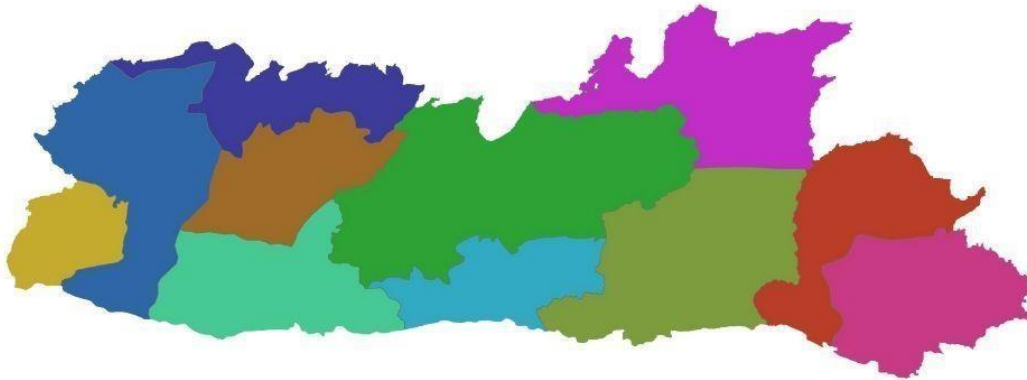




REPORT ON MONITORING SURVEY OF CANCER RISK FACTORS AND HEALTH SYSTEM RESPONSE IN NORTH EAST REGION (NER)

2022



MEGHALAYA

Sl.no	Table of Contents	Page No.
1.	Message: Principal Secretary, Government of Meghalaya, Health & Family Welfare Department.	02
2.	Foreword: Director ICMR-NCDIR	03
3.	Message: Joint Director of Health Services, Civil Hospital, Shillong	04
4.	Acknowledgement: PBCR Investigators	05
5.	List of Abbreviations	06
6.	Executive Summary	07
7.	List of Tables	09
8.	List of Figures	14
9.	Introduction	15
10.	Background	18
11.	Objectives	18
12.	Methodology	19
13.	Survey Results	20
14.	Key findings	58
15.	Recommendations	61
16.	References	63
17.	List of Principal and Co-Principal Investigators	64
18.	Photographs of the survey	66

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Message

I am pleased to know that the Population Based Cancer Registry (PBCR), Civil Hospital Shillong, Meghalaya has conducted a survey entitled 'Monitoring Survey of Cancer Risk Factors and Health System Response in North East Region' and it is going to release a report on the same, with the technical support and financial aid of the National Centre for Disease Informatics and Research (NCDIR)-Indian Council of Medical Research, Bengaluru.

As per the report published by the NCDIR-ICMR, GOI, Bengaluru, "A Report on Cancer Burden in the North Eastern State of India in 2017", the 'Burden of cancer in the North Eastern State of India' is high with unique features and distribution across the region. Cancer is curable if detected at an early stage but prevention is better than cure. Hence the Monitoring Survey report will help us to understand the distribution of major Cancer risk factors and also associated risk factors at the community or population level, which will be beneficial in the prevention and control of cancer in the State of Meghalaya, implementation of effective methods to bring a change in behaviour and detection of cancer at an early stage.

I convey my sincere and best wishes to the cancer registry, all the members of the monitoring team and all medical fraternity of Civil Hospital Shillong.

Our today's effort will be tomorrow's fruitful outcome.

Yours Sincerely


Sampath Kumar



Foreword

The rising burden of cancer across the country is a cause for worry. The incidence and mortality rates for cancer are highest in the North East Region (NER) of the country. The ICMR-NCDIR has successfully completed the 'Monitoring survey of cancer risk factors and health system response in NER 2019-2021' as part of the cancer research NER (CaRes NER) Programme in the state of Meghalaya. The aim of the survey was to estimate the prevalence of major cancer-associated behavioral and metabolic risk factors and pattern of their distribution in the population. The response of the health system towards cancer prevention and control at the primary and secondary level in public and private sector health facilities has also been assessed. The findings from this survey will form a baseline for monitoring of risk factors for comparison in subsequent surveys.

This report contains the findings that were generated from the monitoring survey which was conducted in the state of Meghalaya, implemented through PBCR Meghalaya situated at Civil Hospital, Shillong.

I sincerely appreciate the efforts of the Principal Investigator and Co-Principal Investigator of the study site for their role in supervising and coordinating a smooth and efficient conduct of the survey. The role and support provided by the scientific and technical staff at ICMR-NCDIR, Bengaluru is duly acknowledged.

I hope that this survey will aid in establishing a cancer surveillance program in the region which has so far been compiling data on cancer related statistics. As cancer registration is an integral part of cancer surveillance, an ongoing surveillance of risk factors will help to correlate trends in cancer incidence and risk factors. Valuable information shared with the state and local authorities shall facilitate efforts to reduce the cancer burden through appropriate interventions.

Prashant Mathur



Dr. A. Dkhar, M. D.
Joint Director of Health Services (SS)
Civil Hospital Shillong

Message

The Population Based Cancer Registry (PBCR), Civil Hospital Shillong, Meghalaya with the support and guidance of the National Centre for Disease Informatics and Research (NCDIR) – Indian Council of Medical Research (ICMR), Bengaluru (Government of India), is publishing a survey report entitled “Monitoring Survey of Cancer Risk Factors and Health System Response in North East Region”, conducted in a defined population of the registry area, (i.e East Khasi Hills District, West Khasi Hills District, South West Khasi Hills District, Eastern West Khasi Hills District, Ri Bhoi District, East Jaintia Hills District and West Jaintia Hills District).

This survey report provides important data on cancer and other NCDs related risk factors like the use of Tobacco, Exposure to Second Hand Smoke, Alcohol Use, Diet and Physical Activity, Raised Blood Pressure, Overweight/Obesity, Raised Blood Glucose etc.

The survey report also provides important data on the health seeking behaviour of the community such as cancer screening and the response of health care system, which influence the indicators of health.

This survey finding will play a vital and crucial role in linking and correlating prevalence of risk factors with cancer incidence and cancer burden as well as incidence and burden of other NCDs in the registry area.

The data will also be helpful for research students, people involved in survey and policy makers to efficiently plan, evaluate and set up priorities for allocations of health resources.

I wish the Cancer Registry, Survey team and other Health professionals the very best and keep up the good work being done by them.

A handwritten signature in black ink, appearing to read 'A. Dkhar'.

Dr. A. Dkhar, M.D.

ACKNOWLEDGEMENT

If knowledge is power, elaborate, exact and reliable data constitute the real muscle of knowledge. It is an achievement by the Population Based Cancer registry (PBCR), Civil Hospital Shillong, along with the Monitoring staff to complete the survey entitled “Monitoring Survey of Cancer Risk Factors and Health System Response in North East Region”, in spite of the many challenges posed by Covid 19. It gives us immense pleasure to know that the survey report is going to be released soon.

This report will be of immense help in strengthening NCDs risk factor surveillance program at the population level and will also help to enhance detection of NCDs, including cancer at its earlier stage and the burden and patterns of cancer/NCDs. The survey report will also help in monitoring the outcome of different prevention and control measures that are being implemented in the state.

To collect data, the help of many esteemed colleagues and organization was required. We are thankful to the Principal Secretary and DHS (MI) for their support and assistance. We also express our sincere gratitude to Heads and Staff members of all the government and private hospitals, DMHOs, CHCs, PHCs, Police Department and local Headman for their valuable support and for providing data to the Monitoring staff.

We are grateful to the National Centre for Disease Informatics and Research (NCDIR) – Indian Council of Medical Research (ICMR), Bengaluru, for their technical and financial support.

Finally the Population Based Cancer registry (PBCR), Civil Hospital Shillong, along with the Monitoring survey staff needs to be admired who have performed their duties enthusiastically amidst the pandemic in collecting and processing the data on which this report is based.



Dr. W.B. Langstieh.
M.D. (Path)
Principal Investigator



Dr. Robert R. Marak.
District Surveillance Officer, IDSP
(Epidemiologist)
Co - Principal Investigator

**“Monitoring Survey of Cancer Risk Factors
and Health System Response
in North East Region.”
Civil Hospital Shillong**

List of Abbreviations

BMI	Body Mass Index
BP	Blood pressure
CCA	Central Coordinating Agency
CEBs	Census Enumeration Blocks
CHCs	Community Health Centres
Co-PI	Co-Principal Investigator
CSA	Coordinating PBCR covering State Agency
CVDs	Cardiovascular Diseases
DHs	District Hospitals
HHs	Households
ICMR	Indian Council of Medical Research
MSW	Medical Social Worker
NCDs	Non communicable Diseases
NCDIR	National Centre for Disease Informatics and Research
NER	North-East Region
NHM	National Health Mission
NNMS	National NCD Monitoring Survey
NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke
PBCR	Population Based Cancer Registry
PHCs	Primary Health Centres
PI	Principal Investigator
PPS	Probability Proportional to Size
PSUs	Primary Sampling Units
SDGs	Sustainable Development Goals
TWG	Technical Working Group
WHO	World Health Organization
STEPS	STEP wise approach to surveillance
SARA	Service Availability and Readiness Assessment
WC	Waist Circumference

Executive Summary

The incidence, mortality, and cumulative risk of developing cancer has been consistently high in the Northeastern Region (NER) of India, according to reports of the National Cancer Registry Programme (NCRP). While the Population Based Cancer Registries (PBCRs) under the NCRP have been instrumental in providing the much-needed cancer data for the geographic area covered by a registry, it is vital to understand the likely reasons for the reported cancer incidence and its outcomes. Cancers share several common risk factors, and comparable health system needs with other significant NCDs (cardiovascular diseases, diabetes, stroke, chronic obstructive pulmonary disease and chronic kidney disease) for prevention, early detection and control. These include major behavioural and metabolic risk factors such as tobacco use, unhealthy diet, inadequate physical activity, alcohol use, raised blood glucose and overweight/obesity. Therefore, establishing a cancer risk factor surveillance system within a cancer registry is essential to track changes, implement suitable interventions and evaluate their impact, which would be reflected in the magnitude of cancer that is periodically reported from the registry.

Hence, this survey is an approach to implement a baseline monitoring system to drive us in understanding the linkage between exposures to risk factors, other NCDs and cancer incidence derived from the PBCRs in the NER and would aid in analysing the trends over time. This will enable the policymakers and stakeholders at making best decisions to address cancer prevention and control in the state.

The survey objectives included:

Primary objectives: To generate prevalence of key cancer and other NCD related risk factors and estimate health system response in the state of Meghalaya.

Secondary objectives:

- To set a baseline to monitor and track trends in the prevalence of risk factors associated with cancer and other NCDs in the state of Meghalaya.
- To link or correlate risk factors with cancer incidence and burden collected by the PBCR in the Meghalaya state.

Key findings:

- The proportion of solid fuel use was high in rural areas (87.6%). More than two third of the rural population (84.9%) used wood as cooking fuel. About 85.3% of the rural population used 'open stove' or 'chulha' for cooking.
- Over 52.5% of the total population were current tobacco users, comprising 71% men and 34% women. More than half (66.7%) of men were current users of smoked tobacco.

- 17% of the respondents reported to have consumed alcohol over the past 12 months and 14.9% reported alcohol use within the past month.
- The mean number of days on which either fruits or vegetables were consumed was 5 days in a week.
- According to the WHO criteria, the proportion of those who were obese was 1.2%, while the prevalence of obesity was higher (9.4%) using Asian cut off points.
- The prevalence of raised blood pressure was 16.6%, of which the proportion of newly detected (12.3%) was higher than previously known (4.3%).
- The proportion of respondents whose blood glucose level was over 126 mg/dl was 0.5%, among whom the proportion of known diabetics was 1.4%.
- Nearly 11.1% of the cancer patients had sought health care outside of their state, the majority (77.8%) were availing of treatment at a government health facility.
- Around 22.2% of the cancer patients were self-financing their treatment; while none of them were covered by health insurance.
- Cancer screening for all three types of cancers (cervical, breast, oral) was available in 13.8% of the PHCs, 75% of the CHCs and 100% of the District hospitals.
- A few CHCs had a specialist in position in the following departments: medicine (25%), surgery (25%) and gynaecology (25%).

List of Tables		
Sl.no	Tabletitle	Page No.
1.	1.1 Number of cancer cases and Age Adjusted Incidence Rate (AAR) per 1,00,000 population	16
2.	1.2 Probability of one in number of Persons developing any of leading cancer in 0-74 years' age in Males & Females	16
3.	1.4 Availability of public health care services	17
4.	2.3.1 Sample size charting for the survey	20
5.	3.1. 1 Average size of the household by place of residence	24
6.	3.3.1 Households with cancer cases by place of residence	27
7.	3.3.2 Duration of cancer from the time of diagnosis by place of residence	27
8.	3.3.3 Duration of cancer (in months) by place of residence (Mean)	27
9.	3.4.1 Socio - demographic characteristics of adults by place of residence and gender (Percentage)	28
10.	3.4.2 Religion and social status of adults by place of residence and gender (Percentage)	29
11.	3.5 Obstetric history of adult females	29
12.	3.6.1.2 Prevalence of smoked tobacco use by place of residence and gender(percentage)	30
13.	3.6.1.3 Smokeless tobacco use by place of residence and gender (Percentage)	30
14.	3.6.1.4 Type of current Tobacco use among adults by place of residence and gender (Percentage)	31
15.	3.6.1.5 Current daily tobacco use by place of residence and gender (Percentage)	31
16.	3.6.1.6 Current daily tobacco use by type of product, place of residence and gender (Percentage)	31
17.	3.6.1.7 Age (in years) at initiation and cessation of different forms of tobacco use by place of residence and gender (Mean)	32

18.	3.6.1.8 Duration (years) of tobacco use among past users by place of residence and gender (Mean)	32
19.	3.6.1.9 Personal attempts to quit and advised to quit tobacco use by doctor/health worker by place of residence and gender (Percentage)	32
20.	3.6.3.2-Consumption of different betel products without tobacco by place of residence and gender (Percentage)	34
21.	3.6.4.2 Age of initiation of Alcohol consumption by place of residence and gender (Mean)	35
22.	3.6.4.3 Patterns of alcohol use in the past 12 months by place of residence and gender (Percentage)	35
23.	3.6.4.4 Heavy episodic drinking among adults in the past 30 days by age category, place of residence and gender (Percentage)	35
24.	3.6.4.5 Received advice to avoid alcohol use by doctor/health worker in the last one year by age category, place of residence and gender (Percentage)	36
25.	3.6.5.1 Number of days of consumption of fruits, vegetables and fruit or vegetable juices in a week by place of residence and gender (Mean)	36
26.	3.6.5.2 Number of servings of fruits, vegetables and fruit or vegetable juices consumed per day by place of residence and gender (Mean)	36
27.	3.6.5.3 Number of days of consumption of different meat items(any form) in a typical week by place of residence and gender (Mean)	37
28.	3.6.5.4 Consumption of preserved /salt curated and fermented products among adults by place of residence and gender	37
29.	3.6.6.2 Nature of physical activity in which the participants are engaged by place of residence and gender (Percentage)	38
30.	3.6.6.4 Received Advice to increase physical activity by doctor/health worker in the last one year by age category, place of residence and gender (Percentage)	39
31.	3.6.7.1 Responses to questions on sexual behaviour by place of residence and gender (Percentage)	39
32.	3.6.7.2 Age at first sexual intercourse by place of residence and gender (Percentage)	39

33.	3.6.7.3 Number of sexual partners by place of residence and gender (Percentage)	39
34.	3.6.7.5 High risk behaviour and Sexually Transmitted Infection (STI) among adults by place of residence and gender (Percentage)	40
35.	3.7.2 Blood Pressure categories among those measured by place of residence and gender (Percentage)	41
36.	3.8.2 Prevalence of overweight (including obesity) and Obesity by place of residence and gender (Percentage)	42
37.	3.8.3 Central obesity by age categories, place of residence and gender (Percentage)	42
38.	3.8.4 Received Advice to maintain healthy body weight by doctor or health worker in the last one year by age category, place of residence and gender (Percentage)	42
39.	3.9.1 Raised fasting blood glucose levels (mg/dl) by place of residence and gender (Percentage)	43
40.	3.9.2 Fasting blood glucose levels (mg/dl) among those measured by place of residence and gender (Percentage)	43
41.	3.10.1 Clustering of at least ≥ 3 risk factors among adults by place of residence and gender (Percentage)	43
42.	3.11.1.1 Measurement of blood pressure by place of residence and gender (Percentage)	44
43.	3.11.1.2 Awareness, advice on treatment, adherence to treatment and control of blood pressure among those with raised blood pressure* by place of residence and gender(Percentage)	44
44.	3.11.1.3 Source of measurement and current treatment for raised blood pressure by place of residence and gender (Percentage)	44
45.	3.11.1.4 Received advice to check blood pressure by doctor / health worker in the last one year by age category, place of residence and gender (Percentage)	45
46.	3.11.2.1 Measurement of blood glucose by place of residence and gender (Percentage)	45
47.	3.11.2.2 - Awareness, advice and on treatment, adherence to treatment and control of blood glucose among those with raised blood glucose by place of residence and gender (Percentage)	45

48.	3.11.2.3 Source of measurement and current consultation for raised blood glucose by place of residence and gender (Percentage)	46
49.	3.11.2.4 Advised to check blood glucose by doctor /health worker in the last one year by age category, place of residence and gender (Percentage)	46
50.	3.12.1 Level of awareness and source of information about cancer screening by place of residence and gender (Percentage)	46
51.	3.12.2 Adults who had ever undergone oral/ breast/ cervical cancer screening by place of residence (Percentage)	47
52.	3.12.3 Methods of breast cancer screening by place of residence (Percentage)	47
53.	3.12.4 Methods of Cervical cancer screening by place of residence (Percentage)	47
54.	3.12.5 Received advice to screen for cancer by doctor /health worker in the last one year by place of residence and gender (Percentage) in public primary health care centres	47
55.	3.13.1 Infrastructure and type of available services	48
56.	3.13.2 Availability of cancer related services	48
57.	3.13.3 Counseling facilities for risk behaviour	49
58.	3.13.4. Availability of IEC material on cancer	49
59.	3.13.5 Availability of Human Resource	50
60.	3.13.6 Availability of Laboratory procedures and equipment & supplies in public primary health care centres	51
61.	3.14.1 Infrastructure and available services	51
62.	3.14.2 Availability of Cancer related services	51
63.	3.14.3 Availability of Counseling facilities for risk behaviour and Cancer related IEC materials	52
64.	3.14.4 – Availability of Human Resources (Medical Staff)	53
65.	3.14.5 Availability of Human Resources (paramedical / other Staff)	53
66.	3.14.6 Availability of prevention / treatment procedures	53

67.	3.14.7 Availability of prevention / treatment procedures, laboratory and Equipment & supplies in Public Secondary Health Care facilities (Percentage)	54
68.	3.15.1 Number of cancer patients by place of residence and gender	55
69.	3.15.2 Age at diagnosis and duration of cancer among cancer patients by place of residence and gender (Mean)	55
70.	3.15.3 Site of cancer and other chronic illness among cancer patients by place of residence and gender (Percentage)	56
71.	3.15.4 Type of health facility or health care provider from where cancer care was taken among those who sought treatment by place of residence and gender (Percentage)	57
72.	3.15.5 Source of finances for cancer treatment among cancer patients by place of residence and gender (Percentage)	57

List of Figures		
Sl.no	Figure title	Page No.
1.	3.1.2 (a) Type of House	24
2.	3.1.2 (b) Main source of drinking water	25
3.	3.1.3 (a) Type of fuel	25
4.	3.1.3 (b) Type of fuels used for cooking purposes	26
5.	3.1.3 (c) Type of stove/ fire used among households using solid fuels	26
6.	3.6.1.1 Prevalence of tobacco use (any form) by residence and gender	30
7.	3.6.2.1 Exposure to second hand tobacco smoke in the past 30 days by place of residence and gender (Percentage)	33
8.	3.6.3.1 Consumption of betel products without tobacco (any form) by place of residence and gender (percentage)	33
9.	3.6.4.1 Alcohol use by place of residence and gender (Percentage)	34
10.	3.6.6.1 Levels of physical activity by place of residence and gender (Percentage)	37
11.	3.6.6.3 Proportion of work, transport and leisure activity contributing to total activity by place of residence and gender (Percentage)	38
12.	3.7.1 – Raised Blood Pressure by place of residence and gender (Percentage)	40
13.	3.8.1 (a) - BMI categories (WHO cut off) by area of residence and gender (Percentage)	41
14.	3.8.1 (b) - BMI categories (Asian cut off) by area of residence and gender (Percentage)	42

Chapter 1: Introduction

The National Cancer Registry Programme (NCRP) was established as early as 1981, and has its coordinating centre at ICMR-NCDIR, Bengaluru. The role of NCRP is vital in assessing indicators like incidence & prevalence of cancer, the mortality trends and the quality of the healthcare systems being provided in different regions. The relevant health indicators are then collected, assessed, analysed and interpreted to provide inputs that help in formulating policies, programmes, and research activities. The cancer data is collected from the respective state PBCR for the above analysis. The PBCR of Meghalaya is situated in Civil Hospital, Shillong. The data analysed from these PBCRs helps not only to study the cancer pattern of the population of a defined region, but also helps with time trend analysis of predominant cancers in the state. This in turn leads to formulation of prevention and control strategies for cancers prevalent in the region.

Sociodemographic profile of Meghalaya		
	Population	Literacy Rate(%)
Males	1491832	76.0
Females	1475057	72.9
Total	2966889	74.4

Source: [1]

PBCRCoverage– Meghalaya	
PBCR name	Meghalaya
PBCR location	Civil Hospital, Shillong
Coverage area	East Khasi Hills, West Khasi Hills, Ri Bhoi & Jaintia Hills
Year of establishment	2010
Number of sources of registration	22
Area(in Sq. km)	14262
Coverage of urban and rural area (%)	24.9 & 75.1

1.1 Profile of cancer in Meghalaya^[2]

Cancer is among the top five leading causes of death in the state ^[3] In Meghalaya, the leading site of cancer was oesophagus in both the genders (31.0% in males; 22.3% in females). In males, hypopharynx (8.8%) and stomach (6.3%) are the second and third leading cancer sites respectively, whereas, in females, cervix-uteri (10.0%) and mouth (8.2%) rank as second and third leading cancer sites. Tobacco use related cancer sites were seen as high as a little over two thirds (66.9%) among males and over one third (43.1%) among the females. Across both the gender, Cancer of the oesophagus (31.0% in males; 22.3% in females) constituted the leading site.

Table.1.1 Number of cancer cases and Age Adjusted Incidence Rate(AAR) per 1,00,000 population

Gender	Meghalaya State	
	Number of New Cancer Cases	AAR
Males	4688	176.8
Females	2832	96.5

Table.1.2 Probability of one in number of Persons developing any of the leading cancer in 0-74 year's age in Males and Females

Sl. No	Meghalaya			
	Males		Females	
	Type of Cancer	Probability	Type of Cancer	Probability
1.	Oesophagus	1 in 17	Oesophagus	1 in 36
2.	Hypopharynx	1 in 57	Mouth	1 in 94
3.	Lung	1 in 61	Cervix uteri	1 in 109
4.	Stomach	1 in 64	Stomach	1 in 125
5.	Tongue	1 in 92	Breast	1 in 142

1.3 Availability of Health Services related to Cancer Care in Meghalaya State

The geographical indisposition, rugged terrain, vast hilly areas, and many ethnic groups contribute to the shortage of quality cancer-related health care facilities. Treatment seeking behaviour and delay in diagnosis often impact the mortality of the population in Meghalaya. The public health cancer continuum ranges from prevention to screening to treatment, including palliative care.

Table. 1.4 Availability of public health care services

A. Public sector health facilities ^[4,5,6]	Number
Sub Centres (SC)	451
Health and Wellness Centre - Sub Centre (HWC-SC)	67
Primary Health Centres (PHC)	145
Health and Wellness Centre - Primary Health Centre (HWC-PHC)	35
Community Health Centres (CHC)	28
Sub-district Hospitals (SDH)	00
District Hospitals (DH)	11
Number of government allopathic doctors and dental surgeons	677
B. Tertiary health care facilities	
Medical Colleges ^[7]	01
Tertiary cancer care centre ^[8]	00
Regional cancer care centre ^[9]	00
C. State government health scheme ^[10]	Megha Health Insurance Scheme

1.4 Background

This survey was conducted as a part of cancer research in the North East Region (CaRes NER), a multi disciplinary programme for preventing and controlling cancer in the north-eastern states run by ICMR-NCDIR, Bengaluru. It aims to form a baseline database of cancer and other NCD-related risk factors for comparison in subsequent surveys, which would help establish an NCD risk factor surveillance program. As cancer registration is an integral part of cancer surveillance, ongoing surveillance of risk factors will correlate with cancer incidence and risk factors. Moreover, with the set time-bound and attempts provided by NCD targets (10) and indicators (21) by 2025 ^[11] to achieve universal health coverage, ongoing surveillance would determine outcomes of national health programmes. Therefore, the establishment of a surveillance system is of vital importance to track changes and evaluate interventions. The survey objectives were as follows.

1.5 Objectives

1.5.1 Primary objective

To generate key cancer and other NCD related risk factors and health system response indicators in the PBCR covered regions of Meghalaya.

1.5.2 Secondary objectives

To set a baseline to monitor and track trends in the prevalence of risk factors associated with cancer and other NCDs in the PBCR covered regions of Meghalaya. To link or correlate risk factors with cancer incidence in the region. The survey included four broad components

1. Household level Interview
2. Adult Interview
3. Cancer patient interview
4. Health Facility Interview

Chapter 2: Methodology

2.1 Survey Design

A cross sectional survey design was used to cover the target study population. A multi stage cluster sampling was adopted for the survey. The population from the 2011 census was sorted by state, district, sub-district, town/village code, ward number to identify survey Primary Sampling Units (PSUs). Similar to the National NCD Monitoring Survey, the study procedures consisted of household, adult and health facility level interviews. ^[12] Cancer patient interviews were also conducted if any such patient was identified in the selected household. Questions that were specific to cancer prevention and access to care were included in the study tools.

2.2 Study Population

The target population for the survey was defined as all residents aged 18 or above residing in their usual residence. The institutional population comprising those living in collective places like students' dormitories, hospitals, hotels, prisons, military barracks, etc., were not included in the survey.

2.3 Sample size

The sample size for the survey was worked out to obtain reliable estimates for cancer risk factors related to adults in Population Based Cancer Registry (PBCR) covering areas. The sample size was estimated by considering the objectives of estimating the prevalence of behavioural risk factors for cancer and other NCDs (including tobacco use, alcohol consumption, and physical inactivity). The sample size was 2880 for the state of Meghalaya with 100% coverage by the PBCR as show in the table below:

Table 2.3.1– Sample size charting for the survey

Registry Name	State Name	State Total Population	State Total Population (Age 18+)	Total Population (Age 18+) covering PBCR by state wise	Total Population of Study site (as per census 2011) - (Age 18+)	% of under PBCR covering area	Total sample size per Study Site (Approximately)	Total PSUs (48 HH per PSU)
Meghalaya - PBCR	Meghalaya	29,66,889	1580947	978370	978370	100.0	2880	60
Total Sample Size and Total PSU							2880	60

2.4 Data Collection Tools

The study tools used for different levels included (i) Household (ii) Adult (iii) Adult with cancer and (iv) Health facility (PHC or urban equivalent, CHC/ District Hospital and private facilities). These instruments were adapted from the National NCD Monitoring Survey (NNMS) to suit survey objectives. Standard references were used to define the data variables.

2.5 Survey Period

The survey was conducted between February 2020 and April 2021.

2.6 Governance of Survey

The survey implementation was under the supervision, coordination and monitoring of the Central Coordinating Agency (CCA) at ICMR - National Centre for Disease Informatics & Research (NCDIR), Bengaluru.

The CCA provided all technical and scientific assistance for the survey at all stages. It was responsible for overall coordination, monitoring, quality assurance, data maintenance, cleaning, analysis and report writing with the technical support from its partners. A team of experts were identified for survey supervision, monitoring and scientific guidance.

2.7 Quality Assurance and Training

The quality control measures were followed to standardise the survey at all stages and all levels of governance. This included preparing training materials, undertaking training, calibration and standardisation of equipment, data collection tools, field data collection and storage, handling blood samples and safe disposal mechanisms of the generated biomedical waste. A dashboard was created to monitor the live status of data collection and troubleshooting, or any queries or issues faced at the time of the field was solved through FAQ's and virtual calls.

Principal Investigators (PI) and Co-Principal Investigators (Co-PI) from the PBCR were trained in all survey procedures as part of the CCA's two-day Training of Trainers program. A classroom-based training, demonstrations, hands-on and mock field drills were undertaken for the research team during the 3-day training program from 08th-10th January, 2020 at Dr. Bhubaneswar Borooah Cancer Institute, (Regional Institute for Treatment and Research), Guwahati.

2.8 Data Management and Analysis

The field team used the handheld devices loaded with the software application for data collection and entered the data in field. Provision of keeping back up of data in SD cards in the handheld was also present. The data from the handheld devices were uploaded/ synced to the Central server at ICMR-NCDIR.

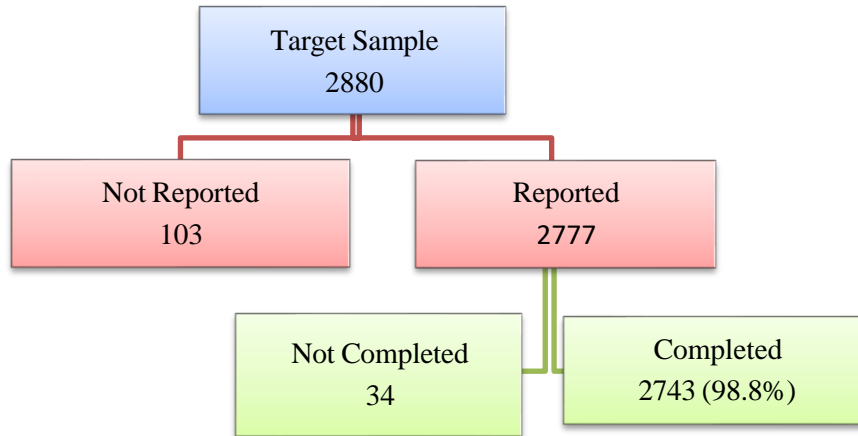
The data from all PSUs' were compiled and cleaned, following which weighting procedures were followed for adjusting for sampling and population proportions and response rates. The detailed statistical analysis plan was prepared based on the identified indicators and subgroups. The data analysis was done using STATA 14.1 with prior developed analysis commands by complex survey analysis. The survey results have been presented by descriptive statistics with means and proportions with 95% confidence intervals (CIs) as a measure of precision on the estimated population parameters.

2.9 Ethical Considerations

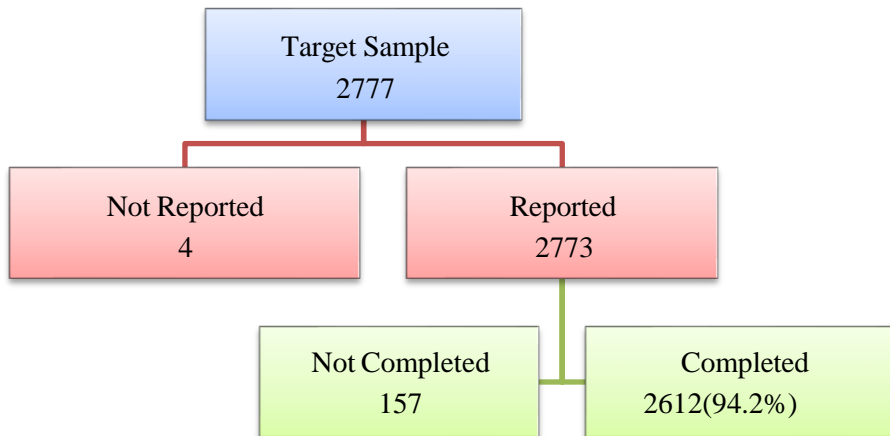
Meghalaya PBCR received its institutional ethical clearance from their institutional ethics committee (CHS/IEC/GEN/25). The survey received ethical clearance from the Ethics review committee of the CCA, ICMR – NCDIR (NCDIR/IEC/2017/2).

Chapter 3: Survey Results

Household Response Rate



Adult – level Response Rate



A. Household level interview

3.1 Household Characteristics

3.1.1 Average size of the household* by place of residence

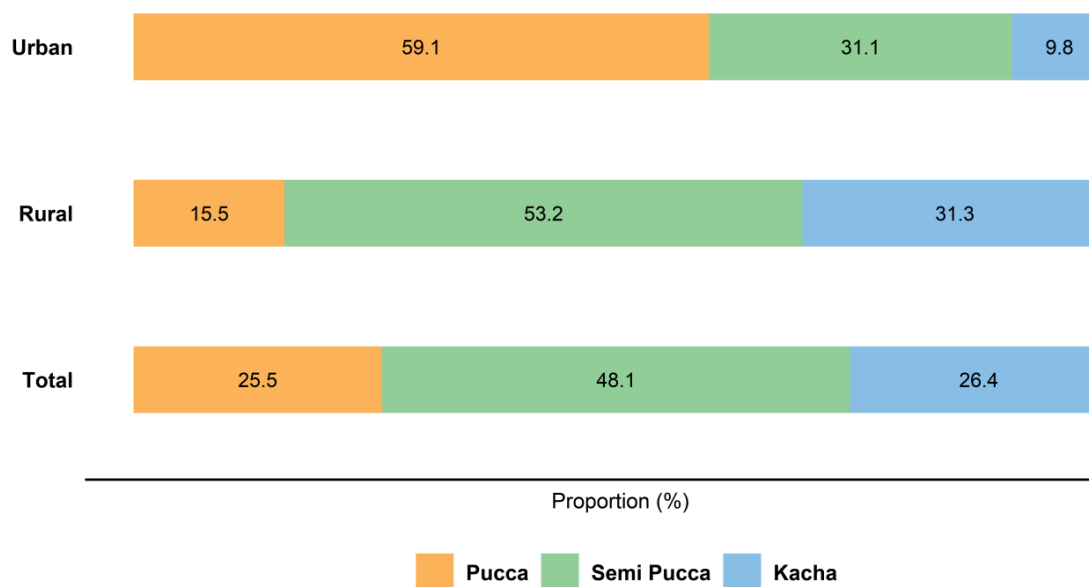
	Urban	Rural	Combined
Median (IQR*)	4 (3)	5 (3)	5 (3)

Size of the household- Number of members in the household [*IQR: - Interquartile Range]

*Household: A person or group of persons who could be biologically related/not related, living together in the same unit(s), who recognise a joint head of the household (an adult male or female) and are considered a single unit, sharing the same household arrangements.

3.1.2 Household characteristics by place of residence (Percentage)

3.1.2 (a) Type of House*



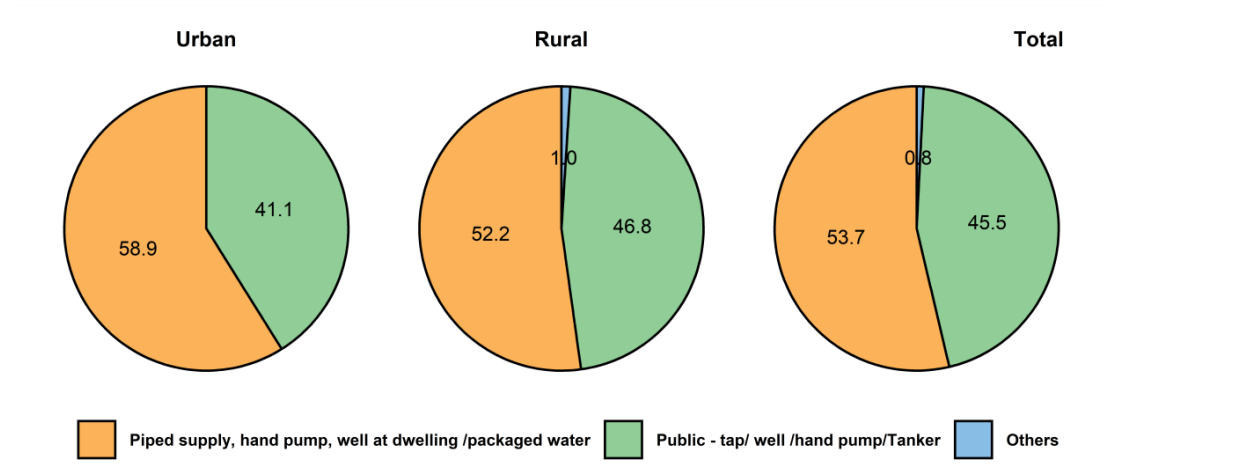
* **Type of house** is defined based on roof, floor and walls.

Pucca house: A pucca house is one, which has walls and a roof made of the following material. Wall material include burnt bricks, stone and cement. Roof material includes tiles, cement, iron or asbestos sheets

Semi pucca house: A house with fixed walls made up of pucca material, but the roof is made up of material other than those used for pucca house.

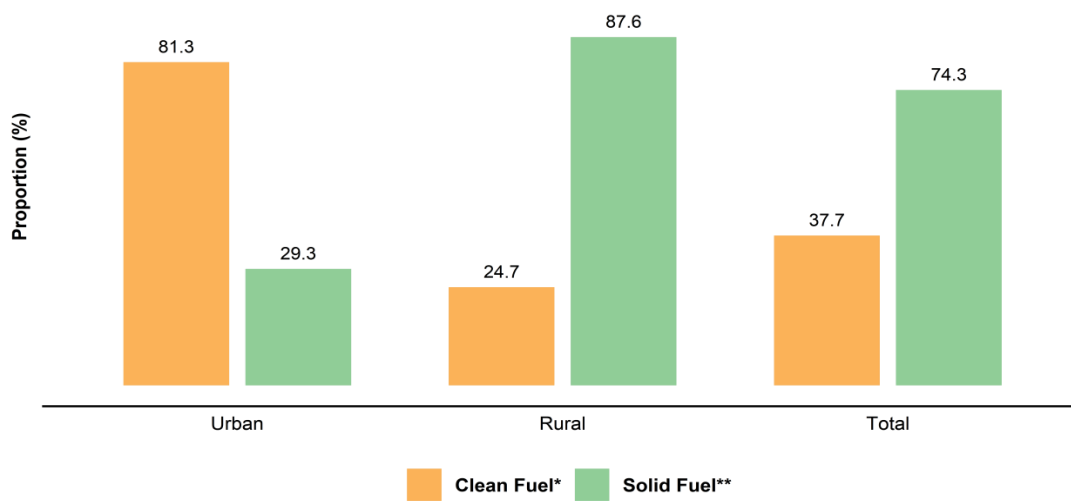
Kutch House: The walls and/or roof are made of material other than those mentioned above, such as unburnt bricks, bamboos, mud, grass, reeds, thatch, loosely packed stones, etc.

3.1.2 (b) Main source of drinking water



3.1.3 Fuel used for cooking and type of kitchen among households by place of residence (Percentage)

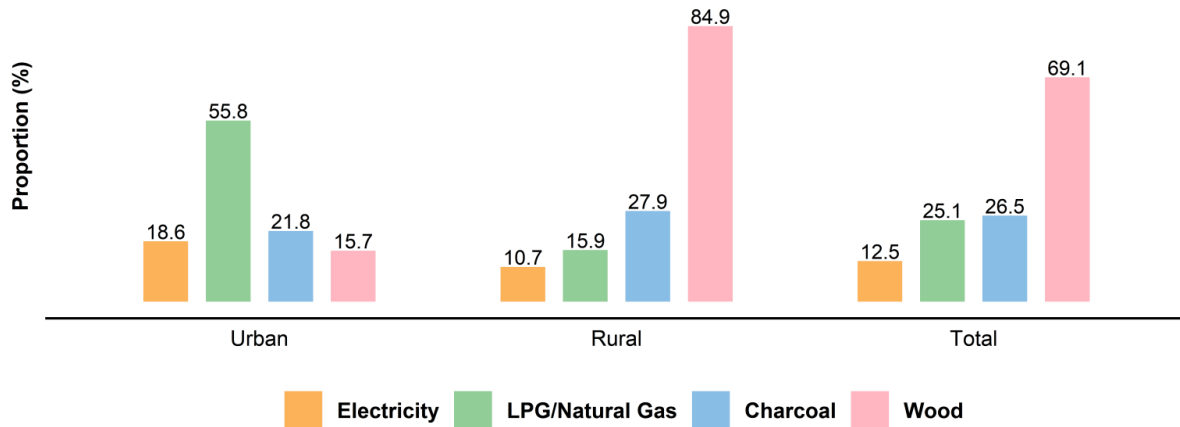
3.1.3 (a) Type of fuel



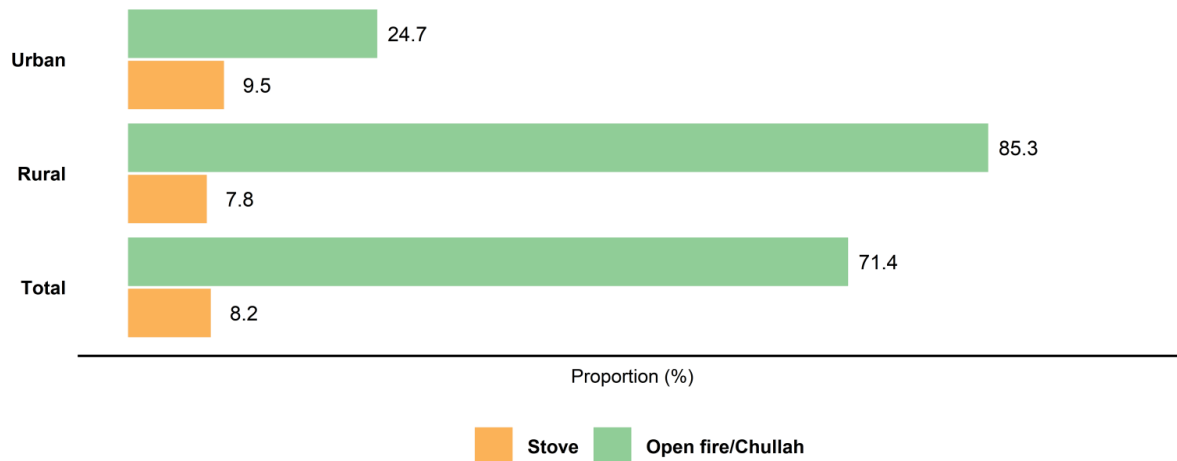
*Clean fuel: Electricity, LPG/Natural Gas, Biogas

**Solid Fuel: Charcoal, Coal/lignite, wood, Straw/Shrubs/Grass, Agricultural crop waste, Dung cakes

3.1.3 (b) Type of fuels used for cooking purposes



3.1.3 (c) Type of stove/fire used among households using solid fuels



3.2 Awareness and Attitudes Towards Cancer (%)

Nearly all (99.6%) of the respondents conceded that they never felt ashamed or hesitant to talk about a cancer case in the household. 1.2% of the households knew about the Human Papilloma Virus (HPV) vaccine.

3.3 Descriptive Profile of Cancer Cases Identified at the Household Level

3.3.1- Households with cancer cases by place of residence

	Urban(N=619)	Rural(N=1993)	Combined(N=2612)
Percentage of households with diagnosed cancer cases			
Percentage – alive	6 (1.0)	8 (0.4)	14 (0.5)
Percentage – deceased	26 (4.2)	44 (2.2)	70 (2.7)

3.3.2 - Duration of Cancer from the time of diagnosis by place of residence

	Urban	Rural	Male	Female	Combined
Duration of diagnosis for cancer patients who were alive during the survey*	(N=6)	(N=8)	(N=8)	(N=6)	(N=14)
< 6 months	0 (0.0)	3 (37.5)	0 (0.0)	3 (50)	3 (21.4)
6-12 months	1 (16.6)	1 (12.5)	2 (25)	0 (0.0)	2 (14.3)
13– 24months	1 (16.7)	2 (25)	1 (12.5)	2 (33.3)	3 (21.4)
> 24 months	3 (50)	1 (12.5)	3 (37.5)	1 (16.7)	4 (28.6)
Don't know	1 (16.7)	1 (12.5)	2 (25)	0 (0.0)	2 (14.3)
Duration between diagnosis and death of the patient*	(N=28)	(N=47)	(N=30)	(N=40)	(N=70)
< 6 months	10 (35.7)	16 (34)	11 (36.7)	12 (30)	23 (32.9)
6-12 months	2 (7.1)	4 (8.5)	3 (10)	3 (7.5)	6 (8.5)
13– 24months	8 (28.6)	13 (27.7)	4 (13.3)	16 (40)	20 (28.6)
> 24 months	7 (25)	7 (14.9)	7 (23.3)	6 (15)	13 (18.6)
Don't know	1 (3.6)	7 (14.9)	5 (16.7)	3 (7.5)	8 (11.4)

*Prior to the date of interview: extracted from the date of diagnosis

3.3.3 - Duration of Cancer (in months) by place of residence (Mean)*

	Urban	Rural	Combined
Average duration of cancer (alive)	67.4	25.6	57.7
Average duration of cancer (deceased)	12.3	11.1	13.2
Average duration of cancer (alive/deceased)	20.9	13.3	21.8

*Extracted from the date of diagnosis

B. Adult Level Interview

3.4 Demographic Characteristics of Adults by Place of Residence and Gender

3.4.1 Socio-demographic characteristics of adults by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Age (in years)					
18–44	75.3	73.4	73.4	74.3	73.8
45 –69	22.0	23.1	23.6	22.1	22.9
70 and above	2.7	3.5	3.0	3.6	3.3
Marital Status					
Never married	27.7	13.3	22.4	10.7	16.6
Currently married/ cohabiting	62.8	77.4	73.4	74.8	74.1
Separated/Not living together/ Divorced	3.8	3.6	2.4	4.9	3.6
Widowed	5.7	5.7	1.8	9.6	5.7
Highest level of Education					
Less than class 6	18.6	45.6	38.8	37.5	38.2
Class 6 to 10	32.3	34.2	31.4	36.0	33.7
Class 11 or 12	17.4	11.7	15.0	11.6	13.3
Graduation or diploma completed	27.2	7.4	12.8	12.9	12.8
Post-graduation	4.5	1.1	2.0	2.0	2.0
No response	0.0	0.0	0.0	0.0	0.0
Occupation					
Professional	17.9	4.9	8.7	7.1	7.9
Medium or large Business	2.5	0.6	1.9	0.1	1.0
Middle / Senior Executive/officer in organization	0.3	0.3	0.4	0.3	0.3
Agricultural land owner	1.5	7.6	8.0	4.5	6.2
Sales and Marketing executives/Clerical	2.1	0.6	1.5	0.5	1.0
Self-employed and small business	11.7	7.0	11.0	5.1	8.0
Skilled manual labourer	6.4	4.0	8.2	0.7	4.5
Unskilled manual/agricultural labourer	11.5	40.8	45.8	22.5	34.2
Student	11.4	4.9	7.9	4.8	6.3
Homemaker	25.1	24.0	0.5	47.9	24.1
Retired	3.9	1.3	2.6	1.2	2.0
Unemployed (able to work)	4.9	3.0	2.4	4.5	3.4
Unemployed(unable to work)	0.6	1.0	1.0	0.8	1.0
No response	0.0	0.02	0.0	0.04	0.02
Others	0.2	0.03	0.1	0.0	0.1

3.4.2 Religion and Social Status of adults by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Religion					
Hinduism	26.8	5.3	10.6	9.7	10.2
Islam	1.7	0.2	0.6	0.4	0.5
Christian	69.8	82.3	78.3	80.5	79.4
Sikhism	0.5	0.0	0.1	0.2	0.1
Buddhism	0.3	0.0	0.1	0.1	0.1
Jainism	0.3	2.2	1.5	2.1	1.8
None	0.6	10.0	8.8	7.0	7.9
Others	26.8	5.3	10.6	9.7	10.2
Social Group					
General	20.0	1.4	5.6	5.7	5.7
OBC	2.2	0.3	0.7	0.7	0.7
SC	6.2	1.4	3.0	2.0	2.4
ST	71.6	96.9	90.7	91.6	91.2
Others	20.0	1.4	5.6	5.7	5.7

3.5 Obstetric History of Adult Females

	Urban	Rural	Total
Ever Pregnant (%)	75.0	89.9	86.5
Age at first Pregnancy (%)			
<18 Years	7.2	6.3	6.5
18 – 29 Years	87.7	90.9	90.3
≥ 30 Years	5.1	2.8	3.2
Average age at first pregnancy*(in years)	22.0	21.0	21.2
Gravida*#	2.5	3.0	2.9
Ever breast fed	98.6	99.3	99.1
Never breast fed	1.4	0.7	0.9
Mean/Median duration(in months) of breastfeeding among ever pregnant women@	35.9	45.1	43.3

*Values are expressed as Mean;

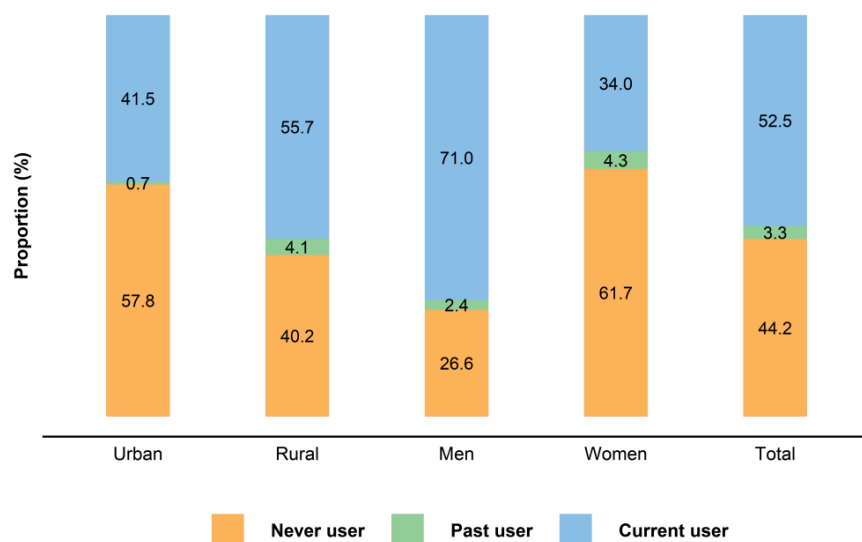
#Includes total number of confirmed pregnancies that a woman has had (includes abortion, still births or live births)

@Combined breast feeding duration of all live births

3.6 Behavioural Characteristics

3.6.1 Tobacco use

3.6.1.1 - Prevalence of tobacco use (any form) by residence and gender



3.6.1.2 - Prevalence of smoked tobacco use by place of residence and gender (percentage)

	Urban	Rural	Men	Women	Total
Never user*	76.1	61.4	31.2	98.3	64.8
Past user**	0.3	2.1	2.1	1.2	1.6
Current user***	23.6	36.5	66.7	0.5	33.6

3.6.1.3 - Smokeless tobacco use by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Never user *	78.1	70.8	82.7	62.3	72.5
Past user**	0.6	7.0	7.1	3.9	5.5
Current user ***	21.3	22.2	10.2	33.8	22.0

*A person who has never smoked/used smokeless tobacco during their lifetime.

**Use of smoke and/or smokeless tobacco in the past either daily or occasionally prior to 12 months preceding the survey

***Use of any form of tobacco (smoke and/or smokeless) over the last 12 months preceding the survey.

3.6.1.4 - Type of current Tobacco use among adults by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Only Smoked Tobacco	20.2	33.5	60.8	0.2	30.5
Only Smokeless Tobacco	17.9	19.2	4.2	33.5	18.9
Both Smoked and Smokeless Tobacco	3.4	3.0	6.0	0.3	3.1
Either Smoked or Smokeless Tobacco	41.5	55.7	71.0	34.0	52.5

3.6.1.5 - Current daily tobacco* use by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Only Smoked Tobacco	19.8	32.2	58.8	0.2	29.4
Only Smokeless Tobacco	15.9	17.1	4.1	29.5	16.8
Both Smoked and Smokeless Tobacco	1.0	2.2	3.7	0.1	1.9
Either Smoked or Smokeless Tobacco	36.7	51.5	66.6	29.8	48.1

* Use of any form of tobacco (smoke and/or smokeless) daily over the last 12 months preceding the survey

3.6.1.6 - Current daily tobacco use* by type of product, place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Smoked Tobacco					
Bidis	34.3	44.2	42.8	24.2	42.6
Manufactured Cigarettes	44.8	14.7	19.7	3.3	19.5
Hand-rolled Cigarettes	23.9	41.9	39.2	17.0	39.0
Pipes /Chilam	0.4	4.9	4.3	0.0	4.2
Cigars, Cheroots	0.8	1.3	1.2	0.0	1.2
Hookah/No. of Shisha session	0.7	0.5	0.5	0.0	0.5
Local smoked tobacco products	1.1	7.0	6.1	0.0	6.0
Others	0.0	0.1	0.1	0.0	0.1
Smokeless Tobacco					
Chewing tobacco	47.9	67.7	57.9	65.0	63.3
Pan with Zarda, Betel with Tobacco quid	32.0	16.9	24.9	18.8	20.2
Tuibur, Tobacco Snuff, by mouth	8.8	4.2	5.0	5.3	5.2
Snuff, by nose	0.0	0.3	0.0	0.3	0.2
Others	0.0	2.3	1.3	1.9	1.8

*Among current users

3.6.1.7 - Age (in years) at initiation and cessation of different forms of tobacco use by place of residence and gender (Mean)

	Urban	Rural	Men	Women	Total
Age at initiation					
Any form of tobacco*	20.3	19.0	18.6	20.4	19.2
Smoked tobacco	19.4	18.5	18.6	19.7	18.7
Smokeless tobacco	21.4	20.1	20.1	20.4	20.3
Age at cessation					
Any form of tobacco**	41.4	32.4	33.7	31.1	32.8
Smoked tobacco	36.9	40.1	40.5	36.2	40.0
Smokeless tobacco	43.9	29.6	29.7	30.6	30.1

*Minimum age of smoked and smokeless tobacco use

**Maximum age of smoked and smokeless tobacco use

3.6.1.8 - Duration (years) of tobacco use among past users by place of residence and gender (Mean)

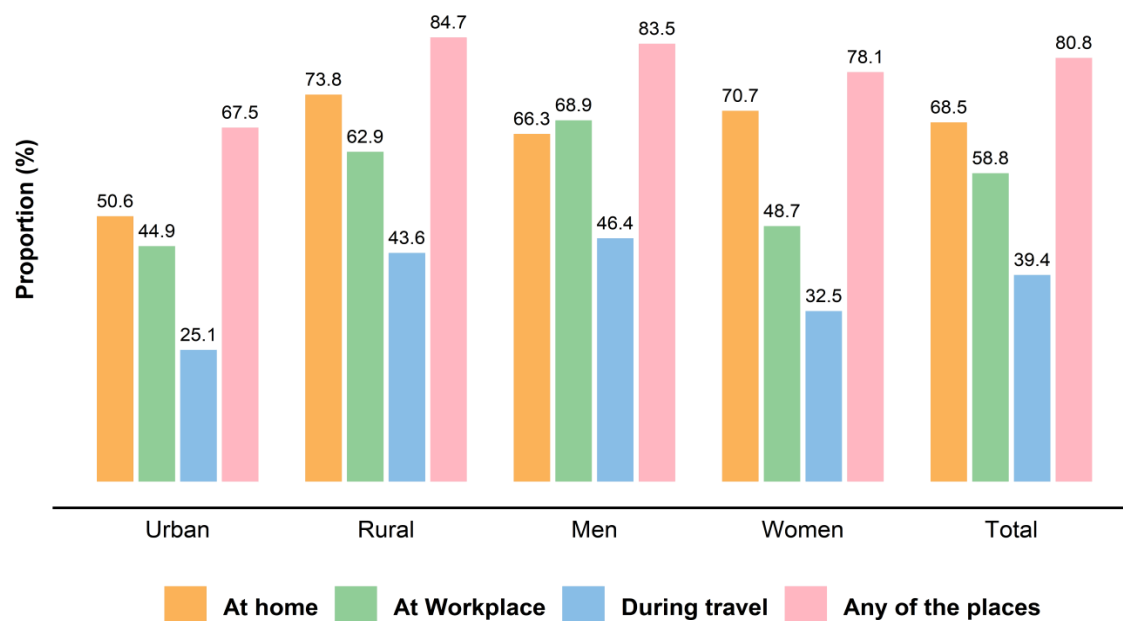
	Urban	Rural	Men	Women	Total
Any form of tobacco	20.8	12.4	14.1	10.4	12.8
Smoked tobacco	17.2	20.7	20.9	17.7	20.5
Smokeless tobacco	22.7	9.4	10.0	9.6	9.8

3.6.1.9 - Personal attempts to quit and advised to quit tobacco use by doctor/health worker by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Attempted to quit					
Smoked tobacco (among current users)	15.3	19.5	19.0	0.0	18.8
Advised to quit					
Any form of tobacco use	6.4	12.4	13.6	8.4	11.0
Smoked tobacco use	5.1	7.8	11.0	3.4	7.2
Smokeless tobacco use	3.9	10.0	9.9	7.3	8.6

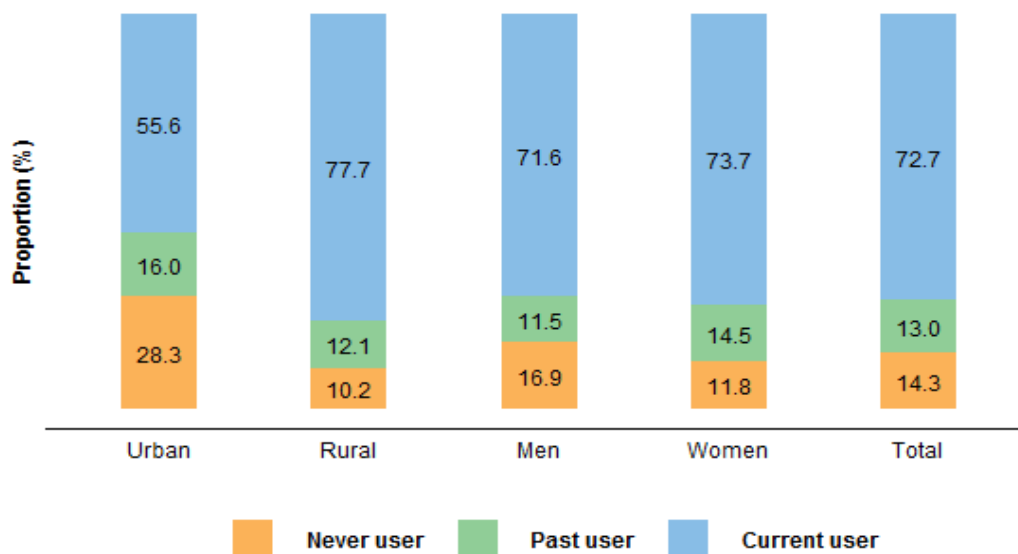
3. 6. 2 Exposure to Second Hand Smoke

3.6.2.1 - Exposure to second hand tobacco smoke in the past 30 days by place of residence and gender (Percentage)



3.6.3 Non – Tobacco Betel Products

3.6.3.1 - Consumption of betel products without tobacco (any form) * by place of residence and gender (Percentage)



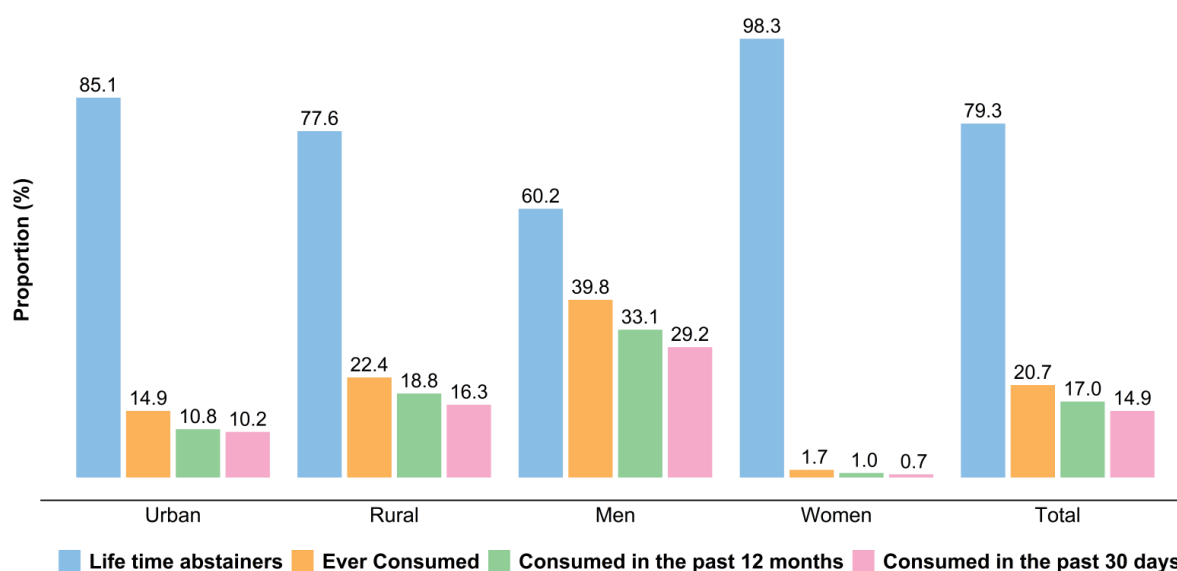
*Includes pan masala, betel quid, areca nut.

3.6.3.2- Consumption of different betel products without tobacco by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Pan Masala					
Never user	94.8	97.0	95.8	97.1	96.5
Past user	2.6	2.1	2.4	2.1	2.2
Current user	2.6	0.9	1.8	0.8	1.3
Betel quid					
Never user	99.7	97.8	98.0	98.5	98.2
Past user	0.3	1.5	1.4	1.0	1.2
Current user	0.0	0.7	0.6	0.5	0.6
Areca nut					
Never user	30.4	10.3	17.6	12.2	14.9
Past user	15.7	12.0	11.4	14.3	12.8
Current user	53.9	77.7	71.0	73.5	72.3

3.6.4 Alcohol Use

3.6.4.1 - Alcohol use *by place of residence and gender (Percentage)



*Lifetime abstainer: A person who has never consumed one or more drink of any type of alcohol in their lifetime.

Ever consumed: A person who has consumed any of the alcoholic products (such as beer, wine, whisky, locally prepared alcohol etc.) at least once in their lifetime.

Current alcohol use: Consumption of alcohol in the last 12 months preceding the survey.

3.6.4.2 - Age of initiation of Alcohol consumption by place of residence and gender (Mean)

	Urban	Rural	Men	Women	Total
Age of initiation of Alcohol consumption	21.7	20.5	20.7	22.3	20.7

3.6.4.3 - Patterns of alcohol use in the past 12 months* by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Unable to stop drinking					
Never	68.2	57.7	60.0	34.4	59.3
Daily/ almost daily	0.0	4.8	3.7	18.7	4.1
Weekly	18.7	24.6	23.9	18.2	23.7
Monthly	9.7	8.9	9.1	7.1	9.0
Less than Monthly	1.9	1.9	1.7	9.3	1.9
Failed to do usual routine work due to drinking habit					
Never	75.2	63.2	65.8	34.4	64.9
Daily/ almost daily	0.0	1.7	1.0	18.7	1.5
Weekly	10.0	18.9	17.8	10.8	17.6
Monthly	8.6	6.6	6.3	26.7	6.9
Less than Monthly	1.9	0.9	0.8	9.3	1.1
Need of first drink in the morning					
Never	75.2	66.4	68.7	34.4	67.7
Daily/ almost daily	0.0	1.9	1.1	18.7	1.6
Weekly	5.4	15.9	13.9	30.5	14.4
Monthly	10.5	7.7	8.1	7.1	8.1
Less than Monthly	1.9	1.6	1.4	9.3	1.6

*Among those who consumed alcohol in the past 12 months

3.6.4.4 - Heavy episodic drinking* among adults in the past 30 days by age category, place of residence and gender (Percentage)

≥6 standard drinks **	Urban	Rural	Men	Women	Total
18- 44 Years	9.4	10.8	20.8	0.3	10.5
45 – 69 Years	4.7	9.2	15.8	0.1	8.2
70 and above	0.0	5.3	9.5	0.0	4.3
18+ years	8.1	10.2	19.3	0.2	9.7

*Drinking ≥6 standard drinks in a single drinking occasion

**Contains a net pure alcohol content of 10 gm

3.6.4.5- Received advice to avoid alcohol use by doctor/health worker in the last one year by age category, place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
18- 44 Years	1.6	4.2	5.3	1.9	3.6
45 – 69 Years	4.1	5.0	8.0	1.4	4.8
70 years and above	13.0	3.7	9.6	1.8	5.4
18+ years	2.4	4.4	6.1	1.8	4.0

3.6.5 Diet

3.6.5.1 - Number of days of consumption of fruits, vegetables and fruit or vegetable juices in a week by place of residence and gender (Mean)

	Urban	Rural	Men	Women	Total
Fruits	2.8	2.1	2.1	2.4	2.2
Vegetables	5.4	4.8	4.9	5.0	5.0
Fruits and/or Vegetables	5.5	4.9	5.0	5.1	5.0
Fruit or Vegetable juice**	1.0	0.9	0.9	1.0	0.9

3.6.5.2 - Number of servings of fruits, vegetables and fruit or vegetable juices consumed per day by place of residence and gender (Mean)

	Urban	Rural	Men	Women	Total
Fruits	0.6	0.4	0.4	0.5	0.4
Vegetables	1.6	1.4	1.4	1.5	1.5
Fruits and/or Vegetables*	2.2	1.8	1.8	2.0	1.9
Fruit or Vegetable Juice**	0.2	0.2	0.2	0.2	0.2

*One standard serving of fruits and/or vegetables is equivalent to 80-100 grams.

The quantity of intake was measured by servings; for vegetables, this refers to one cup of raw, leafy green vegetables (spinach, salad etc.), half cup of other vegetables, cooked or raw (tomatoes, pumpkin, beans etc.), or a half cup of vegetable juice.

For fruits, this refers to one medium-sized piece of fruit (banana, apple etc.) or a half cup of raw, cooked or canned fruit.

** Includes fresh juice made at home/shop.

3.6.5.3 - Number of days of Consumption of different meat items (any form) in a typical week by place of residence and gender (Mean)

	Urban	Rural	Men	Women	Total
Birds/Poultry	1.9	1.8	1.9	1.8	1.8
Fish	2.3	1.9	2.0	2.0	2.0
Red Meat	2.1	1.9	2.0	1.9	1.9
Either Birds/Poultry or Fish or Red Meat*	2.6	2.3	2.4	2.3	2.3

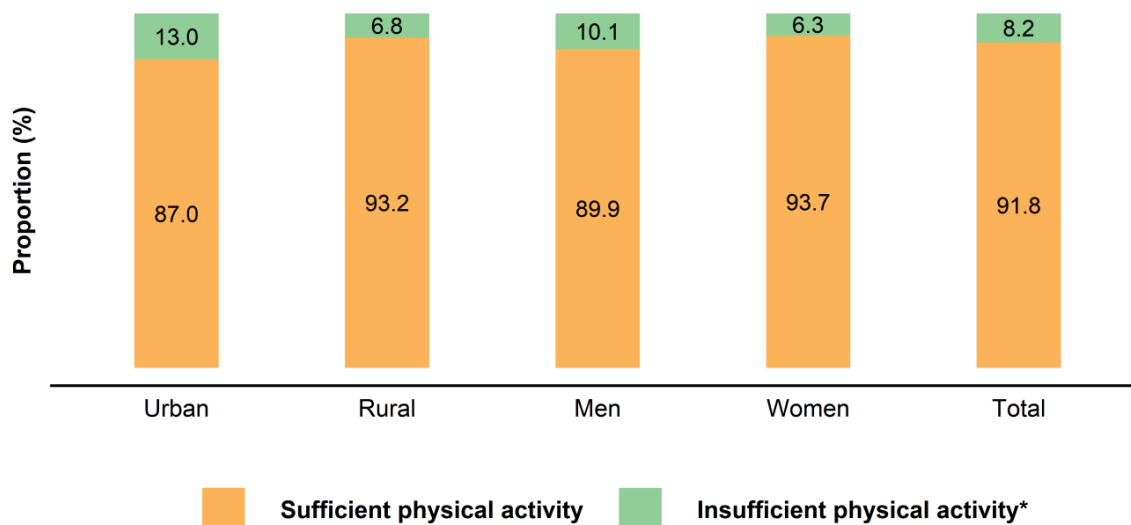
*If an adult consumed more than one meat item, the maximum number of days for any one item was considered

3.6.5.4 - Consumption of preserved/salt curated and fermented products among adults by place of residence and gender

	Urban	Rural	Men	Women	Total
Percentage of consumption	65.3	61.4	61.5	63.1	62.3
Mean number of days of consumption per week	2.5	2.5	2.4	2.5	2.5

3.6.6 Physical Activity

3.6.6.1 - Levels of physical activity by place of residence and gender (Percentage)



*Insufficient physical activity less than 150 minutes of moderate – intensity physical activity per week OR <75 minutes of vigorous – intensity physical activity per week OR an equivalent combination of moderate – and vigorous intensity physical activity accumulating at least 600 MET minutes per week

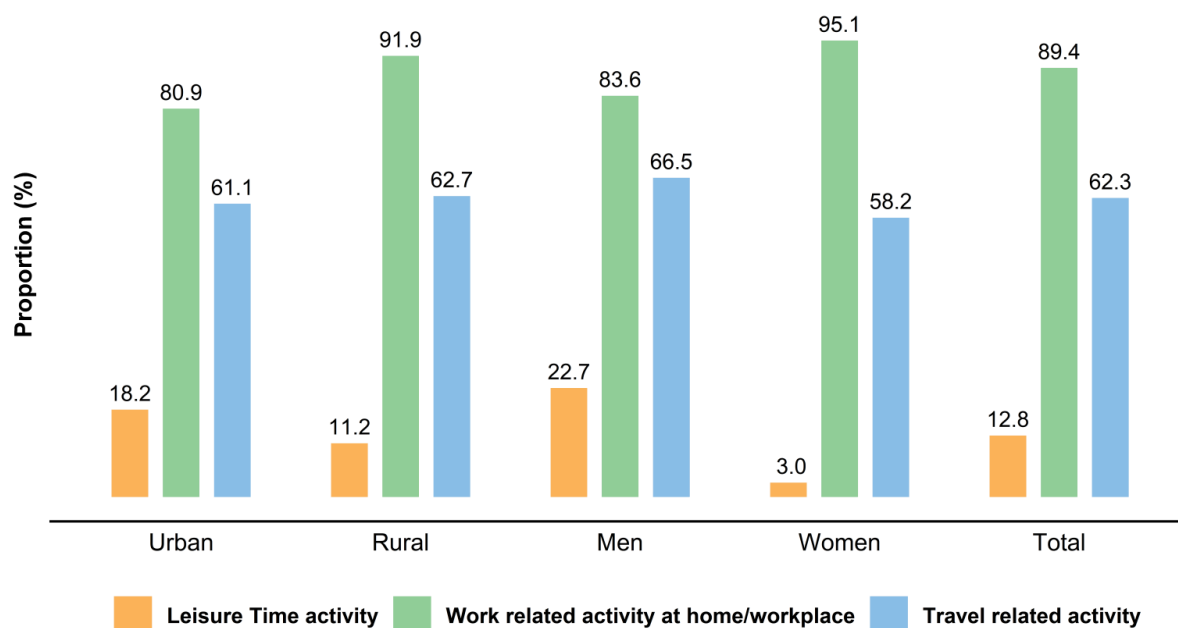
3.6.6.2 - Nature of physical activity in which the participants are engaged by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Routine work at home/workplace					
Vigorous-intensity activity*	11.7	52.2	56.9	29.1	43.0
Moderate intensity activity**	78.1	78.8	62.8	94.5	78.7
Recreational/leisure activities					
Vigorous-intensity activity	9.6	9.9	19.1	0.5	9.8
Moderate intensity activity	13.7	4.6	10.6	2.7	6.7

*An activity which requires hard physical effort, and causes one to breathe much harder than normal.

** An activity that requires moderate physical effort and causes one to breathe somewhat harder than normal.

3.6.6.3 -Proportion of work, transport and leisure activity contributing to total activity by place of residence and gender (Percentage)



3.6.6.4 - Received Advice to increase physical activity by doctor/health worker in the last one year by age category, place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
18- 44 Years	14.0	20.1	13.7	23.5	18.7
45 – 69 Years	15.6	20.2	19.6	18.7	19.2
70 years and above	33.7	19.1	34.0	11.4	21.7
18+ years	14.9	20.1	15.7	22.0	18.9

3.6.7 High risk behaviour and Sexually Transmitted Infections

3.6.7.1- Responses to questions on sexual behaviour by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Responded	40.2	34.8	28.7	43.3	36.0

3.6.7.2- Age at first sexual intercourse by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
<15 Years	0.0	0.4	0.2	0.4	0.3
15 – 19 Years	26.7	43.5	22.0	50.6	39.2
20 -24 Years	47.1	42.9	53.5	37.7	44.0
> 25 Years	26.2	13.2	24.3	11.3	16.5

3.6.7.3 - Number of sexual partners by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Single sexual partner	69.3	72.4	64.1	79.2	71.7
Multiple sexual partner*	1.5	1.5	2.2	0.9	1.5

*Two or more sexual partners

3.6.7.4 - Mean age at first sexual intercourse by place of residence and gender (Mean)

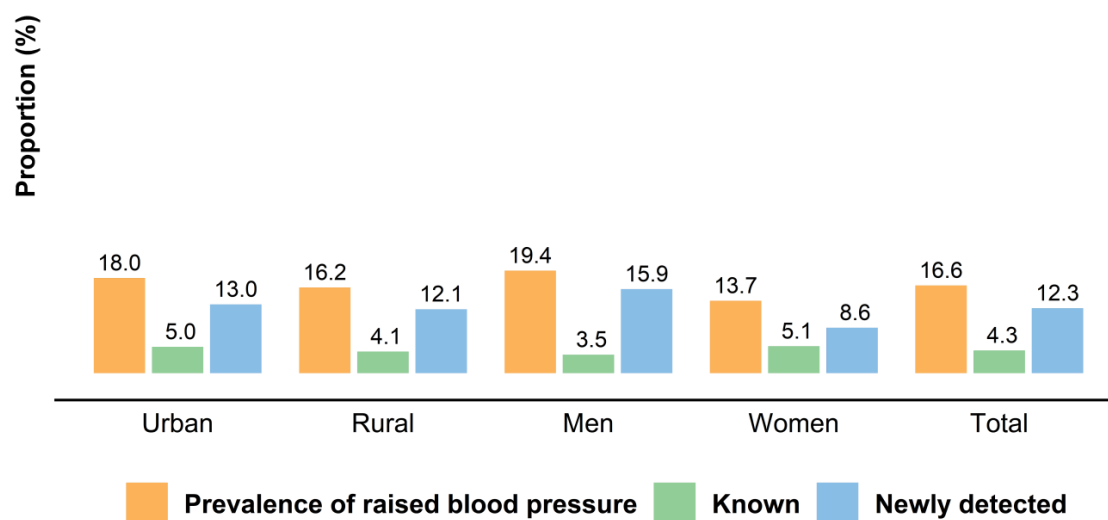
The mean age at first sexual intercourse was 21.1 years, which was slightly lower among women (20.3 years) than men (22.4 years)

3.6.7.5 - High risk behaviour and Sexually Transmitted Infection (STI) among adults by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Ever had STI	0.0	0.0	0.0	0.0	0.0
Type of symptoms					
Urethral /vaginal discharge	0.0	0.0	0.0	0.0	0.0
Blisters or ulcers (sores) on the mouth, lips, genitals, anus, or surrounding area	0.0	0.0	0.0	0.0	0.0
Burning or pain during urination	0.0	0.0	0.0	0.0	0.0
Warts or bumps on the genitals, anus, or surrounding areas	0.0	0.0	0.0	0.0	0.0
Small, dimpled bumps or lesions on the skin	0.0	0.0	0.0	0.0	0.0

3.7 7 Blood Pressure Measurement

3.7.1 - Raised Blood Pressure *by place of residence and gender (Percentage)



*Raised Blood Pressure – Systolic BP \geq 140 and/or diastolic blood Pressure \geq 90

3.7.2- Blood Pressure categories among those measured by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Normal	16.2	26.0	12.2	35.3	23.8
Pre - Hypertension	66.7	59.0	69.0	52.4	60.7
Hypertension – Stage 1	13.5	12.1	15.4	9.5	12.4
Hypertension – Stage 2	3.6	2.9	3.4	2.8	3.1

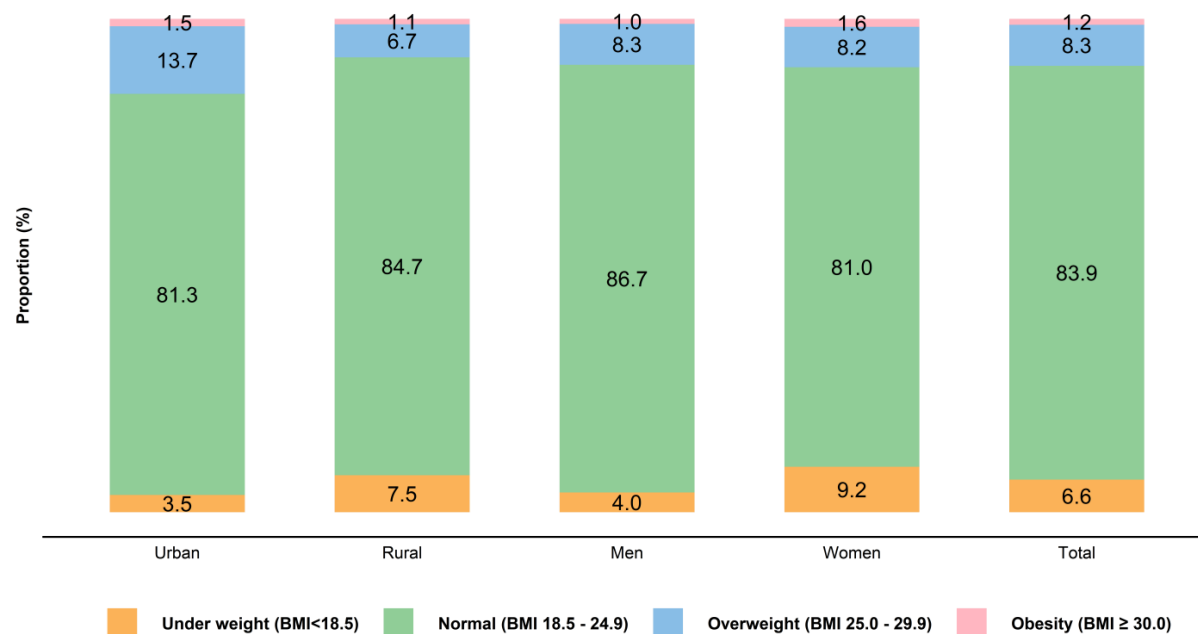
** Normal-(SBP <120,DBP<80); Pre – hypertension (SBP:120-139,DBP: 80-89);

Hypertension Stage 1(SBP:140 -159, DBP:90-99); Hypertension Stage 2(SBP≥160; DBP≥100) among measured.

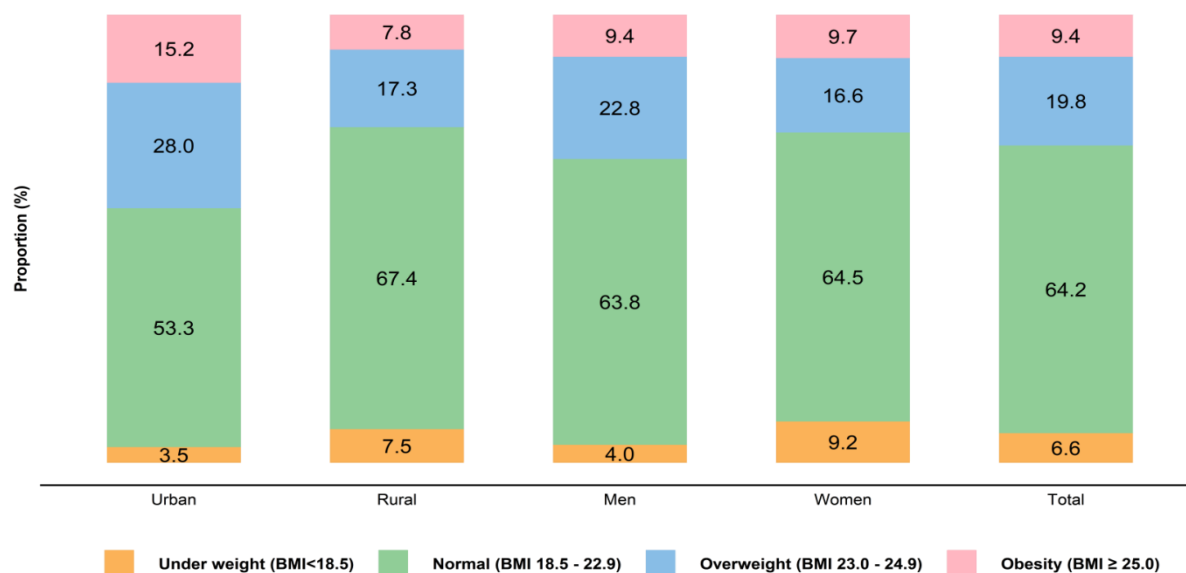
3.8 Physical Measurement

3.8.1-BMI categories based on WHO and Asian cut off by place of residence and gender (Percentage)

3.8.1 (a)- BMI categories (WHO cut off) by area of residence and gender (Percentage)



3.8.1 (b)- BMI categories (Asian cut off) by area of residence and gender (Percentage)



3.8.2- Prevalence of Overweight (including obesity) and Obesity by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Overweight (BMI ≥25.0 kg/m ²)	15.2	7.8	9.4	9.7	9.4
Obese (BMI ≥30.0 kg/m ²)	1.5	1.1	1.0	1.6	1.2

3.8.3-Central Obesity* by age categories, place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
18- 44 Years	20.2	20.9	5.4	36.6	20.8
45 – 69 Years	29.1	21.8	8.7	39.3	23.4
70 years and above	18.9	12.5	2.9	23.7	13.7
18+ years	22.1	20.9	6.1	36.7	21.1

*Awaistcircumferenceof≥90cm in males and ≥80cmin females(as per South Asia Pacific Guidelines)

3.8.4- Received Advice to maintain healthy body weight by doctor or health worker in the last one year by age category, place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
18- 44 Years	9.0	14.0	11.9	13.8	12.9
45 – 69 Years	11.2	15.2	13.3	15.5	14.4
70 years and above	30.6	10.2	17.9	10.6	14.0
18+ years	10.1	14.2	12.4	14.0	13.2

39 Blood Glucose Measurement

3.9.1- Raised fasting blood glucose levels (mg/dl) by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Prevalence of raised blood glucose	2.5	1.5	1.3	2.2	1.7
Known	2.5	1.2	1.3	1.7	1.4
Newly detected	0.0	0.3	0.0	0.5	0.3

*Raised fasting blood glucose - ≥ 126 mg/dl including those on medication for diabetes

3.9.2-Fasting blood glucose levels (mg/dl) among those measured by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
<100 mg/dl	95.8	95.0	95.1	95.3	95.2
100 – 109 mg/dl	2.2	2.5	2.7	2.1	2.4
110 – 125 mg/dl	1.3	2.0	2.0	1.8	1.9
≥ 126 mg/dl	0.7	0.5	0.2	0.8	0.5

3.10 Clustering of risk factors

3.10.1 Clustering of at least ≥ 3 risk factors* among adults by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
18- 44 Years	14.6	11.4	19.2	5.2	12.1
45 – 69 Years	33.8	26.2	34.9	20.4	27.8
70 years and above	34.7	52.6	54.1	45.2	49.3
18+ years	19.4	16.2	23.9	10.0	17.0

*Clustering of risk factors – Presence of ≥ 3 risk factors like daily tobacco use, inadequate fruits and/or vegetable consumption, insufficient physical activity, overweight (≥ 25.0 Kg/m²), raised blood pressure and raised fasting blood glucose including those on medication.

3.11 Health Seeking Behaviour and Management Indicators

3.11.1 Blood Pressure

3.11.1.1 - Measurement of blood pressure by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Never measured in life	25.4	30.3	40.9	17.6	29.2
Measured ever in life	74.6	69.7	59.1	82.4	70.8
Within past 1 year	43.4	42.2	29.4	55.6	42.5
> 1 year	31.2	27.4	29.7	26.8	28.3

3.11.1.2 - Awareness, advice on treatment, adherence to treatment and control of blood pressure among those with raised blood pressure by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Received advice for treatment	76.1	73.8	78.1	71.9	74.4
On treatment*	37.9	22.7	34.5	21.4	26.7
Adherence to treatment**	20.8	15.7	22.7	13.3	17.1
Blood pressure under control ***	17.8	24.8	19.8	25.1	22.9

* Taken medication for at least one day in the last two weeks

** Among those on treatment, consistently took treatment as prescribed over the last two weeks

*** Among those who known to have raised blood pressure

3.11.1.3 - Source of measurement and current treatment for raised blood pressure by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Source of measurement of blood pressure*					
Government screening camp/Health facility	38.3	83.6	66.4	76.6	73.1
Private/NGO screening camp/Health facility	61.7	16.4	33.6	23.4	26.9
Current source of consultation for raised blood pressure					
Allopathic doctor from Public sector	9.9	49.7	40.1	38.6	39.3
Allopathic doctor from Private/ NGO health facility	43.6	14.5	23.9	20.9	22.1

* Among those who got it measured in the last 1 year

3.11.1.4 - Received advice to check blood pressure by doctor/health worker in the last one year by age category, place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
18- 44 Years	49.8	62.1	46.8	71.5	59.2
45 – 69 Years	65.5	62.9	55.8	71.7	63.5
70 years and above	83.5	73.3	74.0	76.2	75.2
18+ years	54.1	62.7	49.7	71.7	60.7

3.11.2 Raised Blood Glucose

3.11.2.1 - Measurement of blood glucose by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Never measured in life	49.4	61.4	66.1	51.3	58.7
Measured ever in life	50.6	38.6	33.9	48.7	41.3
Measured in the past					
Within 1year	26.5	20.9	14.1	30.3	22.2
> 1 year	24.1	17.7	19.8	18.4	19.1

3.11.2.2 - Awareness, advice and on treatment, adherence to treatment and control of blood glucose among those with raised blood glucose by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Received advice for treatment	100.0	70.9	85.3	79.6	82.1
On treatment*	53.8	37.8	46.5	42.0	44.0
Adherence to treatment**	28.2	28.4	25.0	31.0	28.3
Blood glucose under control ***	66.4	73.9	83.2	61.4	71.0

* Taken medication for at least one day in the last two weeks

**Among those on treatment, consistently took treatment over the last two weeks

***Among those who are already aware that they have raised blood glucose, (Fasting Blood Glucose level ≤ 126 mg/dl)

3.11.2.3 - Source of measurement and current consultation for raised blood glucose by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Source of measurement of blood glucose*					
Government screening camp/Health facility	28.5	84.2	58.3	74.1	69.1
Private/NGO screening camp/Health facility	71.5	15.8	41.7	25.9	30.9
Current consultation for raised blood glucose					
Allopathic doctor from Public sector	13.0	33.0	21.1	28.5	25.3
Allopathic doctor from Private/ NGO health facility	52.4	24.7	27.9	41.3	35.4

**Among those who got it measured in the last 1 year*

3.11.2.4 - Advised to check blood glucose by doctor/health worker in the last one year by age category, place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
18- 44 Years	41.2	37.4	29.5	47.0	38.3
45 – 69 Years	55.3	38.1	37.3	46.8	41.9
70 years and above	76.1	55.8	48.9	68.4	59.5
18+ years	45.2	38.2	31.9	47.7	39.8

3.12 Cancer Screening

3.12.1 - Level of awareness and source of information about cancer screening by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Awareness levels by age groups					
18- 29 Years	18.1	20.9	17.1	23.7	20.3
30 – 49 Years	14.4	16.2	14.9	16.6	15.7
50- 69 Years	16.7	10.9	5.3	19.5	12.1
70 years and above	24.1	7.4	6.9	13.4	10.4
18+ years	16.0	16.5	13.8	19.0	16.4
Source of information*					
TV/Newspaper/social media	63.0	49.0	56.1	49.2	52.1
Friends/family	62.1	60.9	54.8	65.7	61.1
Health worker	45.4	59.5	52.9	58.9	56.4
Health awareness camps	6.4	14.3	7.9	15.9	12.6

**Among those who are aware of cancer screening.*

3.12.2 - Adults who had ever undergone oral/breast/cervical cancer screening by place of residence (Percentage)

	Urban	Rural	Total
Cervical cancer	0.2	0.0	0.1
Breast cancer*	1.2	0.7	0.8
Oral cancer	0.1	0.5	0.4

*Among women more than 30 years of age

3.12.3 - Methods of breast cancer screening by place of residence (Percentage)

Screening for breast cancer	Urban	Rural	Total
Forms of screening*			
Only clinical breast examination by doctor / health care professional	100.0	0.0	31.8
Only Ultrasound of breast or mammogram	67.8	0.0	21.6
Performed breast self-examination	69.4	0.0	22.1

*Among those who reported to have undergone breast cancer screening ever in life.

3.12.4 - Methods of Cervical cancer screening by place of residence (Percentage)

	Urban	Rural	Total
VIA	0.0	0.0	0.0
PAP	0.0	0.0	0.0
HPV-DNA	0.0	0.0	0.0
Others	0.0	0.0	0.0

*Among those who reported to have undergone cervical cancer screening ever in life.

3.12.5 - Received advice to screen for cancer by doctor/health worker in the last one year by place of residence and gender (Percentage)

	Urban	Rural	Men	Women	Total
Oral Cancer	0.8	0.5	0.6	0.6	0.6
Breast Cancer*	3.3	1.5	0.0	1.9	1.9
Cervical Cancer*	1.1	0.0	0.0	0.3	0.3

*Among women respondents

C. Health Facility Assessment

3.13 Public Primary Health Care Centres*

3.13.1 - Infrastructure and type of available services

	Urban (n=6)	Rural (n =23)	Total(N=29)
Types of services			
Outpatient services	6 (100.0)	23 (100.0)	29 (100.0)
In patient services	0 (0.0)	20 (87.0)	20 (69.0)
Emergency services	1 (16.7)	22 (95.7)	23 (79.3)
Availability of functional telephone facility	2 (33.3)	3 (13)	5 (17.2)
Availability of ambulance facility¹	0 (0.0)	18 (78.3)	18 (62.1)
Electricity and functional electricity back up	0 (0.0)	18 (78.3)	18 (62.1)

* First point of contact with a qualified doctor in the public sector, providing preventive, promotive and curative health care.

¹Includes ambulance owned by health center, centralised ambulance services, outsourced and hired as and when required

3.13.2 - Availability of cancer related services

	Urban(n=6)	Rural (n=23)	Total(N=29)
Written standard treatment guidelines under NPCDCS availability	4 (66.7)	11 (47.8)	15 (51.7)
Cancer screening availability			
Oral Cancer	3 (50)	7 (30.4)	10 (34.5)
Cervical Cancer	2 (33.3)	3 (13.0)	5 (17.2)
Breast Cancer	4 (66.7)	6 (26.1)	10 (34.5)
All three cancers	1 (16.7)	3 (13.0)	4 (13.8)
Method of screening cancer			
Organized Screening*	3 (50.0)	4 (17.4)	7 (24.1)
Opportunistic screening**	0 (0.0)	3 (13.0)	3 (10.3)
Place of referral of patients found positive after screening			
CHC	0 (0.0)	0 (0.0)	0 (0.0)
DH	2 (33.3)	4 (17.4)	6 (20.7)
Tertiary Care Hospital	2 (33.3)	3 (13.0)	5 (17.2)
Private Health facility	0 (0.0)	0 (0.0)	0 (0.0)
Availability of Physiotherapy facility	0 (0.0)	0 (0.0)	0 (0.0)

* Systematic screening of all persons in a defined target group

**A person's participation results from a referral made by a healthcare provider or based on their own choice.

3.13.3 - Counselling facilities for risk behaviour

	Urban (n=6)		Rural (n =23)		Total(N=29)	
	In house	In Vicinity	In house	In Vicinity	In house	In Vicinity
Availability of Counselling facilities for risk behaviour through counsellor or specialised personnel*						
Tobacco cessation	1 (16.7)	1 (16.7)	8 (34.8)	5 (21.7)	9 (31.0)	6 (20.7)
Dietary Modification	1 (16.7)	1 (16.7)	8 (34.8)	5 (21.7)	9 (31.0)	6 (20.7)
Physical Activity	1 (16.7)	1 (16.7)	5 (21.7)	5 (21.7)	6 (20.7)	6 (20.7)
Alcohol Cessation	1 (16.7)	1 (16.7)	8 (34.8)	6 (26.1)	9 (31.0)	7 (24.1)

*Available in-house and in vicinity(within 5 km)

3.13.4 - Availability of Information, Education and Communication (IEC) material on cancer

	Urban (n=6)		Rural (n =23)		Total(n =29)	
	In house	In Vicinity	In house	In Vicinity	In house	In Vicinity
IEC materials related to Cancer displayed/available in the patient waiting room/outpatient department						
Posters	6 (100.0)		16 (69.6)		22 (75.9)	
Videos	1 (16.7)		1 (4.3)		2 (6.9)	
Pamphlets	1 (16.7)		3 (13.0)		4 (13.8)	
Booklets	1 (16.7)		1 (4.3)		2 (6.9)	

3.13.5 Availability of Human Resources

3.13.5 Availability of Human Resources						
Staff	Urban (n=6)		Rural (n =23)		Total(N=29)	
	Proportion of facilities reporting the availability of Human Resources	Proportion trained for NPCDCS/NHM(NCD related)/State program	Proportion of facilities reporting the availability of Human Resources	Proportion trained for NPCDCS/NHM(NCD related)/State program	Proportion of facilities reporting the availability of Human Resources	Proportion trained for NPCDCS/NHM(NCD related)/State program
Medical Officer (MBBS)	5 (83.3)	2 (33.3)	21 (91.3)	12 (52.2)	26 (89.7)	14 (48.3)
AYUSH Medical Officer	0 (0.0)	0 (0.0)	17 (73.9)	5 (21.7)	17 (58.6)	5 (17.2)
Staff Nurse	6 (100.0)	2 (33.3)	22 (95.7)	9 (39.1)	28 (96.6)	11 (37.9)
Auxiliary Nurse Midwife (ANM)	6 (100.0)	1 (16.7)	22 (95.7)	6 (26.1)	28 (96.6)	7 (24.1)
Lady Health Visitor/ Female Health Assistant/PHN	0 (0.0)	0 (0.0)	14 (60.9)	3 (13.0)	14 (48.3)	3 (10.3)
Male Health Assistant	0 (0.0)	0 (0.0)	10 (43.5)	1 (4.3)	10 (34.5)	1 (3.4)
Accountant cum data entry operator	4 (66.7)	1 (16.7)	17 (73.9)	1 (4.3)	21 (72.4)	2 (6.9)
Pharmacist	6 (100.0)	1 (16.7)	22 (95.7)	1 (4.3)	28 (96.6)	2 (6.9)
Lab Technician	5 (83.3)	0 (0.0)	22 (95.7)	0 (0.0)	27 (93.1)	0 (0.0)
Health educator	0 (0.0)	0 (0.0)	21 (91.3)	1 (4.3)	21 (72.4)	1 (3.4)
Cold Chain & Vaccine Logistic Assistant	6 (100.0)	0 (0.0)	17 (73.9)	1 (4.3)	23 (79.3)	1 (3.4)

3.13.6 Availability of Laboratory procedures and equipment supplies

	Urban (n=6)	Rural (n =23)	Total(N=29)
Availability of Laboratory ¹			
Routine investigations ²	6 (100.0)	22 (95.7)	28 (96.6)
Cancer screening ³	3 (50.0)	1 (4.3)	4 (13.8)
Equipment & supplies available in stock			
General ⁴	6 (100.0)	23 (100.0)	29 (100.0)
Cancer screening ⁵	6 (100.0)	18 (78.3)	24 (82.8)

1. Includes generally available in house, free of cost; generally available in house, on payment; and outsourced, but paid for by the program
2. Includes blood glucose, urine routine, haemoglobin and total leucocyte count
3. For cervical cancer screening: Visual Inspection with Acetic Acid (VIA)
4. Includes availability of at least one of each adult weighing scale, Stadiometer/Wall markings for height, Measuring tape, Stethoscope, B.P Apparatus and Glucometer
5. Includes availability of both Vaginal Speculum (Cusco's and Sims) and Torch / Examination light

3.14 Public Secondary Health Care Facilities

3.14.1 - Infrastructure and available services

	CHC(n=4)	DH(n=1)
Location		
Rural	3 (75.0)	0 (0.0)
Urban	1 (25.0)	1 (100.0)
Types of services		
Outpatient services	4 (100.0)	1 (100.0)
In patient services	4 (100.0)	1 (100.0)
Emergency services	4 (100.0)	1 (100.0)
Intensive Care Unit(ICU) or Cardiac Care Unit	1 (25.0)	0 (0.0)
Availability of functional Telephone facility	0 (0.0)	0 (0.0)
Availability of ambulance facility¹	4 (100.0)	1 (100.0)
Electricity and Functional electricity back up	4 (100.0)	1 (100.0)

¹Includes ambulance owned by health center, centralised ambulance services, outsourced and hired as and when required

3.14.2 -Availability of Cancer related services

	CHC(n=4)	DH(n=1)
Written standard treatment guidelines under NPCDCS availability	1 (25.0)	1 (100.0)
Cancer screening availability		
Oral Cancer	4 (100)	1 (100.0)
Cervical Cancer	3 (75)	1 (100.0)
Breast Cancer	3 (75)	1 (100.0)
All three cancers	3 (75)	1 (100.0)
Method of detecting cancer		
Organised Screening	2 (50)	1 (100.0)
Opportunistic screening	4 (100)	1 (100.0)
Management of patients with Cancer		
Fixed days/day in a week	3 (75)	0 (0.0)
Seen daily, no dedicated day	0 (0.0)	1 (100.0)
All are referred/Not managed	0 (0.0)	0 (0.0)
Availability of Day care facility for management of cancer patients (for Chemotherapy)	0 (0.0)	1 (100.0)

3.14.3 -Availability of counselling facilities for risk behaviour and Cancer related IEC materials

	CHC (n=4)	DH(n=1)
Availability of Counselling facilities for risk behaviour through counsellor or specialised personnel*		
Tobacco cessation	1 (25.0)	1 (100.0)
Dietary Modification	0 (0.0)	1 (100.0)
Physical Activity	0 (0.0)	1 (100.0)
Alcohol Cessation	1 (25.0)	1 (100.0)
IEC materials related to Cancer displayed/available in the patient waiting room/outpatient department		
Posters	4 (100)	1 (100.0)
Videos	0 (0.0)	0 (0.0)
Pamphlets	1 (25.0)	1 (100.0)
Booklets	0 (0.0)	0 (0.0)
Others	0 (0.0)	0 (0.0)

*Available in-house and in vicinity(within 5 km)

3.14.4 - Availability of Human Resources (Medical Staff)

	CHC (n=4)		DH(n=1)	
	Proportion of facilities reporting the availability of Human Resources	Proportion trained for NPCDCS/NHM(NCD related)/State program	Proportion of facilities reporting the availability of Human Resources	Proportion trained for NPCDCS/NHM(NCD related)/State program
Medicine	1 (25.0)	0 (0.0)	1 (100.0)	1 (100.0)
Surgery	1 (25.0)	0 (0.0)	1 (100.0)	0 (0.0)
Gynaecology	1 (25.0)	0 (0.0)	1 (100.0)	0 (0.0)
Radiology	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)
Pathology	1 (25.0)	0 (0.0)	0 (0.0)	0 (0.0)
General duty Medical Officer	4 (100.0)	2 (50.0)	0 (0.0)	0 (0.0)
AYUSH	4 (100.0)	1 (25.0)	0 (0.0)	0 (0.0)
Paediatrics	1 (25.0)	0 (0.0)	1 (100.0)	0 (0.0)

3.14.5 - Availability of Human Resources (paramedical / other Staff)

	CHC(n=4)		DH(n=1)	
	Proportion of facilities reporting the availability of Human Resources	Proportion trained for NPCDCS/NHM(NCD related)/State program	Proportion of facilities reporting the availability of Human Resources	Proportion trained for NPCDCS/NHM(NCD related)/State program
Staff Nurse	4 (100.0)	2 (50.0)	1 (100.0)	0 (0.0)
Pharmacist	4 (100.0)	1 (25.0)	1 (100.0)	0 (0.0)
Lab Technician	4 (100.0)	2 (50)	1 (100.0)	0 (0.0)
Physiotherapist	1 (25)	1 (25)	1 (100.0)	0 (0.0)
Radiographer	2 (50.0)	0 (0.0)	1 (100.0)	0 (0.0)
O.T technician	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)
Social worker	1 (25.0)	0 (0.0)	1 (100.0)	0 (0.0)
Data Entry Operator	2 (50.0)	0 (0.0)	1 (100.0)	0 (0.0)

Rehabilitation therapist	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Counsellor	3 (75.0)	0 (0.0)	1 (100.0)	0 (0.0)
Others	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

3.14.6 - Availability of prevention/treatment procedures

	CHC(n=4)	DH(n=1)
General surgical procedures	1 (25.0)	0 (0.0)
Laparoscopic procedures	0 (0.0)	0 (0.0)
Radiotherapy	0 (0.0)	0 (0.0)
Palliative care	0 (0.0)	0 (0.0)

3.14.7- Availability of prevention/treatment procedures, laboratory and Equipment & supplies in Public Secondary Health Care facilities (Percentage)

	CHC(n=4)	DH(n=1)
Laboratory and other investigations¹		
Routine blood investigations ²	4 (100.0)	1 (100.0)
Biochemistry ³	4 (100.0)	1 (100.0)
Cardiac investigations ⁴	1 (25.0)	1 (100.0)
Radiology ⁵	1 (25.0)	1 (100.0)
Endoscopy ⁶	0 (0.0)	0 (0.0)
Histopathology	0 (0.0)	0 (0.0)
Cervical cancer screening ⁷	0 (0.0)	0 (0.0)
Available equipment in stock		
Essential ⁸	3 (75.0)	1 (100.0)
Imaging ⁹	0 (0.0)	0 (0.0)
Cardiopulmonary ¹⁰	0 (0.0)	0 (0.0)
Dental ¹¹	4 (100.0)	1 (100.0)
Laboratory ¹²	1 (25.0)	0 (0.0)
Cancer screening ¹³	0 (0.0)	0 (0.0)

1. *Includes Generally available in house, free of cost; Generally available in house, on payment; and Outsourced, but paid for by the program*
2. *Includes Haemoglobin, Total Leucocyte count*
3. *Includes blood glucose, Kidney function test and Liver function test*
4. *Includes ECG*
5. *Includes X ray, Low frequency USG, High frequency USG, Mammography and CT Scan/MRI*
6. *Includes Endoscopy and Colposcopy*
7. *Includes Visual Inspection with Acetic acid (VIA)*
8. *Includes atleast one of each adult weighing scale, Stadiometer/Wall markings for height, Measuring tape, Stethoscope and B.P Apparatus*
9. *Includes X ray Machine, Ultrasound machine and C.T scan Machine*
10. *Includes Nebulizer, infusion set, Oxygen mask, Oxygen cylinder, Pulse Oximeter, Laryngoscope, Adult ambu bag, Cardiac monitor, Defibrillator, ECG Machine, ECG roll, 12 Channel stress ECG Tread Mill.*
11. *Includes Dental mirror and Dental chair.*
12. *Includes at least one of each Centrifuge, Glucometer, Haemoglobin meter, Biochemical analyser, Lancets, Glucostrips, Urine strips, Microscope and Reagents/ kits for Glucose test*
13. *Includes Vaginal speculum (Cusco's and sims), Cotton tipped swabs, Punch biopsy forceps, Colposcope, Laryngoscope and Torch / Examination light.*

D. Profile of adults with cancer

3.15.1 - Number of cancer patients by place of residence and gender

	Urban	Rural	Male	Female	Combined
Number of cancer patients	4	5	3	6	9

3.15.2 - Age at diagnosis and duration of cancer among cancer patients by place of residence and gender (Mean)

	Urban (4)	Rural (5)	Male (3)	Female(6)	Combined(9)
Age at diagnosis	54.5	45.0	42.8	52.4	49.2
Duration of cancer *	45.3	81.8	58.3	69.2	65.6

*months

3.15.3 - Site of cancer and other chronic illness among cancer patients by place of residence and gender (Percentage)

	Urban (4)	Rural (5)	Male (3)	Female(6)	Combined(9)
Site of Cancer					
Oesophagus	1 (25.0)	0 (0.0)	0 (0.0)	1 (16.7)	1 (11.1)
Lung	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Stomach	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Throat	0 (0.0)	4 (80)	3 (100.0)	1 (16.7)	4 (44.4)
Mouth	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Cervix	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Gall bladder	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Breast	3 (75)	0 (0.0)	0 (0.0)	3 (50.0)	3 (33.3)
Diagnosed with co-morbidity					
Type of comorbidity					
Tuberculosis	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Kidney failure	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Diabetes Mellitus	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Heart Failure	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Stroke	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Others	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

3.15.4- Type of health facility or health care provider from where cancer care was taken among those who sought treatment by place of residence and gender (Percentage)

	Urban (4)	Rural (5)	Male (3)	Female(6)	Combined(9)
Type of health facility / health care provider					
Within the state	4 (100.0)	4 (80.0)	2 (66.7)	6 (100.0)	8 (88.9)
Outside the state*	0 (0.0)	1 (20.0)	1 (33.3)	0 (0.0)	1 (11.1)
Govt facility	4 (100.0)	3 (60.0)	2 (66.7)	5 (83.3)	7 (77.8)
Private facility**	0 (0.0)	2 (40.0)	1 (33.3)	1 (16.7)	2 (22.2)
Self-healers	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Alternative form of medicine (AYUSH)	0 (0.0)	1 (20.0)	0 (0.0)	1 (16.7)	1 (11.1)
Others	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

*Outside the state includes Other states within NER and Outside NER

**Private facility includes within the state, Other states within NER and Outside NER

3.15.5- Source of finances for cancer treatment among cancer patients by place of residence and gender (Percentage)

	Urban (4)	Rural (5)	Male (3)	Female(6)	Combined(9)
Self-Financing/Taking loan/Sale of assets	1 (25.0)	1 (20.0)	1 (33.3)	1 (16.7)	2 (22.2)
Family support	3 (75.0)	0 (0.0)	0 (0.0)	3 (50.0)	3 (33.3)
Health Insurance Schemes/Hospital Incentives	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Key Findings

I. Behavioural risk factors

Tobacco use

- The prevalence of current tobacco use (smoked or smokeless) was as high as 52.5%. The prevalence of smoked tobacco use (33.6%) was higher than smokeless tobacco use (22.0%).
- Nearly half (48.1%) of current tobacco users (smoked or smokeless) were daily users.
- The mean age at initiation of use was 19.2 years.
- The average duration of tobacco use among past smokers was 12.8 years.
- Only 18.8% of the smoked tobacco users had made self-attempts to quit smoking, while only 11% had been advised to quit tobacco use by doctor/health worker.

Exposure to second hand smoke

- As high as 80.8% respondents reported exposure to second hand tobacco smoke in the past 30 days, either at home, during travel or at the work place.

Non tobacco betel products

- Close to three fourth (72.7%) of the respondents were current users of non-tobacco betel products in the form of pan masala, betel quid or areca nut. The use of areca nut (72.3%) was highest among current users.

Alcohol use

- About 17% had consumed alcohol over the past 12 months, while 14.9% had consumed alcohol over the past 30 days.
- The mean age of initiation of alcohol use was 20.7 years.
- Among those who consumed alcohol in the past 12 months, 4.1% were daily users and 1.6% felt the need for a drink first thing in the morning every day.
- 9.7% of the respondents engaged in heavy episodic drinking
- Only 4% of the respondents had been advised to quit alcohol use by doctor/health worker

Diet

- The average number of days of fruit intake was 2.2 per week
- The average number of servings of fruits and vegetables was 1.9 per day.
- Over 60% of the respondents consumed preserved/salt curated and fermented products.
- Over 90% of surveyed adults reported to be having sufficient level of physical activity.

II Raised blood pressure

- Prevalence of raised blood pressure was reported to be 19.4% in males and 13.7% in females. It was found to be slightly higher in adults from urban than in rural region
- Over half of the respondents (60.7%) were pre-hypertensive.

III Overweight/Obesity

- According to WHO cut off values, 8.3% of the respondents were overweight, while 1.2% were obese.
- The prevalence of obesity was higher in females (1.6%) than males (1.0%).
- Nearly 21% of the respondents had central obesity.

IV Raised blood glucose

- The prevalence of raised fasting blood glucose was 1.7%.

V Clustering of risk factors

- About 17.0% of respondents had a clustering of ≥ 3 risk factors.

VI Health seeking behaviour

- Around 29.2% of respondents had never had their blood pressure ever measured in life.
- Among those with raised blood pressure, around 22.9% of the respondents had their blood pressure under control.

VII Cancer screening

- Around 16.4% of the respondents were aware of cancer screening for the three common cancers: Oral, breast and cervical cancer. Less than 1% had ever undergone screening for oral, cervical, and breast cancer.

VIII: Health system response:

- Less than 15% of the surveyed PHCs' provided cancer screening services.
- Less than 25% of the PHCs' had availability of counselling facilities for risk behaviour through counsellor or specialized personnel.
- Nearly half (48.3%) of the Medical Officers positioned at the PHCs' Proportion had been trained for NPCDCS/NHM (NCD related)/State program.
- Only 13.8% of the PHCs' reported to have lab facilities for cancer detection.
- 75% of the CHCs' and all of the District Hospitals provided cancer screening services.
- No Gynaecologists, physicians and surgeons are trained for NPCDCS/NHM (NCD related) were available in CHCs' and DHs.

Recommendations

This report entails not only the incidence but also the current health system scenario in the state of Meghalaya. This survey picturizes the need for the awareness of cancer and other NCDs and also strengthen the health care system for the provision of its treatment. The recommendations hence can be described under the following topics:

Strengthening of the health system:

- To expand the availability of cancer care services like day-care chemotherapy services at the District Hospitals, Community Health Centres, Primary Health Centres and health financing schemes like Megha Health Insurance Scheme (MHIS) for improved accessibility and affordability considering the remote inaccessible areas due to rough geographical terrain.
- Capacity building of health care providers through regular training, re-training and skill enhancement for cancer screening and care.
- Adopt and promote health technology for prevention and treatment such as use of digital tools for early detection and telemedicine for improved access to care and patient follow-up among healthcare system.
- Integrate cancer prevention with primary care and geriatric care by counselling for a healthy lifestyle.
- Expansion of tertiary cancer care services and facilities to improve the diagnosis, treatment, follow up and disease outcome as well as reduce the need for treatment seeking outside the State.
- Strengthening the medical certification of cause of death for availability of accurate and complete cancer mortality.
- Formulate follow up care programmes for cancer survivors to improve quality of life.

Regularizing activity of PBCR:

- Measures to ensure continuum of care.
- Periodic surveillance of behavioural and metabolic risk factors to measure the baseline prevalence and monitor change trends through regular surveys would be useful for tracking the impact of preventive measures.
- Scaling up and enhancing the availability and utilization of cancer screening and early detection services in the state.

- A prioritized cancer research agenda to address local and regional needs.

Individual Level:

- Promotion of healthy lifestyle practices: To stop all forms of tobacco consumption, alcohol intake and sedentary lifestyle. Practice adequate physical activity and intake of healthy diet.
- Scaling up the availability of Govt. or Pvt. Tobacco and Alcohol cessation centres at the PHCs' and CHCs. Other Community-based interventions which would be more culturally acceptable and cost-effective by reducing travel costs for beneficiaries may help ensure better quitting rates than facility-based interventions could also be considered. Services through the Health and Wellness Centres, Sub-Centre and private health facilities could also be strengthened.
- Awareness about the harmful and deadly effects of tobacco use, second hand smoke exposure and alcohol use needs to be introduced at a more rapid pace primarily through school or college based intervention strategies as most habits related to tobacco use, alcohol consumption, betel products, unhealthy diet and high-risk behaviour, start early in life, usually during adolescence or youth.
- COTPA Act and other Policies prohibiting selling of tobacco and alcohol products below a certain age and smoking at public places needs to be strictly enforced.
- Screening of risk factors: active and passive screening of Cancer risk factors, checking for raised Blood glucose/ Raised blood pressure/ other cardiac conditions for early detection, early intervention and better treatment outcome. Community-based awareness and screening programmes to raise the awareness level on the early warning signs and symptoms of cancers within the community is critical for early detection.
- Introduction of human papillomavirus (HPV) vaccine for prevention of cervical cancer among females primarily through school-based or community-based vaccination campaign.
- Emphasize on importance of regular health check-up for early detection of warning signs and treatment of premalignant conditions before cancer develops.

Dissemination of Information:

Dissemination of the information from the study will help in strengthening the public health policy for prevention of cancer, its screening and treatment. This will facilitate a data-driven advocacy to reduce the incidence of Cancer in this section of the population. Making cancer a notifiable disease will further help us understand the actual burden of the disease.

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Photographs of the Survey

