An epidemiological research study to depict the status of Breast Cancer Awareness in the local population of Nagaon, Karbi Anglong District & surrounding areas in Assam, India – generate awareness to help with early detection

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Breast Cancer Hub Corporation, Charlotte, North Carolina, USA[1], Anandaram Dhekial Phookan College, Nagaon, Assam, India[2]; St John's Medical College Hospital, Bangalore, India[3]

Key Areas of Research/ Expertise/ Skills

Breast Cancer Research, Epidemiological Research Study

Key Collaborations

Cancer Registry, St John's Medical College Hospital, Bangalore and Anandaram Dhekial Phookan College (ADP College)

Impact of research

Breast Cancer Awareness fluctuates in varied groups in India with an enormous breach within North-east India, thus Breast Cancer Hub (BCH) research is bringing awareness and educating the communities in urban & rural upper Assam areas, helping the populace to be informed, & motivating towards early detection screening, eventually helping to be detected early, which is the key to saving lives, making an impact with Breast Cancer in Women as well as Men.

Facilities/ infrastructure for Research

Anandaram Dhekial Phookan College (ADP College), Data collection at specific communities in Nagaon, Karbi Anglong & surrounding areas (in-person or online).

Collaboration within St. Johns

Dr Rakesh S. Ramesh, In-charge Cancer Registry, St John's Medical College Hospital, Bangalore

Funding Source

Breast Cancer Hub Corporation

Background

1 in 8 women can have Breast Cancer in their lifetime in the USA and the incidence is alarmingly increasing worldwide [1]. Unfortunately, the death rate is significantly higher in India due to shyness, taboo, and obliviousness irrespective of education and socio-economic condition. Men with Breast Cancer seem to have experiences of shock and embarrassment, battling the stigma of having a predominantly woman's disease. The level of awareness varies in diverse communities in India with a huge gap within North-east India, thereby Breast Cancer Hub focuses our study to measure the ignorance and support the untapped communities. [2]

Aims and Objectives

We aim to evaluate the status of Breast Cancer Awareness, Screening methodology, and lifestyle patterns in the populace of North-east India, to generate awareness, encourage women & men to seek opportunities for mammograms, ultrasounds, breast-self exams, and clinical breast exams, appraise the effects of lifestyle & environment affecting the communities and create the impact through our anti-tobacco campaign.

Methods and Materials

The study is conducted in person and also through online survey, the obtained data is subsequently de-identified for analysis. Consent is taken from each participant with clear transparency.

Our questions focus on the level of awareness on Breast Cancer, if they actively pursue or/and understand the importance of cancer screening, queries regarding lifestyle, food habits, environment, tobacco consumption & alcohol.

We are using excel spreadsheets to visualize and analyze patterns in the data. For simple categorization and enumeration, we use excel's inherent ability to calculate statistical values (i.e., mean, median, mode, standard deviation, ratios, and count). We are also running multi-dimensional regression analysis to obtain the R square, adjusted r square, and p-value. These statistics as well as the identification of dependent and independent variables will help us obtain reliable inferences.

Finally, we will visualize the data for reporting using graphs, charts and histograms

Results

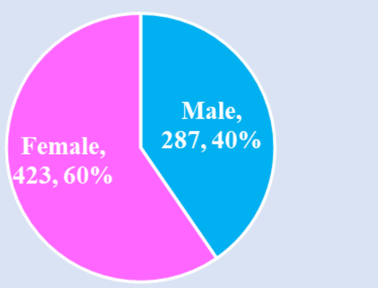


Figure 1 : Participant Gender Distribution

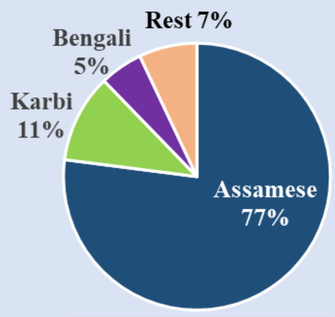


Figure 2 : Race/Ethnicity

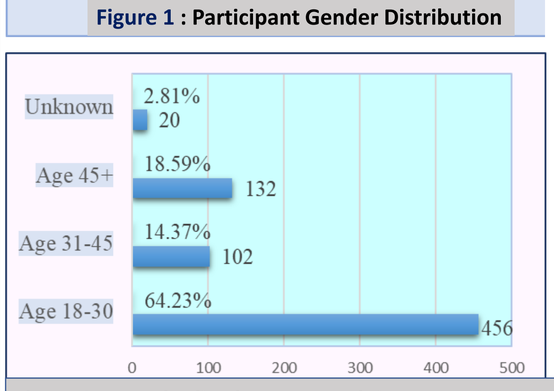


Figure 3: Age Distribution – We mainly targeted the younger population of the local community

Figure 1: We report our results from the dataset of n=710 individuals (female 423 and male 287).

Figure 2: The race represents Assamese 77%, Karbi 10.71%, Bengali 5.21%, remaining unknown 7.08%.

Figure 3: Since most of the data were collected from the students, therefore the age distribution is 18-30: 64.23%, 31-45: 14.37%, 45+: 18.59%, unknown: 2.81%.

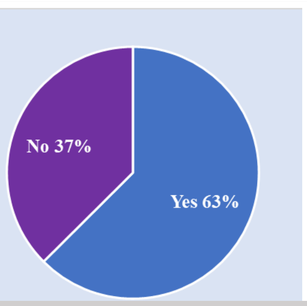


Figure 4: Do you know about Breast Cancer?

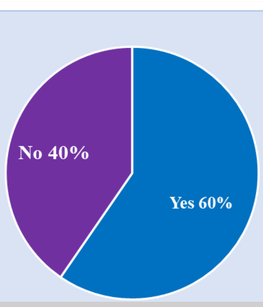


Figure 5: Do you think Screening is helpful?

We report that even though the knowledge about Breast Cancer prevails in 62.53% **(Figure 4),** and 59.58% **(Figure 5)** acknowledged that screening is helpful, but the screening methodology and protocol is not clear to the public

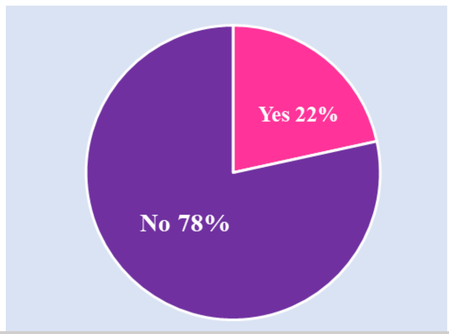


Figure 6: Awareness about Breast Self - Exam

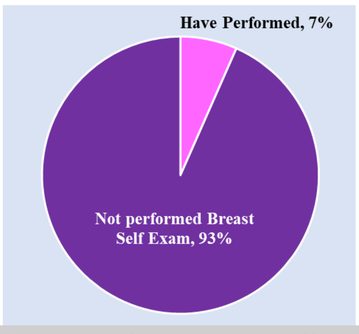


Figure 7: Performing Breast Self - Exam

Figure 6 & Figure 7: Screening methodology and protocol is not clear to the public with only 21.59% aware of Breast Self-Examination and only 6.62% performing the same in reality.

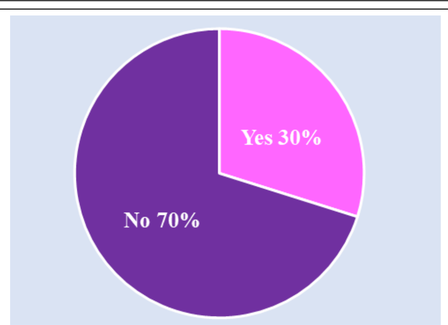


Figure 8: Awareness about Clinical Breast Examination

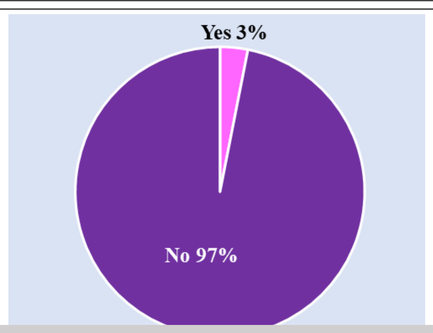


Figure 9: Underwent Clinical Breast Examination

Figure 8 & Figure 9: We report 29.85% are aware of Clinical Breast Exam (CBE) but only 3.09% had CBE not as screening but due to breast concerns.

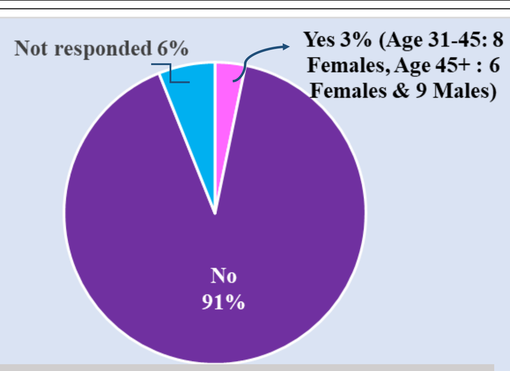


Figure 10: Performed Mammogram

Figure 9: We identify that 3.23% (14 Females and 9 Males) underwent mammograms. We also report 9 Males (age 45+) underwent Mammograms which is a significant population in this cohort under study and further investigation on the Male Breast Cancer situation in Assam is required and we will carry the research further in this arena.

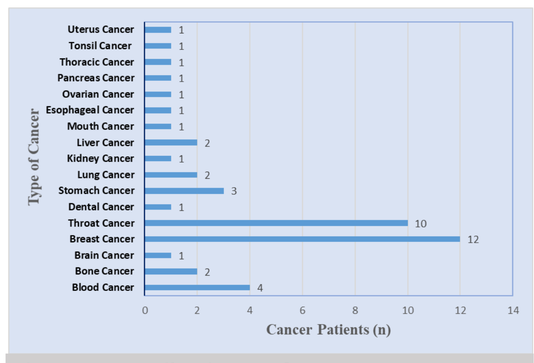


Figure 11 : Family History of Cancer

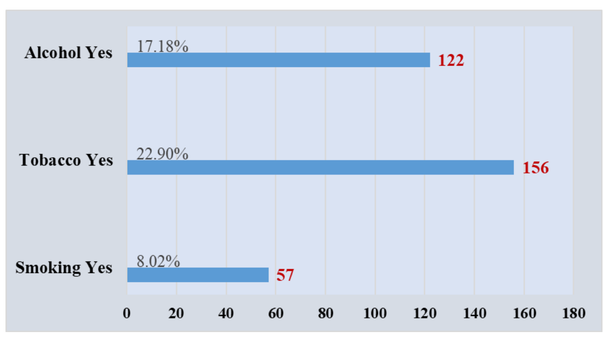


Figure 12 : Tobacco Smoking or Chewing/Alcohol

Figure 11 & Figure 12: Besides, we have 45 out of 710 participants with a family history of Cancer, predominantly Breast and Head & Neck Cancer driving our concern with the tobacco smoking/chewing and alcohol consumption on the rise in the population especially the younger age group. There is not enough awareness on the detrimental effects of tobacco consumption as we identify Smoking 8.02%, Tobacco chewing 22.9%, Alcohol 17.18% with the trend increasing.

Discussion

We observe a high level of ignorance on the knowledge of Breast Cancer screening in the community, even though our study had a majority of the population in the educated sector, but not informed with adequate information. Though the community understands the word Breast Cancer but rarely undergoes screening mammogram, instead, performs CBE/mammogram/ultrasound only when issues in the Breast arise. We report a gradual rise in tobacco consumption, even though there are families with a predominant history of cancer especially breast and head & neck cancer. We also report Mammogram in Men considerably higher in the Upper Assam areas compared to other parts of the country which is an alarming sign.

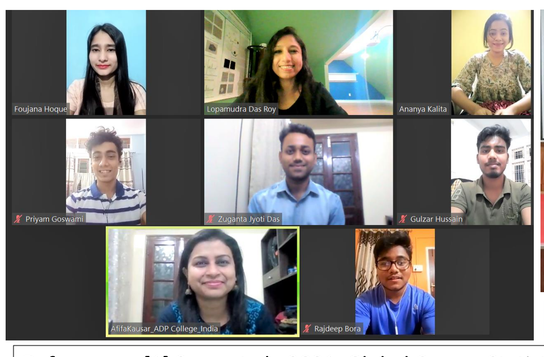
Conclusion

We conclude that Breast Cancer Screening is not a priority even among the participants who are educated in the Nagaon and Karbi Anglong District, and attends healthcare more from diagnostic versus screening purposes. There is not enough awareness on the detrimental effects of tobacco consumption as we identify Smoking 8.02%, Tobacco chewing 22.9%, Alcohol 17.18%. We see a huge trend of family history with Cancer driving our study to focus on ethnicity and identify vulnerable populations.

Acknowledgements

We would like to thank Sarkangthim Taro and Harlongbi Engti for their help with the project and grateful to the participants for providing us with the data and the consent to publish.

Team



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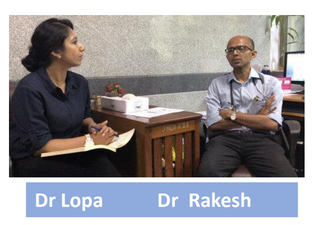

Dr Lopa Dr Rakesh

References: [1] Sung et al., 2021. Global Cancer Statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. https://doi.org/10.3322/caac.21660

[2] Breast Cancer Hub: https://www.breastcancerhub.org/research

Ethics Committee Approval: IRB USA #20204167, IEC India #1/34/2021 (St John's Medical College Hospital)

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