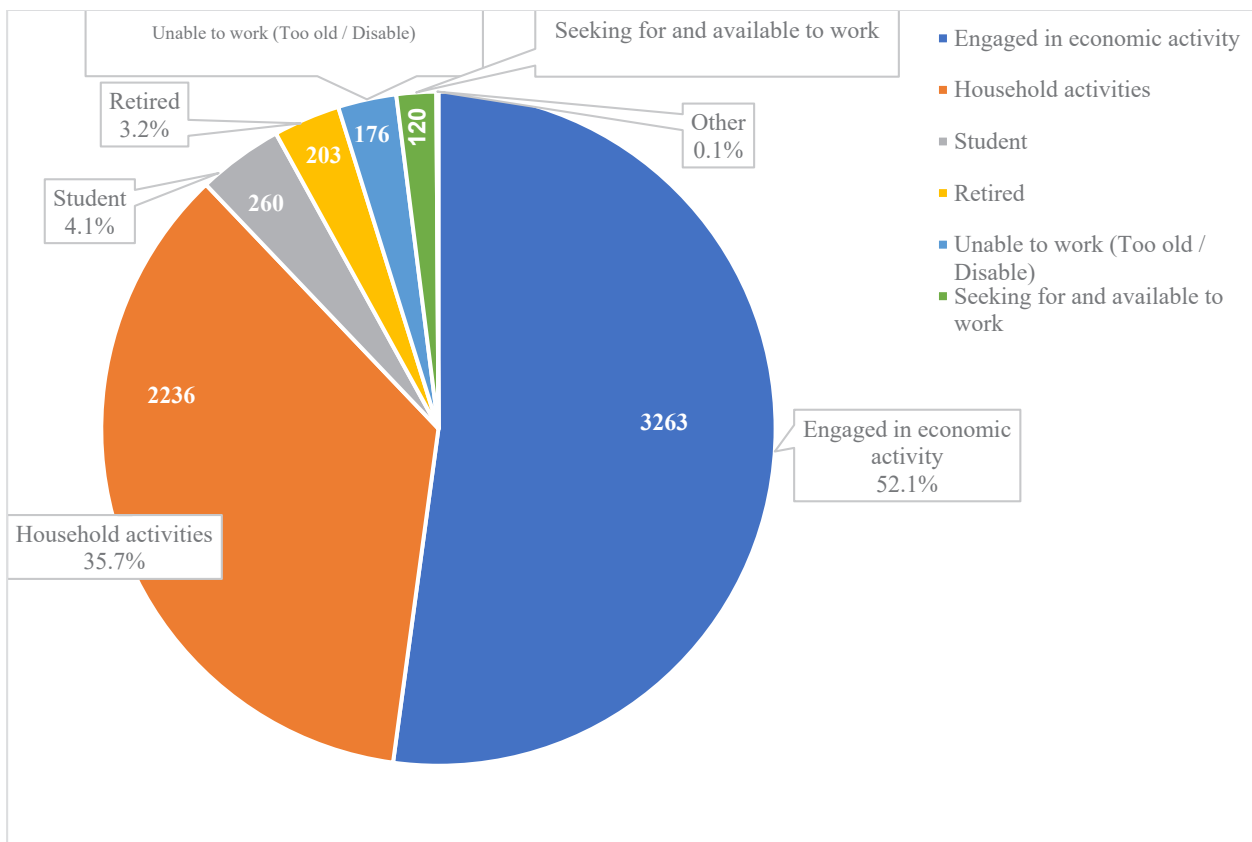
Figure 3.3: Distribution of Respondents by Employment Status Over the Past 12 Months

52.1% of the respondents had been engaged in an economic activity over the past 12 months, while 35.7% were engaged in household activities.

Employment status at the main economic activity is given below in Figure 3.4.
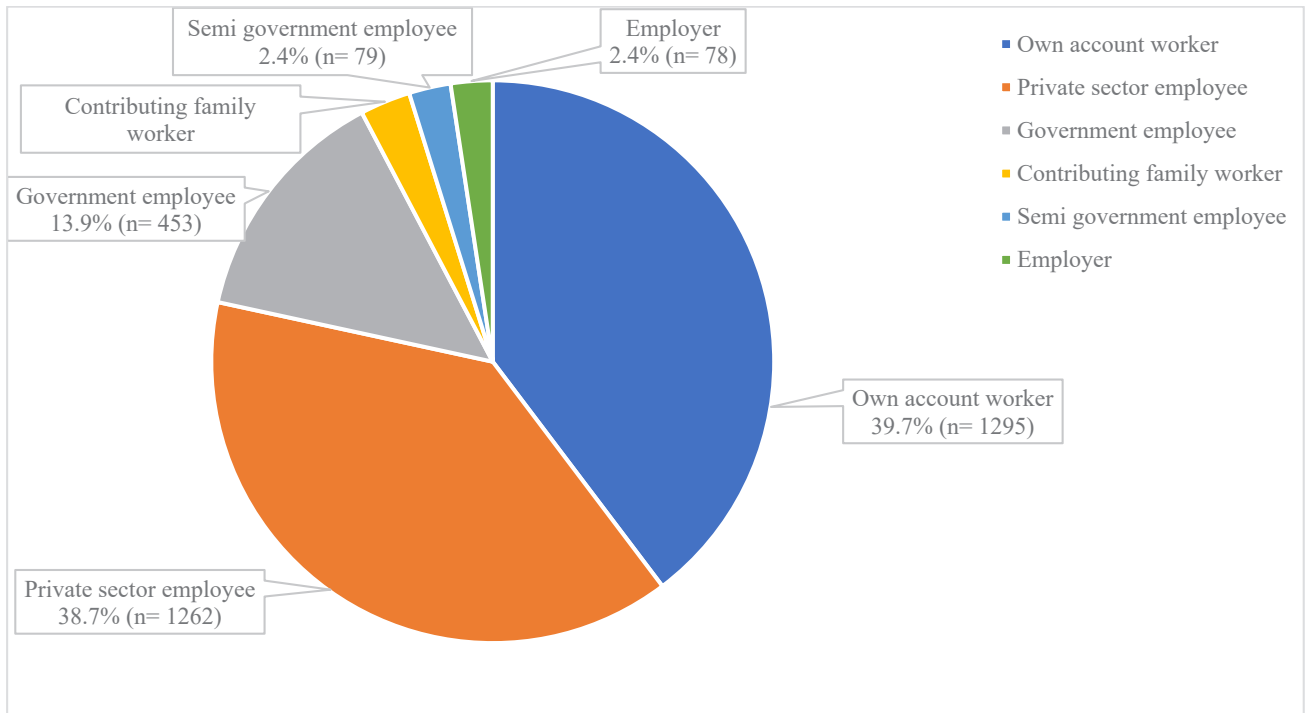
Figure 3.4: Employment Status at the Main Economic Activity

Of those engaged in an economic activity, the most reported employment status at the main economic activity was either own account workers (39.7%) or private sector employees (38.7%), with only 13.9% being employed in the government sector.

3.1.5   Household Income of Survey Respondents

Respondents were asked for the average monthly income [in LKR] of the household, from all the household members combined. Respondents were categorised into six income categories based on their annual household income as shown in Figure 3.5.

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1. Own account workers: who carry out the economic activity without having any paid employees.
2. Private sector employee: Private-sector workers employed by private-sector institutions.
3. Government employee: public servant who work for central or provincial governments.
4. Contributing family workers: who make their contribution to the economic activities carried out by their own household, without wages/salaries.
5. Semi-government employees: those who work for government agencies or businesses that are owned by the government and were established by a law passed by the legislature.
6. Employers: who have at least one paid employee under them.
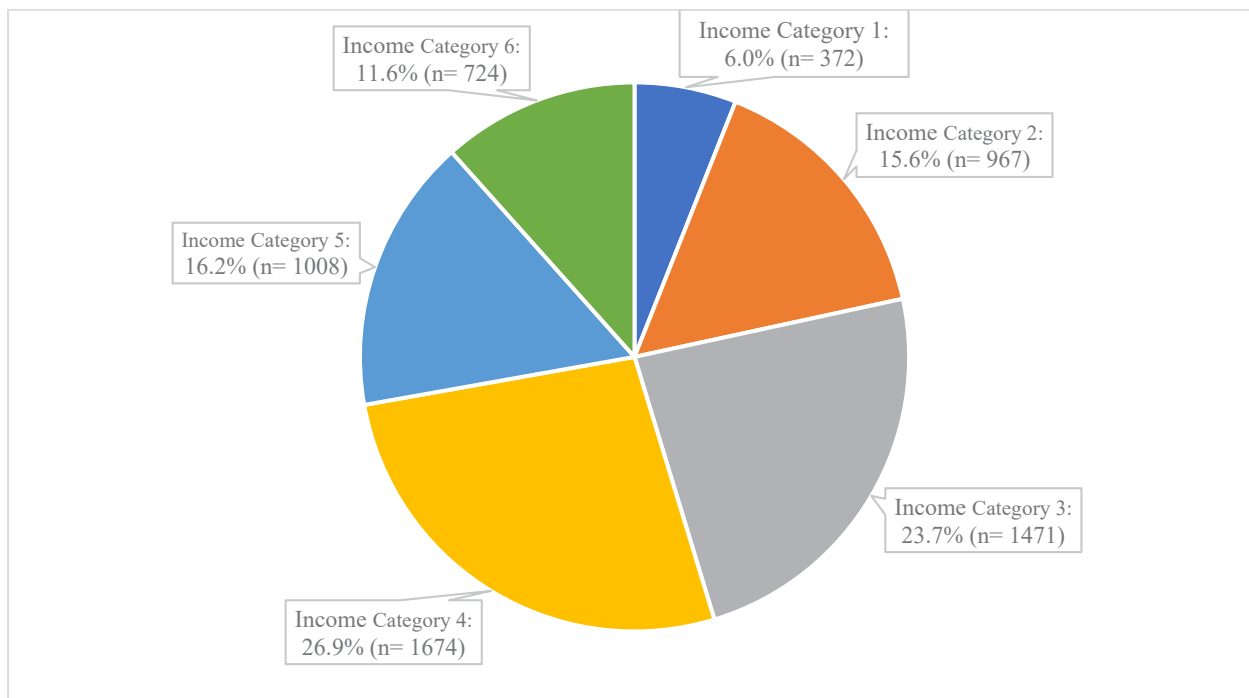
Figure 3.5: Distribution of Respondents by Income Category

The annual household income was found to be between LKR 23,501 and LKR 52,000 (Income categories 3 and 4) for half of the respondents. Six percent of respondents reported an annual household income of LKR 10,000 or less.

3.1.6 Wealth Index

Please refer annexure section of the electronic version of the report for the development and calculation of the wealth index and it can be downloaded from the website of the Ministry of Health.

Income Category 1: Less than or equal to LKR 10,000
Income Category 2: LKR 10,001 – 23,500
Income Category 3: LKR 23,501 – 36,500
Income Category 4: LKR 36,501 – 52,000
Income Category 5: LKR 52,001 – 81,500
Income Category 6: LKR More than or equal to 81,501

The distribution of respondents by wealth index and age is given below in Table 3.2.

Table 3.2: Distribution of Respondents (Both Sexes) by Wealth Index and Age Group

Age Group (years)	1) Poorest quintile (%)	2) Second quintile (%)	3) Third quintile (%)	4) Fourth quintile (%)	5) Richest quintile (%)	Total (%)
18-29	131 (9.3)	164 (13.7)	210 (20.0)	245 (27.4)	252 (29.6)	1002 (100.0)
30-44	375 (14.8)	392 (17.7)	457 (22.6)	438 (21.8)	424 (23.2)	2086 (100.0)
45-59	402 (14.9)	428 (20.7)	370 (19.3)	408 (22.9)	382 (22.3)	1990 (100.0)
60-69	346 (21.1)	269 (20.7)	220 (19.8)	163 (17.7)	191 (20.7)	1189 (100.0)

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

3.2   Tobacco Use

Tobacco products are available in two main forms in Sri Lanka, smoking tobacco such as cigarettes, cigars, pipes, beedee and smokeless tobacco such as chewed tobacco, babul and snuff. In this survey, the prevalence, frequency, and pattern of use of tobacco was assessed among adults, according to their age and sex. Use of all types of tobacco, as well as the use of specific types of tobacco such as Cigars, beedee, babul, chewable tobacco with betel, chewable tobacco and snuff, were also assessed in this survey.

3.2.1   Current Tobacco Users

The respondents were inquired about their current status of smoking tobacco products or the use of smokeless tobacco products. Furthermore, they were inquired whether they were daily users, of smoked tobacco or smokeless tobacco products as well (Figure 3.6 and Figure 3.7).
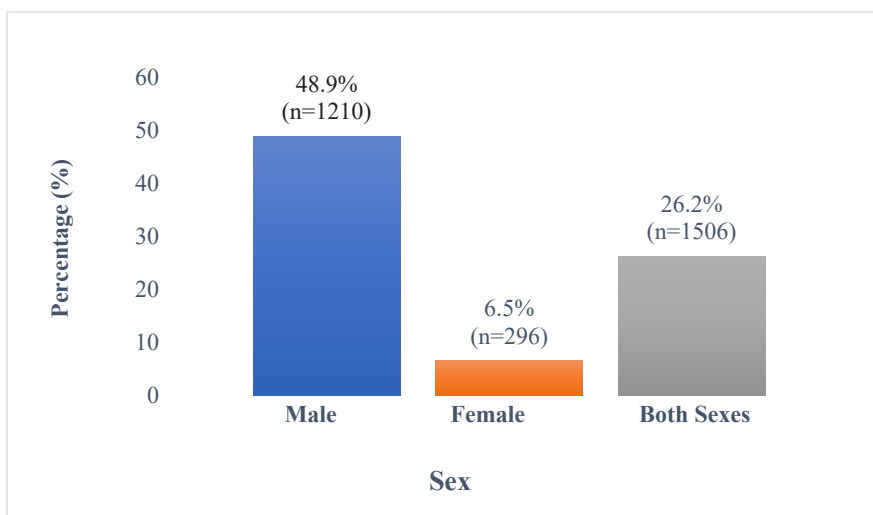
Figure 3.6: Prevalence of Current Tobacco Users According to Sex
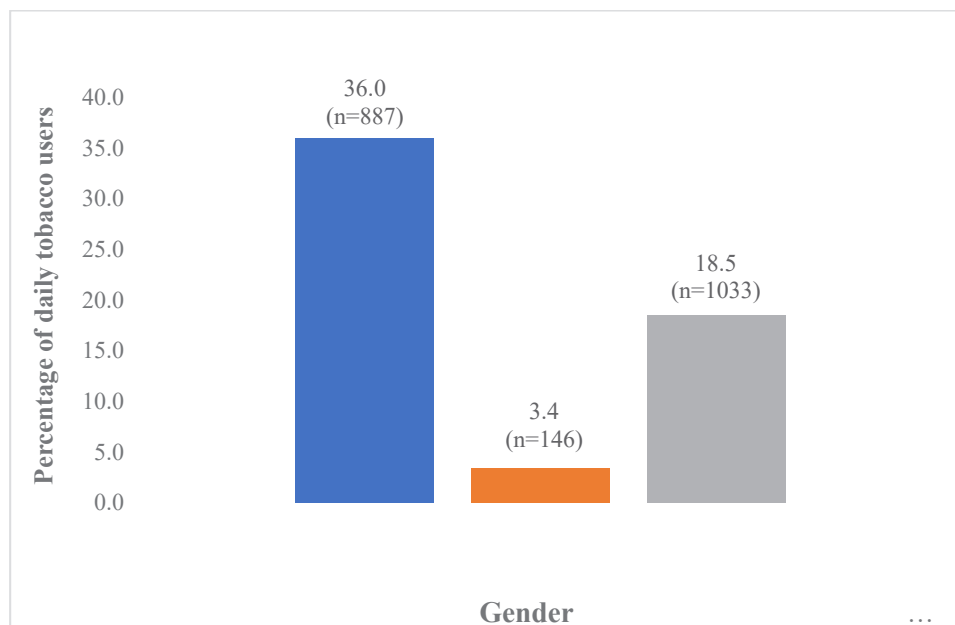
Figure 3.7: Prevalence of Daily Tobacco Users According to Sex

Among the respondents considered, approximately 26.2% were current users of tobacco (Figure 3.6), while 18.5% were daily users (Figure 3.7). It is observed that the overall consumption of tobacco has increased over time (Table 3.3).

Table 3.3: Comparison of Tobacco Users in STEPS Surveys 2015 and 2021

	Prevalence of Current Tobacco Users	
	STEPS 2015	**STEPS 2021**
Male	45.7 (CI: 42.7- 48.6)	48.9 (CI: 46.3- 51.5)
Female	5.3 (CI: 4.3- 6.3)	6.5 (CI: 5.5- 7.4)
Total	25.8 (CI: 24.1- 27.6)	26.2 (CI: 24.7- 27.7)

3.2.2 Current Smokers

The respondents were inquired about their current smoking habit with regard to any type of smoked tobacco products, such as beedi, cigarettes, cigars, or pipes. Since the female consumers of smoked tobacco were small, the figures highlighted pertaining to smoked tobacco products were those of the males (Figure 3.8).
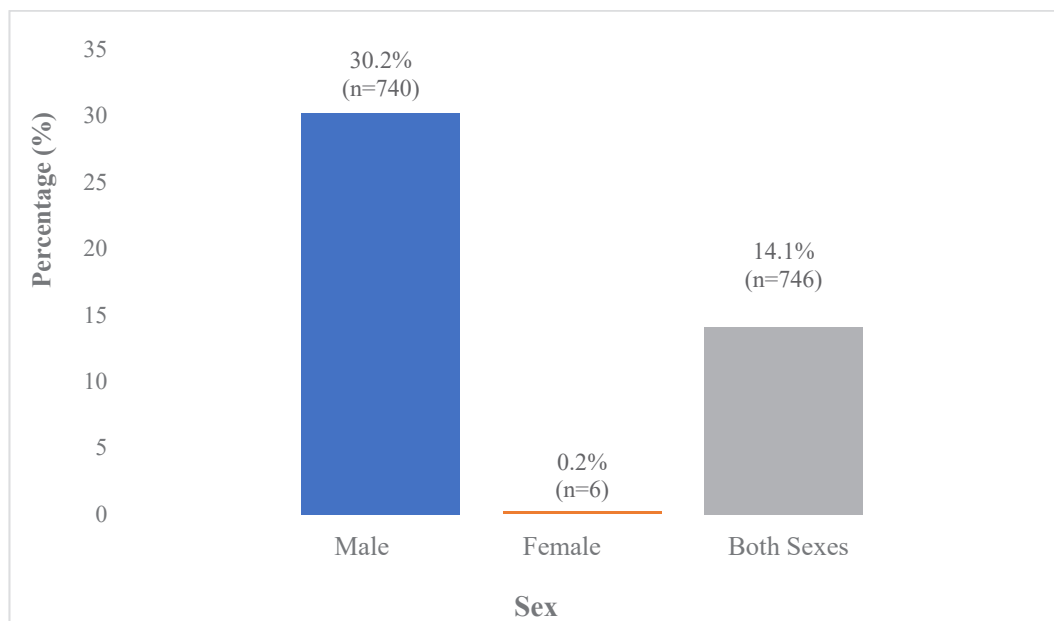
Figure 3.8: Percentage of Current Smokers

Comparing with the 2015 STEPS survey finding, it was observed that the prevalence of smoking among males in 2015 was 29.4% (CI: 26.8-31.9) and in 2021 to the prevalence was 30.2% (CI: 27.9-32.4). The prevalence of smoking among females was 0.1% (CI: 0.0- 0.2) in 2015 and in 2021 the prevalence was reported as 0.2% (CI: 0.0-0.4).

3.2.3 Age of Initiation of Smoking

The respondents were inquired about the age when they first started smoking, and the mean age of initiation of smoking was 20.5 years for males and 36.4 for females. The 2015 STEPS survey report findings on the age of initiation of smoking, had been the same as the current findings.

3.2.4   Quantity of Smoked Tobacco Products Consumed

In this section, the respondents who were daily smokers, were inquired as to how many of the different types of each product, were consumed by the respondents daily. Here too, the figures represent the findings for males, as the number of female smokers were few.
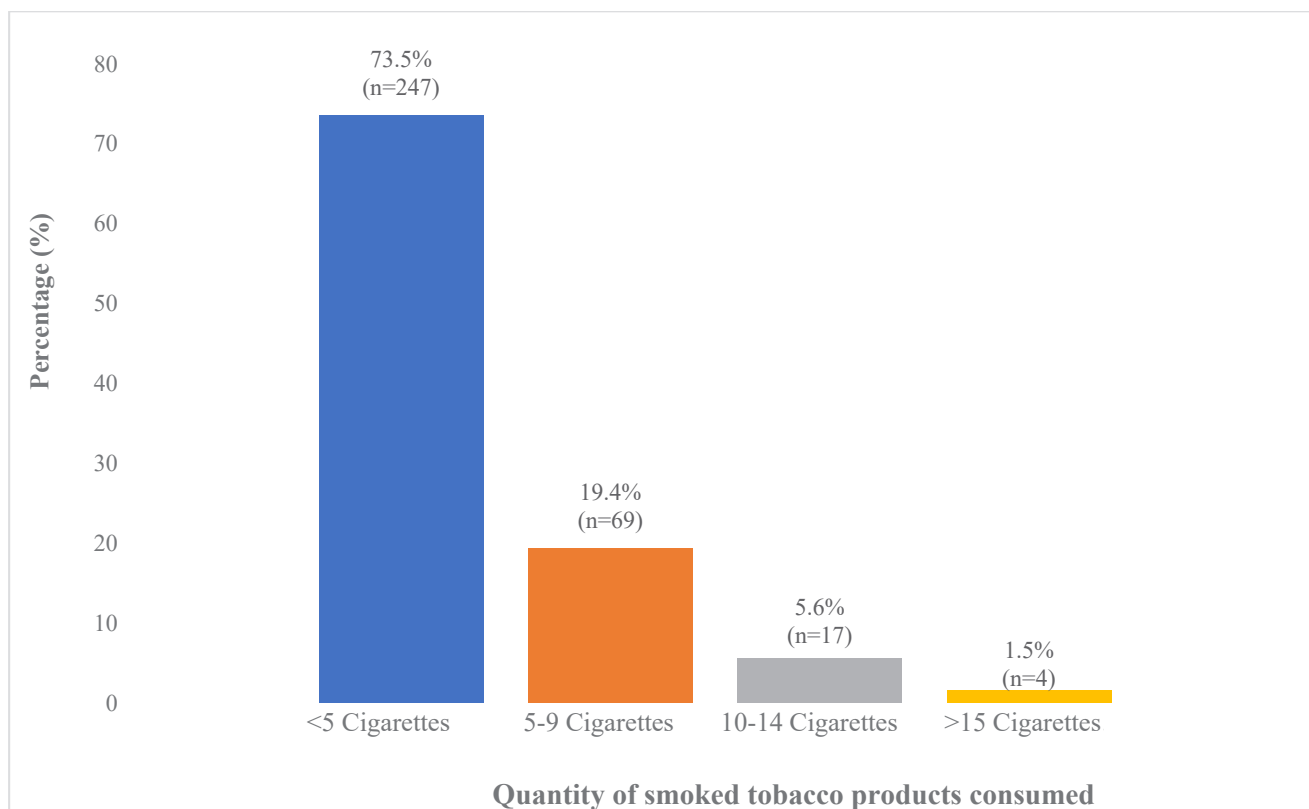
Figure 3.9: Quantity of Smoked Tobacco Products Consumed Daily by Males

When considering the consumption of manufactured cigarettes by daily smokers (male), majority (73.5%, CI: 67.8- 79.3) consumed less than 5 cigarettes while 1.5% consumed more than 15 cigarettes per day (Figure 3.9).

3.2.5 Types of Smoked Tobacco Products Consumed

The respondents were inquired about the different types of smoked tobacco products consumed by the current smokers, and the results among males are as follows.
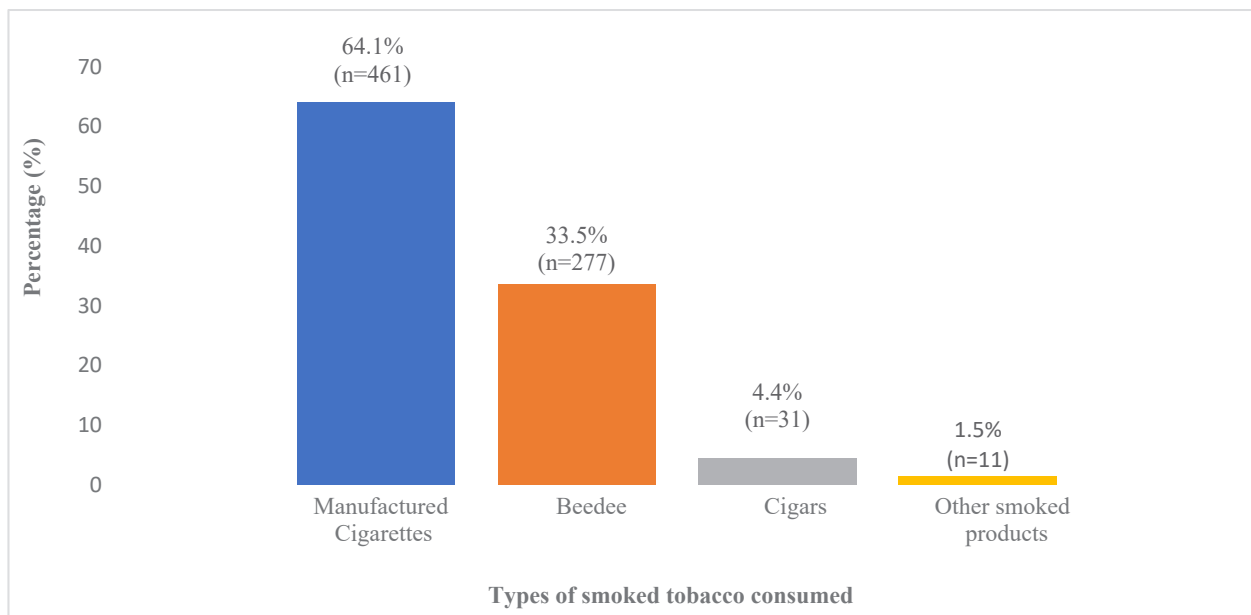
Figure 3.10: Different Types of Smoked Tobacco Consumed by Male Smokers

Majority of current smokers consume manufactured cigarettes, followed by Beedee (Figure 3.10). The 2015 STEPS survey report revealed that 83% (CI: 79.7-86.2) had used manufactured cigarettes, while only 5.8% (CI: 3.4-8.1) had consumed hand rolled cigarettes such as Beedee. It can be observed that by 2021, the use of manufactured cigarettes had declined and use of Beedee had increased.

3.2.6 Attempts at Smoking Cessation

In this section, the respondents were inquired about their attempts to quit smoking, within the past 12 months. They were also asked whether they were advised to quit smoking tobacco during any visit to a doctor or other health worker in the past 12 months. Due to the very low numbers of female smokers, only the figures of the male smokers presented for this variable (Table 3.4).

Table 3.4: Quitting Attempts by Male Smokers

Description	Percentage (Number)
Current male smokers who have attempted to quit	34.7 (239)
Current male smokers who have been advised by a doctor to quit	18.5 (118)

In the 2015 STEPS report, it was noted that approximately 51.8% (CI: 46.9-56.8) of males had attempted to quit smoking habit, and hence, it is noted that the attempts to quit have reduced from 2015 to 2021 (34.7%, CI: 30.6-38.8). There is also a significant reduction in medical advice to quit in 2021 survey (18.5%, CI: 15.1-21.9), compared to the 2015 survey findings, where about 35.2% (CI: 30.1-40.2) of smokers had been requested to quit by doctors. According to GATS survey, 51.6% of males had attempted to quit smoking habit and 47% of smokers had been requested to quit by doctors. The results of GATS survey are in line with 2015 STEPS survey.

3.2.7 Second-Hand Smoking

The respondents were inquired if in the past 30 days, they were exposed to secondhand smoking inside their house (Figure 3.11). They were also inquired if within the past 30 days, someone smoked in their presence, within an enclosed area at their workplace (Figure 3.12).
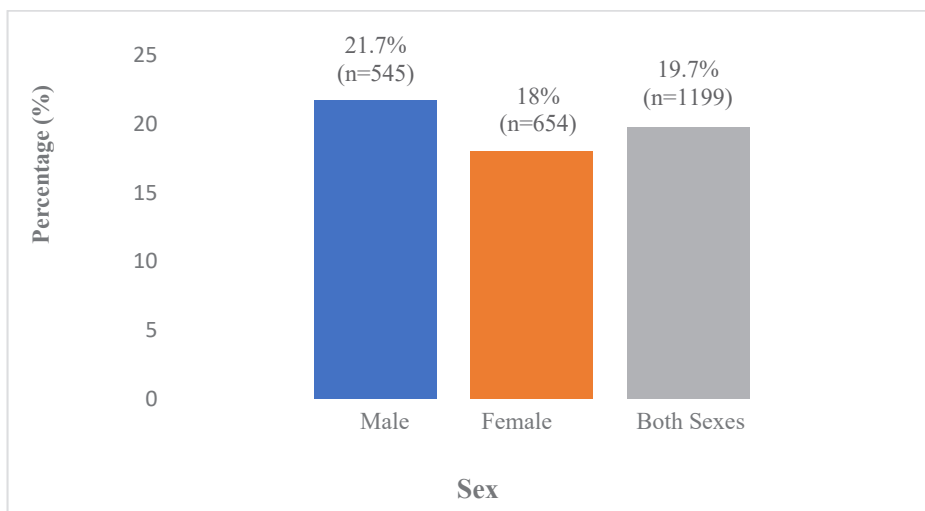
Figure 3.11: Exposure to Secondhand Smoke at Home

Of all respondents, approximately 19.7% (21.7% (CI: 19.7-23.6) of males and 18% (CI: 16.4-19.6) of females) were exposed to secondhand smoking while at home (Figure 3.11), during the past 30 days.
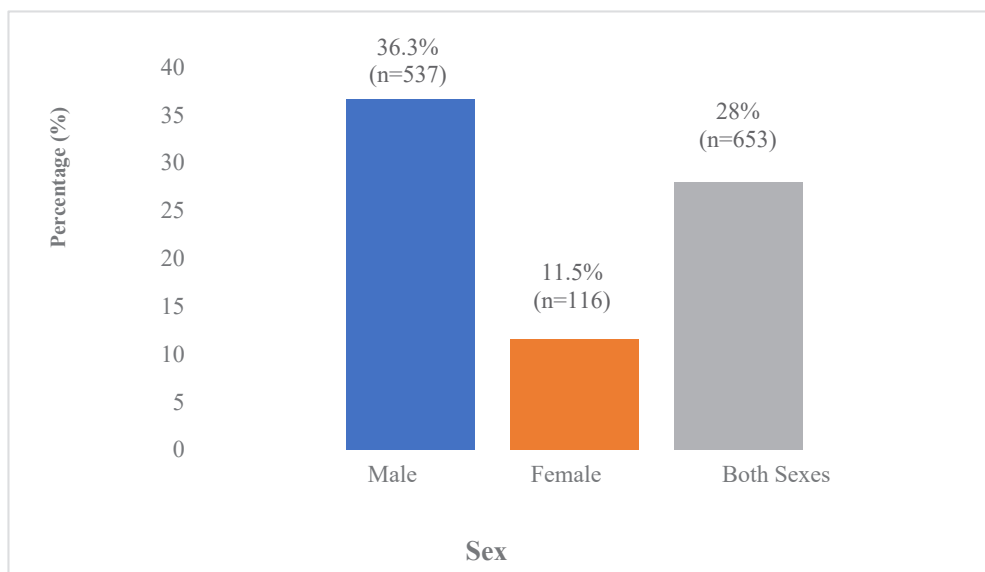
Figure 3.12: Exposure to Secondhand Smoke at Work

Furthermore, 28.0% (36.3% of males and 11.5% of females) claimed that they were exposed to secondhand smoking while at work over the past 30 days period (Figure 3.12).

The STEPS survey 2015 had reported that approximately 25.2% (CI: 22.5-28.0) of males and 21.6% (CI: 19.3- 23.9) of females had been exposed to secondhand smoke at home. With regard to the exposure to secondhand smoking of both sexes at workplaces, the 2015 survey finding was 24% (CI: 21.4- 26.8), and in 2021, it had increased to 28% (CI: 25.8-30.1).

3.2.8   Current Users of Smokeless Tobacco

The respondents were inquired about their current use of smokeless tobacco products, and the results were as follows (Figure 3.13).
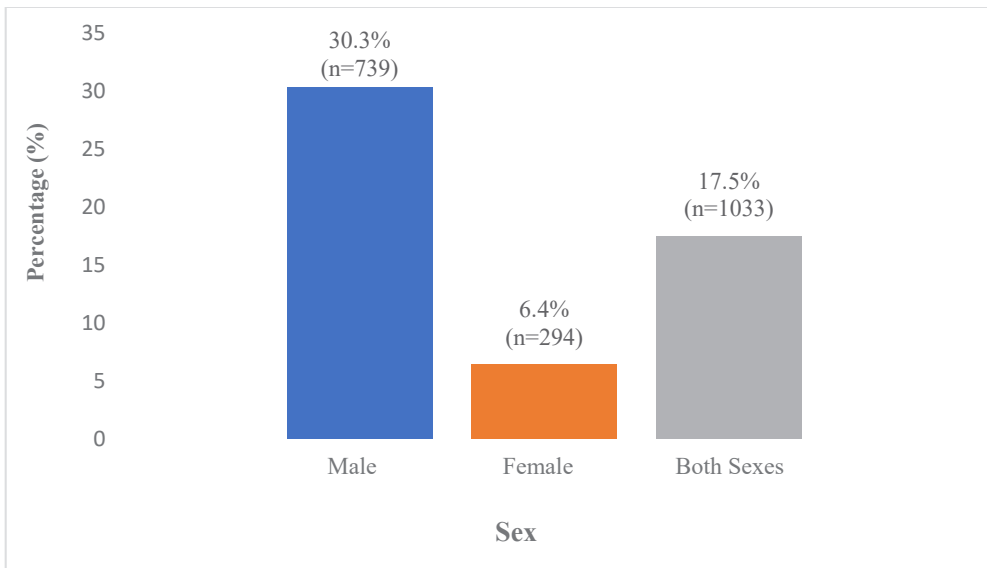
Figure 3.13: Current Users of Smokeless Tobacco

It is observed that approximately 30.3% of the respondent men consumed smokeless tobacco products while 6.4% of female respondents also consumed same (Figure 3.13). When compared to the STEPS survey findings of 2015, the prevalence among males had increased from 26% (CI: 23.3- 28.8) to 30.3%, and among females, from 5.3% (CI: 4.3 - 6.3) to 6.4% (CI: 5.4-7.3). Similarly, the overall prevalence had also increased from 15.8% to 17.5% (CI: 16.2-18.8).

3.2.9   Types of Smokeless Tobacco Products Used

The respondents were inquired about their current use of different types of smokeless tobacco products, and responses of both the male and female respondents were summed up for the results.
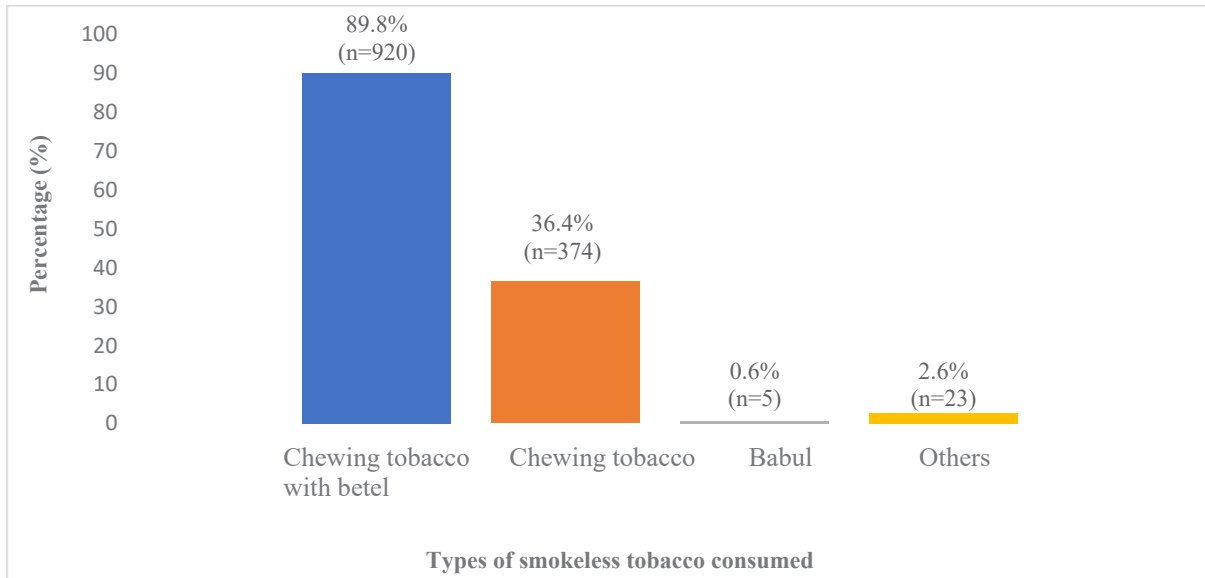
Figure 3.14: Types of Smokeless Tobacco Consumed

Considering the different types of smokeless tobacco types used by the current users, it was noted that 89.8% of them chew tobacco with betel, while 36.4% chew tobacco only (Figure 3.14). The use of products such as Babul and snuff were minimal.

3.2.10 Consumption of Different Types of Smokeless Tobacco Products

Daily users consume different smokeless tobacco products and the mean daily usage of these different types of smokeless tobacco products were assessed among the respondents (Figure 3.15).
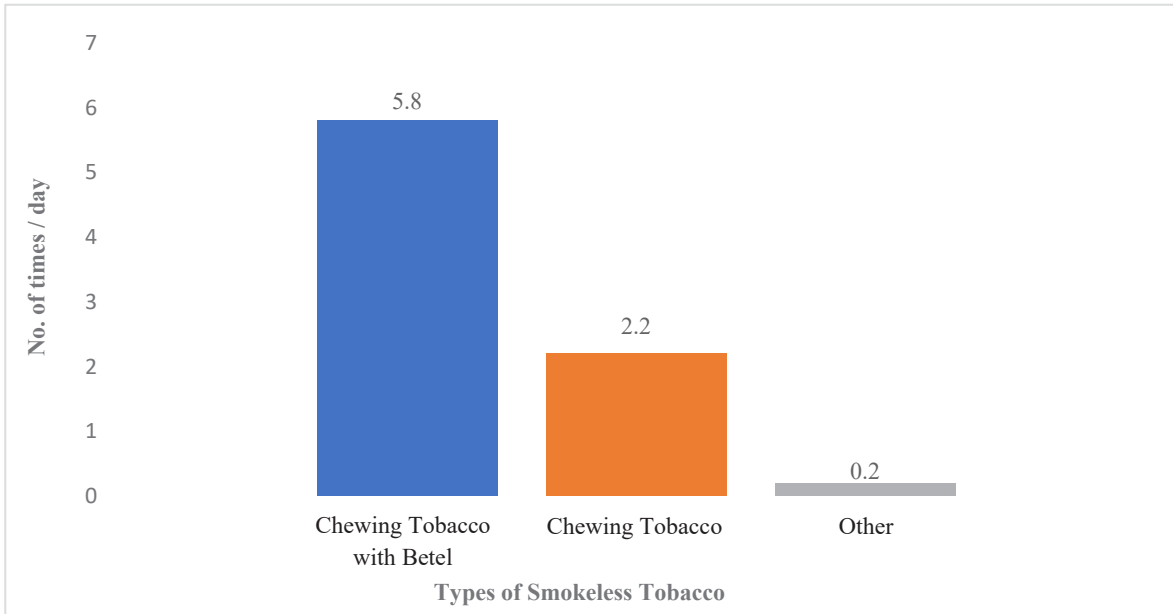
Figure 3.15: Mean Daily Use of Smokeless Tobacco

It is observed that chewing tobacco with the betel quid is the most preferred method of smokeless tobacco consumption, being consumed on average 5.8 times per day, while chewing dried tobacco leaves alone was observed to be on average 2.2 times per day. The use of babul, snuff by nose etc., was much less.

3.2.11 Urine Cotinine Test

Cotinine is a metabolite of Nicotine, which is present in tobacco, and enters the human body through the consumption of tobacco of any form. Following the metabolism of Nicotine, the alkaloid Cotinine is excreted via urine, and hence, the measurement of urine cotinine level is an important and a reliable indicator for measuring tobacco exposure of a person. Measuring cotinine levels is better than measuring nicotine levels because nicotine gets excreted from the body within a few hours, but cotinine remains for a day or more. The urine cotinine levels among persons not exposed to tobacco is less than 10 ng/ml, while persons exposed to second-hand smoking will have values of approximately 30 ng/ml. Values over 200 ng/ml indicate moderate to heavy consumption of tobacco.
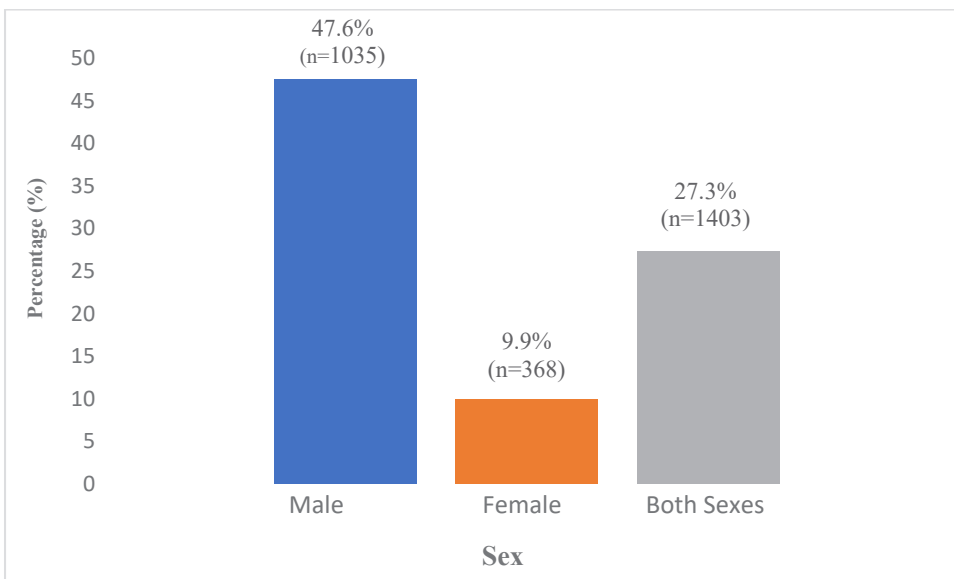
Figure 3.16: Percentage of Respondents with Elevated Urine Cotinine Levels > 200ng/ml

As shown in the above chart (Figure 3.16), it can be observed that 47.6% of males and 9.9% females have had elevated urine cotinine levels, over 200ng/ml.

3.2.12 Smoker to Non-Smoker Ratio

Among the respondents, the ratio of smoker to non-smoker were assessed and compared between 2015 and 2021 (Figure 3.17). Again, the females were not compared since there were few.
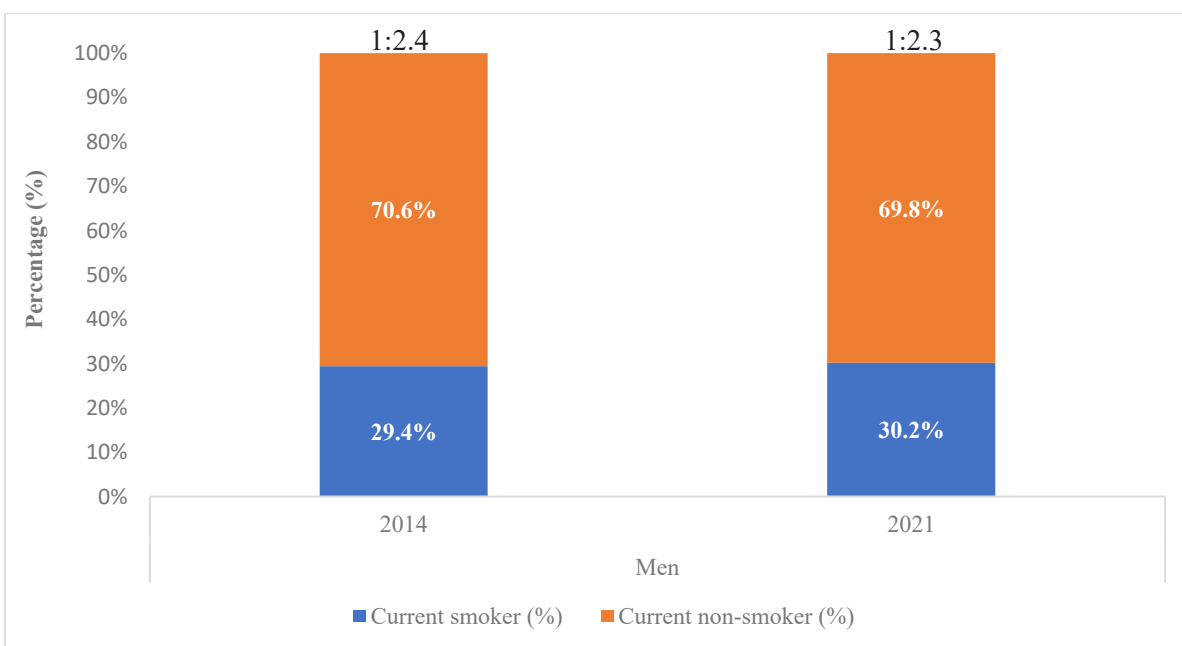
Figure 3.17: Smoker to Non-Smoker Ratio

The smoker to non-smoker ratio capturing the past STEPS survey data (Figure 3.17), indicate a slight increase in the smoking prevalence of males, while that of both sexes is observed to be decreasing.

3.2.13 Areca nut Users

The respondents were inquired about their current consumption of areca nut, and the results were as follows (Figure 3.18).
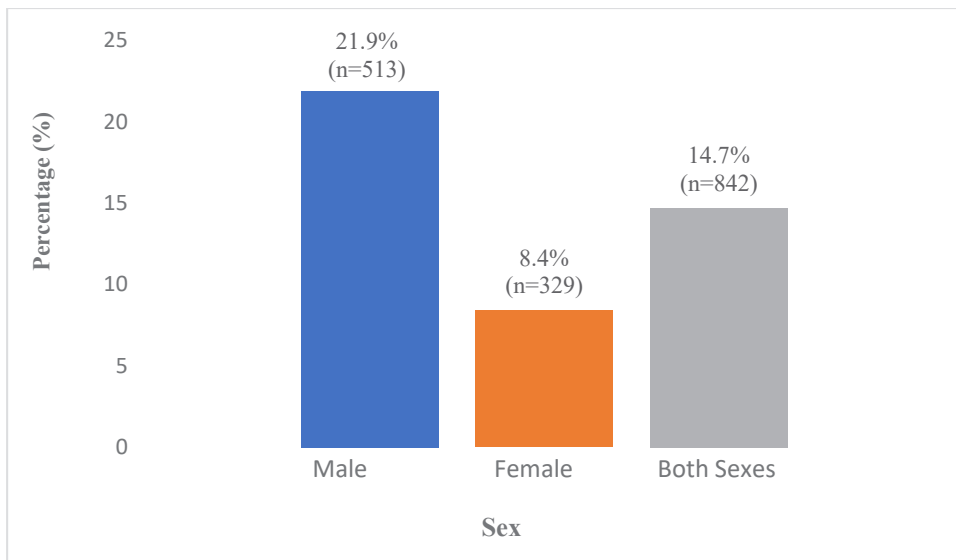
Figure 3.18: Current Consumers of Areca nut

It is observed that among all respondents, 14.7% were current consumers of areca nut, while the consumption among males was much greater at 21.9% (Figure 3.18). In the current STEPS survey, respondents were not questioned on different products of areca nut.

3.2.14 Wealth Quintiles and Level of Education in Relation to Tobacco Use

Figure 3.19 shows, current tobacco users based on the wealth quintile.
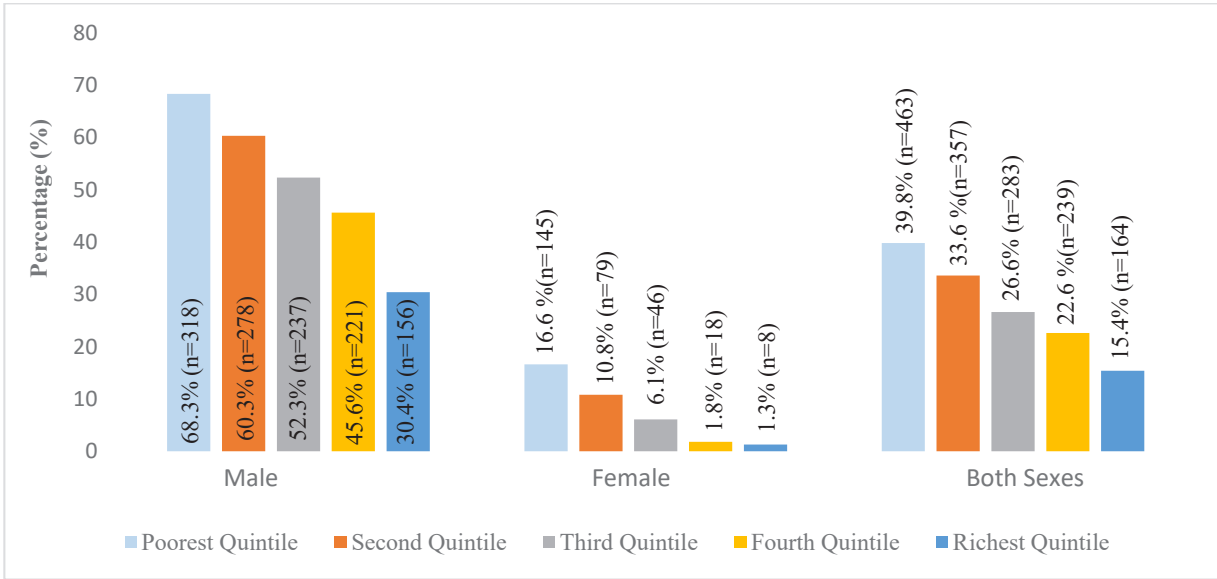
Figure 3.19: **Current Tobacco Users Based on the Wealth Quintiles**

It can be observed that persons from the poorest wealth quintiles make up the highest percentage of current tobacco users, and the pattern is similar among both males and females.

Figure 3.20 shows, current tobacco users based on the level of education.
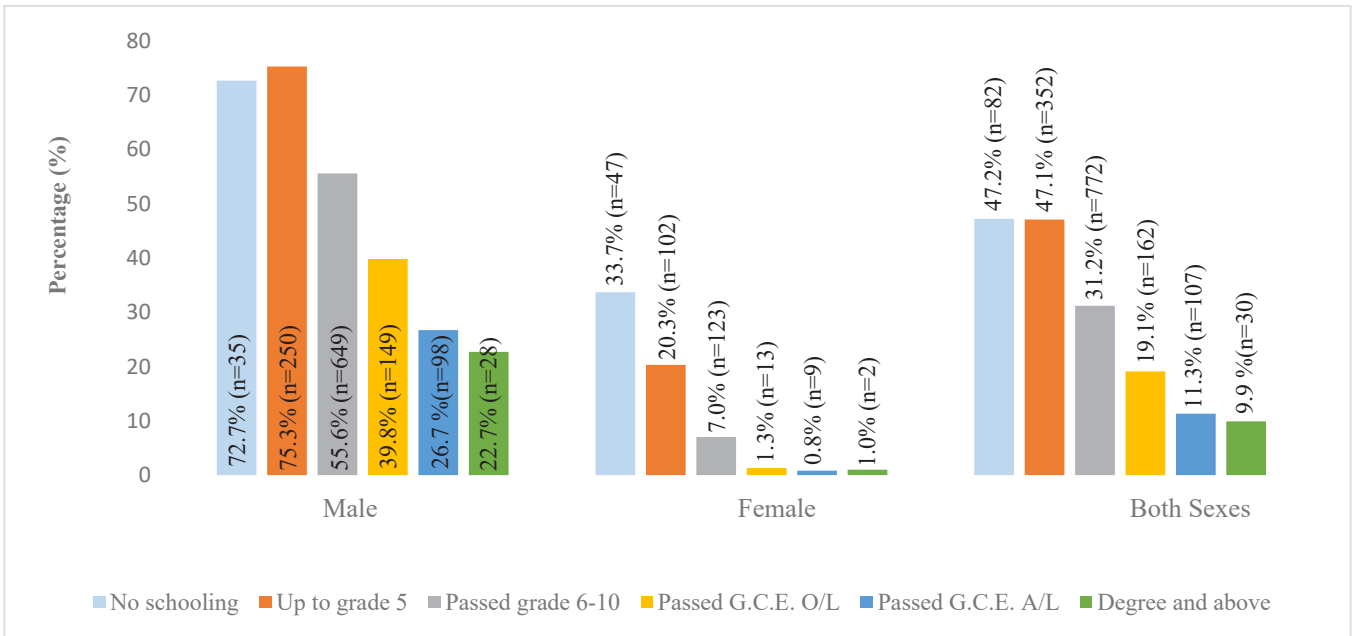
Figure 3.20: **Current Tobacco Users Based on the Level of Education**

The respondents from the poorest education background are the heaviest users of tobacco products, and the difference can be clearly observed.

Figure 3.21 shows, current male smokers based on the wealth quintiles.
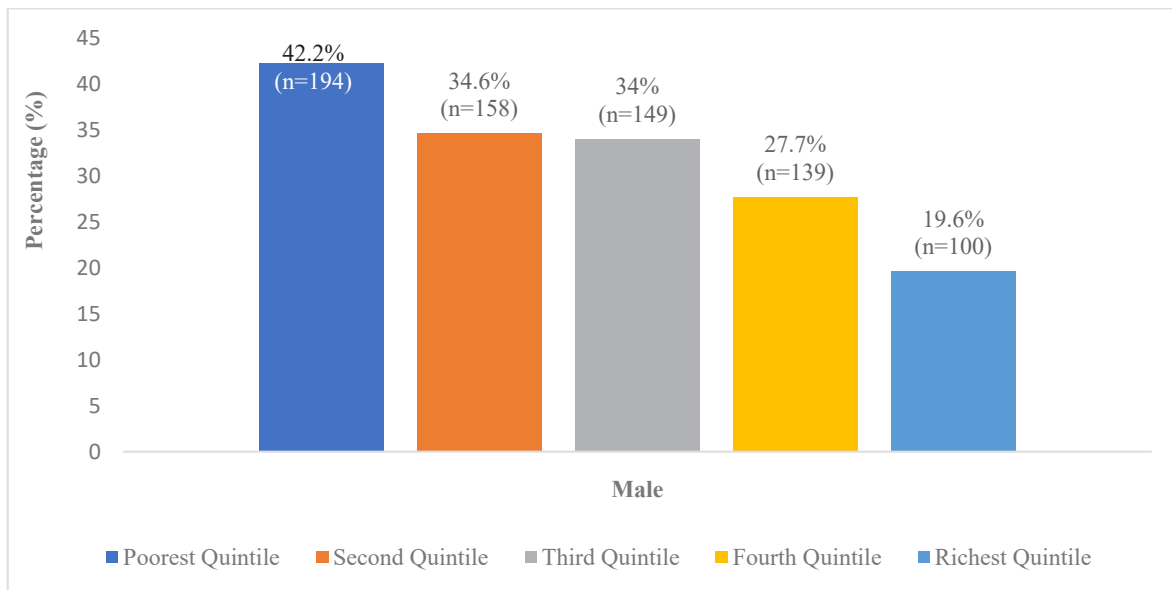
Figure 3.21: Current Male Smokers Based on the Wealth Quintiles

It can be observed that there is a negative relationship between the prevalence of smoking among with the wealth quintile.

Figure 3.22 shows, current male smokers based on the level of education.
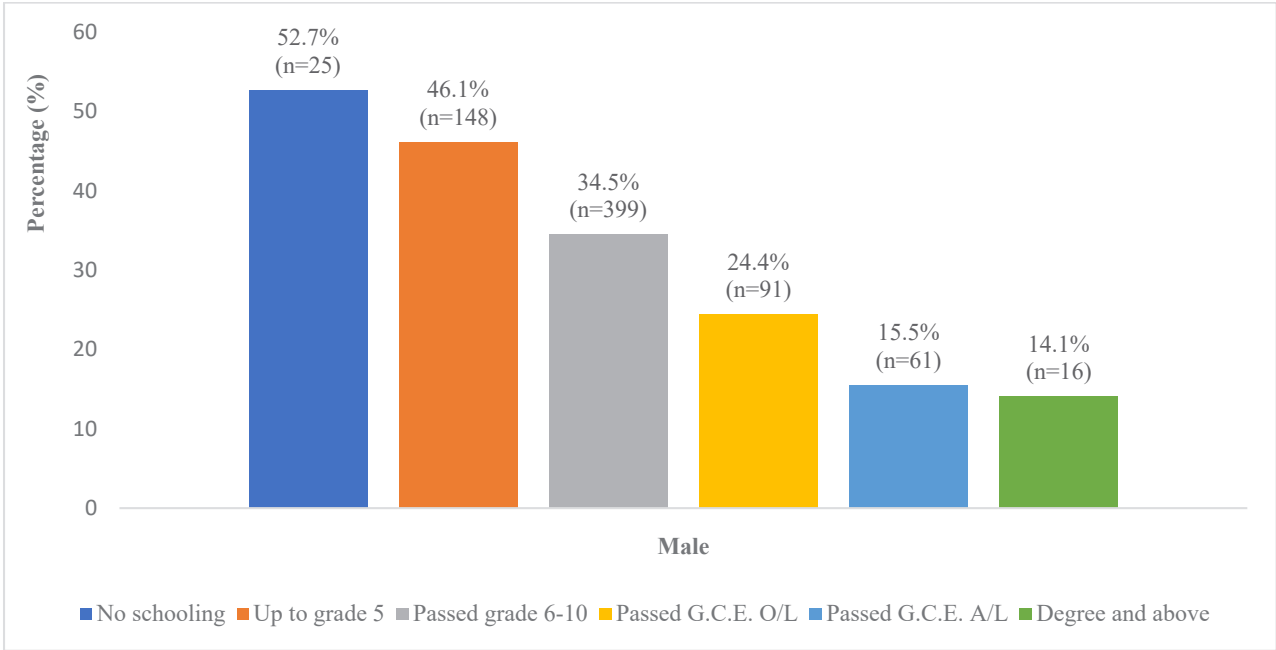
Figure 3.22: Current Male Smokers Based on the Level of Education

It is observed that there is a negative relationship between the level of education and the smoking status. The least educated are the highest smokers. Female smokers were negligible.

Figure 3.23 shows, current users of smokeless tobacco based on the wealth quintiles
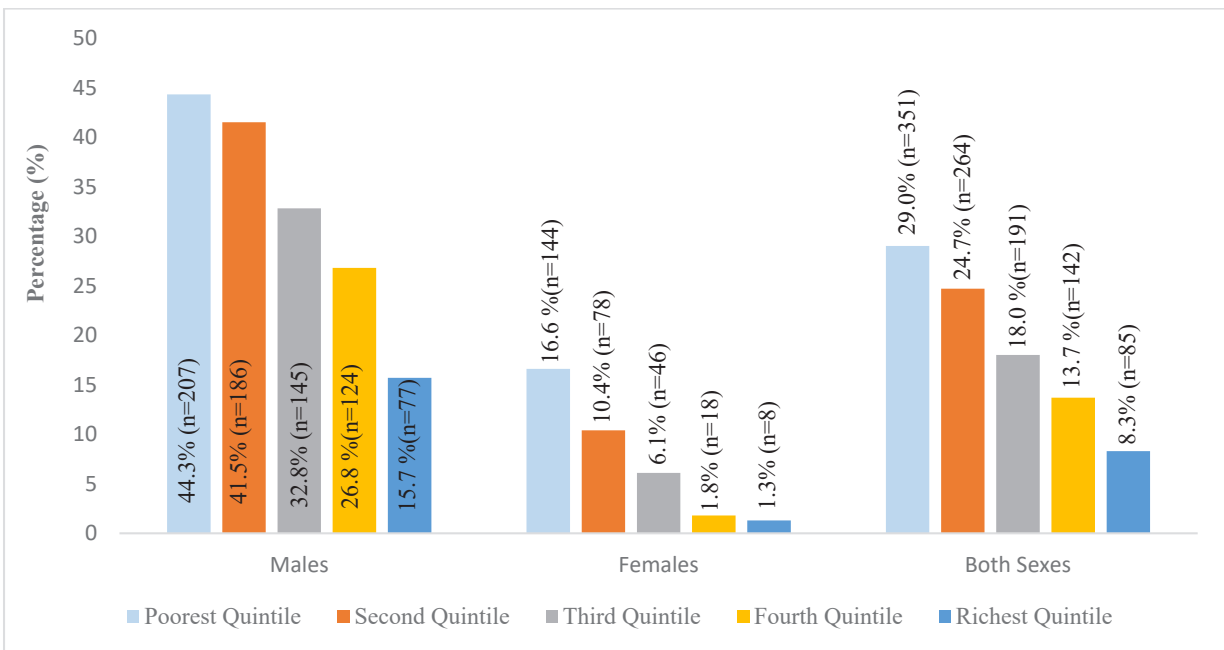
Figure 3.23: Current Users of Smokeless Tobacco Based on the Wealth Quintiles

The highest number of users of smokeless tobacco belong to the poorest quintile, and there is a clear negative relationship on smokeless tobacco use and wealth status.

Figure 3.24 shows, current users of smokeless tobacco based on the level of education
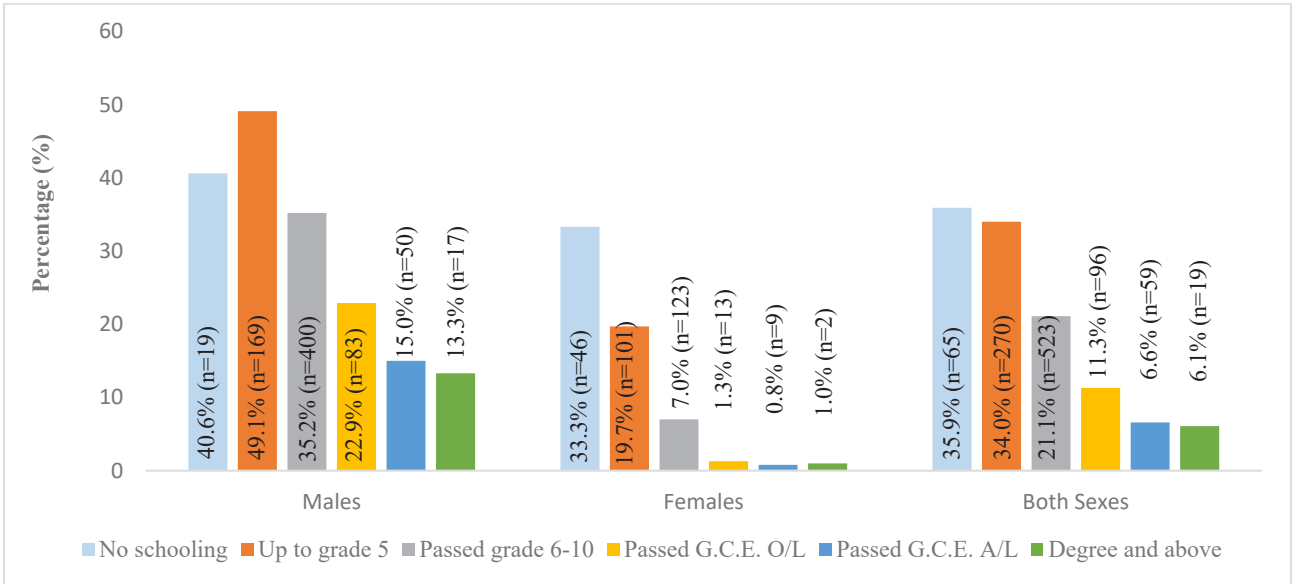
Figure 3.24: Current Users of Smokeless Tobacco Based on the Level of Education

The use of smokeless tobacco is low in both sexes among the higher education strata, while the lowest education level represents the highest usage.

Figure 3.25 shows, current users of areca nut based on the wealth quintiles
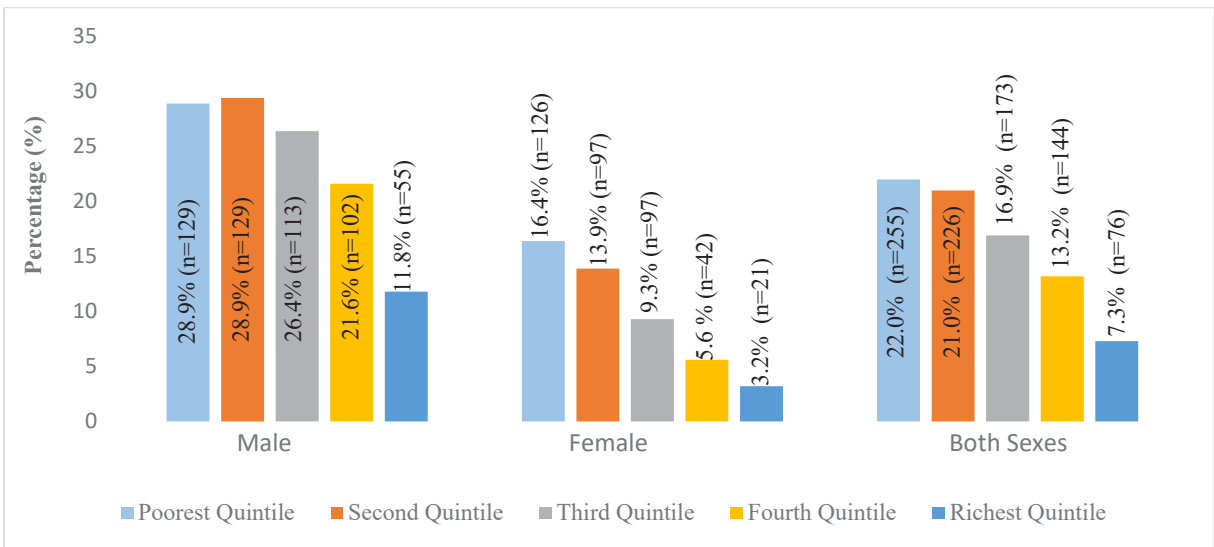
Figure 3.25: Current users of Areca nut Based on the Wealth Quintiles

The two poorest quintiles consist of the highest percentage of Areca nut users, with over 20% prevalence among males.

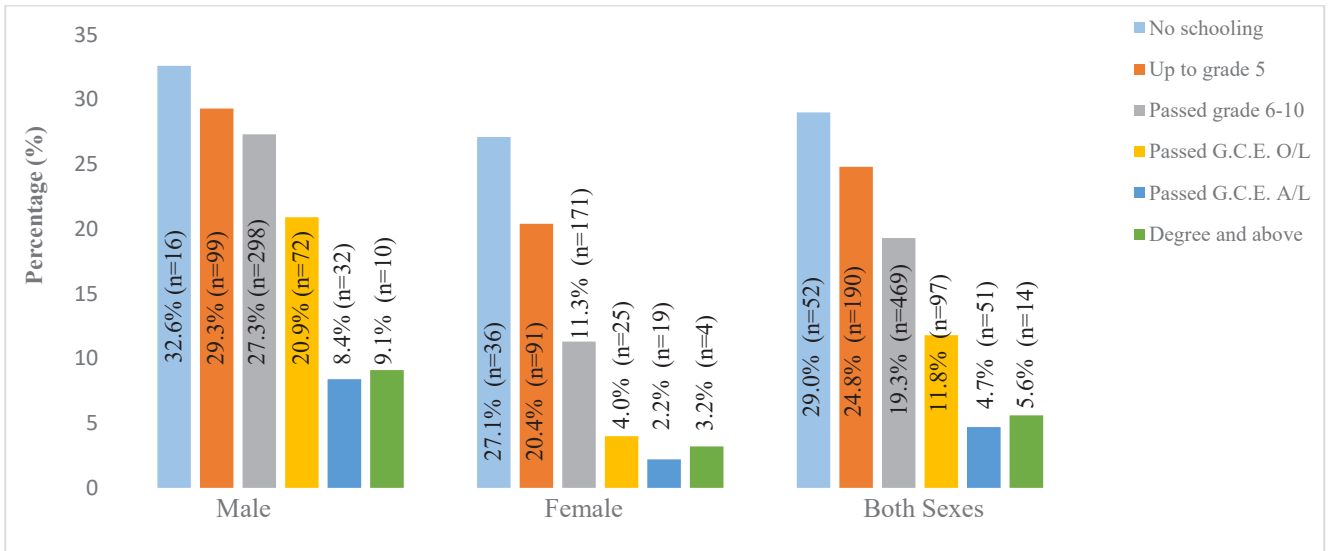Figure 3.26 shows, current users of areca nut based on the level of education

Figure 3.26: Current Users of Areca nut Based on the Level of Education

It is observed that those of the lower educational status are the highest consumers of Areca nut, but there is a slight increase in Areca nut use among the highest educational stratum, compared to its immediate lower stratum.

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

3.3 Alcohol Consumption

3.3.1 Alcohol Consumption Status

During the survey, respondents were questioned on their alcohol consumption status. The history of consumption of arrack/ kassippu/ toddy/ beer/ whisky/ wine was inquired. Those who never had consumed alcohol in their life were defined as lifetime abstainers while current drinkers were those who had consumed alcohol in the past 30 days. Respondents who claimed to have consumed alcohol during their life but not during the last twelve months were classified as former drinkers.

The percentage of respondents who had six or more drinks (60 g) on any occasion was assessed by asking how many times did they have six or more standard alcoholic drinks in a single drinking occasion during the past 30 days. One standard drink contains approximately 10g of pure alcohol.

Table 3.5: Alcohol Consumption Status Among Survey Respondents

	Male (%) (n)	Female (%) (n)	Both sexes (%) (n)
Percentage of respondents who currently drink	43.3 (1053)	1.2 (38)	20.7 (1091)
Percentage of respondents who are lifetime abstainers	34.2 (881)	91.9 (3567)	65.1 (4448)
Percentage of respondents who engage in heavy episodic drinking	15.1 (364)	0.3 (10)	7.1 (374)

It was estimated that 43.3% (CI: 40.9-45.6) of males were current drinkers. The percentage of male current drinkers was 34.8% (CI: 32.0-37.6) in the 2015 STEPS survey and the percentage increase from 2015 was 24.4% in the present survey.

In the current survey, it was found that 65.1% of the respondents had abstained from alcohol during their life. The majority of the females (91.9%) were lifetime abstainers of alcohol, only 34.2% (CI: 31.7-36.6) of males fell into this category. It is notable that the lifetime abstinence from alcohol among males has declined by 6% in the current survey compared to the 2015 survey (40.2%, CI: 37.0-43.4), which shows that there has been an increase in alcohol consumption over the last 6 years.

Nearly 15.1% (CI: 13.3-16.8) of the males had indulged in heavy episodic drinking (six or more drinks on a single occasion) during the last 30 days. Compared with the 2015 STEPS survey, it was observed that 16.8% (CI: 14.5-19.0) of the males had indulged in heavy episodic drinking whereas in the present survey the percentage decline was 11.2%

3.3.2   Trends of current alcohol drinkers to current non- drinkers

Figure 3.27 shows the comparison of current alcohol drinkers to current non-drinkers ratios in 2015 and 2021.
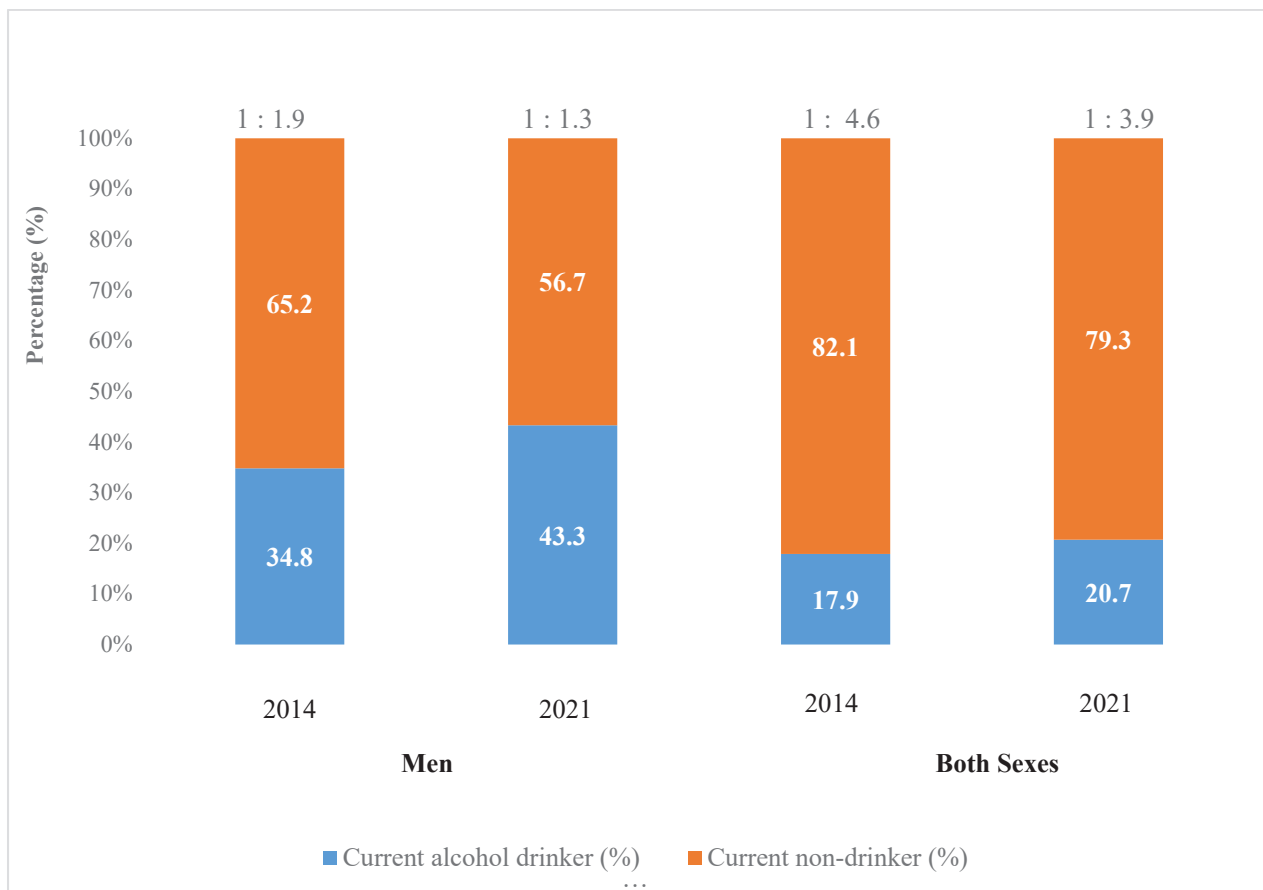
Figure 3.27: Comparison of current alcohol drinkers to current non-drinkers ratios in 2015 and 2021

Compared to the previous surveys, a small rising trend of current drinkers was observed in both males and both sexes whereas a declining trend was observed among current non-drinkers. The ratio between male current alcohol drinkers and male current non-drinkers has changed from 1:1.9 to 1:1.7 over the last 6 years.

3.3.3 Quantity of Alcohol use

The mean number of occasions with at least one standard drink in the past 30 days among current drinkers was assessed by asking how many occasions did they have at least one alcoholic drink during the past 30 days.

The standard drinks consumed on a drinking occasion among current drinkers were evaluated by inquiring when they drank alcohol, on average how many standard alcoholic drinks did they have

during one occasion. The volume of drinking levels among respondents was measured by the standard drink which contains approximately 10g of pure alcohol.

Table 3.6: Quantity of Alcohol use (Mean) among men

	Men
Mean number of drinking occasions in the past 30 days	5.8
Mean number of standard drinks per drinking occasion among current (past 30 days) drinkers	3.9

The mean number of drinking occasions for male current drinkers during the past 30 days was 5.8 (CI: 5.3-6.3). Compared to 2015 STEPS (5.6%, CI: 4.9-6.3) data the mean number of drinking occasions among current male drinkers has shown a percentage increase of 3.5%.

It was estimated that the mean number of standard drinks per drinking occasion among current male drinkers during the past 30 days was 3.9.

3.3.4 Respondents who noticed advertisements, images or references of beer, wine, arrack, any other spirits by medium of communication.

The respondents were asked if they have noticed advertisements, images or references of beer, wine, arrack, any other spirits etc. on the internet and social media, cinema from other countries, international magazines and International TV channels during the last 12 months.
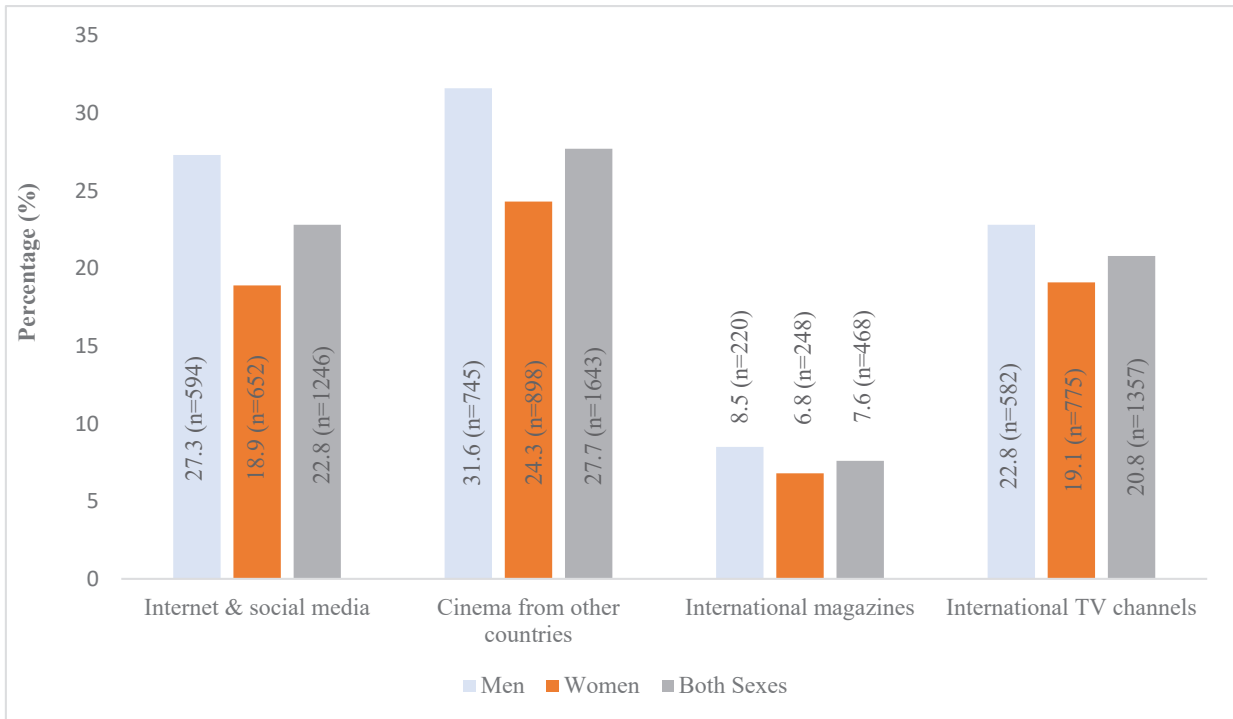
Figure 3.28: Respondents who noticed advertisements, images or references of beer, wine, arrack, any other spirits by medium of communication

The most prominent method amongst both sexes with a percentage of 27.7 % was watching cinema from other countries. with males having a percentage of 31.6% and females 24.3%.

3.3.5 Respondents who noticed anti-alcohol messages on television, radio, billboards, posters, newspapers, magazines, or movies, internet and social media
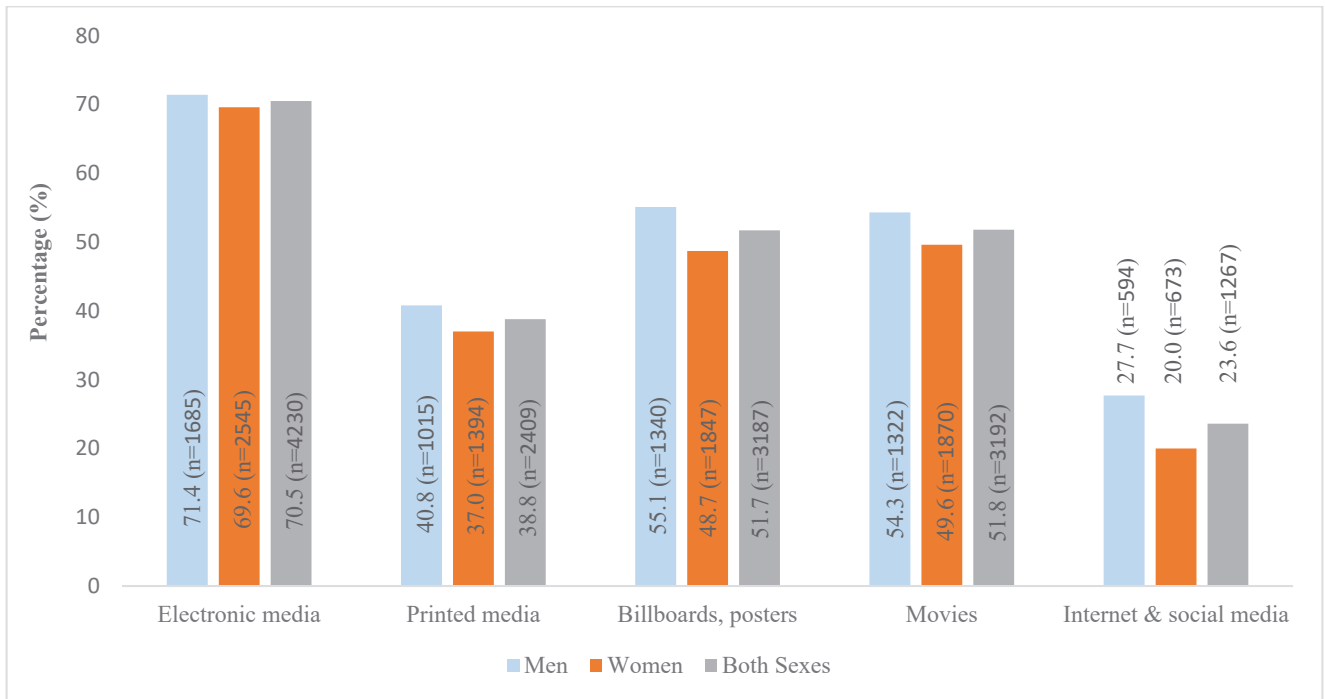
In this study, respondents were asked if they heard anti-alcohol messages on television, radio, billboards, posters, newspapers, magazines, or movies, internet and social media during the past 30 days.

Figure 3.29: Source of anti-alcohol messages

During the last 30 days 71.4 % of the males, 69.6% of females and 70.5% of both sexes had noticed or heard any anti-alcohol messages through electronic media.

3.3.6 Wealth Quintiles and Level of Education in Relation to Alcohol Consumption

Figure 3.30 shows current alcohol drinking status among males according to the wealth quintiles
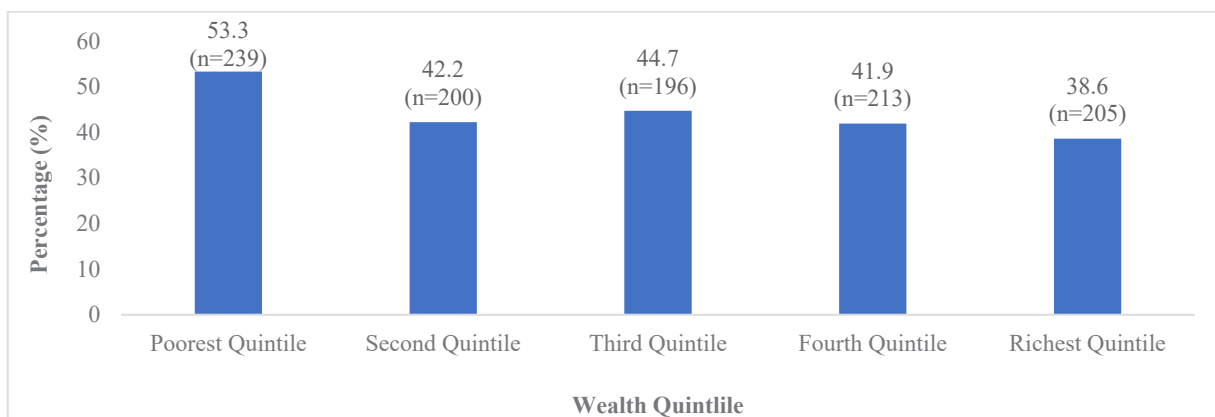
Figure 3.30: Current alcohol drinking status among males according to the wealth quintiles

It is notable that the male current drinkers were more concentrated among the poorest quintile and the proportion of current alcohol drinking status among females was insignificant for analysis in relation to the male current drinkers.

Figure 3.31 shows current alcohol drinking status among males by the level of education
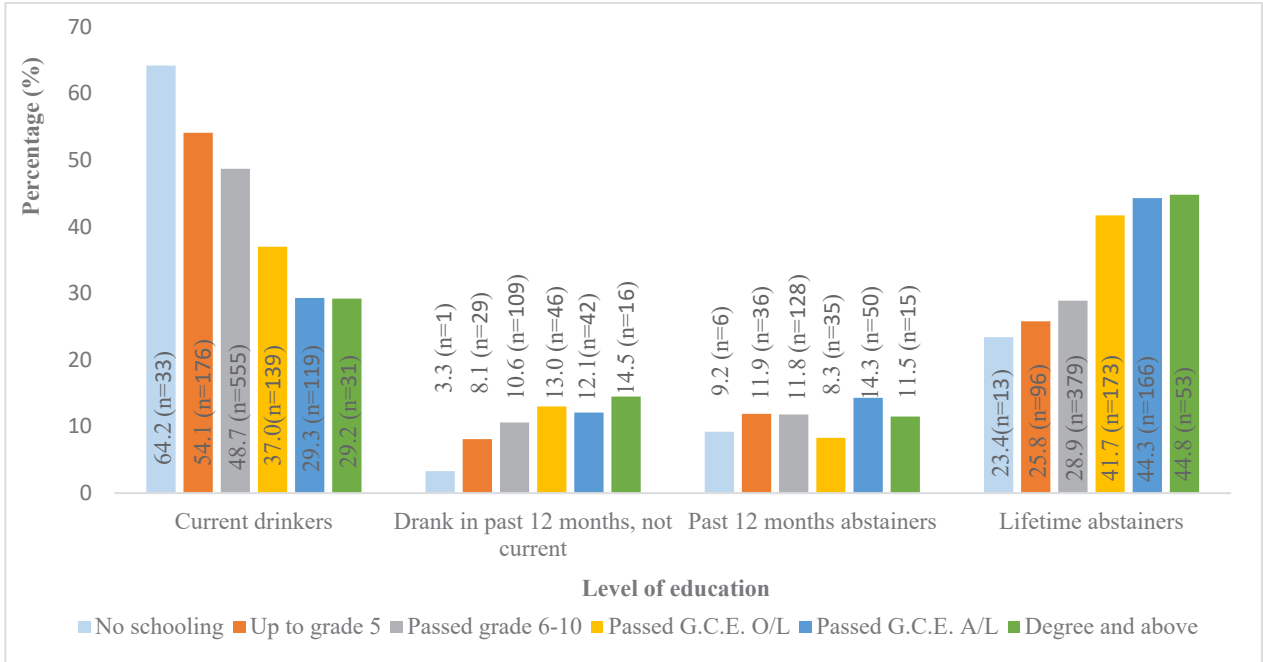
Figure 3.31: Current Alcohol Drinking and Lifetime Abstainers Status among Males by the Level of Education

Those with the lowest level of education had the highest proportion of current drinkers and the lowest proportion of lifetime abstainers.

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

3.4 Diet

Unhealthy diet is one of the modifiable risk factors for NCDs. Factors assessed in relation to dietary practices among respondents are summarized as follows.

3.4.1 Fruit and Vegetable Consumption

3.4.1.1 Average Number of Servings of Fruits and Vegetables Consumed per Day

Average number of servings of fruit and vegetables consumed by the respondents was estimated based on the responses provided to the question on the average number of servings of fruits and vegetables consumed per day, as reported by the respondents.
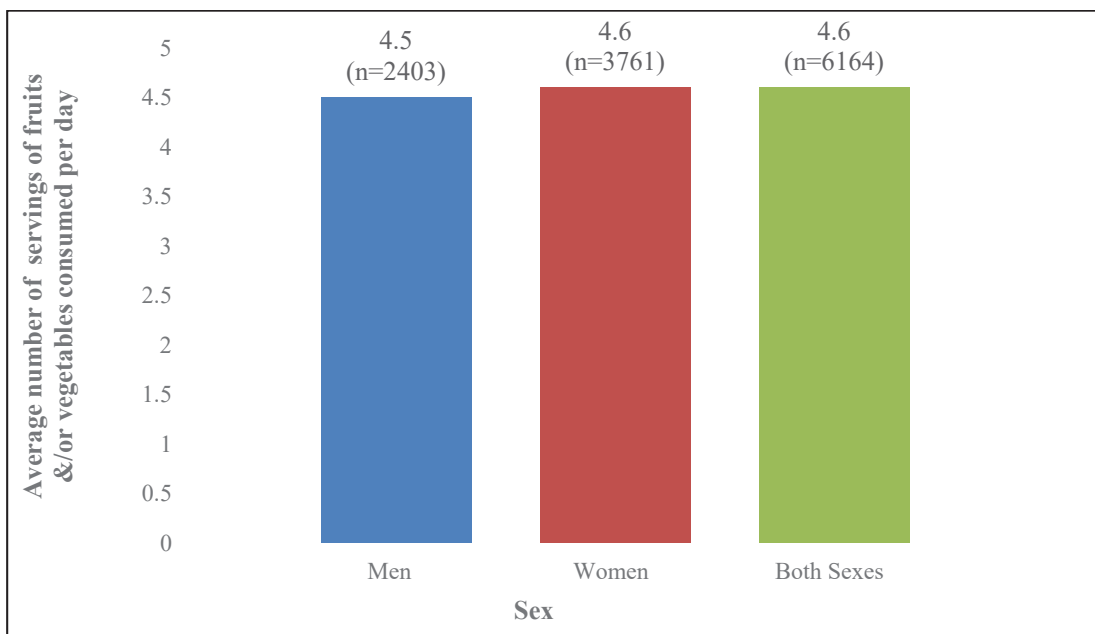
Figure 3.32: Average Number of Servings of Fruits and/or Vegetables Consumed per Day

When considering the intake of both vegetables and fruits, it was estimated that a total of 4.6 servings were consumed by a single respondent on average, per day (Figure 3.32).

3.4.1.2 Consuming less than 5 servings of fruits and/or vegetables per day

Percentage distribution of number of servings of fruit and/or vegetables on average per day is given in figure 3.33.
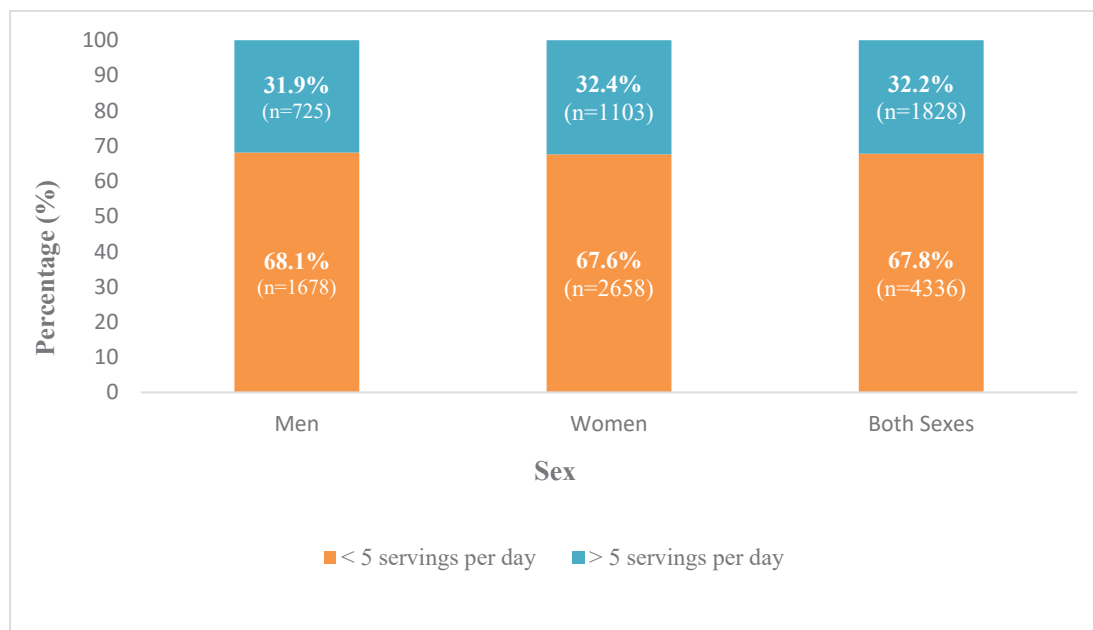

Figure 3.33: Percentage Distribution of Number of Servings of Fruit and/or Vegetables on Average Per Day

It was estimated consumption of less than 5 servings of fruits and/or vegetables was 68.1% among males and among females it was 67.6 %. When both sexes were considered 67.8% consumed less than 5 servings of fruits and/or vegetables per day (Figure 3.33).

3.4.2   Use of Cooking Oils and Fats

3.4.2.1 Oil or Fat most often used for Meal Preparation in the Households

The type of cooking oils used most often for food preparation is demonstrated in figure 3.34.
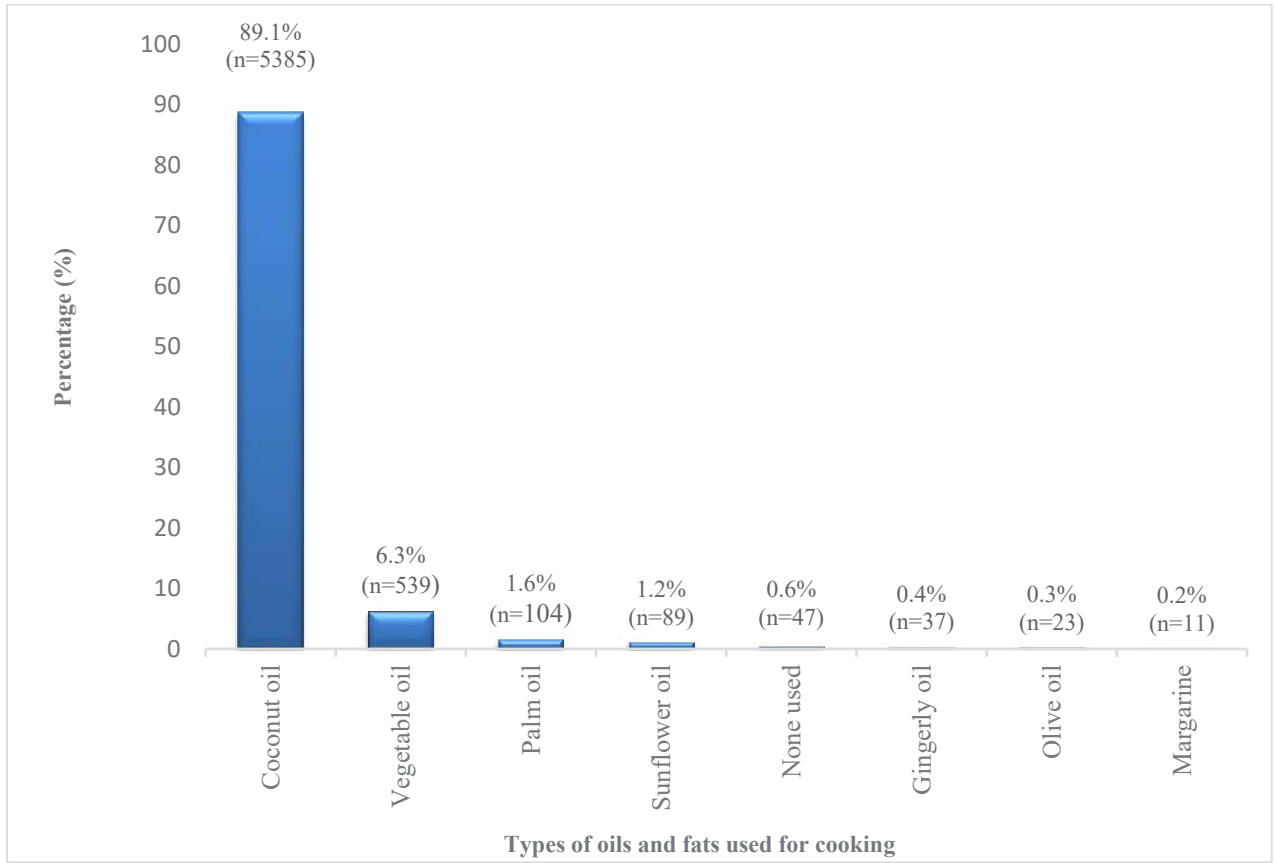
Figure 3.34: Types of Oils and Fats Used for Cooking

A majority of the respondents (89.1%; N=5385) had stated that they used coconut oil for meal preparations, while (6.3% (n=539)) used vegetable oil. Margarine as a form of a fat had been used only by 0.2% (n=11) participants for meal preparation (Figure 3.34).

3.4.3   Salt Consumption

3.4.3.1 Adding Salt or Salty Sauce to Food Before and / or While Eating (Always or often)

This practice was determined based on the responses provided by the respondents about the frequency of adding salt or a salty sauce such as soya sauce to their foods right before eating and/or while eating.
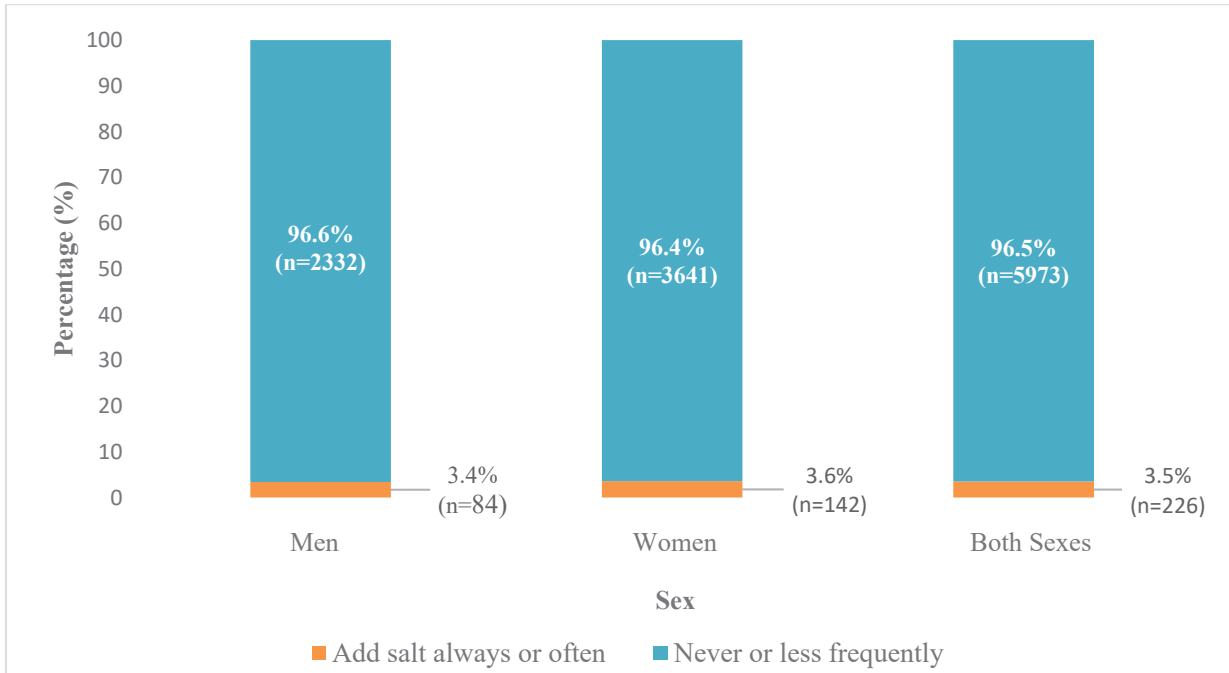
Figure 3.35: Adding Salt or Salty Sauce Always or Often Before and / or while Eating

Out of the respondents, 3.5% as a total have reported that they add extra salt or salty additive (always or often), before eating and / or while eating food (Figure 3.35).

3.4.3.2 Mean Intake of Salt Per Day

Levels of sodium in spot urine samples, collected from the respondents were used to estimate 24-hour salt intake of the population. (Kawasaki equation was used for the calculation. It was recommended by the Department of Nutrition, Medical Research Institute, Ministry of Health).
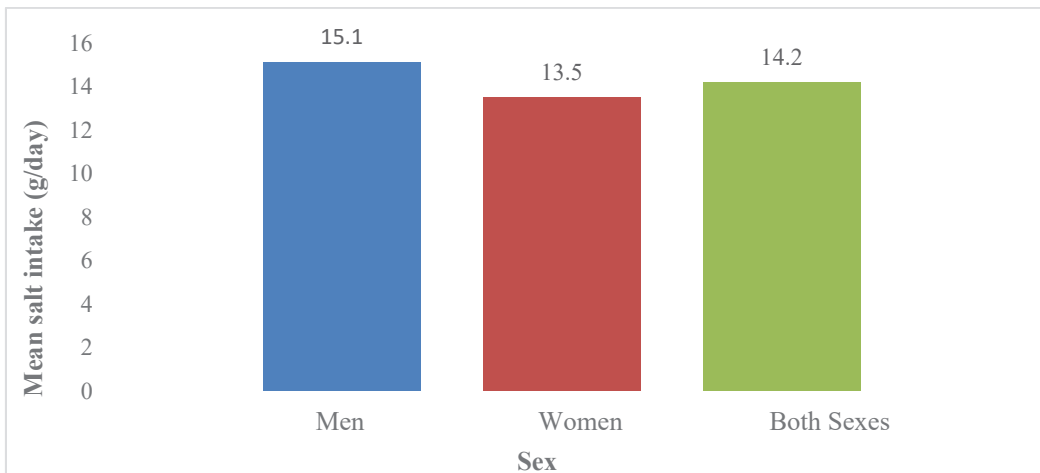

Figure 3.36: Mean Salt Intake (g/day)

According to the estimation, individual daily consumption of salt was 14.2 grams for participants from all age groups (Figure 3.36), which is an increase from the previously reported value of 13.3 g per person/day in 2021 (Jayatissa et al., 2021).

According to the INTERSALT equation, mean intake of salt (g) per day of men were 9.7g and women 7.6g.

3.4.4   Consumption of Processed Food

3.4.4.1 Respondents who Always or Often Consume Processed Food High in Salt.

Among the respondents 8.1% males and 8.3% females have stated that they always or often consume processed foods, high in salt and the overall percentage was 8.2%.

When compared to the findings of the STEPS survey 2015, there is a marked reduction (from 26.6% (CI: 23.9-29.3) to 8.2% (CI: 7.2-9.2)) regarding the practice of using processed foods high in salt always or often.

3.4.4.2 Perceptions on Salt Consumption

Perception on the amount of salt consumed by the respondents was recorded and given in figure 3.37.
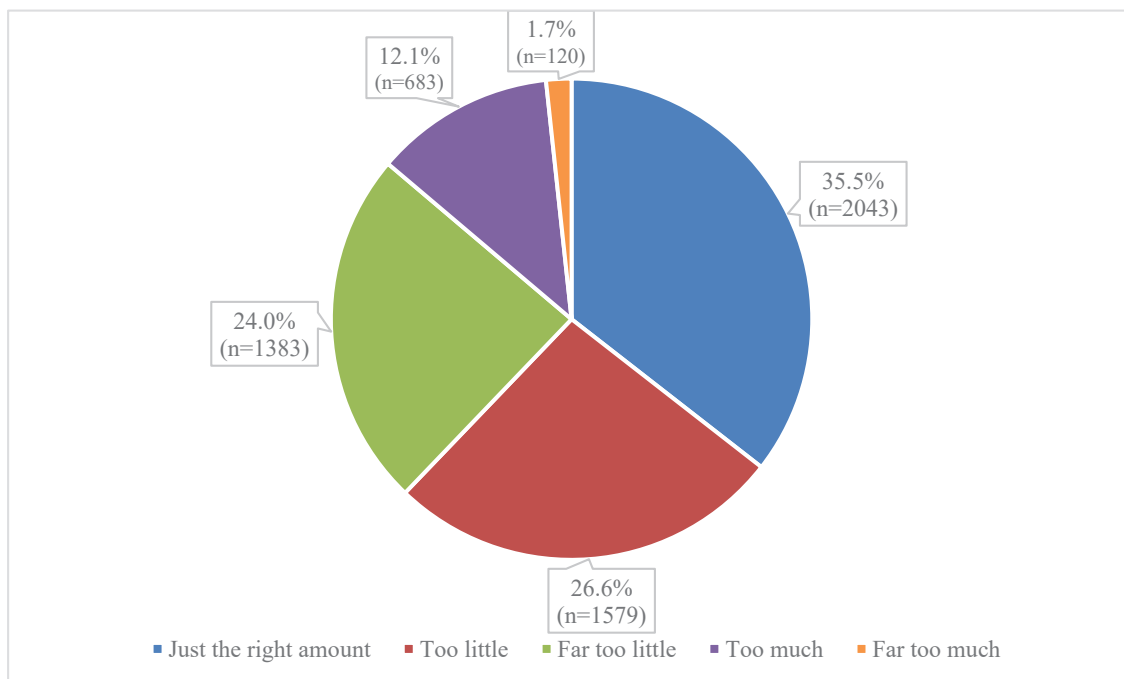

Figure 3.37: Perceptions on salt consumption

Only 35.5% stated that they consumed just the right amount of salt, 50.6% stated too little and far too little and only 13.8% stated too much and far too much.

3.4.4.3 Attitudes among respondents about lowering the salt in the diet

The attitudes among the respondents about lowering the salt in their diet was assessed using a likert scale of three responses (very important, somewhat important and not important at all) and given in figure 3.38.
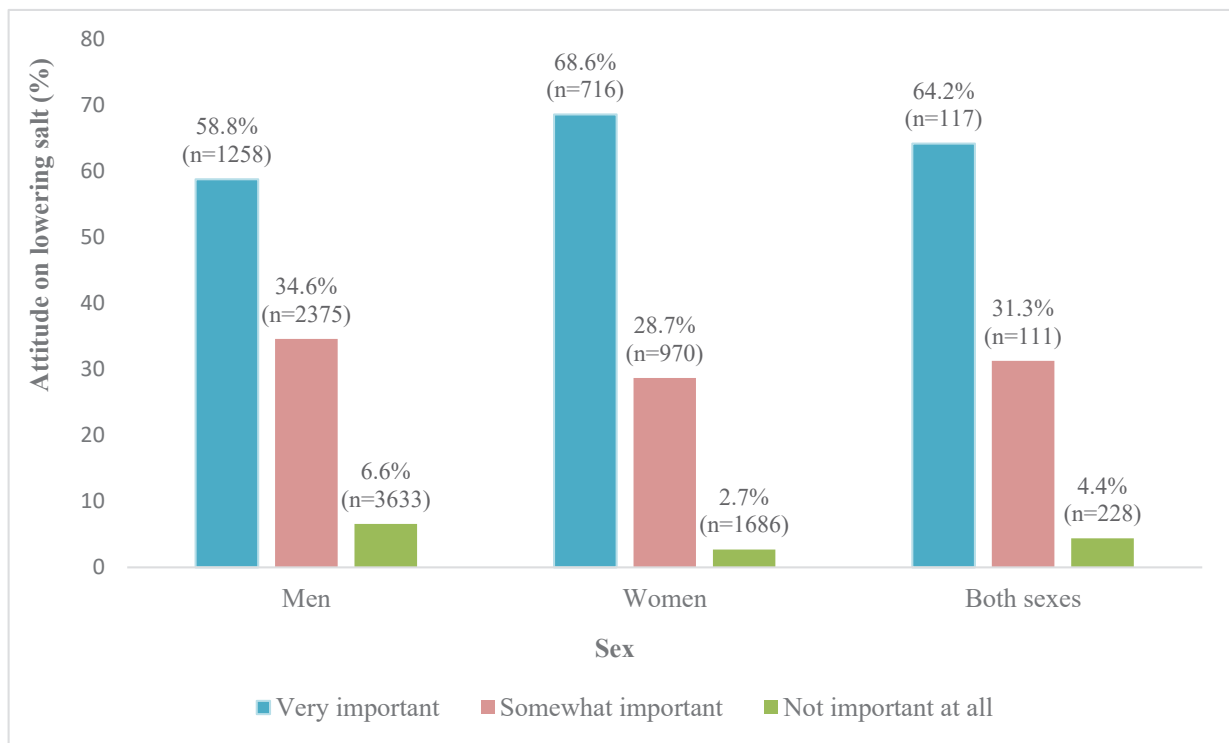

Figure 3.38: Attitudes among the Respondents on Lowering the Salt in the Diet

Out of all the respondents higher percentage (68.6%) of females compared to males (58.8%) have stated that they consider lowering salt in the diet as very important (Figure 3.38). Only 4.4% said reducing salt is not important at all.

3.4.5 Actions Taken Regularly to Control Salt Intake

The responses were obtained from the participants about the actions taken regularly to reduce the intake of salt and is based on the question "Do you do any of the following on a regular basis to control your salt intake?"

Figure 3.39: Actions Taken by Respondents to Limit Intake of Salt

According to respondents, 44.7% from both sexes have stated that they limit consumption of processed foods specifically to limit their salt intake. Another 11.7% have agreed that they buy low salt/sodium alternatives (Figure 3.39).

3.4.6 Number of Servings of Fruits &/or Vegetables Consumed Based on Quintiles of Wealth Index

Figure 3.40 shows number of servings of fruits &/or vegetables consumed, based on the wealth quintiles.
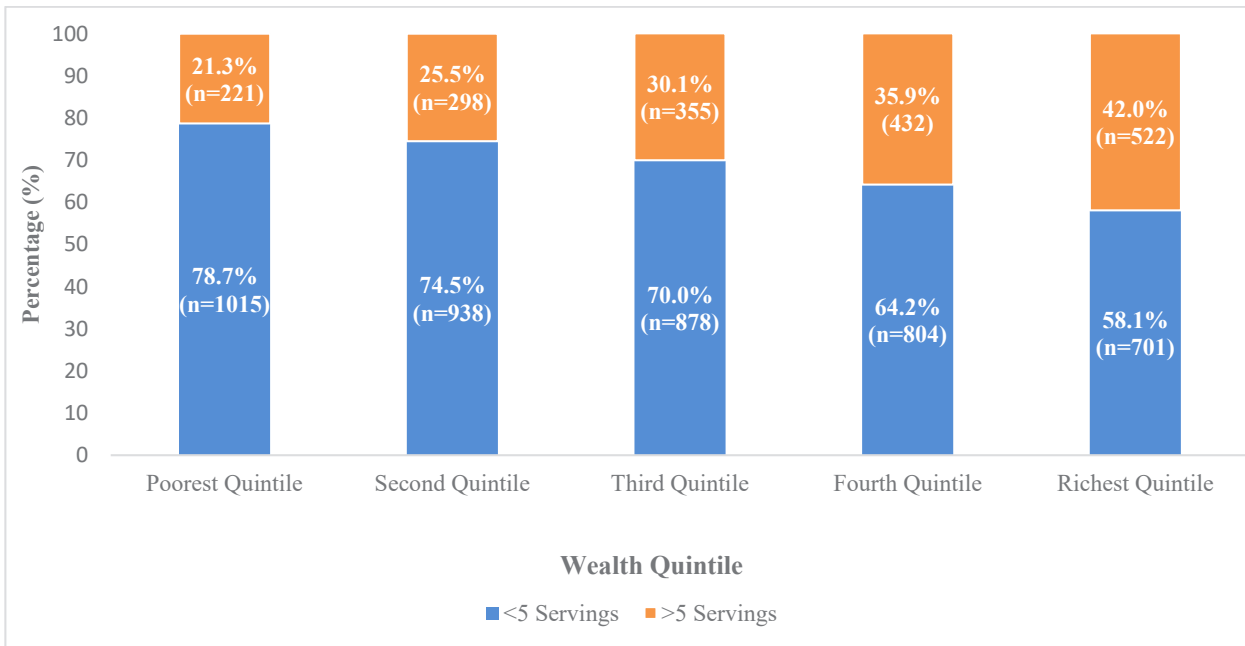

Figure 3.40: Number of Servings of Fruits and / or Vegetables used based on Wealth Quintiles

Majority of 78.7% poorest quintile altogether consume less than five servings of fruits and/or vegetable servings a day while only 21.3% consume 5 or more servings. In the richest quintile, 42 % of respondents eats equal or more than five fruits and/or vegetables servings a day and 58.1% altogether eats less than 5 servings a day in an average (Figure 3.40). There seems to be a link between the buying power and consumption of fruits and vegetables.

3.4.7 Number of Servings of Fruits and/or Vegetables Consumed based on Level of Education

Figure 3.41 shows the number of servings of fruits and/or vegetables used based on level of education.
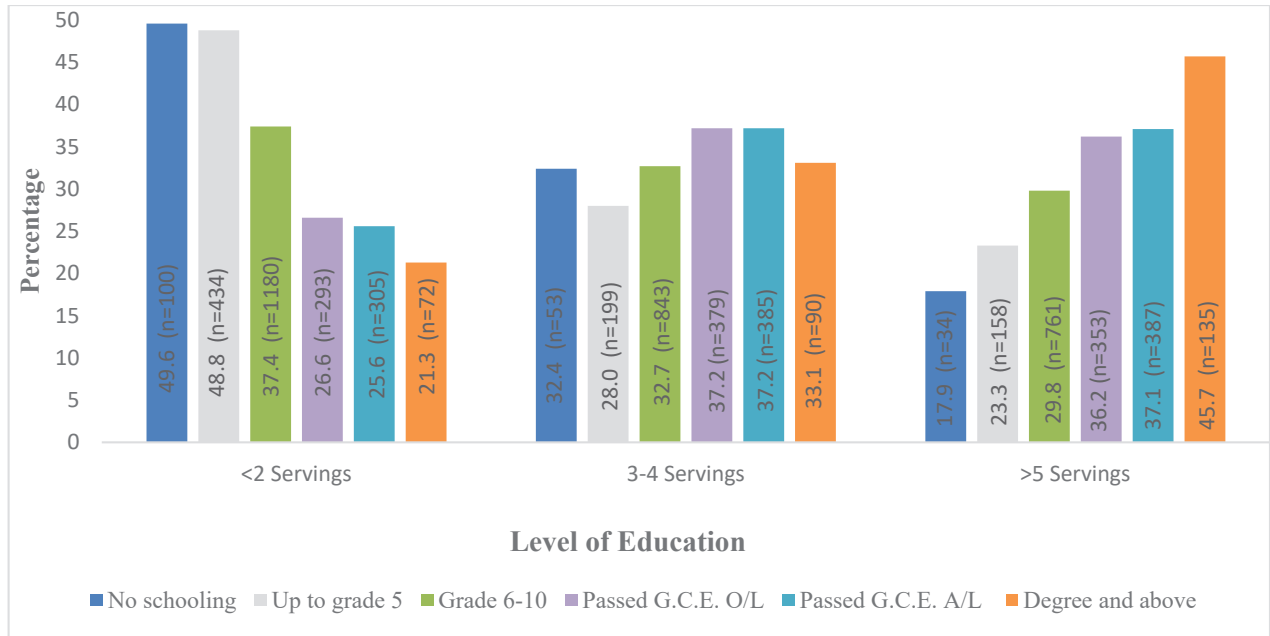

Figure 3.41: Number of Servings of Fruits and/or Vegetables used based on Level of Education

Among the respondents from the group who have not attained school, only 17.9% take more than 5 servings of fruits and/or vegetables. Among the respondents who have studied up to degree level or above 45.7% have stated that they eat 5 or more servings of fruits and/or vegetables (Figure 3.41). It seems that more educated a person is more likely to consume more vegetables and fruits. As this may be a confounded for income level further analysis is needed.

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

3.5   Physical Activity

Definition of physical activity - any bodily movement produced by skeletal muscles that results in energy expenditure. It includes daily activities of work, transport and household activities, sports and exercises.

Exercise is a subset of physical activity that is planned, structured, and repetitive and has as a final or an intermediate objective of improvement or maintenance of physical fitness.

3.5.1   Physical inactivity

"Insufficient physical activity" means not engaging in WHO recommended levels of moderate, vigorous or an equivalent combination of physical activity per week. Participants were assessed on whether they met such level of physical activity during activity at work or travel to and from places or as a recreational activity. Percentage of physically inactive is given in the Figure 3.42.
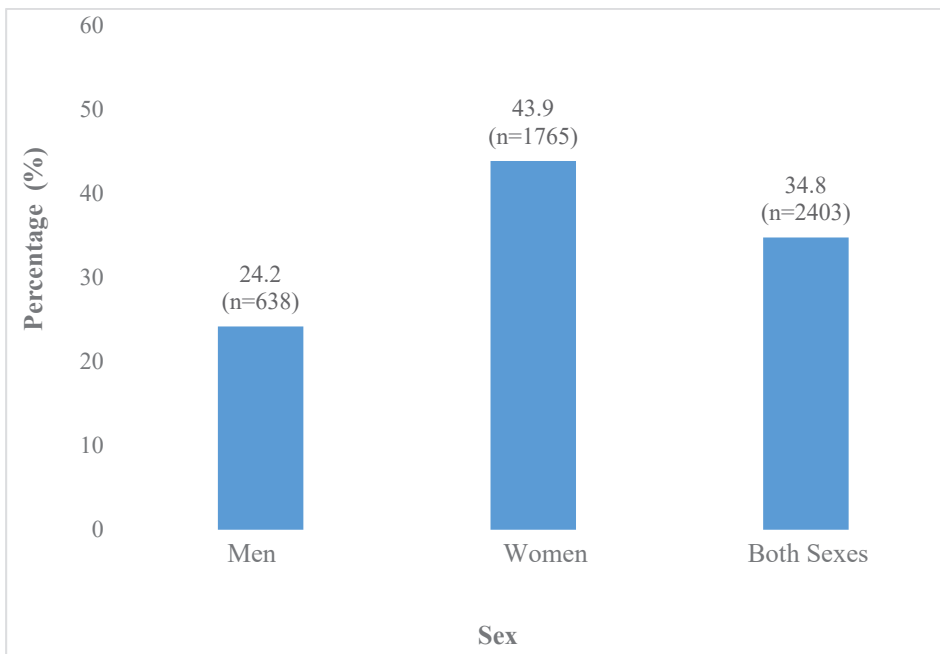

Figure 3.42: Distribution of those who are physically inactive by sex

According to Figure 8.1, 34.8% of the respondents did not meet the WHO recommendation of physical activity. Out of male respondents 24.2% were physically inactive while 43.9% of the female respondents were not adequately physically active according to recommendations.

Figure 3.43 shows comparison of physical inactivity to physical activity ratio in 2015 and 2021.
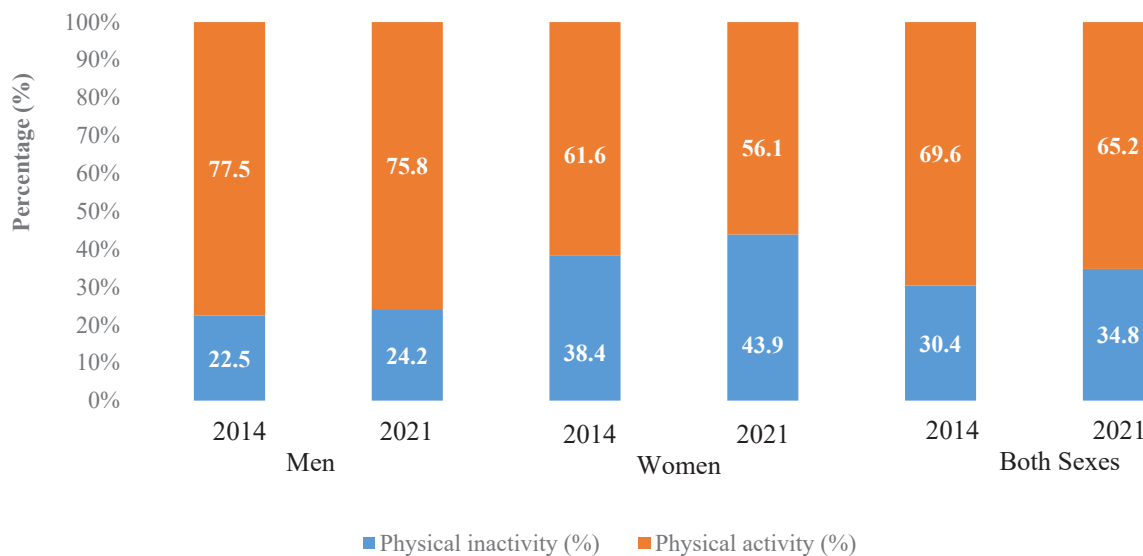

Figure 3.43: Comparison of physical inactivity to physical activity ratio in 2015 and 2021

It is also noted that physical inactivity has increased compared to the estimates reported in STEPS survey 2015. In 2015, 30.4% (CI: 27.9-32.8) adults (22.5% (CI: 19.4-25.6) males and 38.4% (CI: 35.5-41.4) females) were estimated to be physically inactive (Figure 3.43). The ratio between physical inactivity and physical activity has increased from 2015 to 2021.

3.5.2   Obesity

3.5.2.1 Body Mass Index

Weights of all respondents were measured in kilograms using standardized techniques. Height which was measured in centimeters was converted to meters when Body Mass Index (BMI) was calculated.

The Body Mass Index was calculated, and the respondents were categorized as underweight, normal, overweight and obese. Pregnant females were excluded.
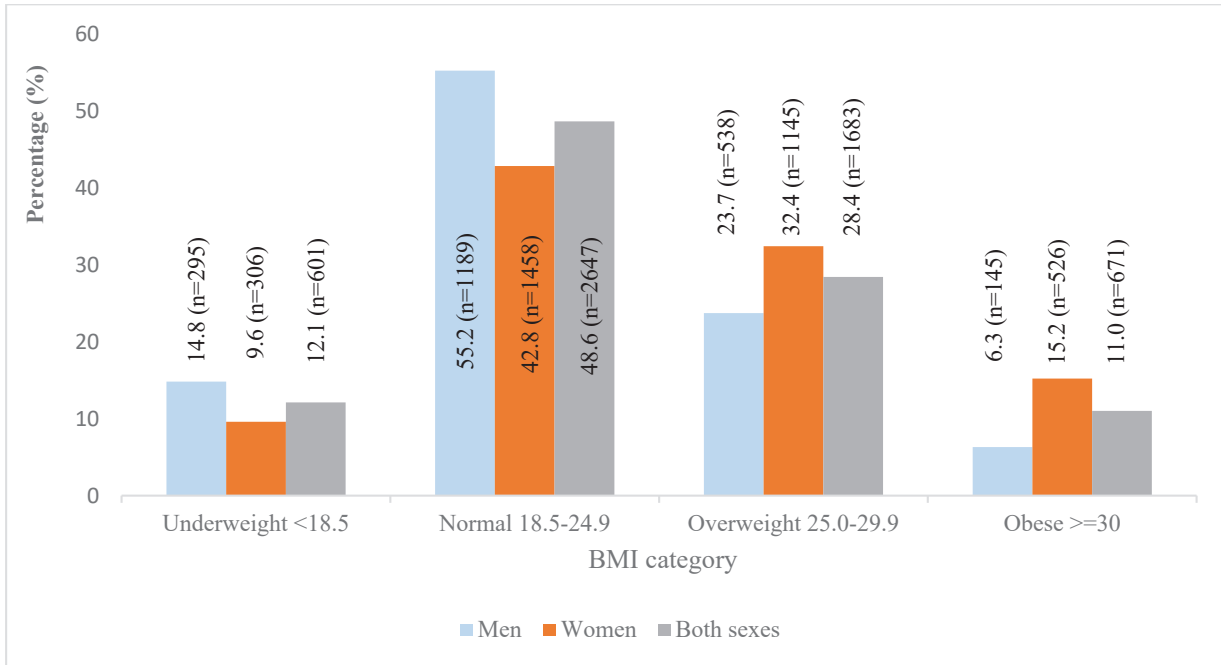

Figure 3.44: Percentage distribution of BMI categories of respondents by sex

Eleven percentage (CI: 10.0-12.0) of all respondents were obese according to Figure 3.44, while only 5.9% (CI: 5.1-6.7) of all respondents were found to be obese in 2015. The percentage of all respondents with normal BMI has declined by 12.2% in comparison to the survey findings in 2015 (in 2021, 48.6% (CI: 47.0-50.1) and in 2015, 55.4% (CI: 53.5-57.3).

3.5.2.2 Waist: Height ratio

Waist circumference and height of each respondent was measured in centimeters, using standardized techniques after obtaining their consent. Pregnant females were excluded. Waist: height ratio was calculated, and the respondents were categorized as those with waist: height ratio < 0.5 and >=0.5.
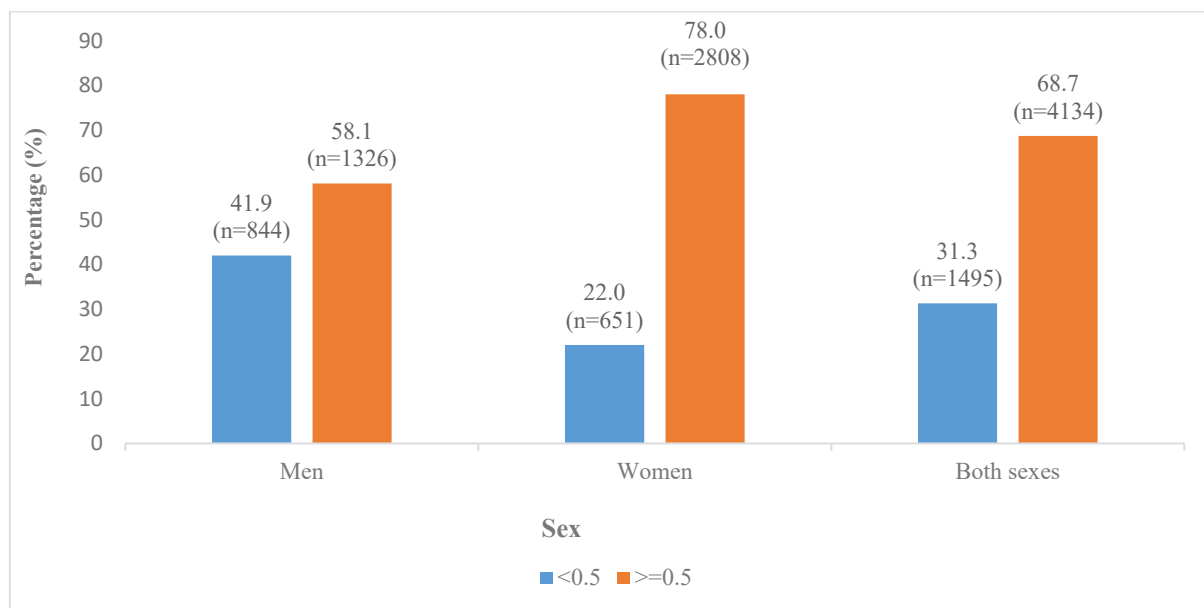
Figure 3.45: Distribution of waist: height ratio of respondents by sex

The waist: height ratio was ≥ 0.5 among the majority of all respondents (men, women and both sexes being 58.1%, 78.0% and 68.7% respectively).

3.5.3 Physical Inactivity Based on Quintiles of Wealth Index

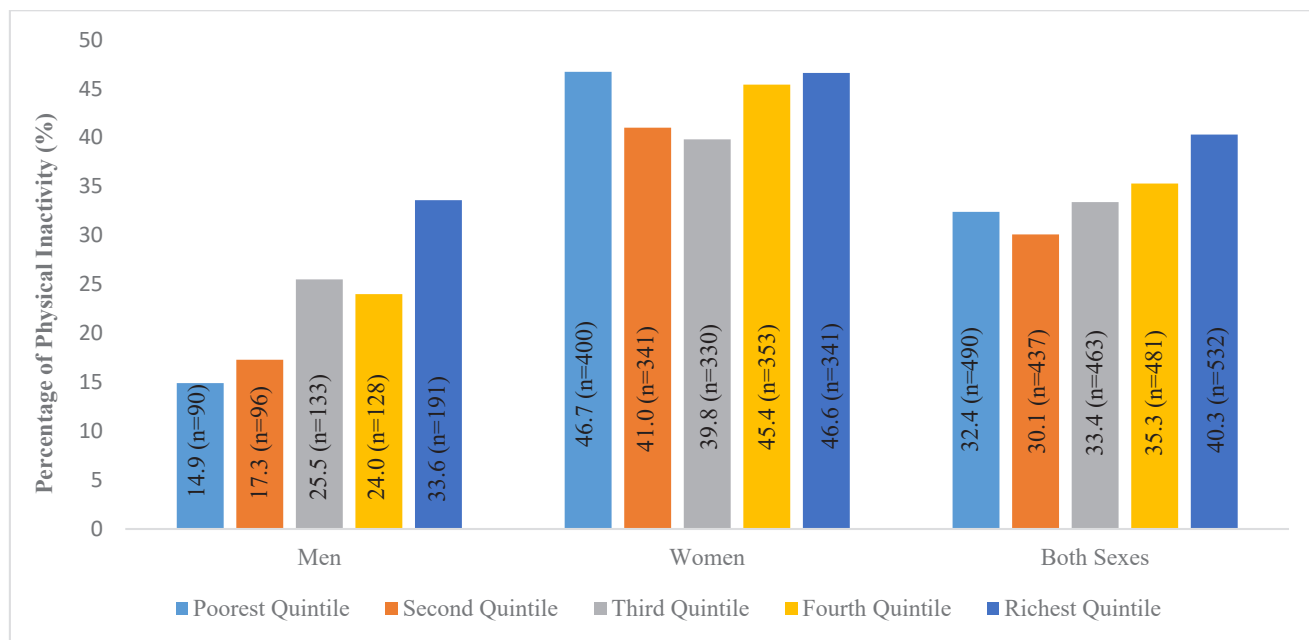Figure 3.46 shows distribution of physical inactivity according to wealth quintiles.

Figure 3.46: Distribution of physical inactivity according to wealth quintiles and sex

As shown in Figure 3.46 physical inactivity among all respondents has gradually increased from second quintile to the richest quintile. Prevalence of physical inactivity is similar among females of the poorest quintile and the richest quintile.

3.5.4 Physical Inactivity Based on Level of Education

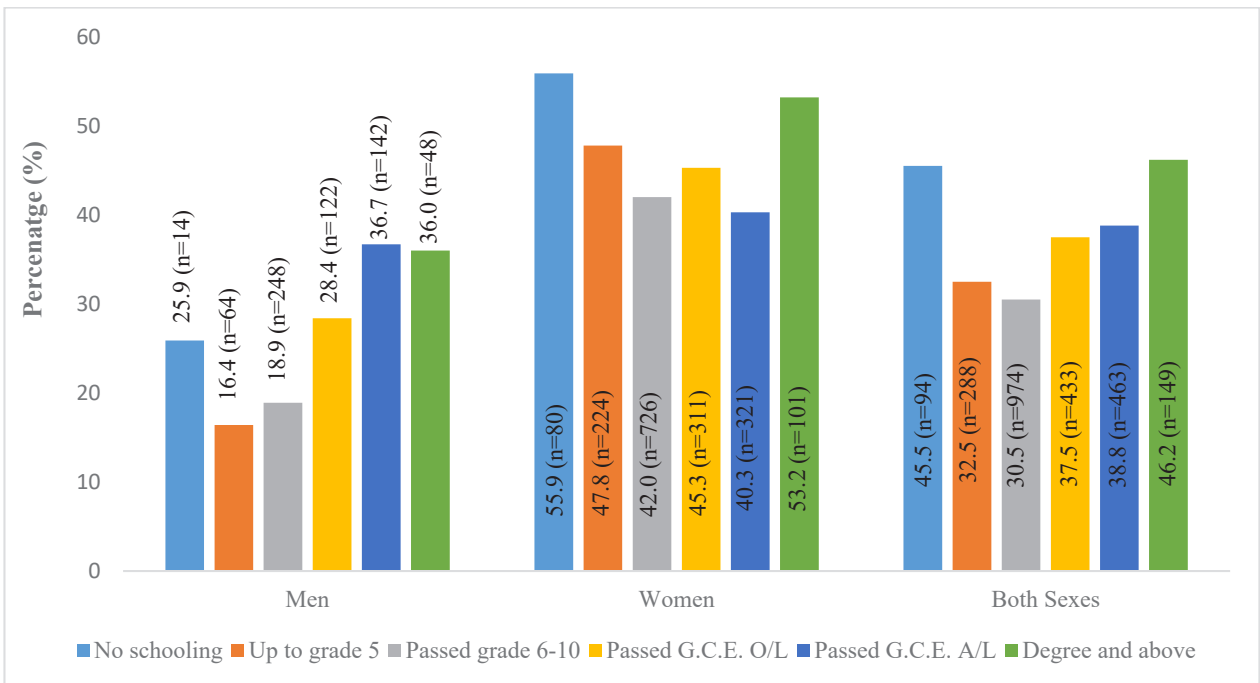Figure 3.47 shows distribution of physical inactivity according to the level of education and sex.

Figure 3.47: Distribution of Physical Inactivity according to Level of Education and Sex

According to figure 3.47 prevalence of physical inactivity is high among the respondents either who had no schooling or who had completed a degree and above.

3.5.5 Waist: Height ratio by Wealth Index

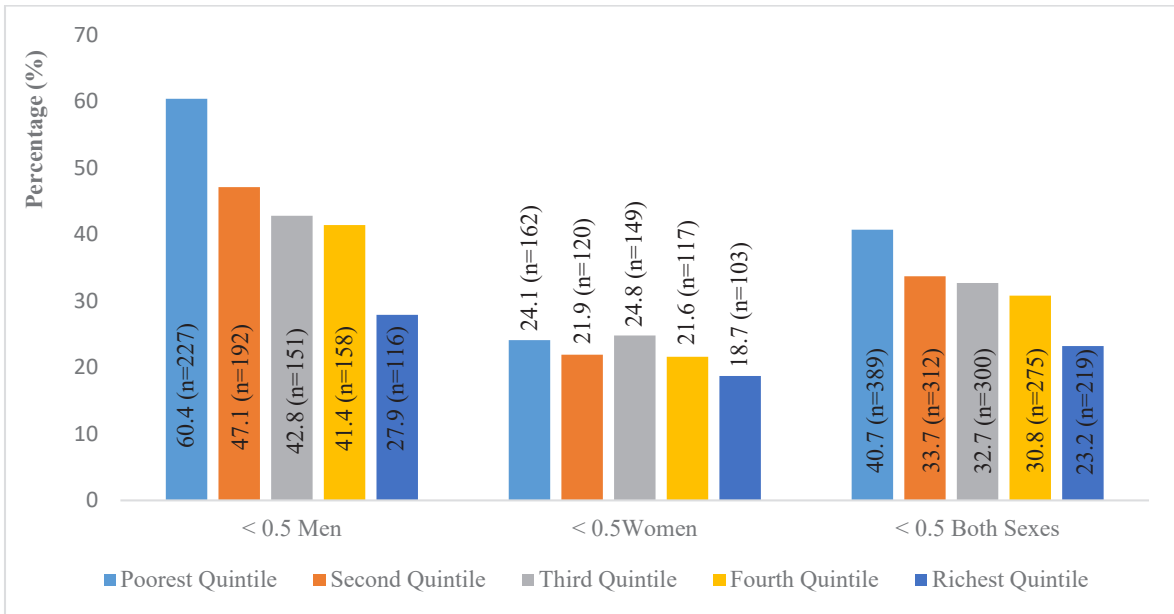Figure 3.48 shows distribution of waist: height ratio by the wealth index.

Figure 3.48: Waist: Height ratio by Wealth Index

Nearly 60% of males and 24% of females who belong to the poorest quintile were found to have a waist: height ratio less than 0.5. Among all quintiles men were found to contribute to a major proportion of those with a waist: height ratio less than 0.5.

3.5.6 Waist: Height ratio by Level of Education

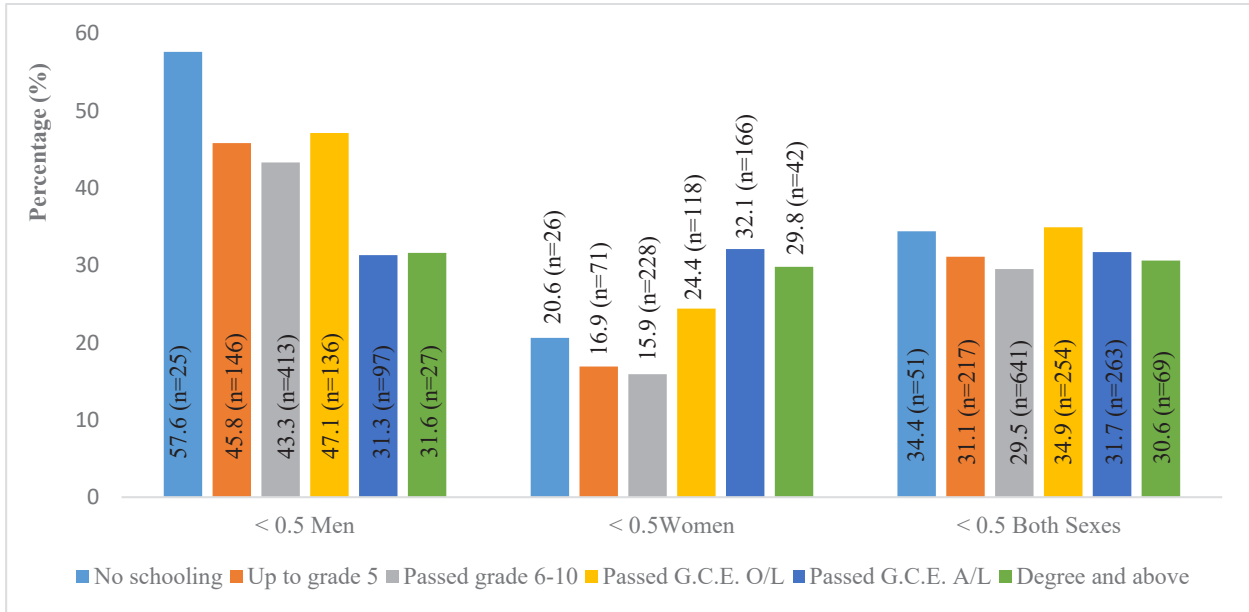Figure 3.49 shows the waist: height ratio by education level

Figure 3.49: Waist: Height ratio by Education Level

A major proportion of men with any level of education were found to have a waist: height ratio less than 0.5 and it was highest (57.6%) among men who had never been to school. Among females the highest percentage (32.1%) with waist: height ratio less than 0.5 was among those who had passed G.C.E. Advanced Level examination.

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

3.6   Cervical Cancer Screening

All female respondents were asked if they ever underwent a test to screen for cervical cancer. Of all of them, 25.9% had undergone a screening test for cervical cancer at least once in their lifetime. This is an improvement compared with the value 15.2% reported in 2015 STEPS survey.

Table 3.7 shows distribution of female respondents in the 35-45 years age group who have ever had a screening test for cervical cancer.

Table 3.7: Distribution of Female Respondents in the 35-45 Years Age Group Who Have Ever Had a Screening Test for Cervical Cancer

Age Group	Women	
(years)	**Number**	**% ever tested**
35-45	1001	51.7

Female respondents aged 35-45 years who had ever undergone a screening test for cervical cancer was 51.7%.

3.6.1   Wealth Quintile and Cervical Cancer Screening

Figure 3.50 shows distribution of women who ever had a screening test for cervical cancer among all female study participants aged 35-45 years based on their wealth quintile.
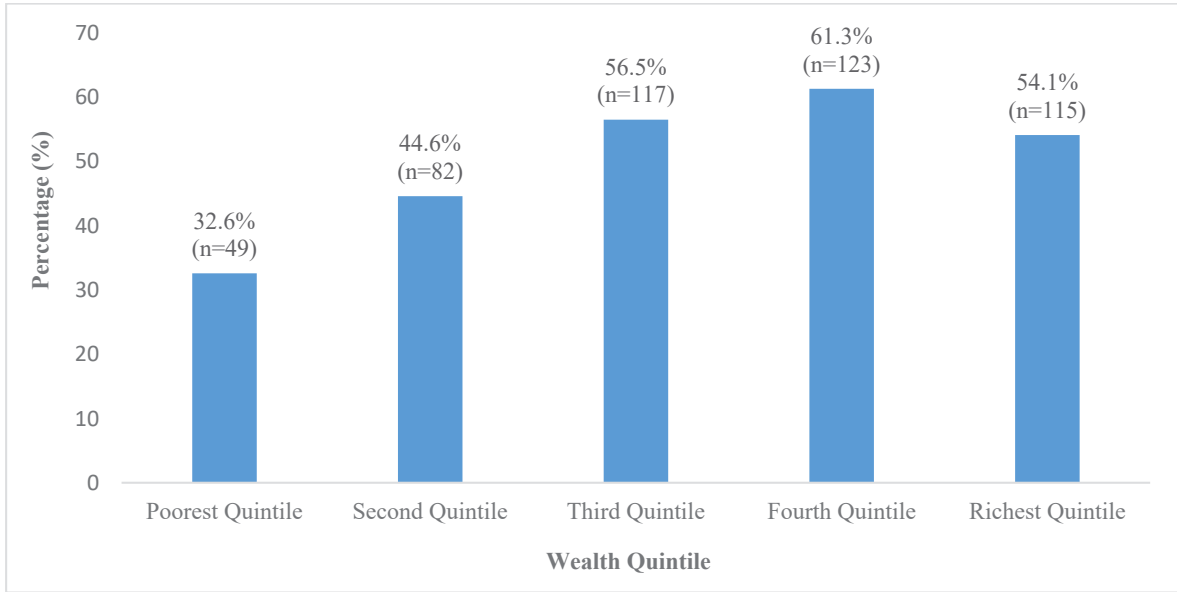
Figure 3.50: Women who ever had a Screening Test for Cervical Cancer Among all Female Study Participants Aged 35-45 Years Based on their Wealth Quintile

61.3% of those aged 35-45 years who are in the fourth quintile have ever had a screening test for cervical cancer. Only 32.6% of those who are in the poorest quintile have ever had a screening test for cervical cancer. There was a gradual increase in the percentage of ever tested for cervical cancer up to the fourth quintile then a decline in the richest quantile.

3.6.2 Level of Education and Cervical Cancer Screening

Figure 3.51 shows distribution of women who ever had a screening test for cervical cancer among all female study participants aged 35-45 years based on their education level.
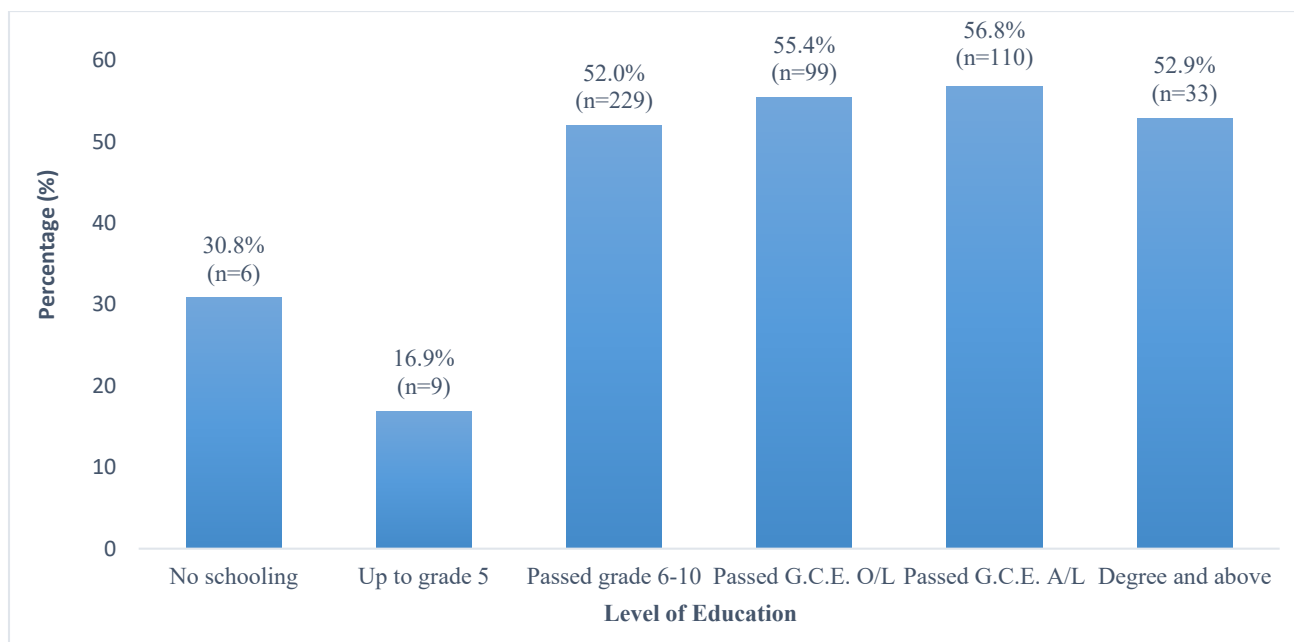

Figure 3.51: Distribution of Women who ever had a Screening Test for Cervical Cancer Among All Female Study Participants Aged 35-45 Years Based on their Education Level

Fifty-six percent of those aged 35-45 years who had studied up to G.C.E. advanced level have ever had a screening test for cervical cancer. Only 16.9% of those who had studied up to grade 5 have ever had a screening test for cervical cancer.

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

3.7   Blood Pressure

3.7.1   Respondents currently taking medication for raised blood pressure

Respondents were asked whether they have been treated for raised blood pressure with medication prescribed by a doctor or other health worker during the past two weeks and were categorized as follows.
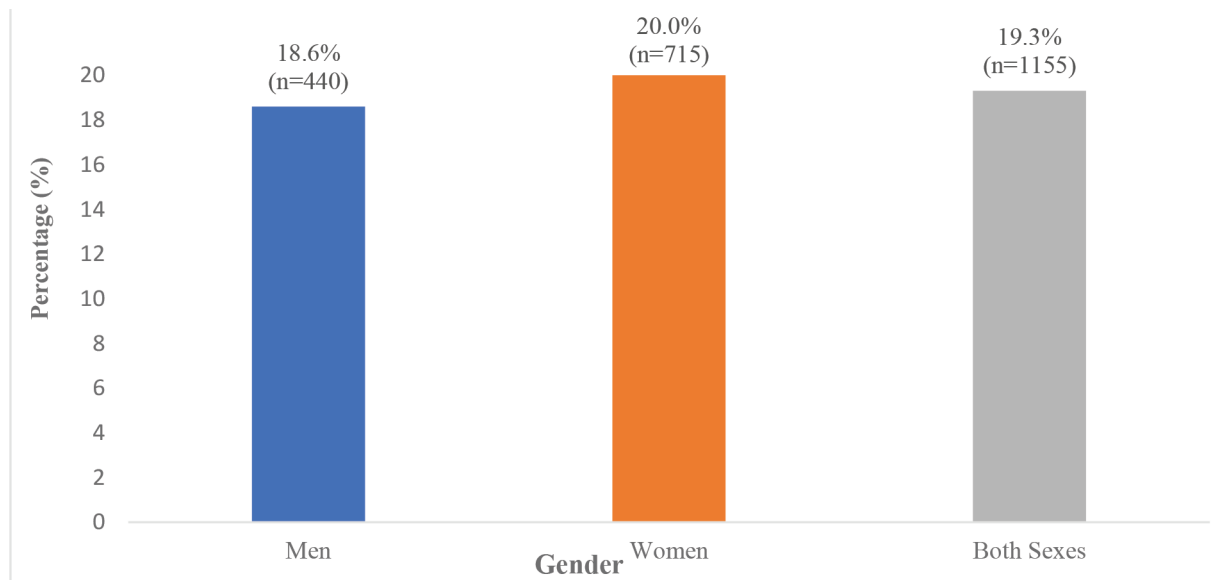

Figure 3.52: Respondents currently taking medication for raised blood pressure

Figure 3.52 shows that 77.4% (CI: 74.3-80.5) of the respondents with raised blood pressure were on medication currently. In comparison to 2015, (57.7%, CI: 53.8-61.6) there is a significant improvement in taking medication among patients diagnosed with hypertension.

3.7.2   Blood Pressure Measurements

In the current survey, systolic and diastolic blood pressure of all male and female respondents were measured in millimeter mercury (mmHg) using standardized digital blood pressure meters.

Table 3.8: Respondents including those currently on medication by mean systolic and diastolic blood pressure in mmHg

Blood pressure	Men	Women	Both sexes
Mean Systolic blood pressure	130.3	127.0	128.5
Mean Diastolic blood pressure	81.9	79.3	80.5

Mean systolic blood pressure of the respondents was 128.5 mmHg (CI: 127.9-129.2). It is observed that this value is significantly greater than the value recorded in the STEPS survey in 2015, which was 125.1 mmHg (CI: 124.4-125.8).

3.7.2.1 Raised Blood Pressure

Raised blood pressure was defined as Systolic Blood Pressure (SBP) $\geq$ 140 mmHg and/ or Diastolic Blood Pressure (DBP) $\geq$ 90 mmHg. Blood pressure measurements of participants who were on medication for raised blood pressure and those who were not on medication were analyzed separately.

3.7.2.1.1   Respondents including those on current treatment by sex who are having raised blood pressure
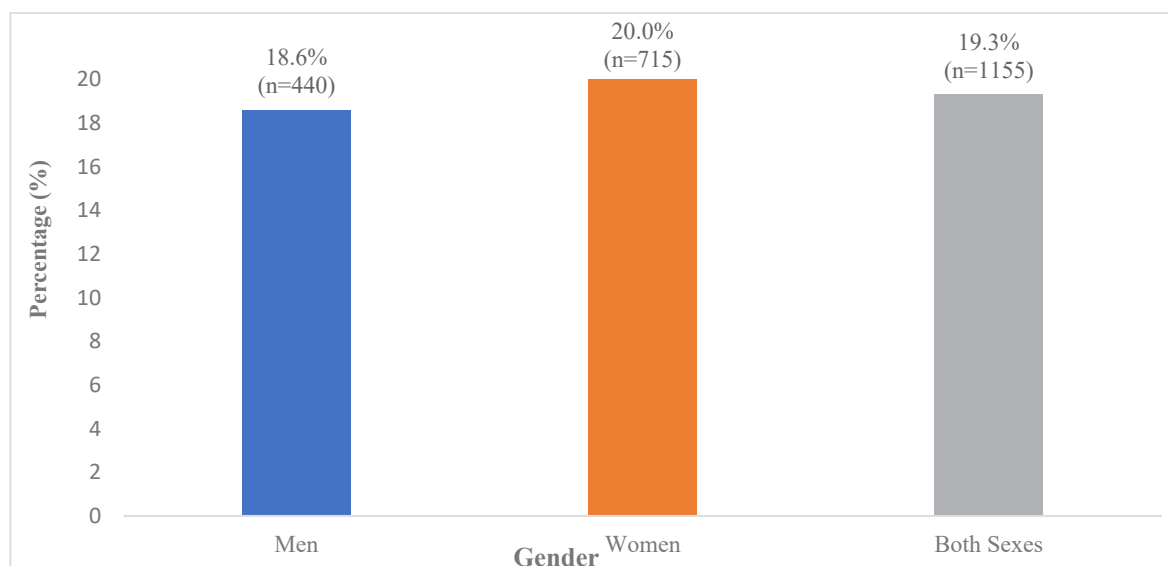

Figure 3.53: Respondents with SBP ≥160 and/or DBP ≥ 100 mmHg or currently on medication for raised blood pressure

Figure shows that 19.3% of respondents those who are on treatment had raised systolic blood pressure of 160 mmHg or more and a diastolic blood pressure of 100 mmHg or more including the ones who were on current treatment.

3.7.2.1.2 Respondents with raised blood pressure (SBP ≥ 140 and/or DBP ≥ 90 mmHg) by diagnosis, treatment, and control of blood pressure

Respondents were categorized according to their status of raised blood pressure diagnosis, treatment, and control as follows.
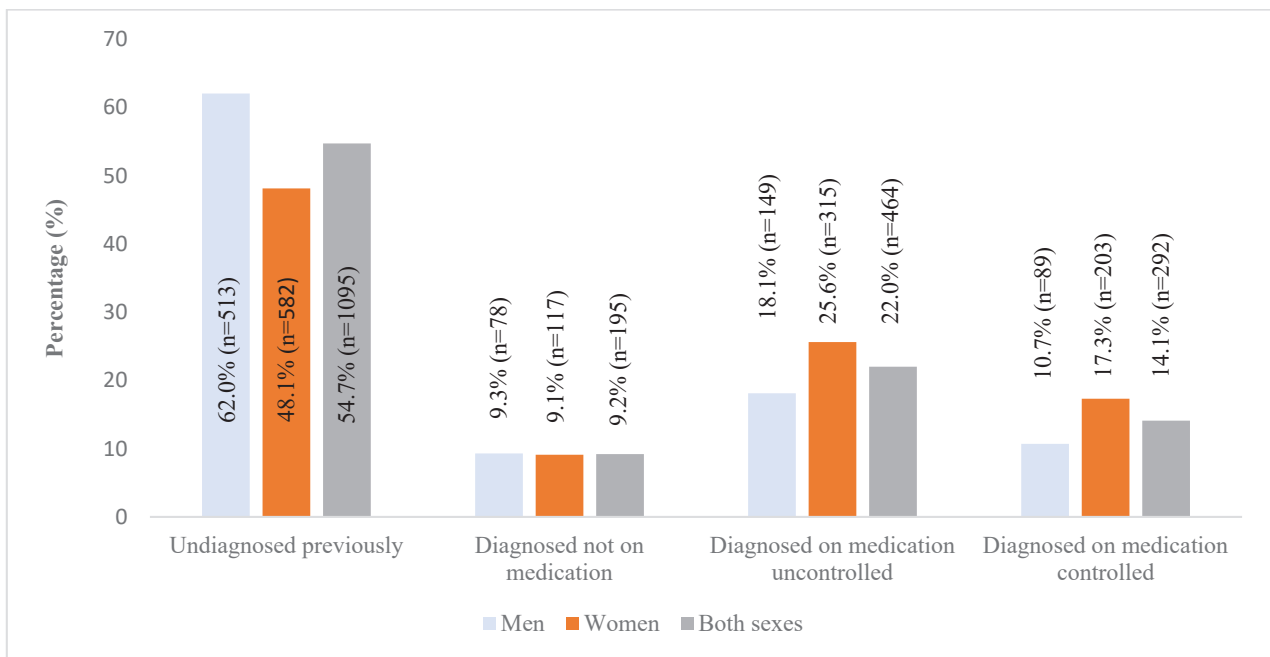

Figure 3.54: Respondents with raised blood pressure (SBP ≥ 140 and/or DBP ≥ 90 mmHg) by diagnosis, treatment and control of blood pressure

The blood pressure of 25.6% of females was uncontrolled although were diagnosed and on medication. A notable proportion of the respondents with high blood pressure (54.7%) had not been diagnosed previously. Among them only 14% were on treatment and had controlled pressure.

3.7.2.2 Raised Blood Pressure and Wealth Quantile

Figure 3.55 shows respondents with SBP ≥140 and/or DBP ≥ 90 mmHg or currently on medication for raised blood pressure and wealth quantile.

Figure 3.55: Distribution of respondents with raised blood pressure including those on medication (SBP ≥ 140 and/or DBP ≥ 90 mm Hg) by wealth index

All respondents as well as men and women belonging to the fourth and richest quintile were found to have a lower prevalence of raised blood pressure in comparison to those belonging to other wealth quintiles.

Figure 3.56 shows respondents with SBP ≥160 and/or DBP ≥ 100 mmHg or currently on medication for raised blood pressure and wealth quantile.
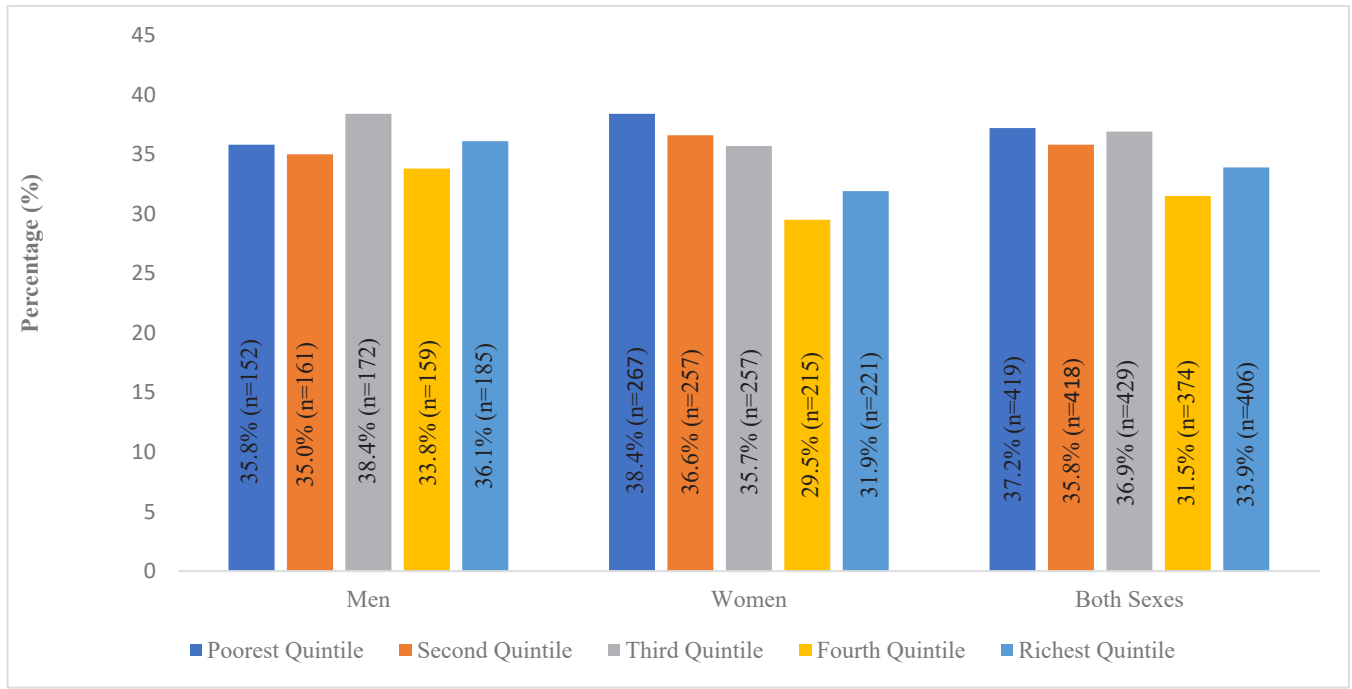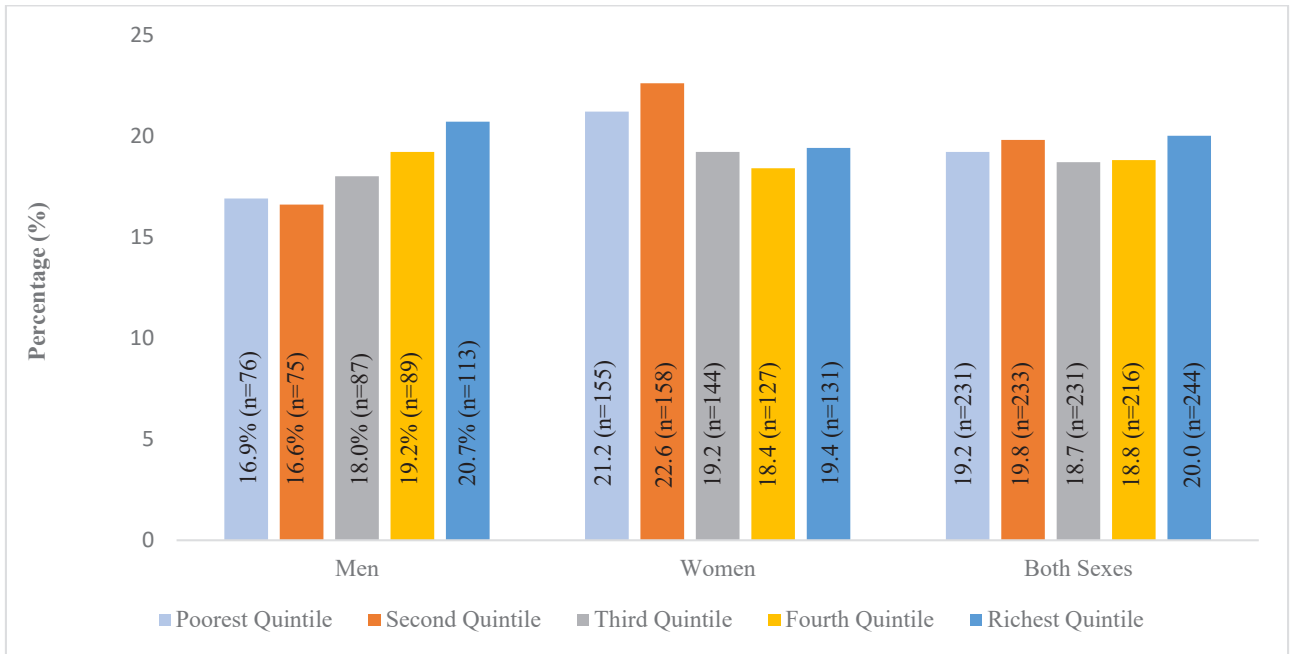
Figure 3.56: Distribution of respondents with raised blood pressure including those on medication (SBP ≥ 160 and/or DBP ≥ 100 mm Hg) by wealth index

All respondents belonging to all five quintiles were found to have an almost similar prevalence of raised blood pressure.

3.7.2.3 Raised Blood Pressure and Level of Education

Figure 3.57 shows distribution of respondents with raised blood pressure (SBP ≥140 and / or DBP ≥90 mm Hg) by education level.
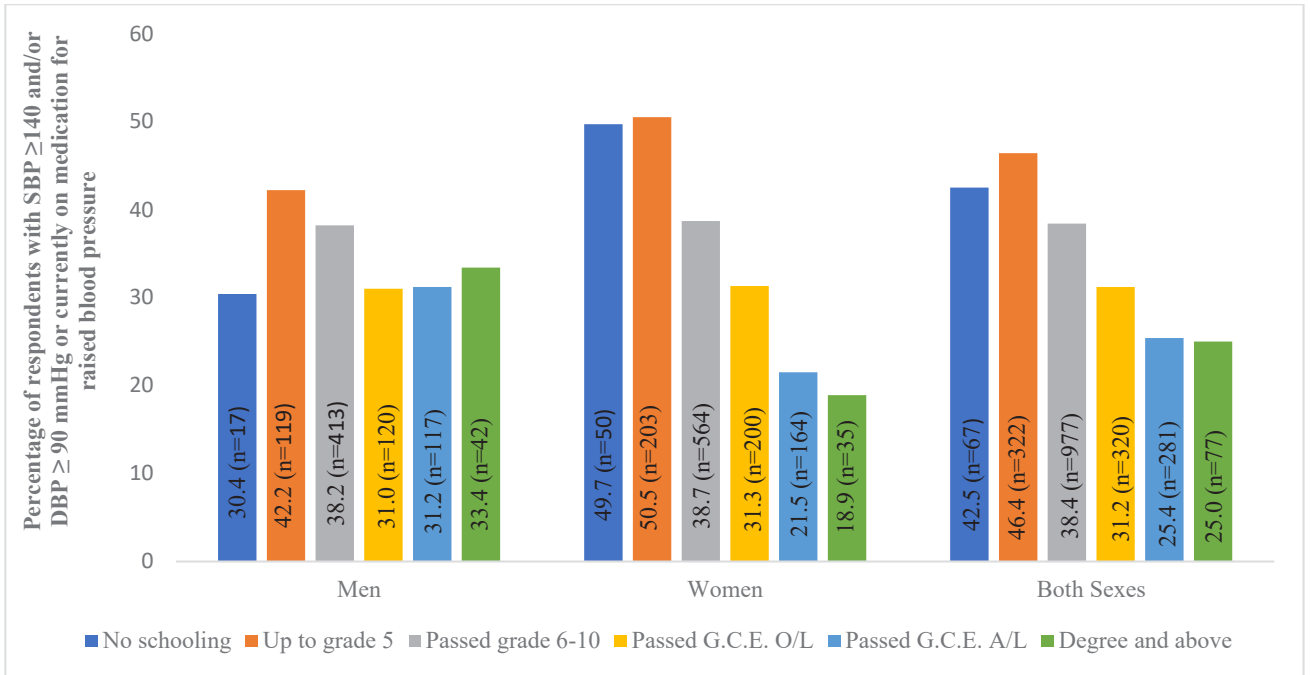
Y-axis: Percentage of respondents with SBP ≥140 and/or DBP ≥ 90 mmHg or currently on medication for raised blood pressure

Men
- 30.4 (n=17)
- 42.2 (n=119)
- 38.2 (n=413)
- 31.0 (n=120)
- 31.2 (n=117)
- 33.4 (n=42)

Women
- 49.7 (n=50)
- 50.5 (n=203)
- 38.7 (n=564)
- 31.3 (n=200)
- 21.5 (n=164)
- 18.9 (n=35)

Both Sexes
- 42.5 (n=67)
- 46.4 (n=322)
- 38.4 (n=977)
- 31.2 (n=320)
- 25.4 (n=281)
- 25.0 (n=77)

Legend: ■ No schooling ■ Up to grade 5 ■ Passed grade 6-10 ■ Passed G.C.E. O/L ■ Passed G.C.E. A/L ■ Degree and above

Figure 3.57: Distribution of respondents with raised blood pressure (SBP ≥140 and / or DBP ≥90 mm Hg) by education level

The prevalence of raised blood pressure SBP ≥140 and / or DBP ≥90 mm Hg shows a decline with the level of education in women.

Figure 3.58 shows distribution of respondents with raised blood pressure (SBP ≥160 and / or DBP ≥100 mm Hg) by education level.
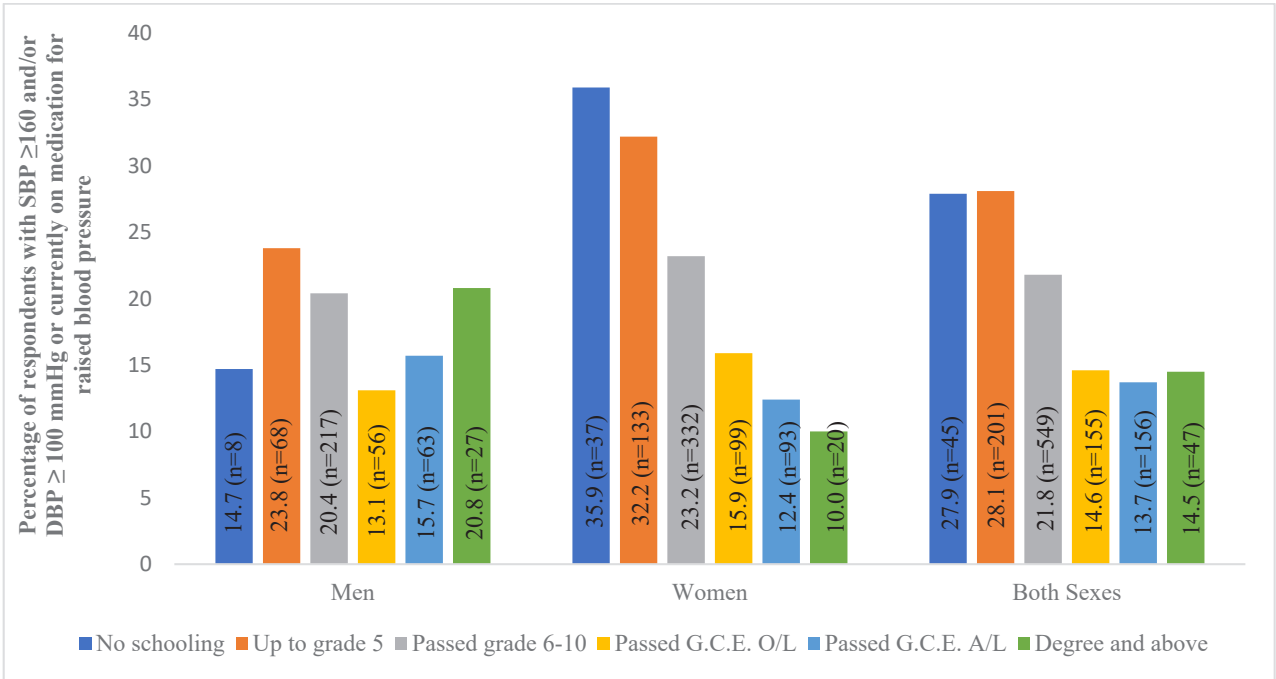

Figure 3.58: Distribution of respondents with raised blood pressure (SBP ≥160 and / or DBP ≥100 mm Hg) by education level

The prevalence of raised blood pressure SBP ≥160 and / or DBP ≥100 mm Hg shows a reduction with the increasing level of education in women and both sexes.

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

3.8 Blood Sugar Measurement

3.8.1 History of Diabetes

Past history of blood sugar measurement and diagnosis of diabetes mellitus was assessed among the respondents by asking whether they have ever had their blood sugar measured by a doctor or other health worker; whether they have been found to have raised blood sugar; whether the diagnosis was within past 12 months.
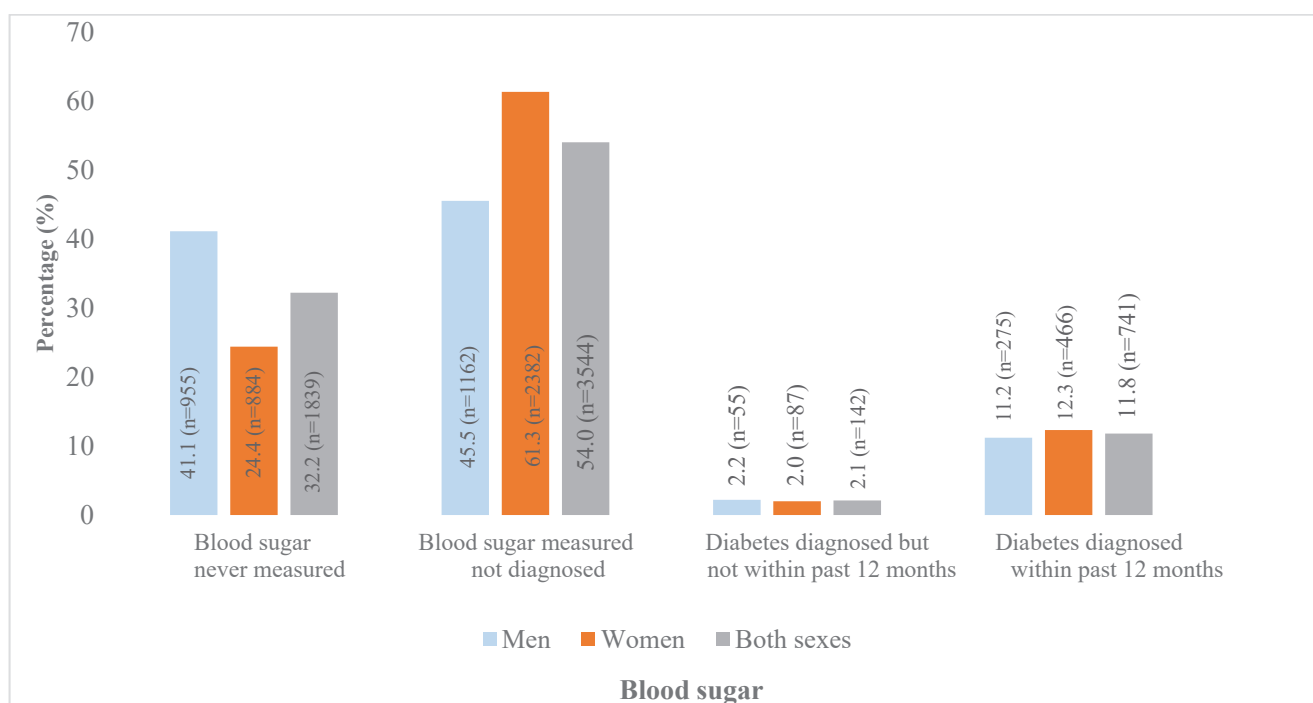

Figure 3.59: Percentage Distribution of Respondents According to Measurement of Blood Sugar

Among the respondents, 32.2% had never measured blood sugar. In 2015, this was 50.9%. And 11.8% had measured blood sugar and diagnosed with diabetes within past 12 months (Figure 3.59). In 2015, this was 7.3%.

Among those previously diagnosed, respondents who have sought advice or treatment from a traditional healer for diabetes were identified by asking whether they have ever seen a traditional

healer for diabetes and if ever seen a traditional healer, they were asked whether they were taking any traditional remedy for diabetes at the time of the survey.
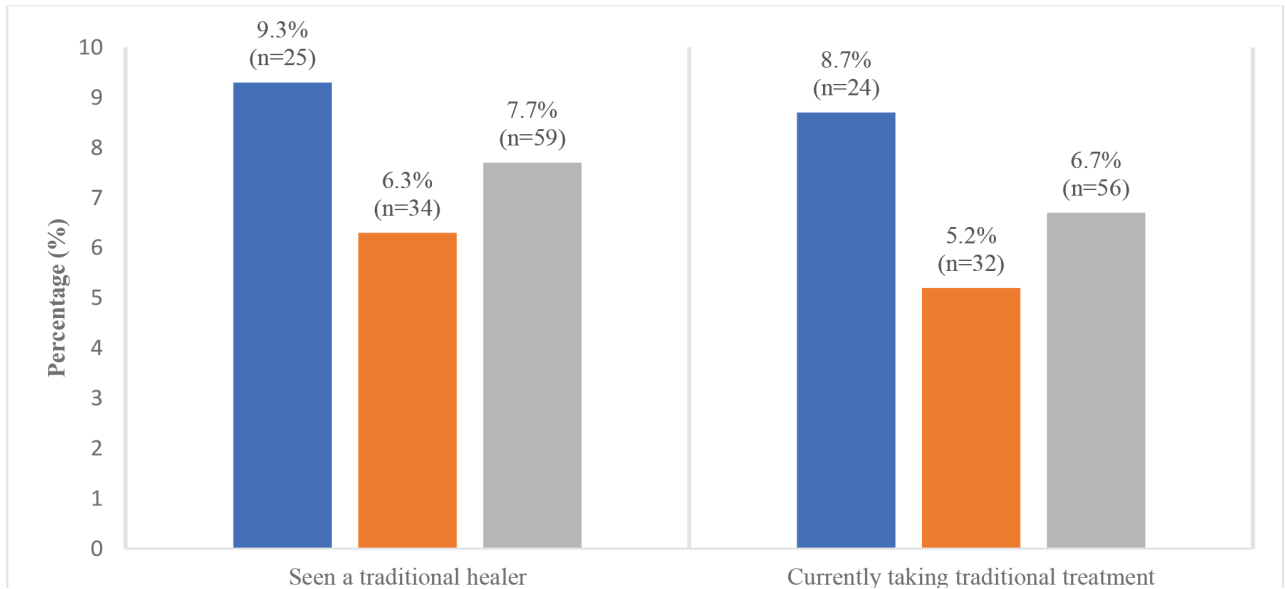

Figure 3.60: **Respondents previously diagnosed with high blood sugar seeking treatment from traditional healers**

Among the respondents diagnosed previously with high blood sugar, 7.7% (CI: 5.4-9.9) has seen a traditional healer for treatment (9.3% (CI: 5.5-13.2) for males and 6.3% (CI: 3.9-8.8) for females) and 6.7% (CI: 4.7-8.8) of the respondents were taking traditional treatment at the time of the survey. In 2015, 9.5% (CI: 6.6-12.5) (11.1% (CI: 6.7-15.5) for males and 8.1% (CI: 4.1-12.1) for females) of the respondents had seen a traditional healer for treatment and 11.2% (CI: 7.6-14.9) were on traditional treatment.

3.8.2   Raised Blood Glucose

All Respondents who came fasting were tested for fasting blood glucose level. And were categorized into blood glucose level categories and percentages of respondents currently on medication for raised blood glucose.

Impaired fasting glycaemia was defined as either plasma venous value ≥6.1mmol/L (110mg/dl) and <7.0mmol/L (126mg/dl) or capillary whole blood value ≥5.6mmol/L (100mg/dl) and <6.1mmol/L (110mg/dl).
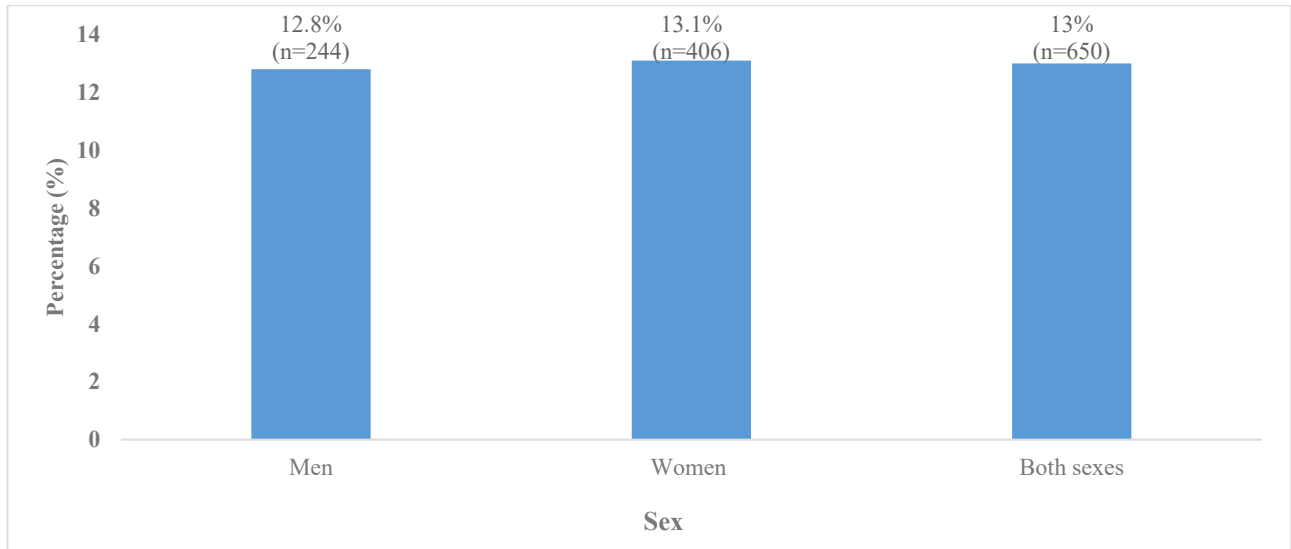

Figure 3.61:   Respondents by Prevalence of Impaired Fasting Glycaemia (*excluding already diagnosed as diabetes)*

Thirteen percent (CI: 11.7-14.2%) of all respondents were estimated to have impaired fasting glycaemia (those who were taking medications for raised blood sugar were excluded), with 12.8% (CI: 10.9-14.6%) males and 13.1% (CI: 11.6-14.7%) females. Overall prevalence of impaired fasting glycaemia has increased by about 9.0% since 2015 (3.8%, CI: 3.1-4.5%).

Raised blood glucose was defined as either plasma venous value ≥ 7.0 mmol/L (126 mg/dl) or capillary whole blood value ≥ 6.1 mmol/L (110 mg/dl).
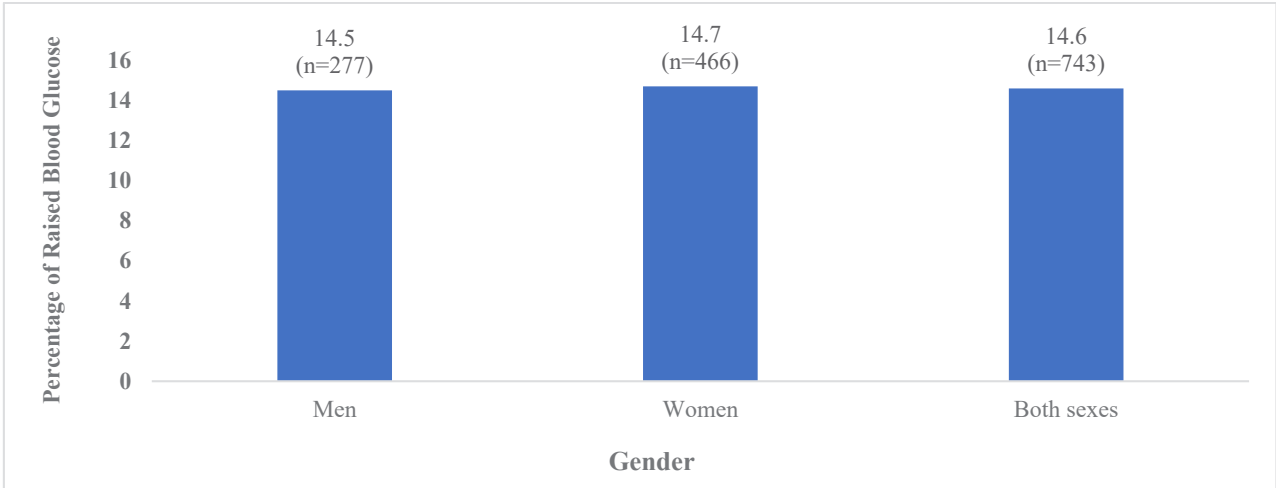
Figure 3.62: Percentage Distribution of Respondents by Prevalence of Raised Blood Glucose (>126 mg/dl) or Currently on Medication for Diabetes

The survey estimated that 14.6% (CI: 13.5-15.8) of the respondents (14.5% (CI: 12.7-16.4) males and 14.7% (CI: 13.2-16.2) females) either had raised blood glucose or were currently on medication for diabetes. This value is more than twice as high as that of value reported in STEPS 2015 report (7.4%, CI: 6.4-8.5).

3.8.2.1 Medication for Diabetes

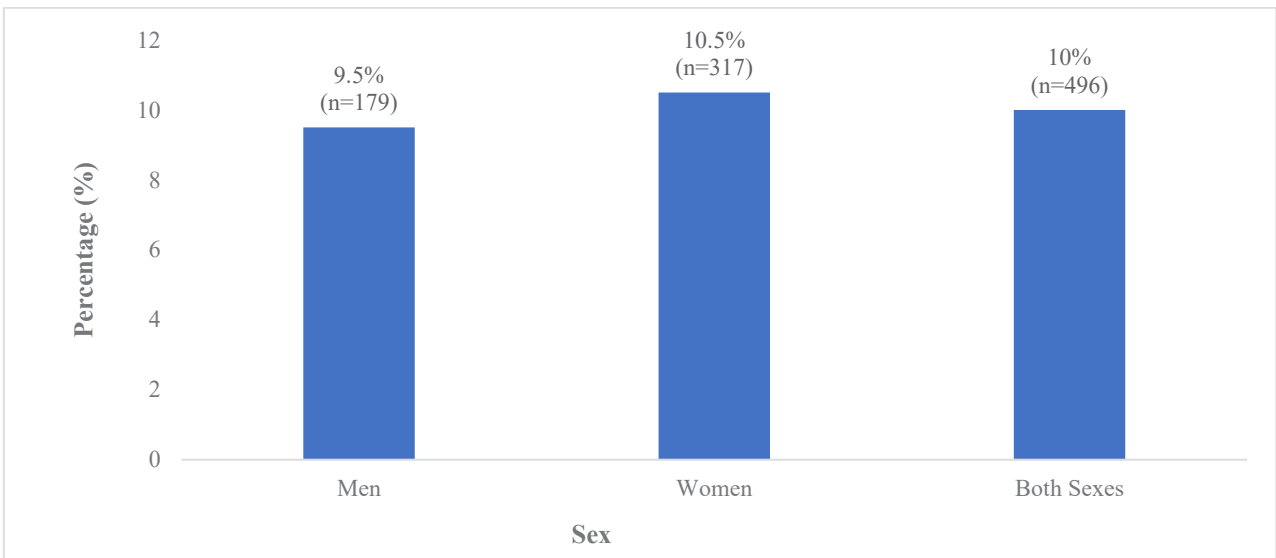Figure 3.63 shows the percentage of respondents who are currently on anti-diabetic medication.

Figure 3.63: Respondents who are Currently on Medication for Diabetes

It was estimated that approximately one in ten respondents (10.0%, CI: 9.0-11.0) were currently on medication for diabetes (9.5% of males and 10.5% of females) which is significantly more than the 2015 STEPS report value (6.6%, CI: 5.9-7.3).

3.8.2.2 Blood Glucose Diagnosis and Treatment Among Respondents who had Raised Blood Glucose or took Medication on the day of Survey

Respondents with raised blood glucose or who took medication for raised blood glucose on the day of survey, were categorized according to their status of Raised blood glucose diagnosis and treatment by asking; "whether their blood sugar was ever measured by a doctor or health worker, whether they were ever diagnosed with raised blood sugar or diabetes, whether they have been taking insulin or any drugs for diabetes in the past two weeks prescribed by a doctor or any health worker, their fasting status in the last 12 hours, and intake of oral hypoglycemics /insulin on the day of testing,. ".
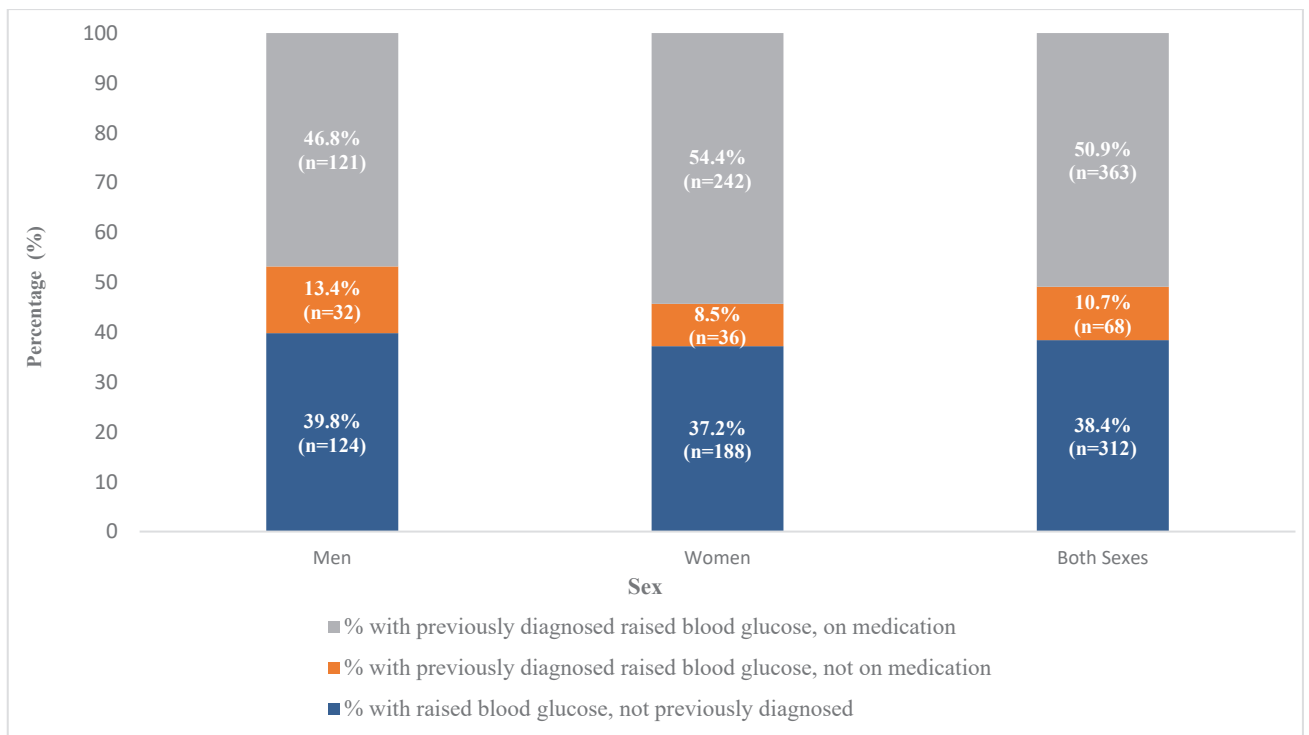

Figure 3.64: Respondents with Raised Blood Glucose by Diagnosis and Treatment

Among all respondents with raised blood glucose, 38.4% were found to have raised blood glucose but not previously diagnosed and 10.7% were previously diagnosed but not on medication. Nearly half of the respondents (50.9%) had previously diagnosed raised blood glucose and on medication prescribed by a physician.

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

3.9   Cholesterol Measurement

3.9.1   History of High Blood Cholesterol

Figure 3.65 shows respondents with previously diagnosed raised blood cholesterol by current medication status.
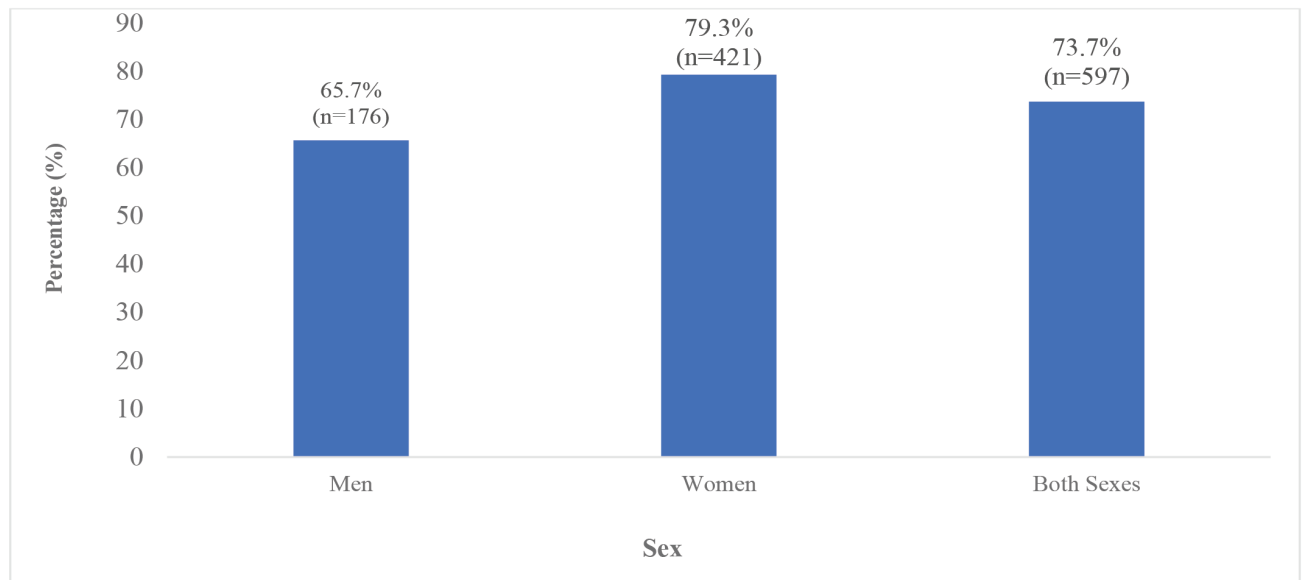

Figure 3.65: Respondents with Previously Diagnosed Raised Blood Cholesterol by Current Medication Status

Of the respondents previously diagnosed with raised blood cholesterol, 73.7% (CI: 70.1-77.3) were on medication which is around 20% higher than the 2015 value (56.8%, CI: 51.9-61.8). Percentage of females currently on treatment (79.3%) was more than the males currently on medication (65.7%).

History of high total cholesterol measurement and diagnosis was assessed among the respondents by asking "whether they have ever had checked cholesterol by a doctor, whether they were identified to have raised blood cholesterol and whether the diagnosis was within past 12 months".
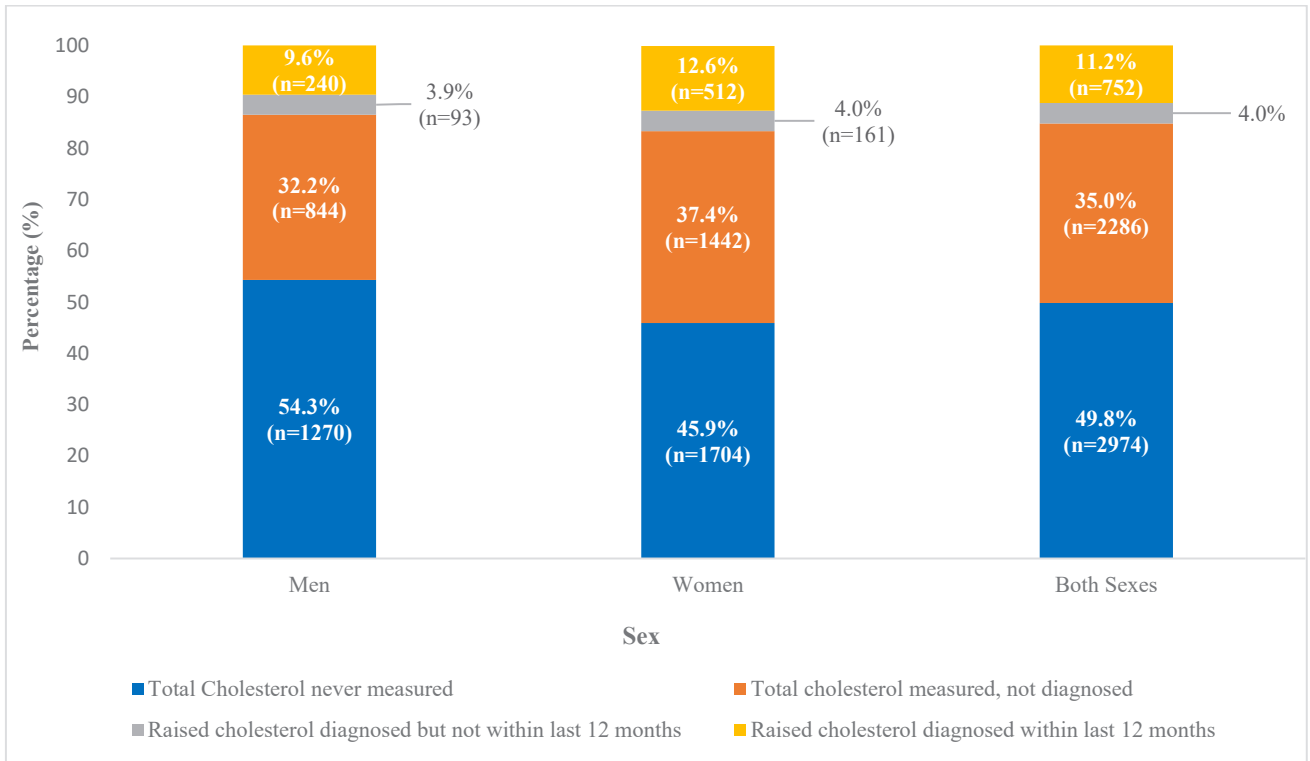
Figure 3.66: Respondents by their Total Cholesterol Measurement and Diagnosis

Nearly half (49.8%, CI: 48.3-51.3) of the respondents had never measured their blood cholesterol levels and the proportion of respondents with unmeasured blood cholesterol status has markedly reduced by 20% from 2015 STEPS report value (71.1%, CI: 69.1- 73.1). Nearly 11.2% (CI: 10.3-12.2) of the respondents were diagnosed with high cholesterol levels within past 12 months. This has increased by 5% from the 2015 STEPS survey (6.1%, CI: 5.4-6.8).

3.9.2   Raised Total Cholesterol or Currently on Medication for Raised Cholesterol

Respondents were asked whether they have been treated for raised cholesterol with drugs (medication) prescribed by a doctor or other health worker during the past two weeks, their total blood cholesterol was measured.
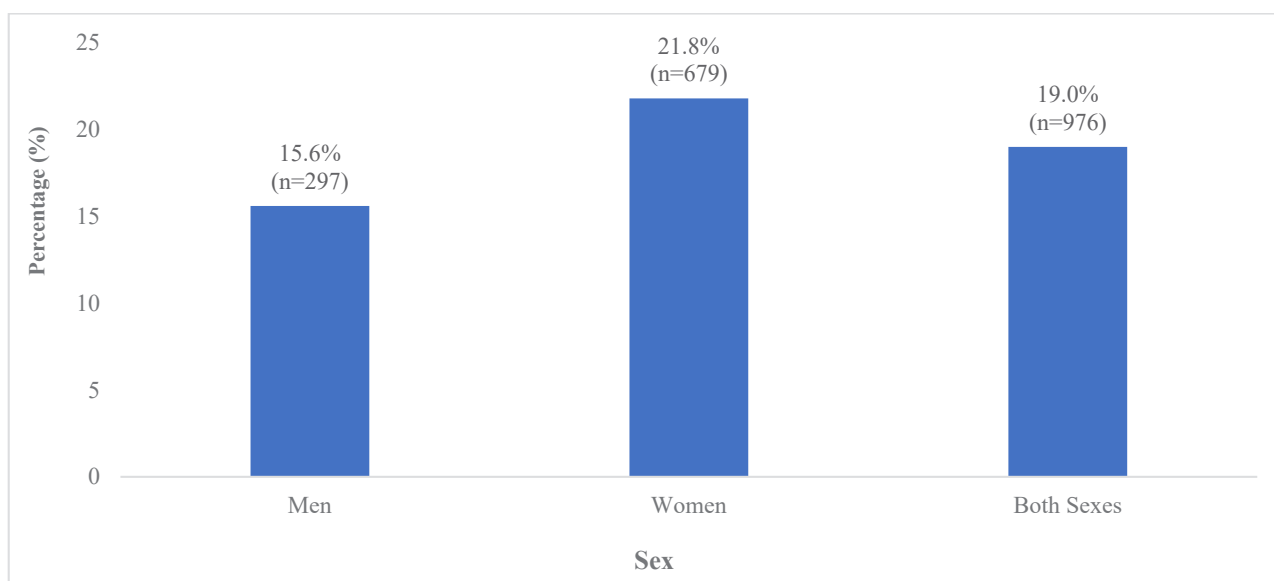
Figure 3.67: **Respondents by Prevalence of Total Cholesterol ≥ 240 mg/dl or Currently on Medication for Raised Cholesterol**

Overall, 19.0% (CI: 17.5-20.4) of the adults had raised total cholesterol ≥ 240 mg/dl or were currently on medication for raised cholesterol which is twice as high as that of the value reported in 2015 STEPS report (8.9%, CI: 7.8-9.9). It was higher for females (21.8%) than males (15.6%).

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

3.10   Cardiovascular Diseases

3.10.1 Cardiovascular Disease Risk

A 10-year cardiovascular disease risk of ≥20% is defined according to age, sex, blood pressure, smoking status (current smokers or those who quit smoking less than one year before the assessment), total cholesterol, and diabetes (previously diagnosed or a fasting plasma glucose concentration ≥ 126mg/dl) status of the respondents.

3.10.1.1   Respondents with a 10year CVD risk of ≥20% or with existing CVD

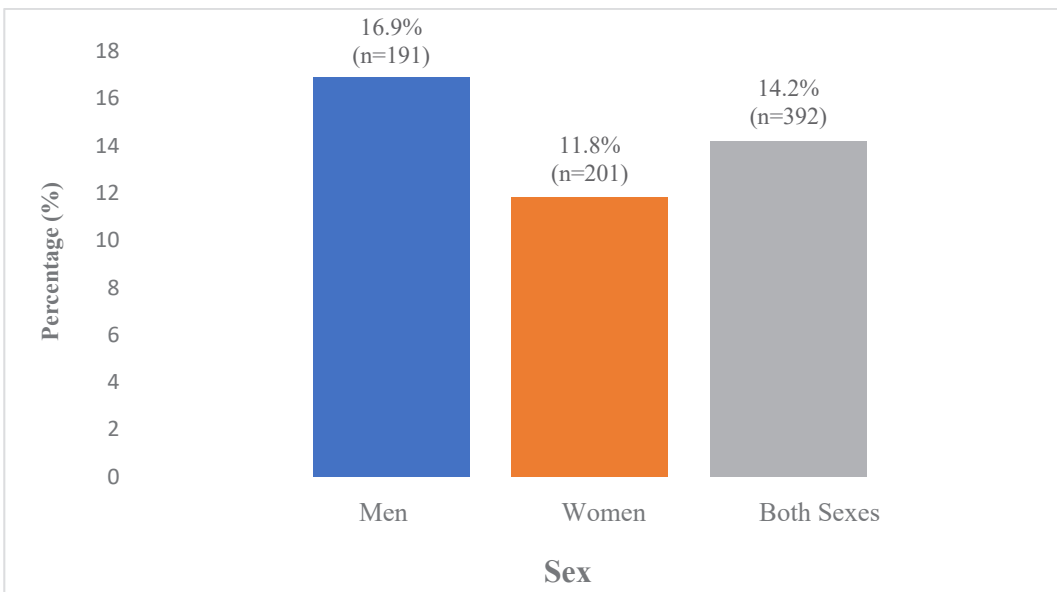Figure 3.68 shows respondents with a 10year CVD risk of ≥20% or with existing CVD.

Figure 3.68: Respondents with a 10year CVD risk of ≥20% or with existing CVD

Out of study participants, 16.9% of men and 11.8% of females were with a 10year CVD risk of ≥20% or with existing CVD.

3.10.1.2 Respondents with a 10year CVD risk of ≥20% or with existing CVD and Wealth Quintile

Figure 3.69 shows distribution of a 10year CVD risk of ≥20% or with existing CVD and wealth quintile.

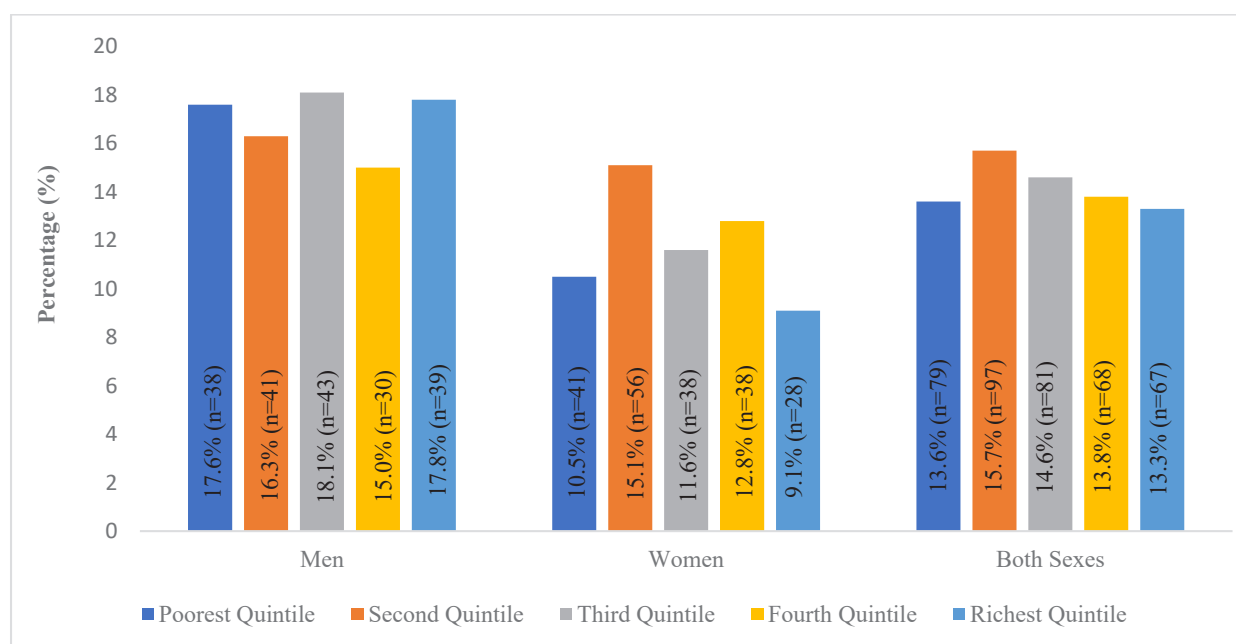**Figure 3.69: Distribution of a 10year CVD risk of ≥20% or with Existing CVD and Wealth Quintile**

Men had the highest percentage of a 10year CVD risk of ≥20% or with existing CVD among all the wealth quintiles.

3.10.1.3 Respondents with a 10year CVD risk of ≥20% or with Existing CVD and Level of Education

Figure 3.70 shows distribution of a 10year CVD risk of ≥20% or with existing CVD and level of education.
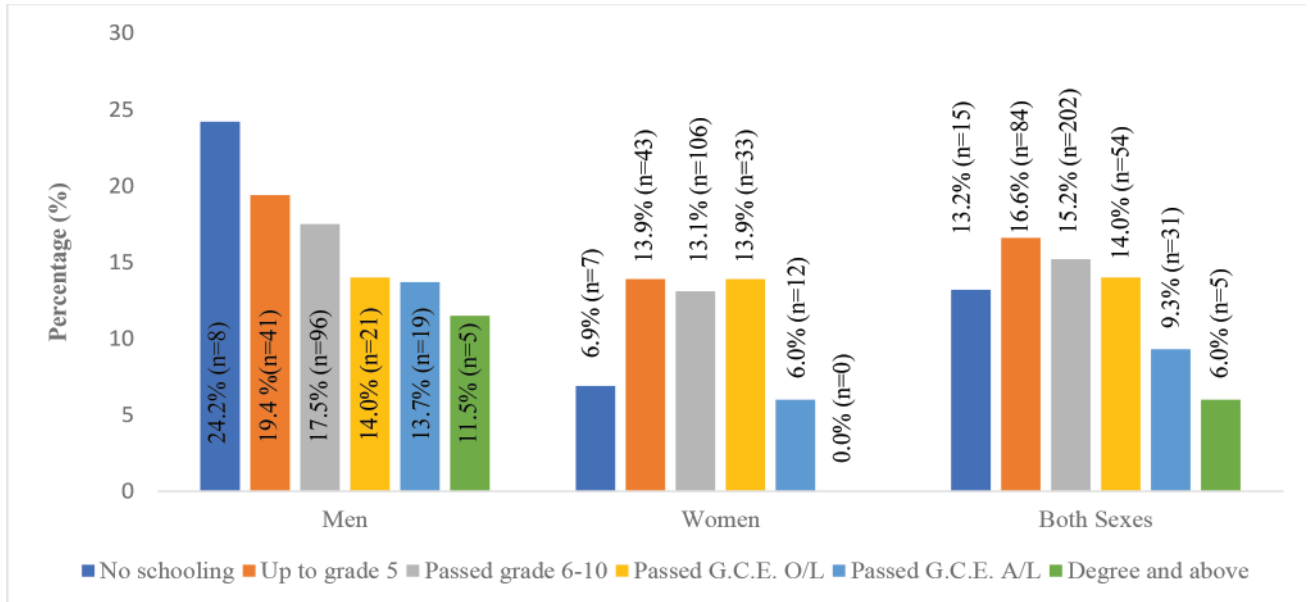
Figure 3.70: Distribution of a 10year CVD risk of ≥20% or with Existing CVD and Level of Education

There was a gradual decrease in the percentage with a 10year CVD risk of ≥20% or with existing CVD from lowest to highest education among males. Such a relationship cannot be ascertained among females.

3.10.2 Past History of Ischemic Heart Disease Among all Respondents

Respondents were asked whether they have ever had a heart attack or chest pain from heart disease (angina) and they were categorized as follows.
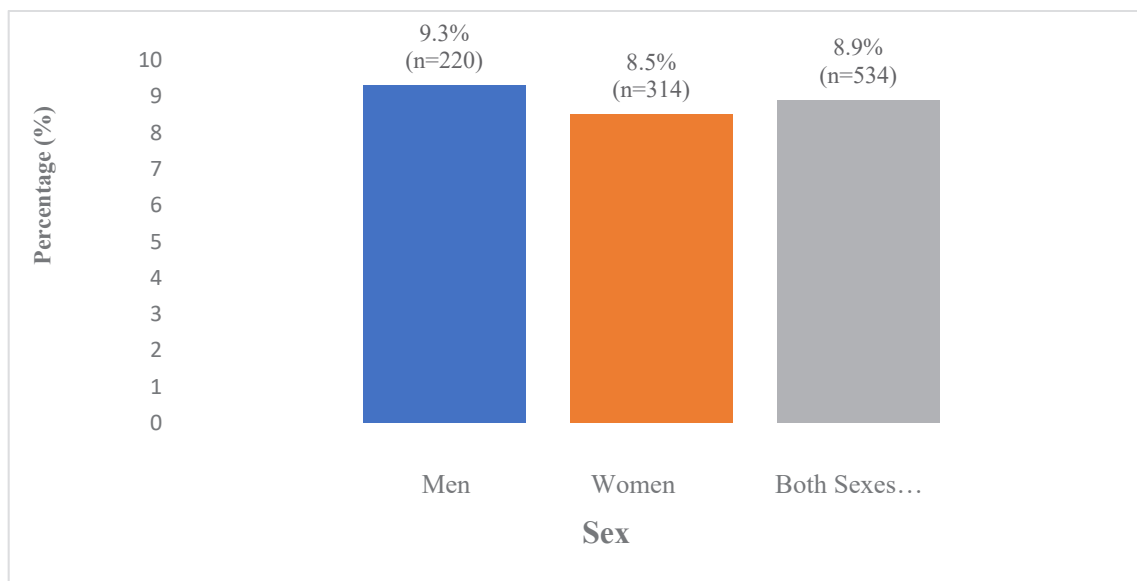
Figure 3.71: Respondents who reported ever having a Heart Attack or Chest Pain

9.3% (CI: 7.9-10.7) of men and 8.5% (CI: 7.4-9.5) of females had a heart attack or chest pain from heart disease (angina). Compared to 2015 figures, the prevalence of those with past history of ischemic heart disease has increased in 2021 (in 2015, 4.5% (CI: 3.5-5.6) males and 4.2% (CI: 3.4-5.0) females had a heart attack or chest pain from heart disease (angina)).

3.10.2.1   Respondents who were Taking Aspirin Regularly to Prevent or Treat Heart Disease

Respondents were asked whether they have been taking aspirin to prevent or treat heart disease. Figure 3.72 gives responses to the question,

Figure 3.72: Respondents who are taking Aspirin Regularly to Prevent or Treat Heart Disease

Among the respondents 3.8% (CI: 3.0-4.7) of males and 3.3% (CI: 2.6-4.0) females were taking aspirin regularly to prevent or treat heart disease. This figure is also higher than that of 2015 in which 2.8% of both males and females (CI: 2.1-3.5 & CI: 2.2-3.3 respectively) were taking aspirin regularly to prevent or treat heart disease.

3.10.2.2 Respondents who were Taking Aspirin Regularly to Prevent or Treat Heart Disease and Quintiles of Wealth Index

Figure 3.73 shows distribution of respondents who were taking aspirin regularly to prevent or treat heart disease and wealth quintile.
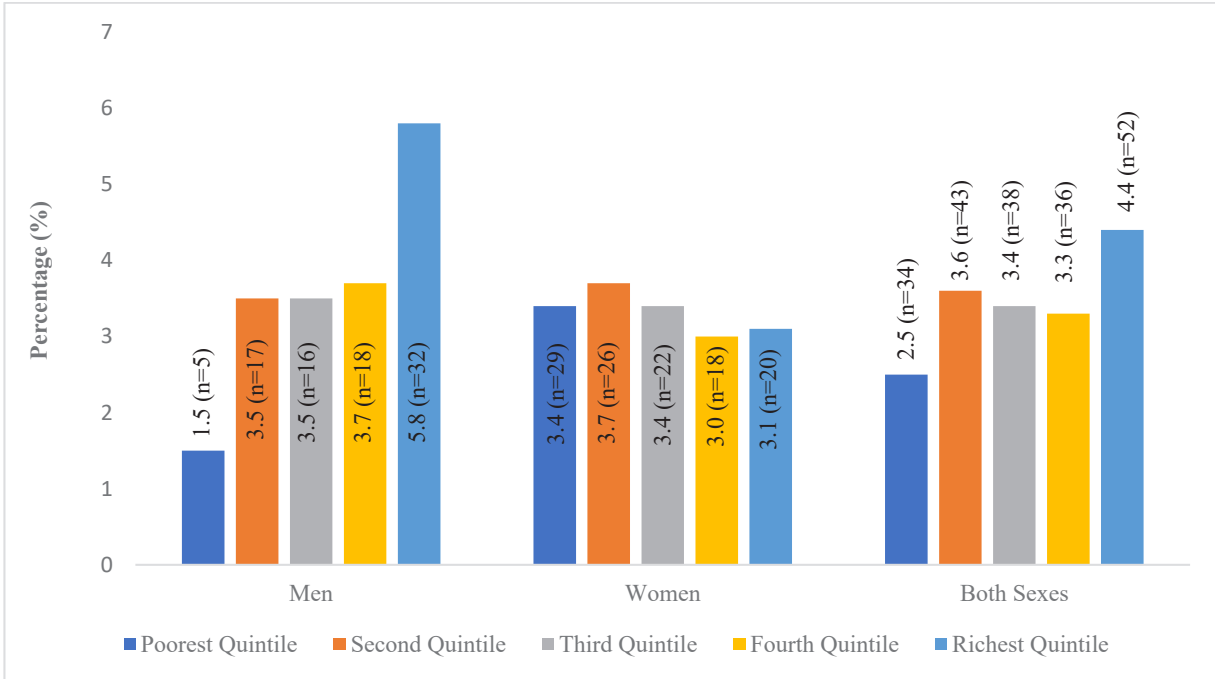
Figure 3.73: **Distribution of Respondents who were taking Aspirin Regularly to Prevent or Treat Heart Disease and Wealth Quintile**

The richest quintile of men (5.8%) and both sexes (4.4%) had highest percentage of taking aspirin regularly to prevent or treat heart disease and lowest being the poorest quintile.

3.10.2.3   Respondents who were Taking Aspirin Regularly to Prevent or Treat Heart Disease and Level of Education

Figure 3.74 shows distribution of respondents who were taking aspirin regularly to prevent or treat heart disease and level of education.

Figure 3.74: **Distribution of Respondents who were taking Aspirin Regularly to Prevent or Treat Heart Disease and Level of Education**

There seem to be no relationship with intake of aspirin and level of education.

3.10.2.4 Respondents who are taking Statins Regularly to Prevent or Treat Heart Disease

Respondents were asked whether they have been taking statins to prevent or treat heart disease and figure 3.75 gives responses to the question,
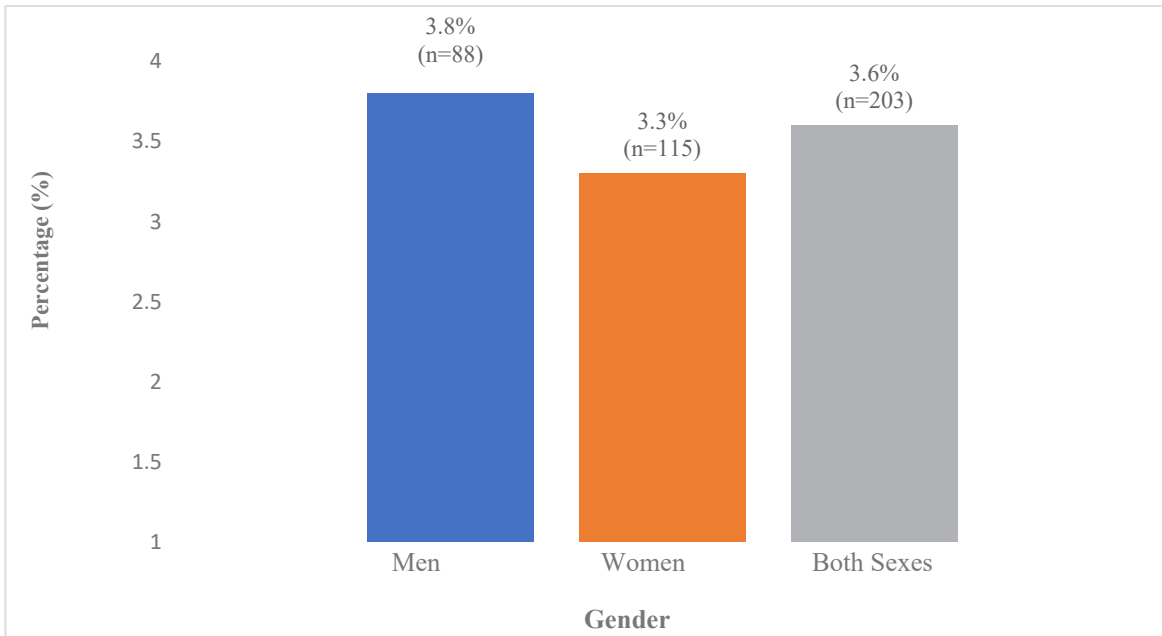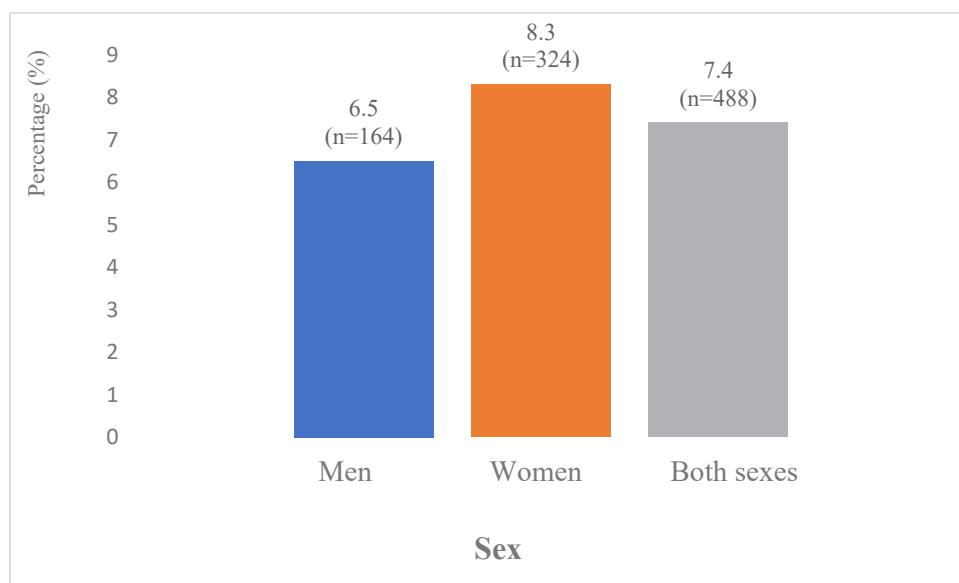
Figure 3.75: Respondents who are taking Statins Regularly to Prevent or Treat Heart Disease

Among the respondents 6.5% (CI: 5.4-7.5) of males and 8.3% (CI: 7.2-9.3) females were taking aspirin regularly to prevent or treat heart disease. In 2015, 4.6% (CI: 3.7-5.5) of males and 5.7% (CI: 4.7-6.6) females were taking aspirin regularly to prevent or treat heart disease.

3.10.2.5   Respondents who are taking Statins Regularly to Prevent or Treat Heart Disease and Quintiles of Wealth Index

Figure 3.76 shows distribution of respondents who were taking statin regularly to prevent or treat heart disease and wealth quintile.
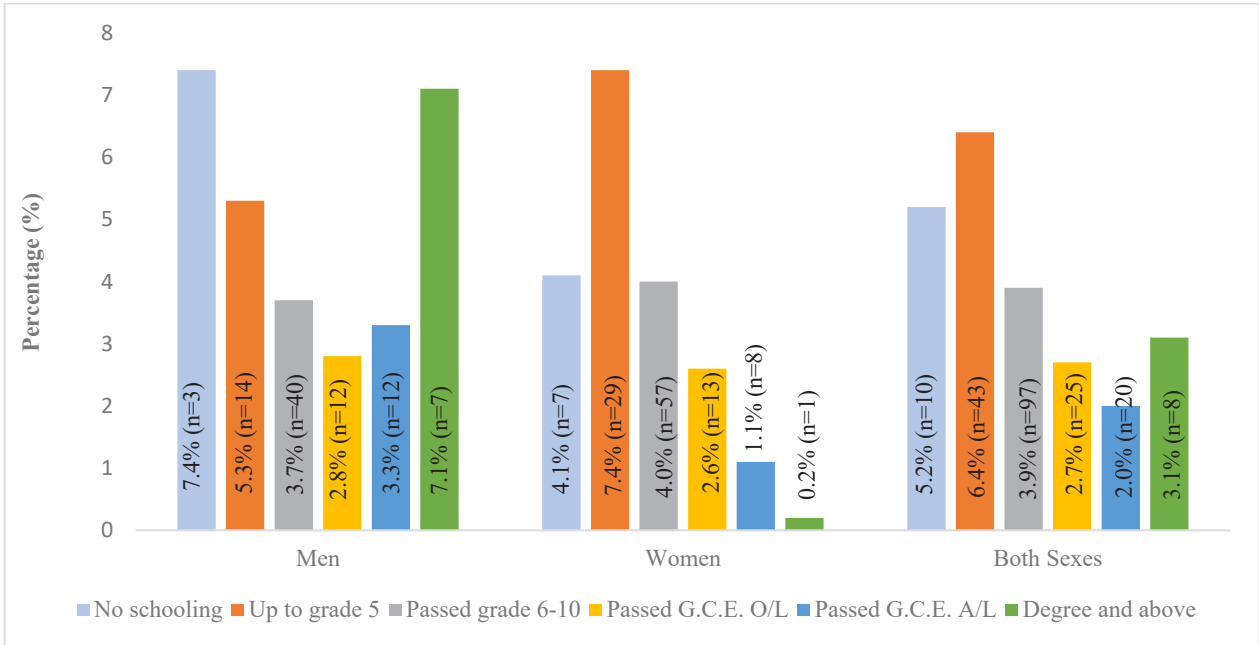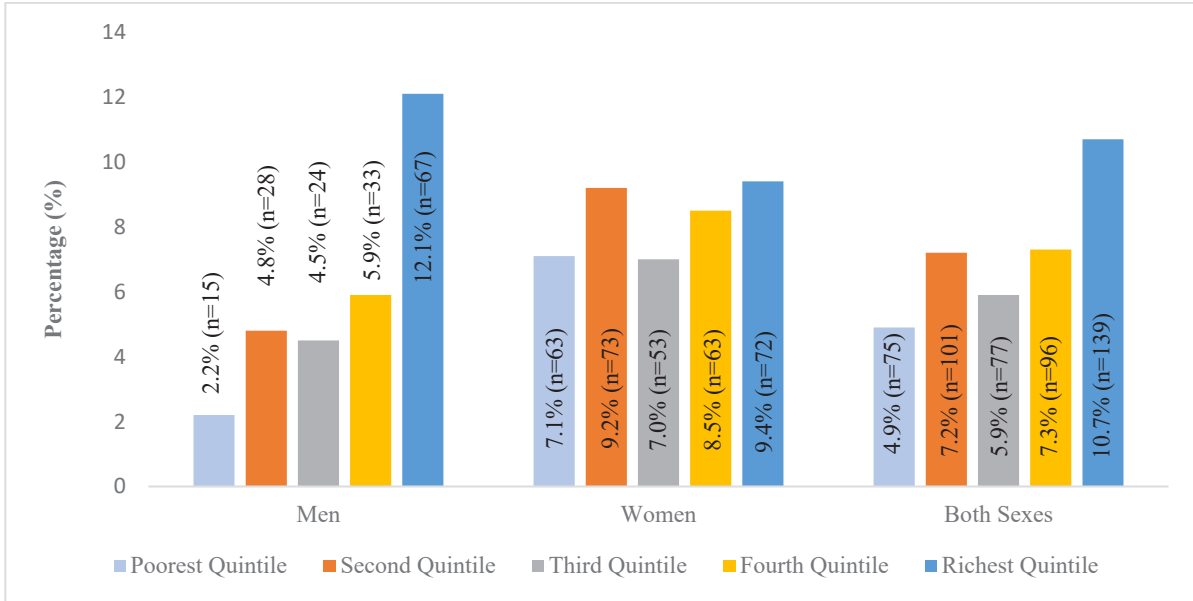
Figure 3.76: Distribution of Respondents who were taking Statin Regularly to Prevent or Treat Heart Disease and Wealth Quintile

The richest quintile of men (12.1%), women (9.4%) and both sexes (10.7%) had highest percentage of taking statin regularly to prevent or treat heart disease.

3.10.2.6   Respondents who are taking Statins Regularly to Prevent or Treat Heart Disease and Level of Education

Figure 3.77 shows distribution of respondents who were taking statin regularly to prevent or treat heart disease and level of education.
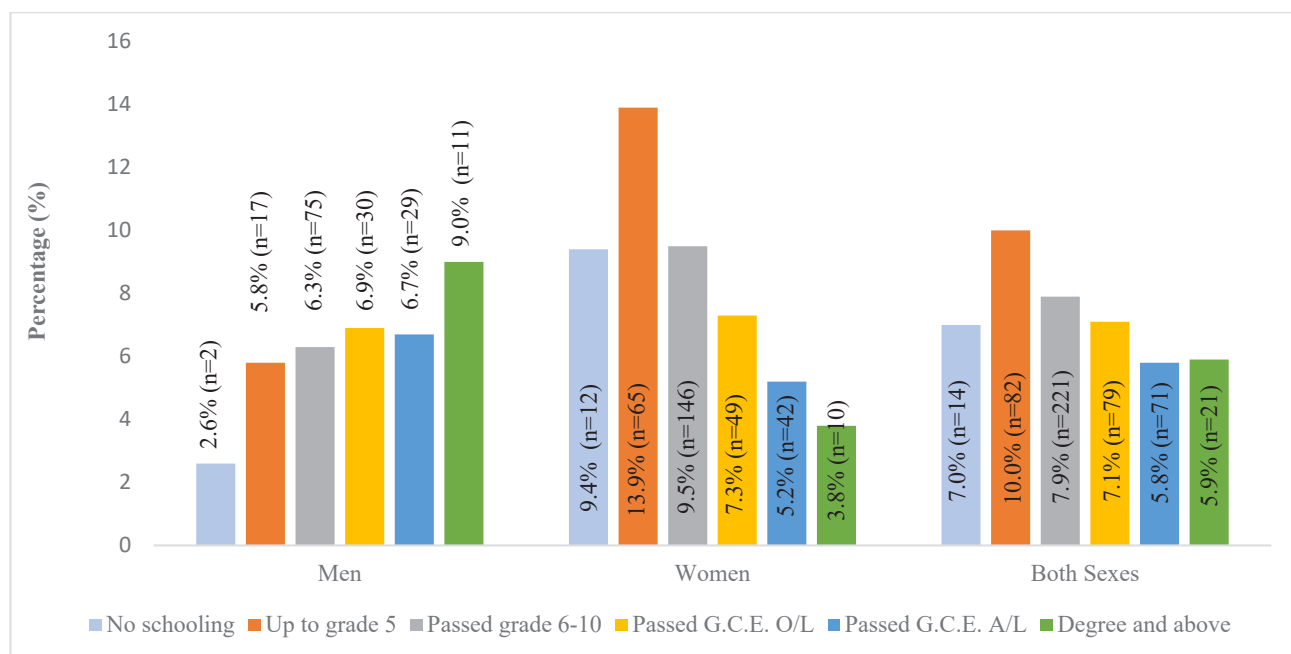
Figure 3.77: Distribution of Respondents who were taking Statin Regularly to Prevent or Treat Heart Disease and Level of Education

There was an increase trend of respondents who were taking statin regularly to prevent or treat heart disease along with the level of education in men but not in women.

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

3.11   Summary of Combined Risk Factors

For the purpose of exploring combined risk factors, responses were grouped into three categories according to the presence of the five major risk factors based on principal component analysis.

The first category was 'no risk factors'; the second '1-2 risk factors', and the third '3-5 risk factors'. The five major risk factors are:

a)   Current daily smoking

b)   Less than five servings of fruit and/or vegetables per day

c)   Not meeting WHO recommendations on physical activity for health (<150 minutes of moderate activity per week, or equivalent)

d)   Overweight or obese (BMI ≥ 25 kg/m2)

e)   Raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP)

Figure 3.78 shows summary of respondents combined risk factors.
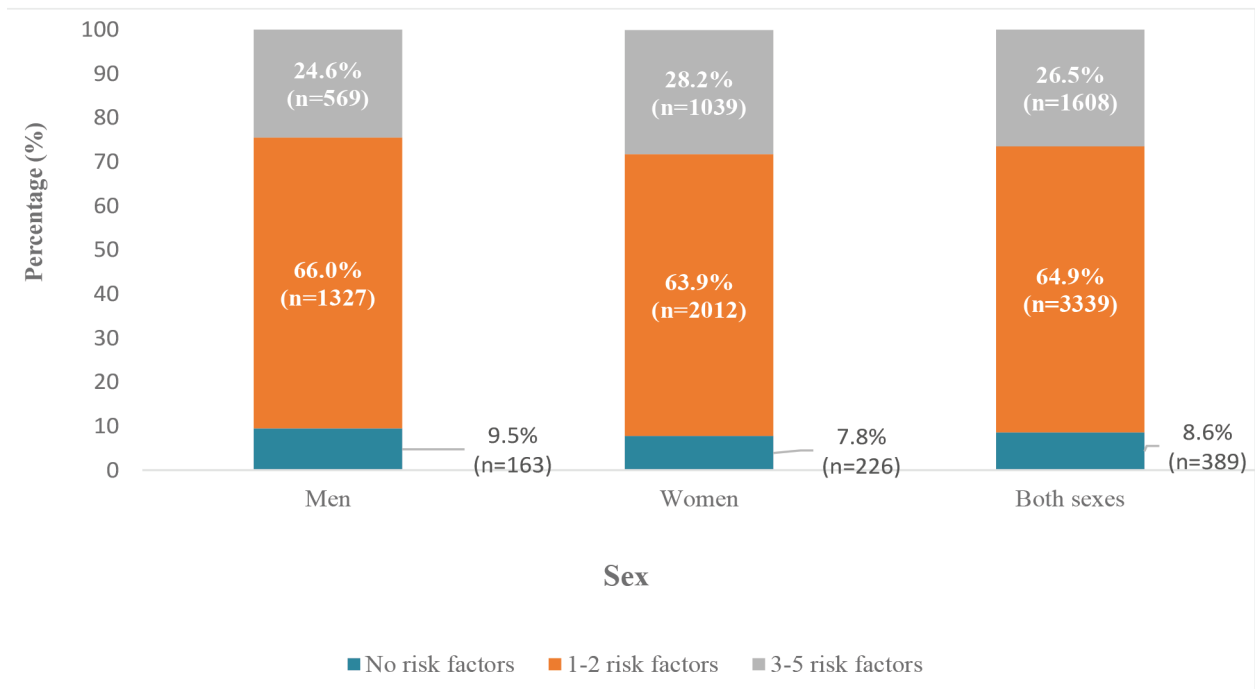
Figure 3.78: Summary of Respondents combined risk factors

Figure shows that nearly 26.5% (CI: 25.1-28.0) of the adults were estimated to have 3-5 risk factors (28.2% (CI: 26.4-30.0) females and 24.6% (CI: 22.4-26.7) males). In 2015 this was 18.3% (CI: 16.8-19.7). (20.2% (CI: 18.4-22.1) females and 16.4% (CI: 14.3-18.5) males). In compared to 2015 the population with 1-2 risk factors shows a reduction. (66% (CI: 63.7-68.3) males and 63.9% (CI: 62.0-65.9) females in 2021 and 76.0% (CI: 73.5-78.4) males and 71.0% (CI: 68.9-73.1) females in 2015).

3.11.1 Raised risk vs Wealth quintile for both sexes

Figure 3.79 shows distribution of respondents with raised risk factors by wealth quintile.
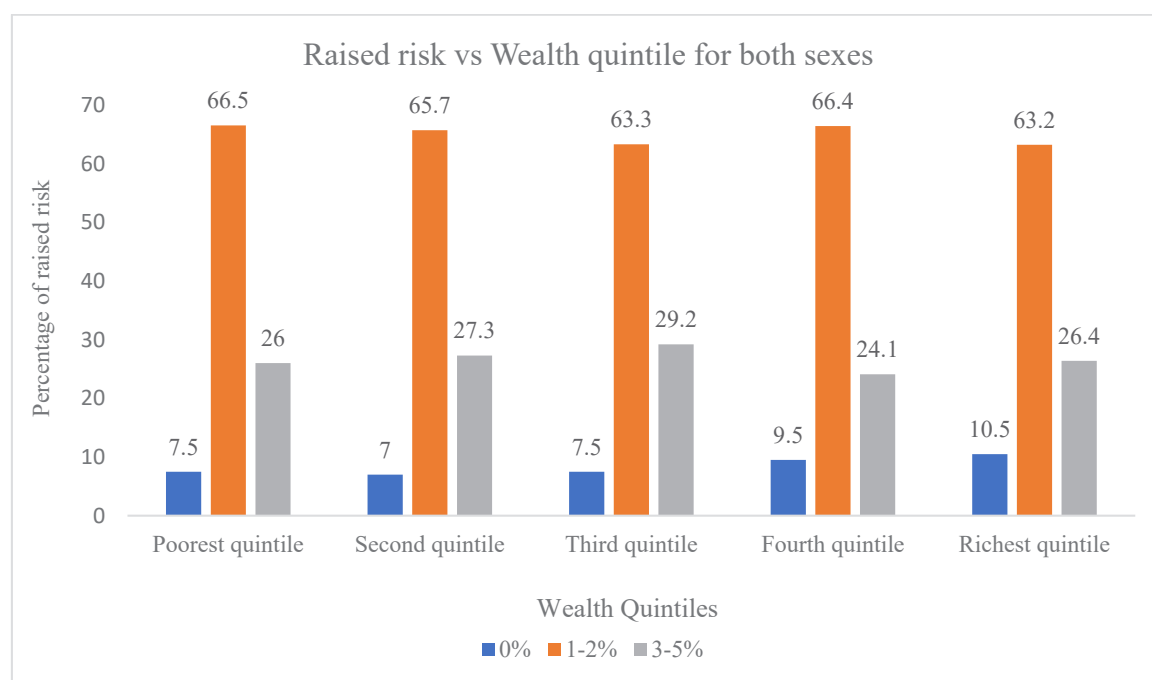
Figure 3.79: Distribution of respondents with raised risk factors by wealth quintile

Among respondents, raised risk of 1-2% was the highest among all five wealth quintiles. It was 66.5% among the respondents who belong to poorest wealth quintile. Raised risk of 3-5% was highest among the respondents who belong to third wealth quintile.

3.11.2 Raised risk vs Level of Education for both sexes

Figure 3.80 shows distribution of respondents with raised risk factors by level of education.
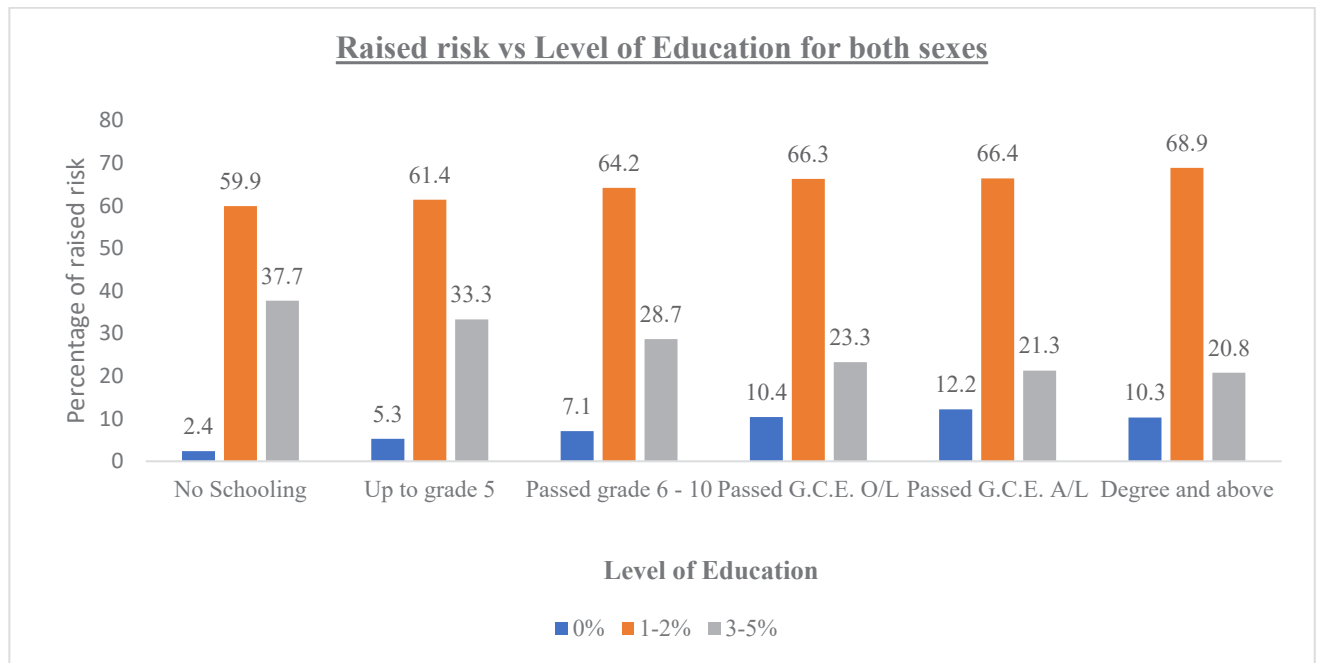
Figure 3.80: Distribution of respondents with raised risk factors by level of education

Among respondents, raised risk of 1-2% was the highest among all six categories of level of education. It was 68.9% among those who had at least a degree and above qualification as their level of education. Raised risk of 3-5% was highest in the non-school going group (37.7%).

Detailed analysis tables are annexed in the electronic version of the report, and it can be downloaded (http://www.health.gov.lk/moh_final/english/others.php?pid=127) from the website of the Ministry of Health.

4 Conclusion and Recommendation

Globally, major Non Communicable Diseases (NCD), such as Cardio Vascular Diseases, cancers, diabetes and Chronic Respiratory Diseases (CRD) are the leading causes of death responsible for 74% of total deaths in 2019 (World Health Organization, 2022). They continue to be an important public health challenge in all countries, including low- and middle-income countries where more than three quarters of NCD deaths occur (World Health Organization, 2022). More than two thirds of all deaths in South-East Asia are from NCDs and half of them are premature and occur between the ages of 30 and 70 years in 2021 (WHO SEARO, 2021).

All NCDs share common modifiable behavioral risk factors like tobacco use, unhealthy diet, lack of physical activities, and the harmful use of alcohol, which lead to overweight and obesity, raised blood pressure, blood sugar and cholesterol (World Health Organization, 2021 & WHO, 2008).

According to WHO estimates, in the year 2016, 84% of all deaths were due to NCDs, with Cardio Vascular Disease (CVDs) being the leading cause of mortality accounting for 34% of all deaths, followed by cancers (14%), diabetes (9%) and chronic respiratory diseases (8%)(World Health Organization, 2018).

According to World Health statistics, probability of an individual dying from any of CVD, cancer, diabetes, or CRD below 70 years of age in Sri Lanka was estimated as 13.2% in 2019 with the probability at 17.5% in males compared to 9.8% in females (World Health Organization SEARO, 2019). Although the estimated life expectancy at birth in Sri Lanka is 73.8 years for males, 79.8 years for females and 76.9 years for both sexes, Healthy Life Expectancy at birth is much lower with 65.1 years, and 69.0 years for males and females respectively and 67 years for both sexes.

STEPS survey is the main surveillance tool used to assess the prevalence of selected Non Communicable Diseases and high risk behaviour. STEPS survey 2021/2022 was carried out with the participation of Department of Census and Statistics (DCS). Also, data was collected using CAPI technology. The Department of Census and statistics was involved in the survey with the intension of

improving the validity of the data. As the staff of the DCS is competent in computer based data collection it is recommended to carry out future STEPS surveys in collaboration of DCS.

Due to the COVID epidemic the data collection had to be stopped two times. This has delayed the completion of the STEPS survey. In addition, the Covid period has resulted in lock down of many areas and the travelling of people was highly restricted. Also, the income of private companies and entrepreneurs have come down due to nonfunctioning of private enterprises. These events may have changed the behaviors of people and the data obtained have to be interpreted considering all the factors restricting people's normal movement.

Tobacco Use

Tobacco products are available in two main forms in Sri Lanka, smoking tobacco and smokeless tobacco.

Approximately 26.2% of the respondents were current users of tobacco, while 18.5% were daily users. It was observed that the prevalence of smoking among males in 2015 was 29.4% and in 2021 it was 30.2%, though the difference was not statistically significant.

When considering the consumption of manufactured cigarettes by male daily smokers, majority (73.5%) consumed less than 5 cigarettes per day while 1.5% consumed more than 15 cigarettes per day.

Majority of current smokers consume manufactured cigarettes, followed by Beedi. The 2015 STEPS survey report revealed that 83% had used manufactured cigarettes, while only 5.8% had consumed hand rolled cigarettes such as Beedee and cigars. It can be observed that by 2021, the use of manufactured cigarettes had declined and use of Beedee had increased. This may be due to economic downfall which has followed the Covid epidemic.

It is noted that the number of persons attempting to quit has reduced from 51% in 2015 to 34.7% in 2022.

Recommendations:

It is recommended to carry out awareness programmes to increase the awareness on harmful effects of tobacco while making the quitting services widely available.

The hot line for quitting is available for many years and an evaluation of its usefulness in facilitating quitting needs to be studied.

It is recommended to increase tobacco taxes discouraging use of tobacco in any form.

Alcohol Use

The alcohol use has increased in 2022 and the percentage increase in male drinkers from 2015 was 24.4% in the present survey. The ratio between male current alcohol drinkers and male current non-drinkers has changed from 1:1.9 to 1:1.7 over the last 6 years.

In the current survey, the majority of the females (91.9%) were lifetime abstainers of alcohol, only 34.2% of males fell into this category.

The alcohol advertisements were seen by most when they watch films from other countries over the TV. Most of the respondents have heard anti-alcohol messages in TV, internet, electronic media and printed media.

When alcohol drinking was analyzed according to education level and wealth quintles it is seen that the alcohol intake is less among the educated and those in high wealth quintiles.

Recommendations:

It is recommended to carry out awareness programmes to increase the awareness on harmful effects of alcohol including there is no safe level for alcohol.

It is recommended to increase alcohol taxes discouraging use of alcohol.

Cervical Cancer Screening

It is encouraging to note that 25.9% of the female respondents had undergone a screening test for cervical cancer at least once in their lifetime. This is an improvement compared with the value 15.2% reported in 2015 STEPS survey. Female respondents aged 35-45 years who had ever undergone a screening test for cervical cancer was 51.7%. It is observed that the cervical cancer screening is positively linked to educational level and wealth quintile.

Recommendations:

It is recommended to carry out awareness programmes to increase the awareness on cervical cancer screening among eligible female population.

The HPV DNA testing and pap smear must be made available at a convenient distance from any household in the country.

A follow up study on what happens to a female tested positive in a screening test will evaluate the usefulness of the screening test in preventing cervical cancer.

Blood Pressure

In the year 2022, 77.4% of the respondents with raised blood pressure were currently on medication. In comparison to 57.7% currently on medication in 2015, there is a significant improvement in taking medication among patients diagnosed with hypertension.

Mean systolic blood pressure of the respondents was 128.5 mm Hg. It is observed that this value is significantly greater than the value recorded in the STEPS survey in 2015, which was 125.1 mmHg.

19.3% of respondents who were on treatment had raised systolic blood pressure of 160 mmHg or more and a diastolic blood pressure of 100 mmHg or more.

The prevalence of raised blood pressure (SBP $\geq$ 140 and/or DBP $\geq$ 90 mmHg or currently on medication for raised BP) was 34.8%.

Recommendations:

It is recommended to develop a system to monitor patinets longitudinally so the control rates could be calculated.

Also, as only 20% of the patients were under control, a research on the titration rates of medicines will show whether the patients are actively treated to reduce their high pressure.

Cardiovascular Diseases

16.9% of men and 11.8% of females were with a 10 year CVD risk of $\geq$20% or with existing CVD.

There was a gradual decrease in the percentage with a "10year CVD risk of $\geq$20% or with existing CVD" from lowest to highest education among males.

9.3% of men and 8.5% of females had a heart attack or chest pain from heart disease (angina). Compared to 2015 figures, the prevalence of those with a past history of ischemic heart disease has increased in 2021 (in 2015, 4.5% of males and 4.2% of females had a heart attack or chest pain from heart disease (angina)).

Among the respondents, 3.8% of males and 3.3% of females were taking aspirin regularly to prevent or treat heart disease. This figure is also higher than that of 2015 in which only 2.8% of both males and females were taking aspirin regularly to prevent or treat heart disease.

Among the respondents 6.5% of males and 8.3% females were taking Statins regularly to prevent or treat heart disease and this is higher than in 2015, where 4.6% of males and 5.7% females were taking statins regularly to prevent or treat heart disease.

Recommendations:

The screening for CVD risk is recommended to be carried out in all adults more than 35 years. Other than in HLCs screening is recommended to be carried out in occupational settings.

Physical inactivity

"Insufficient physical activity" means not engaging in WHO recommended levels of moderate, vigorous or an equivalent combination of physical activity per week.

34.8% of the respondents did not meet the WHO recommendation of physical activity. Out of male respondents 24.2% were physically inactive while 43.9% of the female respondents were not adequately physically active according to recommendations.

It is also noted that physical inactivity has increased compared to the estimates reported in STEPS survey 2015. In 2015, 30.4% (CI: 27.9-32.8) adults (22.5% (CI: 19.4-25.6) males and 38.4% (CI: 35.5-41.4) females) were estimated to be physically inactive. The ratio between physical inactivity and physical activity has increased from 2015 to 2021.

Recommendations:

A media campaign needs to be carried out on the need of physical activities and the recommended physical activity regimens.

Facilities for physical activity must be made available at each village level.

Obesity

Eleven percentage of all respondents at STEPS survey were obese while only 5.9% (CI: 5.1-6.7) of all respondents were found to be obese in 2015. The percentage of all respondents with normal BMI has declined by 6.8% in comparison to the survey findings in 2015 (in 2021, 48.6% (CI: 47.0-50.1) and in 2015, 55.4% (CI: 53.5-57.3).

Physical inactivity among all respondents has gradually increased from second quintile to the richest quintile. Prevalence of physical inactivity is similar among females of the poorest quintile and the richest quintile.

Recommendations:

Awareness of adults on age appropriate nutrition must be increased by conducting nutrition demonstrations.

Nutrition counselling by human nutritionists or HLC staff must be improved. The staff at HLC will need to be trained on nutrition counselling.

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