

Addressing the Social Determinant of Health for Early Cancer Detection Among Underserved Groups through Community Extension Camps

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfilment of the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

Dr. Gurmilan kour

Under the Supervision and Guidance of

Dr. Neetu Purohit

DECLARATION BY STUDENT

I hereby certify that the dissertation I have written, Addressing the Social Determinants of Health for Early Cancer Detection among Underserved Groups through Community Extension Camps, is a true and accurate account of the original research I conducted. I certify that it has not been submitted to another university or organization for the award of a degree or diploma. Information that was taken from other people's published or unpublished work has been properly acknowledged in the text.

Name of Student: Gurmilan kour

Date:

Completion Certificate



Date: 31st May 2023

Internship Completion Certificate

To Whom It May Concern

This is to certify that **Dr. Gurmilan Kour**, (KHPL-I-0172) has worked as "Intern" with Karkinos Healthcare Private Limited and has successfully completed the internship under the guidance of **Bharat Kumar Sarvepalli**.

Internship Duration: 15th March 2023 to 31st May 2023.

We wish all the best

For Karkinos Healthcare Pvt Ltd

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CERTIFICATE

This is to certify that the dissertation, Addressing the Social Determinant of Health for Early Cancer Detection among Underserved Groups through Community Extension Camps, is a record of the research work completed by Gurmilan kour in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management)/MBA (Pharmaceutical Management)/MBA (Rural Management) from the IIHMR University, Jaipur under my supervision.

Guide- Dr.Neetu Purohit IIHMR University, Jaipur	School Dean- Dr (Col) Mahender Kumar IIHMR University, Jaipur
Date-	Date-

Abstract

Background

Cancer poses a significant burden in India, with a high number of cases and projected increase. Late detection and limited healthcare access contribute to high mortality rates and financial strain. Early detection camps are crucial in addressing these challenges by detecting cancer at a treatable stage. However, participation and cost barriers persist. Outreach programs raise awareness and ease screening fears, while camps provide affordable or free screenings. Early detection improves treatment outcomes and empowers individuals. Enhancing participation and access to these services is vital for reducing cancer's impact in underserved communities.

Materials and methods:

Research subjects were retrieved from the individuals who attended the Karkinos healthcare camps in different locations between 15th March to 15th May 2023, Using the a structured

Results: A total of 615 individuals attended the early-detection cancer camps, Among them,

Out of 587 individuals, 572 people (approximately 97.44%) underwent the screening procedure to assess their probable susceptibility to various cancer kinds. Among those who underwent the screening, 330 were males (approximately 57.69% of the total individuals) and 257 were women (approximately 44.02% of the total individuals). The risk assessments performed on these individuals were specific to their gender.

During the camps, 572 individuals received oral visual examinations. Among them, 104 individuals (approximately 18.18%) were identified as having a heightened risk of developing oral cancer, and 23 individuals (approximately 4.03%) were found to already have the disease.

In addition to the oral visual examinations, 230 individuals received HPV screening. Out of the screened population, 47 women (approximately 20.43%) were found to have a higher risk of cervical cancer, and 17 women (approximately 7.39%) were already diagnosed with the disease.

A total of 257 women had their breasts examined, and 119 were found to be at increased risk for breast cancer and 10 were found to have the disease.

A total of 587 individuals had their risk for acquiring different types of cancer analysed. This group included 119 women(approximately 20.27%of the total)with a high risk of breast cancer, 114 (approximately 19.4%of the total)people with a high risk of lung cancer, 47 women(approximately 8.1%of the total) with a high risk of cervical cancer, 104 people(approximately 17.71% of the total) with a high risk of oral cancer, 56 people(approximately 9.5%of the total) with a high risk of colon cancer, and 5 men (approximately 0.85% of the total))with a high risk of prostate cancer.

This highlight the value and Effectiveness of early-detection cancer screening programmes in identifying people who are at high risk and finding cancer at an early stage. The camps have played a significant role in improving the participants' health outcomes and increasing their knowledge of early cancer diagnosis. Through the comprehensive risk assessments and screenings conducted during the camps, individuals have been able to identify their susceptibility to various types of cancer.

Conclusion:

The findings from the Karakinos healthcare camps demonstrate the positive impact of early-detection cancer screening programs With a total of 587 individuals undergoing risk assessments and screenings, the camps have successfully identified people at high risk for various types of cancer, including breast, lung, cervical, oral, colon, and prostate cancer. These screenings have not only provided individuals with early intervention opportunities but have also empowered them with knowledge about early cancer diagnosis. The camps have significantly improved the participants' health outcomes by facilitating early detection, enabling timely medical interventions. By identifying individuals with heightened risks and those already diagnosed with cancer.

Moreover, the camps have increased awareness among participants about the importance of early cancer diagnosis. By addressing fears and providing education on regular screenings, the camps have empowered individuals to take proactive steps in managing their health and seeking timely medical attention. However, it is crucial to continue enhancing participation and access to these services, particularly in underserved communities. Efforts should focus on raising awareness, addressing cost barriers, and expanding outreach programs to reach a wider population.

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List of Abbreviation

1. SDOH - Social Determinants of Health
2. HPV - Human Papillomavirus
3. FOBT - Fecal Occult Blood Test
4. PSA - Prostate-Specific Antigen
5. CIN2 - Cervical Intraepithelial Neoplasia grade 2
6. CIN3 - Cervical Intraepithelial Neoplasia grade 3
7. AIS - Adenocarcinoma in situ
8. OVE-Oral Visual Examination
9. SPSS-Statistical package for the social sciences

Acknowledgement

On completing my dissertation, I would want to thank all of the people who have contributed in various ways to this project. First of all, I want to thank the Almighty God for keeping me well and for my parents, brother, and friends who never stop encouraging and motivating me to pursue further education. I received a fantastic opportunity for learning and career growth during my internship with Karkinos Healthcare in Delhi. I am extremely fortunate to be able to convey my sincere thanks to Sripriya Rao, the Chief Growth Officer for Women Wellness at Karkinos Healthcare in Delhi, and Mayank Chhabra, the Implementation Research Manager, for inspiring, guiding, and helping me to finish my project at their reputable company. I want to thank him right now for his efforts. As a result of their busy schedules, the department heads and personnel deserve my gratitude as well. I could not have completed my assignment without their enthusiastic participation and assistance. My deepest appreciation to my mentor Neetu Purohit for her unfailing support and encouragement during the internship.

Sincerely,
Gurmilan kour

CHAPTER1: Introduction

1.1Cancer as a Burden

Cancer, without a doubt, represents a formidable burden on individuals, families, communities, and healthcare systems worldwide. It is a complex and multifaceted disease that poses significant challenges in terms of its prevalence, impact on health and well-being, and the economic and social costs associated with its prevention, diagnosis, and treatment. Understanding and addressing the burden of cancer is crucial for improving outcomes, reducing mortality rates, and enhancing the overall quality of life for those affected by this devastating disease.

The burden of cancer manifests in various ways. Firstly, cancer is a leading cause of death globally, with millions of new cases diagnosed each year. It affects individuals of all ages, genders, and socioeconomic backgrounds, leading to physical suffering, reduced quality of life, and premature mortality. The pain, symptoms, and functional impairments associated with cancer can significantly impact a person's ability to carry out daily activities, maintain employment, and engage in social relationships.

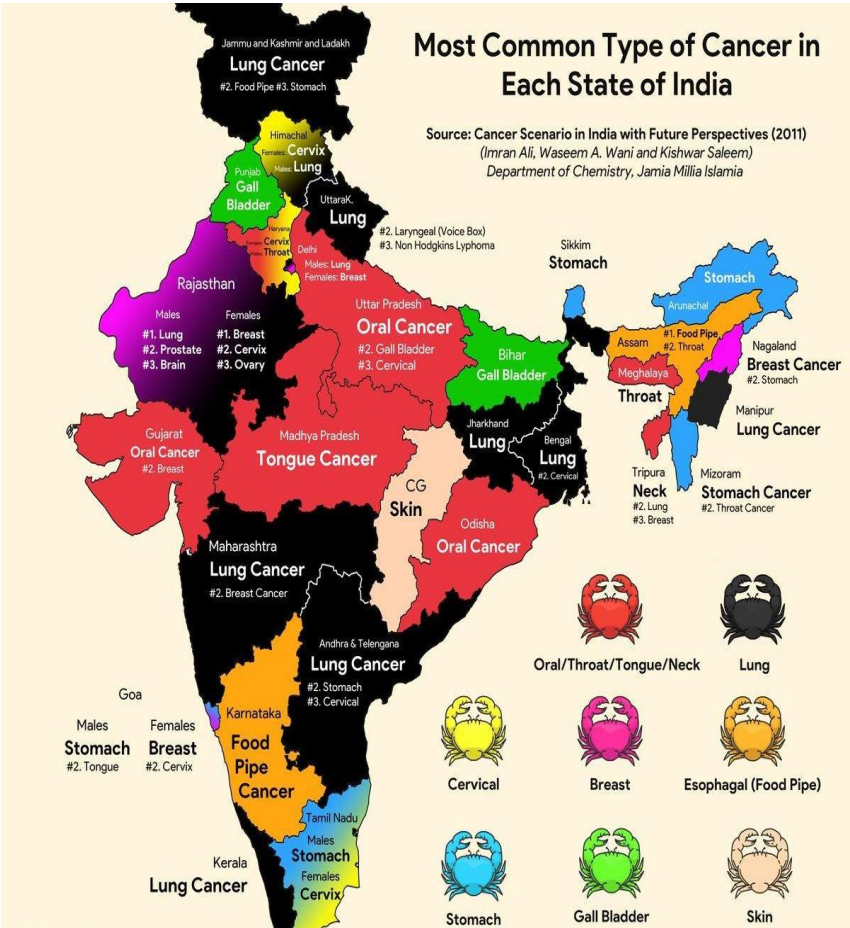
Additionally, cancer places an immense emotional and psychological burden on individuals and their families. The fear, anxiety, and uncertainty that accompany a cancer diagnosis can be overwhelming. Patients and their loved ones often experience significant distress, depression, and emotional turmoil throughout the cancer journey, including during treatment, survivorship, and end-of-life care. Coping with the psychosocial impact of cancer is an ongoing challenge that requires comprehensive support systems and resources.

Furthermore, the economic burden of cancer is substantial. The cost of cancer care, including diagnosis, treatment, supportive therapies, and follow-up care, can be exorbitant. Medical expenses, lost wages due to reduced work productivity or unemployment, and the financial strain on families can be overwhelming. The economic burden is further exacerbated by the indirect costs associated with caregiving, transportation, and accommodation during treatment, which can push individuals and families into financial hardship and perpetuate health disparities.

In addition to the individual and familial burdens, cancer poses significant challenges to healthcare systems and society as a whole. The increasing prevalence of cancer places demands on healthcare

infrastructure, requiring adequate resources, specialized facilities, skilled healthcare professionals, and advanced technologies for diagnosis, treatment, and palliative care. The allocation of resources to effectively manage and prevent cancer becomes a complex task for healthcare systems already facing competing priorities.

Addressing the burden of cancer requires a comprehensive and multi-faceted approach. This involves effective prevention strategies, early detection and screening programs, access to quality and affordable treatment options, comprehensive supportive care services, and research and innovation to advance our understanding of cancer biology and improve therapeutic interventions. Additionally, addressing social determinants of health, such as socioeconomic status, education, and access to healthcare, is crucial to reducing the burden of cancer, particularly among underserved populations.



Most Common Type Of Cancer In India

1.2 Social Determinants of Health

The situations in which people grow up, develop, live, work, and age are termed as social determinants of health (SDOH). Socioeconomic status, education, employment, social support systems, as well as physical settings, and access to healthcare services are just a few examples of the many variables that make up these determinants. SDOH have a considerable impact on a person's health condition, health practises, and access to healthcare, and they are a major contributor to health inequalities and inequities seen in many groups.

Social determinants of health have significant effects on general well-being. For instance, people with greater socioeconomic class typically have access to superior healthcare, better health outcomes, and resources for healthy practises. In contrast, those who endure socioeconomic disadvantages including poverty, a lack of education, or insecure housing frequently have greater incidence of chronic illnesses, worse health outcomes, and less access to healthcare services. The intersection of social determinants of health with other variables including race, ethnicity, and gender exacerbates existing health inequalities and injustices.

Promoting equal access to healthcare and enhancing population health depend on addressing socioeconomic determinants of health. Policies and interventions aiming at lowering socioeconomic disparities, boosting educational chances, guaranteeing access to cheap housing and wholesome food, encouraging employment possibilities, and enhancing social support networks are all part of efforts to address such variables. Communities may foster conditions that encourage healthy behaviours, enhance access to healthcare, and eventually lessen health inequalities across various groups through addressing social determinants of health.

1.3 Importance of Cancer Early Diagnosis and Screening

Effective management and treatment of cancer depend greatly on early detection and screening. Early cancer detection has a number of advantages, such as better treatment outcomes, higher survival rates, and lower medical expenses. Early diagnosis reduces the need for aggressive procedures, improves patients' overall quality of life, and opens the door to more conservative treatment alternatives.

The goal of screening programmes is to find cancer in people who may not yet be exhibiting any symptoms. These initiatives seek to identify cancer in its earliest stages, when it is more manageable.

Mammograms for breast cancer, HPV-DNA testing for cervical cancer, FOBT for colorectal cancer, and PSA tests for prostate cancer are all common screening techniques. Regular screenings can find cancer before it has spread, allowing for prompt treatment and bettering results. Additionally, screening programmes frequently target high-risk groups, including individuals who have particular lifestyle habits or genetic predispositions, enabling personalised and focused early detection efforts.

1.4 IMPORTANCE OF AWARENESS AND SCREENING CAMPS

The importance of comprehensive awareness campaigns and health education activities should not be underestimated when discussing early diagnosis and screening programmes. Through these initiatives, the general people will be made more aware of the value of routine exams, typical cancer symptoms, and risk factors. Early detection and screening programmes can considerably help to lower the burden of cancer and enhance general population health by educating people, supporting preventative actions, and encouraging proactive healthcare-seeking behaviour.

1.5 PROGRAM EXECUTION PLAN

Intervention I: Community Awareness and Education

Improving the knowledge of cancer among the general population will significantly promote early detection. The key strategy is to build the capacity of grass root workers to create awareness among the target population about the prevention, risk factors, screening, treatment and social security schemes for cancers. Addition to this the awareness campaigns, posters, banners would be planned by Karkinos with the help of volunteers

Awareness campaigns: Awareness session by Karkinos & NGO team, door-to-door marketing, Flyer distribution, speaker announcements.

Intervention II: Capacity Building & Training

The volunteers from the locality will be trained and sensitised by the Karkinos learning team. The training will be in the local language. The training will mainly include signs and symptoms of cancer , the importance of screening and early detection, Frontline workers and service providers need to be able to communicate not just signs and symptoms for early detection but also skills in communicating reassurance and support to individuals and family members.

Intervention III: Technology Enablement

Karkinos will strengthen Information Technology across the healthcare facilities with the aim to standardise digital health records and establishing a seamless flow of information. Karkinos will deploy the cancer screening - Mobile App for community health workers. The seamless use of technology will enable us to track high-risk groups, closely follow up suspects, reduce dropouts and ensure better care coordination. Karkinos will provide access to teleconsultation services, treatment planning reviews through linkages to Karkinos's central command centre and central pathology lab.

Intervention IV: Community-level Vaccination & Screening

Screening facility will be organised by PHC's. The ASHA/ANM and local NGO will mobilize individuals from the community. A micro plan will be prepared in consultation with the local program officer to ensure systematic screening of the eligible men/ women.

Chapter 2-Literature Review

S.NO	AUTHORS	STUDY LOCATION	SAMPLING TECHNIQUES	SALIENT FEATURES
1.	Dinesh Prasad Sahu <u>2020</u>	INDIA	observational	Cancer burden in India: The text highlights the increasing trend of cancer in India and the challenges faced by healthcare systems in tackling the disease. The heterogeneous distribution of the disease burden across different states and territories is mentioned. Poor prognosis in low- and middle-income countries: Patients with cancer in low- and middle-income countries have a poorer prognosis compared to high-income countries. Lack of awareness, late diagnosis, and inequitable access to affordable curative services contribute to this disparity. Lack of awareness and late reporting: Lack of awareness about cancer leads to late reporting of cancer cases to healthcare facilities. Studies in India have shown that the majority of individuals with cancer seek healthcare for the first time at late stages. Factors such as illiteracy, financial constraints, myths, superstitions, and lack of awareness

				contribute to the delay in seeking healthcare. Limited cancer awareness: Awareness about cancer, particularly specific types of cancer, varies among the population. Studies have shown differences in awareness levels, which can be influenced by factors such as literacy rates, income levels, and education. Sources of cancer information: Television is mentioned as a major source of cancer information, followed by healthcare personnel. Friends and relatives also play a role in providing information about cancer. The importance of utilizing mass media and the internet for awareness campaigns is emphasized.
2.	Korn, Callie Walsh-Bailey Pilar-2022	USA	systematic sampling approach	The study aims to identify and implement effective interventions that specifically target and address SDOH. By doing so, it seeks to reduce inequities in cancer screening and promote more equitable access to screening services and the study acknowledges the role of social determinants of health in cancer screening. SDOH are the social and economic factors that influence health outcomes, such as socioeconomic status, education, and access to healthcare.

3.	suzanne Dworak	National cancer Institute, USA	Observational	This highlights the importance of addressing the social, environmental, and economic factors that contribute to Black-White inequities in breast cancer. It emphasizes that these inequities are primarily driven by structural factors rather than biological differences. To effectively reduce these disparities, the passage calls for a deeper understanding of the broader context in which individuals are situated, moving beyond simplistic racial explanations and individual risk factors. It stresses the need for comprehensive health promotion efforts that consider the unique needs of Black women, including tailored messaging and strategies for cancer screening and navigating complex treatment environments. The individuals also emphasizes the importance of community engagement, amplifying marginalized voices, and incorporating their perspectives in policy and practice change efforts. Overall, it advocates for a holistic approach that addresses the underlying determinants of breast cancer inequities and promotes inclusive solutions.
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4.	Das and Sirohi	West Bengal	Observational study	The study found that community-based cancer screening programs are essential for addressing the growing cancer burden in low- and middle-income countries. Successful implementation of such programs requires strong partnerships between government, healthcare providers, and community, organization The study also identified several challenges, including lack of funding, inadequate infrastructure, and limited public awareness. countries, like these require sustained political commitment, adequate resources, and collaboration between different stakeholders.
5.	Abhishek Shankar Shubham Roy	Women college in different parts of India	Cross-sectional study	The level of knowledge of cervical cancer was poor. An increase in the level of knowledge of cervical cancer among the population was found after this study. To inculcate safe lifestyle practices, awareness programs should be conducted more widely and frequently.
6.	Bashar,Aggarwal, Divya Valecha	North India	Observational study	The study found that the participation of community health workers was a crucial factor in the success of the screening camp, as they helped in mobilizing and educating the community about cancer screening. Additionally, the use of mobile health

				clinics and telemedicine helped in extending the reach of the screening camp to remote areas, where access to healthcare services is limited.
7.	<u>Gaurav Agarwal*</u> <u>and Pooja Ramakant</u>	URBAN INDIA	Observational study	Heterogeneous Healthcare Infrastructure: India is a sub-continent with diverse ethnic, cultural, religious, and economic variations. The healthcare infrastructure in the country exhibits heterogeneity, with variations in the availability and accessibility of breast cancer care services across different regions. Limited Awareness and Early Diagnosis: Breast cancer awareness programs in India are primarily concentrated in urban areas, while remote and rural parts of the country often lack access to these programs. This, coupled with prevailing myths and ignorance surrounding the disease, leads to delayed presentation and diagnosis of breast cancer. As a result, a significant number of Indian breast cancer patients are diagnosed at advanced stages. Lack of Organized Screening Programs: India lacks an organized breast cancer screening program, leading to a lack of early detection. Additionally, there is a scarcity of diagnostic aids and limited emphasis on female health in the

				predominantly patriarchal society, further hindering early diagnosis. Demographic Trends: Breast cancer is the most common cancer in urban Indian females and the second most common in rural Indian women. The age-standardized incidence rates vary across regions, ethnicities, and religions. The incidence of breast cancer has been increasing in India, with a higher proportion of premenopausal patients compared to Western countries. Reproductive Factors: Early age at marriage, multiple childbirths, and extended periods of breastfeeding are common in Indian societies. However, changing social values and urbanization have led to delayed age at first childbirth and decreased breastfeeding, potentially contributing to the increasing incidence of breast cancer.
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Research Gap

1. Limited research exists on the specific strategies and interventions needed to effectively address the social determinants of health for early cancer detection among underserved populations through community extension camps.
2. It has been done in limited areas and the major issue is related to loss to follow up with the individuals.
3. The cost-effectiveness and scalability of community extension camps as a strategy to address the social determinants of health for early cancer detection among underserved populations

RATIONAL

The reason for selecting the mentioned research statement -Addressing the social determinants of health for early cancer detection among underserved groups through community extension camps are as followed:

- **Urgent Public Health Need:** The burden of cancer and the disparities in early detection among underserved groups highlight the urgent need for research on addressing the social determinants of health for early cancer detection among underserved groups through community extension camps . This research problem directly addresses a critical public health issue that can have a significant impact on improving health outcomes and reducing health disparities.
- **Innovative Approach:** Community extension camps represent an approach to addressing the social determinants of health for early cancer detection. By bringing healthcare services directly to underserved communities, these camps have the potential to overcome barriers related to access, awareness, and cultural sensitivity. Exploring the effectiveness of these camps contributes to the development of evidence-based practices in cancer prevention and detection.

- Potential for Impact: The lives of individuals who are underserved could be significantly changed if community extension camps for early cancer diagnosis are implemented successfully. Early cancer detection allows for immediate intervention, which improves treatment outcomes, lowers healthcare costs, and improves the quality of life for cancer patients. The chance to investigate and create efficient solutions that can change the way cancer care is provided to marginalised groups is provided by this research challenge.
- Promoting Health Equity: This research issue promotes health equity by concentrating on early cancer detection in underprivileged groups. It acknowledges the significance of guaranteeing equal access to healthcare services and addressing the socio economic issues that lead to health disparities in order to work towards a more equitable healthcare system.

RESEARCH QUESTION:

What Social determinants of health among the population influence the cancer screening uptake through community extension clinics and what is the correlation between participation numbers and behavioural outcomes?

RESEARCH OBJECTIVE :

- To identify the factors that impact the level of participation in Early detection cancer screening camps.
- To propose appropriate recommendations based on the findings to enhance participation levels and maximize the impact of camps.

CHAPTER 3-RESEARCH METHODOLOGY :

- **Study Design & Type:** Cohort Study & Analytical study
- **Study Setting:** The study has been conducted in Community screening camps at various locations across Delhi NCR, Rajasthan & Haryana .
- **Study Population:** The study population are the individuals with Truck Drivers and their families (TATA MOTORS)
- **Duration of Study:** The study has been conducted over a period of Two months (15th April & 15th May 2023)
- **Sample Size:** The sample size has been determined using 615 participants present in camp conducted by karkinos health care.
- **Data Collection Procedure:** Data has been collected using a structured questionnaire. The questionnaire will include questions related to demographic information, participation in camps, and behavioural outcomes.
- **Ethical Considerations:** The current project was approved by the independent ethics committee. All the participants were informed about the project, the screening test, and its importance. All data were recorded through a digital application, and informed user consent was taken. The consent forms were translated into local languages . The participants had a choice to decline the screening tests and further follow up.
- **Implications of Research:** The findings of this study will help healthcare organizations and policymakers to identify effective strategies for promoting participation in camps and help in early diagnosis of cancer.

Chapter 4 : Result

A total of 615 population has been recorded for the study described further in detail.

The camp has been conducted in TATA MOTORS 4 different locations:

1. DELHI NCR,(1 CAMP)
2. RAJASTHAN -JAIPUR (2 CAMPS)
3. HARYANA (1 CAMP)

The camp was conducted at Tata Motors location, where a comprehensive range of risk assessments and examinations were carried out to detect various types of cancer. The following screenings and tests were performed:

- Breast examination and mammography: These screenings were conducted to assess the risk of breast cancer in individuals. Breast examination involves a physical examination of the breasts to check for any abnormalities, while mammography is an X-ray imaging technique used to detect early signs of breast cancer.
- HPV DNA test: This test was conducted to screen for cervical cancer. It involves the detection of high-risk strains of the human papillomavirus (HPV) that are known to cause cervical cancer. By identifying the presence of these strains, early detection and intervention can be achieved.
- PSA test: The PSA (Prostate-Specific Antigen) test was performed to screen for prostate cancer. PSA is a protein produced by the prostate gland, and elevated levels of PSA in the blood may indicate the presence of prostate cancer. This test helps in early detection and monitoring of the disease.
- FOBT (Fecal Occult Blood Test): This test is used for the early detection of colorectal cancer. It involves analyzing a stool sample to detect the presence of occult (hidden) blood, which can be an indication of colorectal cancer or other gastrointestinal conditions.
- Oral visual examination and use of velcoscope: These examinations were conducted to assess the risk of oral cancer. The oral visual examination involves a thorough inspection of the oral cavity, including the lips, gums, tongue, and inner cheeks, to identify any abnormal lesions or signs of cancer. The use of a velcoscope, which is a

specialized device, aids in magnifying and visualizing the oral tissues more effectively for early detection of abnormalities.

By offering this comprehensive range of risk assessments and examinations, the camp aimed to detect and address various types of cancer at an early stage. Early detection is crucial in improving treatment outcomes and reducing the burden of cancer.

- Total Footfall-615
- Total Risk Assessment-587
- Total screening- 572

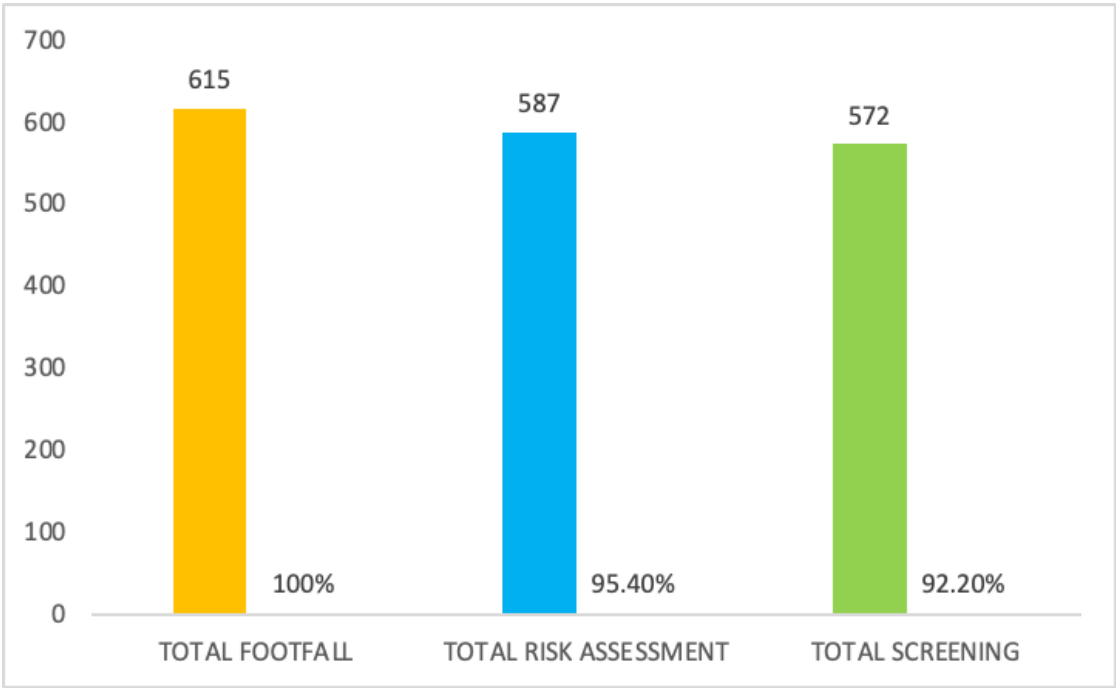


Table 5.1- Details of the Early Detection Cancer Screening

In the above graph it has been observed that out of the total footfall of 615 individuals at the early detection cancer screening camp, only 587 agreed to undergo risk assessment. This indicates a participation rate of approximately 95.4% and 572 (92.5%) went under screening.

As seen in the graph, participation level has been decreasing due to Several factors in the risk assessment and screening camps. The findings suggest that factors such as lack of awareness about the importance of early cancer detection, fear or apprehension regarding the screening process, and cultural beliefs or stigmas associated with cancer may have contributed to the lower participation rate.

TOTAL RISK ASSESSMENT

- COLON CANCER-56
- LUNG CANCER-114
- CERVICAL CANCER-47
- ORAL CANCER-104
- PROSTATE CANCER-5
- BREAST CANCER-119

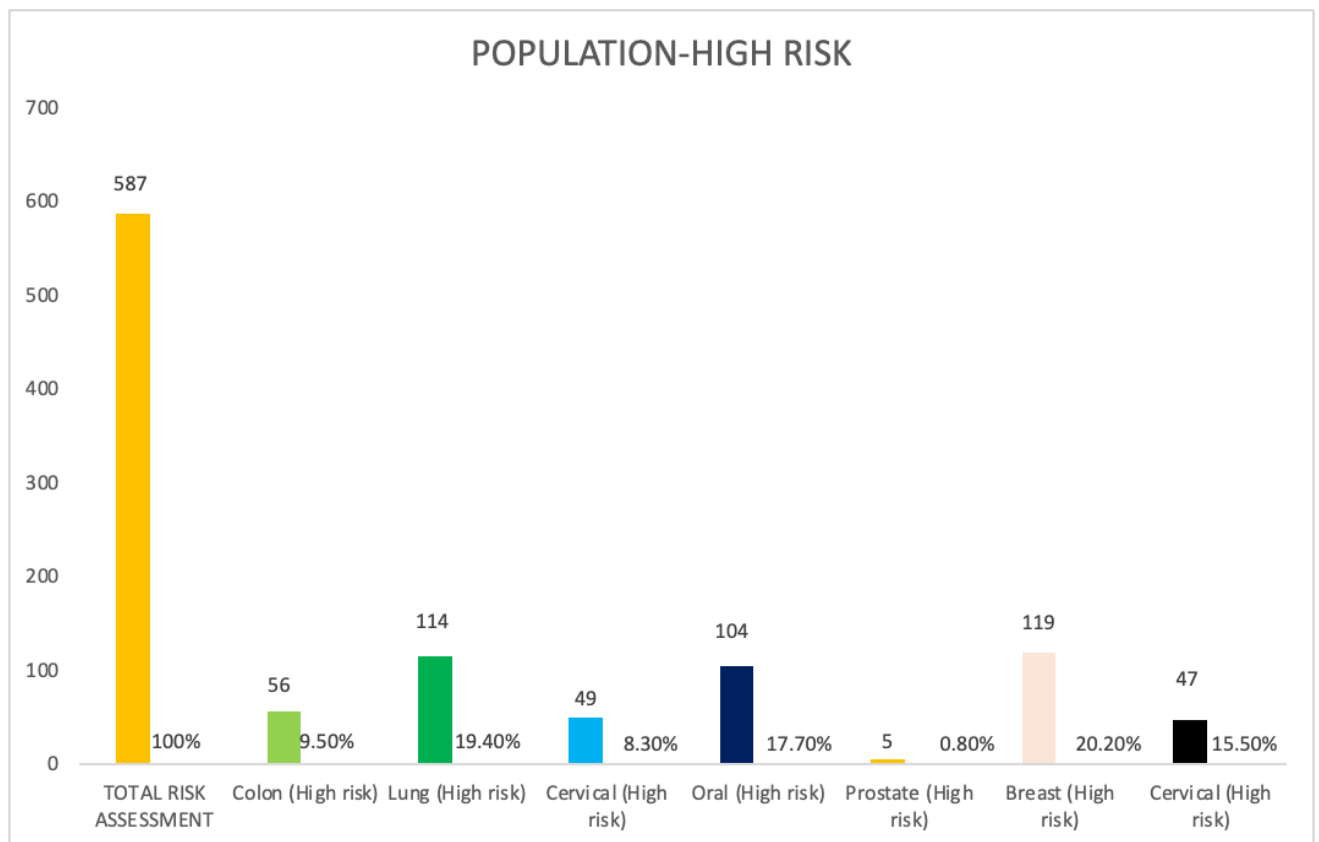


Table 5.2-Individuals with High Risk

Risk Assessment is done based on the questionnaire:

- Personal history
- Family History
- Habit and lifestyle assessment
- Assessment
- ☐ Ulcer /growth in the mouth
- ☐ Difficulty in swallowing
- ☐ Lump in the breast
- ☐ Changes in skin texture/ulcer on breast
- ☐ Ever had PAP/HPV

- ☐ Blood in Sputum
- ☐ Sudden weight loss

The provided data illustrates that out of a total of 587 individuals, a significant number of them were identified as being at high risk for various types of cancer. Specifically, 56 (approximately 9.5%) individuals were identified as being at high risk for colon cancer, 114 (approximately 19.4%) for lung cancer, 49 (approximately 8.35%) for cervical cancer, 104 (approximately 15.5%) for oral cancer, 5 (approximately 0.8%) for prostate cancer, and 119 (approximately 20.27%) for breast cancer.

Risk Assessment by Sex

- Total Number of Men Screenings: 330
- Total Number of Woman Screenings: 257

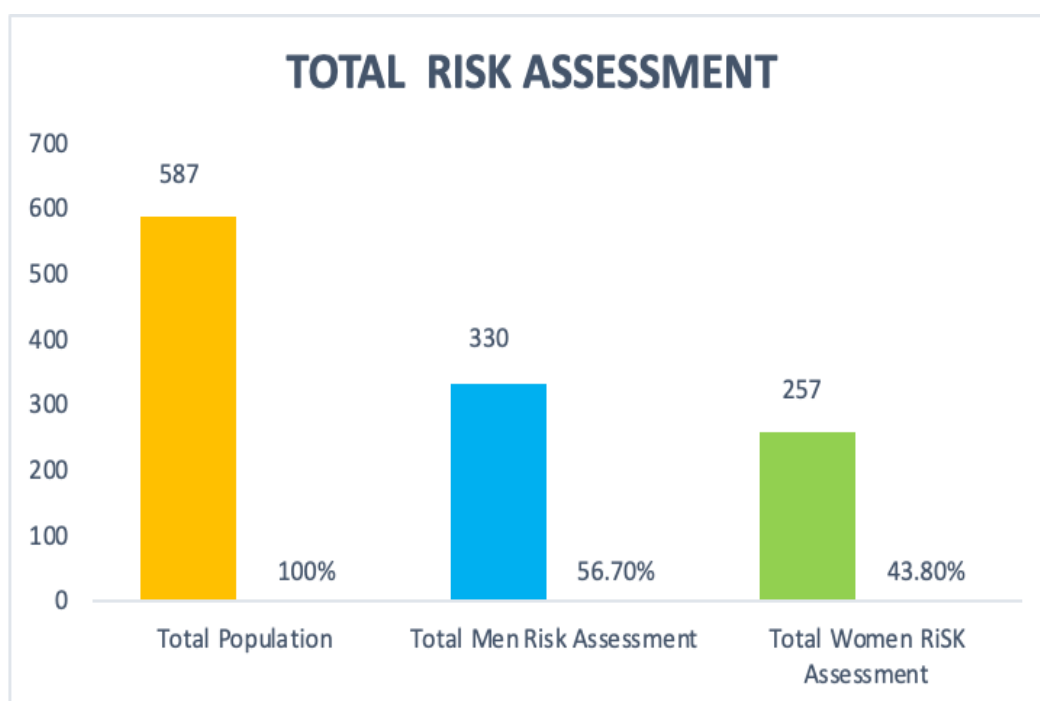


Table 5.3- Details of the total risk assessment by sex

Out of a total of 587 Risk Assessments done, there were 330 men(56.7%) and 257 women(43.8%) screened in the 4 camps conducted in different locations. The camps were conducted mainly for Breast, Cervical, Oral, Colorectal, Prostate, and Lung cancer.

➤ Oral Cancer

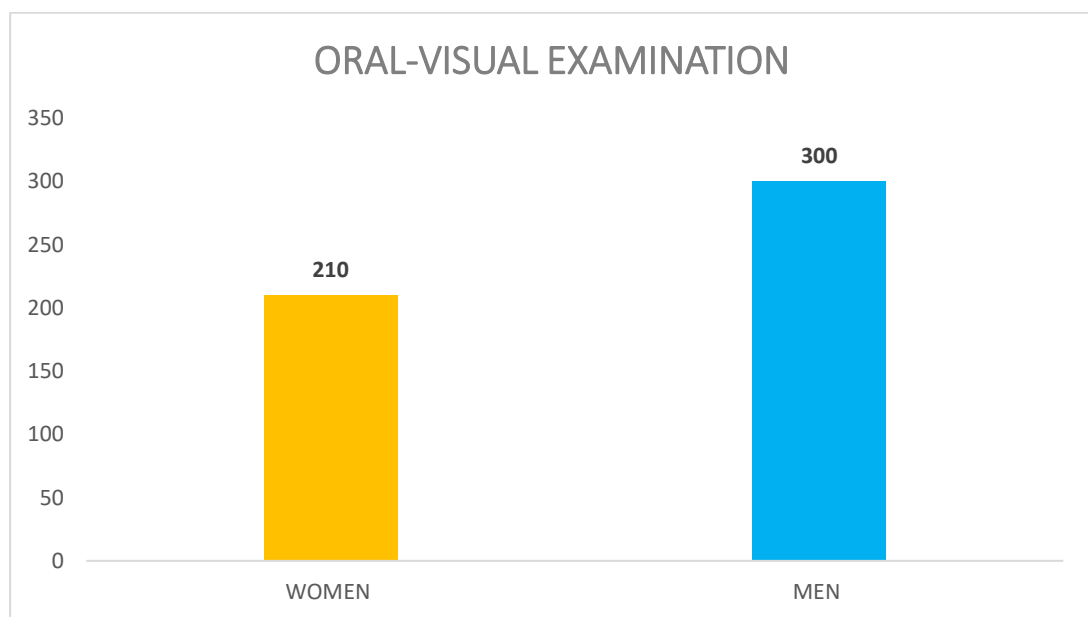


Table 5.4- Oral Visual Examination

The graph represents that after the risk assessment, men were at a higher rate to get oral visual examinations as compared to women. As men showed higher risk during the risk assessment.

Oral Visual Examination

- Total OVE-510
- Higher Risk-Oral cancer-104
- Individual with Oral Cancer-23

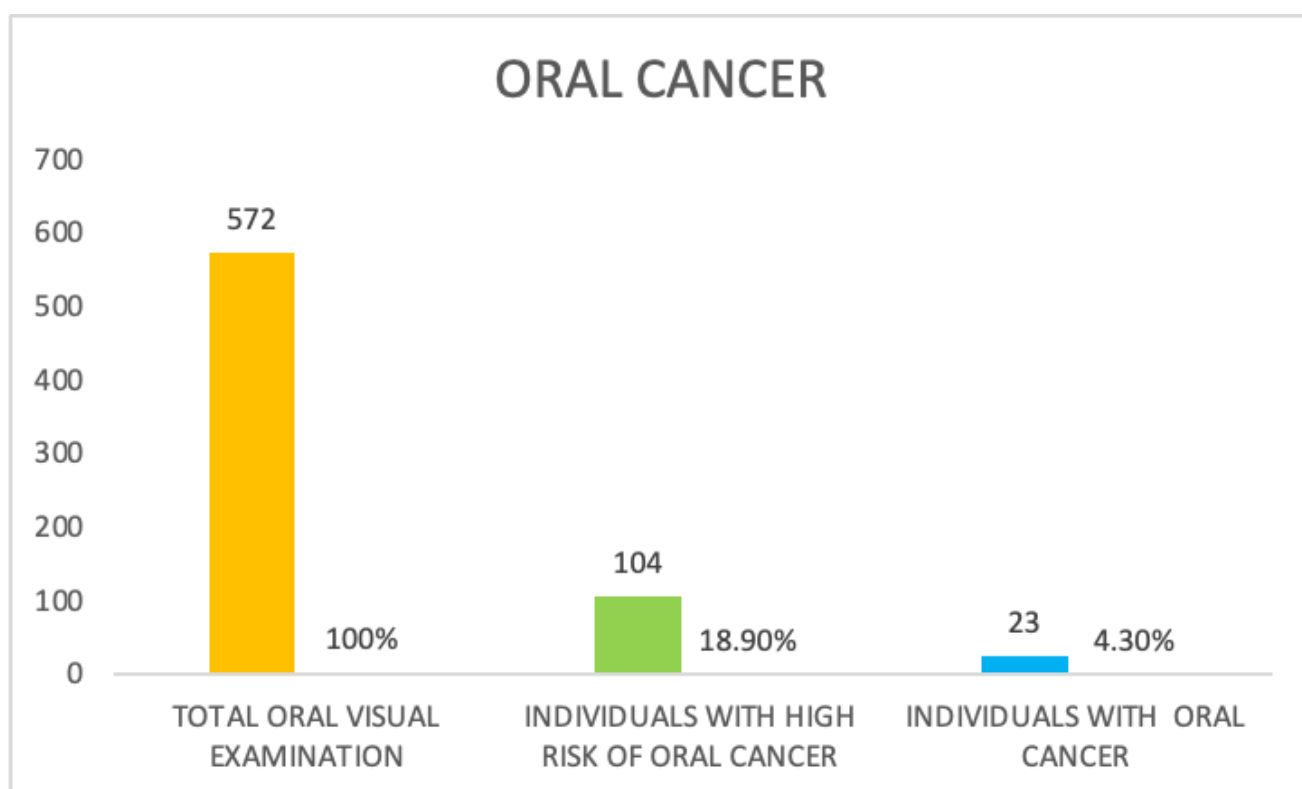


Table 5.5- Individuals With Oral Cancer

From the total of 572 individuals for Oral visual Examination post-risk assessment, there were 104(approximately 18.9%)people with high risk for oral cancer and 23 (approximately 4.3%)in need of treatment

➤ Cervical cancer

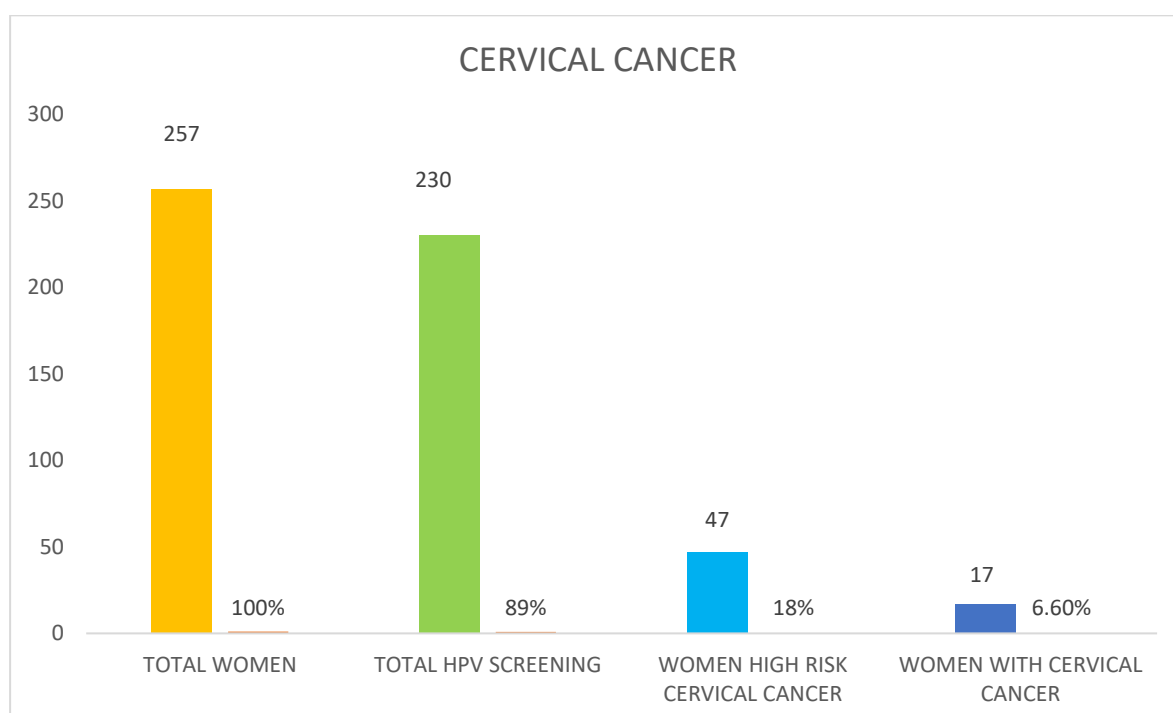


Table 5.6- Individuals With Cervical Cancer

The above-given graph shows that there were a total of 230(approximately 89%)women screened for Cervical cancer and out of it 47 (18%)women were at a higher risk of Cervical cancer and 17(6.6%) women were diagnosed with cervical cancer.

Whereas there were 257 women for risk assessment and 230 women for HPV screening. As 27 women wished not to continue with the screening because of the following factors:

1. Fear and anxiety: Fear of receiving a positive result or anxiety about the screening process itself can deter women from participating. Concerns about the

potential implications of a positive result, such as the need for further tests or treatment, may also influence their decision.

2. Cultural and social beliefs: Cultural and social factors can play a significant role in shaping women's attitudes towards HPV screening. Stigma, misconceptions, and cultural taboos surrounding discussions of sexual health and HPV infection may create barriers to participation
3. Trust and communication: A lack of trust in healthcare providers or inadequate communication about the importance and benefits of HPV screening can impact women's decision-making.

These factors were observed after taking a feedback from them. The feedback form includes following questions

- Education status
- Were you comfortable collecting sample ?
- Mention your problem while collecting sample
- Did you feel anxious/stressed before/while taking a sample?
- Were you required to take consent from your family/life partner?
- Have you heard about cervical cancer

Breast Cancer

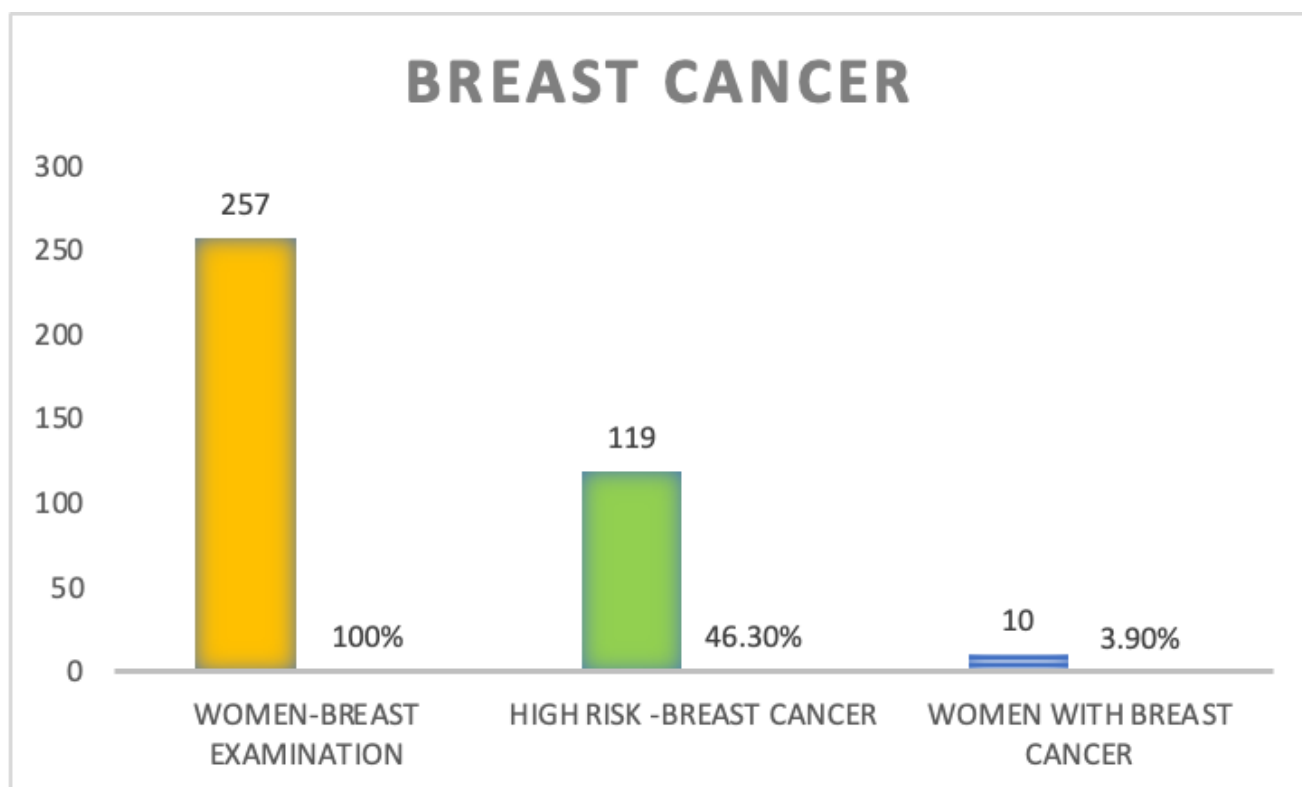


Table 5.7- Individuals With Breast Cancer

The above-given graphs explain out of the total 257 women who underwent breast examination, 46.3% were identified as being at a higher risk of breast cancer. Additionally, 3.9% were diagnosed with breast cancer at a very early stage.

As compared to cervical cancer, women were more convinced to Breast examination due to the reasons mentioned below:

- **Fear and Stigma:** Cervical cancer screening, such as Pap smears, may involve more invasive procedures and can be perceived as more uncomfortable or embarrassing compared to breast examination.

- Cultural and Social Factors: Cultural beliefs, societal norms, and taboos may influence women's decisions regarding cervical cancer screening. Cultural barriers, lack of open conversations about sexual health, and limited support from family or community members may contribute to lower participation rates in cervical cancer screening.
- Perceived Risk: Women may perceive breast cancer as a more immediate and significant threat compared to cervical cancer

CHAPTER 5 :DISCUSSION

Early cancer detection plays a crucial role in improving patient outcomes and reducing mortality rates. However, underserved populations often face barriers to accessing cancer screening services due to various social determinants of health. This discussion aims to analyse the factors impacting the level of participation in early cancer detection camps and propose recommendations to enhance participation among underserved groups. The data provided highlights the participation levels and outcomes of a community extension camp, focusing on oral, cervical, breast, prostate, lung, and colon cancer screenings.

The findings from the early-detection cancer camps demonstrate the effectiveness of community extension camps in addressing the social determinants of health for early cancer detection among underserved groups in India. These camps have proven to be valuable in identifying individuals at high risk and detecting cancer at an early stage. The results highlight the importance of such programs in improving health outcomes and increasing awareness of early cancer diagnosis.

One of the key outcomes of the camps was the high participation rate, with 97.44% of individuals undergoing the screening procedure. This indicates the success of outreach efforts in raising awareness and reducing barriers to participation. By bringing the screening services closer to the community, individuals were more likely to access and utilize them. This is particularly significant for underserved populations who may face challenges related to healthcare access and affordability.

The screenings conducted during the camps were comprehensive, targeting specific cancer types based on gender. This personalized approach allowed for tailored risk assessments, enabling individuals to understand their susceptibility to various types of cancer. By identifying individuals at high risk, appropriate interventions and follow-up care can be provided, potentially leading to earlier detection and better treatment outcomes.

The findings also reveal the prevalence of certain types of cancer among the screened population. For instance, a considerable number of individuals were found to be at risk for oral, cervical, and breast cancer. These results emphasize the need for targeted interventions and ongoing surveillance in these areas. By detecting these cancers early, individuals can receive timely treatment and improve their chances of survival.

Moreover, the camps not only identified individuals at high risk but also identified individuals who already had the disease. This underscores the significance of early detection, as it allows for prompt treatment initiation and potentially better outcomes. Identifying individuals with undiagnosed cancer is a crucial step in reducing mortality rates and the burden of cancer on individuals and their families.

The success of these community extension camps can be attributed to their ability to address social determinants of health. By providing affordable or free screenings, these camps overcome financial barriers that may hinder underserved individuals from accessing cancer detection services.

Additionally, by conducting the camps in community settings, they create a comfortable and familiar environment, reducing fears and anxieties associated with cancer screenings. This is particularly important in cultures where discussions around cancer may still carry stigma or fear.

However, while these findings are promising, it is essential to acknowledge the limitations of the study. The results are based on data collected from a specific time frame and locations, which may not fully represent the broader population. Furthermore, the study does not provide information on the long-term outcomes and follow-up care for individuals identified as high risk or diagnosed with cancer. Future research should focus on evaluating the impact of early detection camps on treatment outcomes and survival rates.

CHAPTER 6:RECOMMENDATION

Recommendations for boosting camp effectiveness and participation: The following recommendations might assist boost attendance at cancer screening camps and maximise the impact on underserved groups in considering the findings and information provided.

- Targeted Public Relations and Education: Develop targeted advocacy programs that raise awareness about cancer risks, prevention and early detection strategies. Effectively disseminate information through various channels such as community leaders, local media, and social platforms. Work with community organizations and leaders to ensure culturally sensitive messaging and engagement.
- Mobile and Community Extension Camps: Organize mobile camps and community extension camps in underserved areas to increase accessibility. These camps should offer a full range of cancer screenings, including screening for oral, cervical, breast, prostate, lung and colon cancers. Ensure that camps are staffed with medical professionals who are culturally competent and sensitive to the needs of the population they serve.
- Empower local health workers: Educate and empower community health workers as ambassadors for cancer prevention programs. By addressing cultural beliefs and language barriers and facilitating access to health services, these individuals can provide education, support and personalized counselling to community members.
- Working with local healthcare providers: We work with local healthcare providers, clinics and hospitals to ensure a smooth referral and follow-up process. Build partnerships to provide subsidized or free cancer screening and treatment to underserved people. Strengthen referral channels to ensure timely and appropriate care for individuals.
- Expansion of dissemination initiatives: In future years, we'll continue expanding our outreach to additional marginalised populations. Targeting certain demographic segments, such as low-income persons, members of racial and ethnic minorities, and residents of rural areas, may fall under this category. We can provide these vulnerable people increased access to cancer screening services by holding more community extension camps.

- Culturally Sensitive Approach: Recognizing and addressing the cultural factors and beliefs associated with cancer and early detection can play an important role in improving participation rates among underserved groups. Future efforts should focus on developing culturally sensitive teaching materials and support strategies that resonate with diverse populations. This helps build trust, raise awareness, and remove cultural barriers that can hinder early cancer detection.
- Health Awareness and Education Campaigns: Future initiatives ought to put an emphasis on health education and awareness campaigns made specifically for underprivileged communities. These efforts should stress the significance of early cancer diagnosis, and the advantages of screening, and debunk any myths or anxieties people may have about screening procedures. People from marginalised groups might choose to participate in cancer screening programmes with more information and awareness.

CHAPTER 7:CONCLUSION

In conclusion, addressing the social determinants of health for early cancer detection among underserved groups through community extension camps is crucial for improving participation levels and maximizing the impact of these camps. The study successfully identified factors that impact participation, analyzed the advantages of early diagnosis, and proposed appropriate recommendations based on the findings. The data presented demonstrates the significance of these camps in reaching underserved populations and providing essential screenings for various types of cancer. By implementing targeted outreach, mobilizing resources, and collaborating with local healthcare providers, we can enhance participation, increase early cancer detection rates, and ultimately improve outcomes for underserved communities. Continued efforts in this direction will play a vital role in reducing health disparities and promoting equitable access to cancer screening and care.

References

- Jou K, Sterling MR, Ramos R, Antoine F, Nanus DM, Phillips E. Eliciting the social determinants of cancer prevention and control in the catchment of an urban cancer center. *Ethn Dis* [Internet]. 2021 Winter [cited 2023 Jun 5];31(1):23–30. Available from: <http://dx.doi.org/10.18865/ed.31.1.23>
- 2020 international cancer education conference program and abstracts. *J Cancer Educ* [Internet]. 2021;35(S1):1–60. Available from: <http://dx.doi.org/10.1007/s13187-020-01940-w>
- Gehlert S, Hudson D, Sacks T. A critical theoretical approach to cancer disparities: Breast cancer and the social determinants of health. *Front Public Health* [Internet]. 2021;9:674736. Available from: <http://dx.doi.org/10.3389/fpubh.2021.674736>
- Elmore LW, Greer SF, Daniels EC, Saxe CC, Melner MH, Krawiec GM, et al. Blueprint for cancer research: Critical gaps and opportunities. *CA Cancer J Clin* [Internet]. 2021;71(2):107–39. Available from: <http://dx.doi.org/10.3322/caac.21652>
- Korn AR, Walsh-Bailey C, Pilar M, Sandler B, Bhattacharjee P, Moore WT, et al. Social determinants of health and cancer screening implementation and outcomes in the USA: a systematic review protocol. *Syst Rev* [Internet]. 2022 [cited 2023 Jun 5];11(1):117. Available from: <http://dx.doi.org/10.1186/s13643-022-01995-4>
- National Academies of Sciences Engineering and Medicine, Health and Medicine Division, Board on Population Health and Public Health Practice, Committee on Community-Based Solutions to Promote Health Equity in the United States. *Communities in action: Pathways to health equity*. Negussio Y, Baciú A, Geller A, Weinstein JN, editors. Washington, D.C., DC: National Academies Press; 2017.
- Cancercoalitionofvirginia.org. [cited 2023 Jun 5]. Available from: <https://cancercoalitionofvirginia.org/wp-content/uploads/2023/02/CACancer-Plan-2023-Single-WEB-FINAL-1-23-1.pdf>
- Healthcare access in rural communities [Internet]. *Ruralhealthinfo.org*. [cited 2023 Jun 5]. Available from: <https://www.ruralhealthinfo.org/topics/healthcare-access>
- Permanente K, Eder M, Henninger M, Durbin S, Iacocca MO, Martin A, et al. Screening and interventions for social risk factors: A technical brief to support the U.s. preventive services task force [Internet]. *Uspreventiveservicestaskforce.org*. [cited 2023 Jun 5]. Available from: https://www.uspreventiveservicestaskforce.org/uspstf/sites/default/files/inline-files/Social%20Risk%20Factors%20Tech%20Brief_Assembled%20for%20Web_Sep%202021_1.pdf
- What causes health [Internet]. *The Human Journey*. 2017 [cited 2023 Jun 5]. Available from: <https://humanjourney.us/health-and-education-in-the-modern-world-section/what-causes-health/>

- Lum H. Stakeholder engagement to reduce health inequities in rural cancer care [Internet]. Cuanschutz.edu. [cited 2023 Jun 5]. Available from: https://medschool.cuanschutz.edu/docs/librariesprovider94/di-docs/d-i-presentation/lum-cc-symposium-10-19-2021.pdf?sfvrsn=6916d3ba_0