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Evaluating Cancer Awareness: Unveiling the Insights of Health Workers in Community Health Centers

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ABSTRACT

Cancer, a leading global cause of death, claimed nearly 10 million lives in 2020, with projections anticipating a surge to 27.5 million new cases by 2040 due to factors like population growth, aging demographics, and risky behaviors. This burden significantly impacts global life expectancy, ranking as a primary or secondary cause of death in 112 out of 183 countries before age 70. Studies in Southern India and North Cameroon underscore gaps in knowledge and awareness about specific cancers like cervical and breast cancer, respectively. Against this backdrop, this study conducted in the Khorda district of Odisha assesses the knowledge and attitudes of health workers towards cancer. Employing a non-experimental descriptive survey design, the study delves into socio-demographic variables, educational interventions, and years of experience among health workers, primarily females (78.94%) and married individuals (61.84%). The study revealed significant findings among health workers regarding cancer knowledge and attitudes. A strong positive correlation (Spearman's rho = 0.96, $p < 0.0001$) between knowledge and attitude was observed. T-test results ($t = 28.93$, $p < 0.0001$) confirmed significant differences in knowledge scores. Chi-square analysis showed religion was significantly associated with knowledge ($\chi 2 = 7.544$, $p = .023$), while other socio-demographic factors were not significantly associated. This research lays a crucial foundation for understanding health workers' perceptions of cancer, providing valuable insights for tailored interventions. Future studies should explore the dynamic interplay of these factors to refine strategies for enhancing healthcare professionals' engagement in cancer care, thus mitigating the escalating burden of this disease.

KEYWORDS: *Cancer Awareness, Healthcare Professionals, Knowledge Assessment, Attitude Assessment, Community Health Centers*

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INTRODUCTION

Cancer, a global leading cause of death, claimed nearly 10 million lives in 2020. In low- and lower-middle-income countries, 30% of cases result from infections(1). In 2018, the International Agency for Research on Cancer reported 17 million global cancer cases, and projections indicate an anticipated surge to 27.5 million new cases by 2040. The escalating global burden of cancer is attributed to population growth, aging demographics, and heightened risk factors like smoking, physical inactivity, unhealthy diets, and cancer-causing infections(2). Cancer stands as a prominent contributor to mortality, acting as a significant impediment to advancing life expectancy globally. According to 2019 estimates from the World Health Organization, cancer holds the position of the first or second leading cause of deaths before the age of 70 years in 112 out of 183 countries. In an additional 23 countries, it ranks as the third or fourth leading cause of death(3). A study in Southern India revealed inadequate knowledge but a positive attitude

toward cervical cancer screening. Overall knowledge regarding cervical among the surveyed women was poor, though they exhibited a positive attitude(4). Another study in the North Region of Cameroon emphasized the need to raise awareness about breast cancer and the importance of screening practices(5). Cancer, once deemed a death sentence, has seen transformative progress through research, offering hope and elevating survival rates for patients. With 4 in 10 cancers preventable through lifestyle changes, early detection via screenings plays a crucial role. Despite progress, challenges persist, urging continued research for improved outcomes and survivorship. Cancer research remains paramount, offering hope, better prognoses, and ultimately saving lives. Effective communication, proper nutrition, and early interventions play crucial roles in cancer care. Addressing gaps in cancer screening practices, particularly in low-resource settings, is essential. Community health workers and technology integration emerge as valuable tools in cancer detection and care. The study aims to evaluate health workers' attitudes and awareness in district Khordha community areas, contributing valuable insights where previous research is lacking. Understanding health workers' perspectives is pivotal, given their crucial role in healthcare delivery, ensuring early detection, and improving cancer outcomes.

Material and method:

This study employs a quantitative approach, emphasizing structured methods for studying knowledge and attitude on cancer disease among health workers. In this study, a non-experimental descriptive survey research design is employed to provide a comprehensive understanding of knowledge and attitude among health workers. The study was conducted at the Community Health Centre in Khorda district of Odisha. The Research Variables are the knowledge and attitude on cancer disease among health workers. The Socio-Demographic Variables are age, gender, educational qualification, years of experience, area of duty, exposure to educational intervention on cancer disease.

Sample size

The population of this study consists of all health workers at the Community Health Centre in Khorda district, Odisha. The sample includes a total of 76 health workers from the Community Health Centre, encompassing Community Health Officers (CHO), Accredited Social Health Activists (ASHA), Nursing Officers (NO), and Lab technicians. Participants were chosen using total purposive sampling. The sample size is calculated by Solvin's formula as: $n = \frac{N}{1+Ne^2}$

Where: n = sample size,
N =population size(94), and
e =margin of error (0.05).

Tools for data collection

The data collection tools employed in this study are carefully designed to capture essential information related to socio-demographic variables, knowledge, and attitudes regarding cancer among health workers. The tool-1: Socio-demographic questionnaire, intended to gather data on various socio-demographic variables. Health workers will provide responses to questions related to their age, gender, educational qualification, years of experience, area of duty, exposure to educational interventions on cancer, and more. The tool-2: Structured knowledge questionnaire focused on cancer. This knowledge questionnaire aims to assess the depth of knowledge health workers possess about cancer, covering aspects such as risk factors, symptoms, and preventive measures, which includes 21 items. This tool's scores are categorized into three levels: Good (17-21), Average (11-16), and poor (0-10). The third tool is a structured attitude questionnaire, which delves into health workers' attitudes towards cancer with 15 items. It explores their perceptions, beliefs, and emotional responses concerning cancer-related issues. This tool's scores are categorized into two levels: Negative attitude(0-8), and Positive attitude(9-15).

All three tools utilize a traditional pen-and-paper method for data collection, ensuring a systematic and standardized approach to gathering information from the participants. The validation process for the data collection tools was thorough to ensure accuracy and relevance. Experts in oncology, nursing education, and survey methodology reviewed the tools for content validity. Their feedback was incorporated to refine the questions, ensuring they were comprehensive and clear. A pilot study was conducted with a small group of health workers who were not part of the main study sample. This pilot test helped identify any ambiguities or issues with the questionnaire items, allowing for further adjustments. The final versions of the socio-demographic questionnaire, structured knowledge questionnaire, and structured attitude questionnaire were then confirmed for use in the main study.

Reliability of Tools

The reliability of the tools was assessed using Cronbach's alpha coefficient to measure internal consistency. The structured knowledge questionnaire and the structured attitude questionnaire were administered to the pilot group, and Cronbach's alpha values were calculated. A coefficient value of 0.79 or

higher was considered acceptable, indicating that the tools consistently measured the intended constructs. The socio-demographic questionnaire, being straightforward in nature, was validated through repeated measures to ensure consistent responses over time. These reliability checks ensured that the tools produced stable and consistent results when used with different samples of health workers.

Data collection procedure

The data collection procedure was meticulously planned and executed to ensure the integrity and reliability of the study. First, formal permission was obtained from the head of the Community Health Centre in Khorda district, Odisha, and ethical approval was secured from the relevant ethics committee. Informed consent was obtained from all participants, ensuring they were fully aware of the study's purpose, procedures, and their rights. Participant identification and sampling were conducted through face-to-face meetings with potential participants. A total purposive sampling method was used to select 76 health workers, including Community Health Officers (CHO), Accredited Social Health Activists (ASHA), Nursing Officers (NO), and Lab technicians. For data collection, the socio-demographic questionnaire, structured knowledge questionnaire, and structured attitude questionnaire were administered using a traditional pen-and-paper method. Participants were provided with clear instructions to ensure they understood how to complete the questionnaires, and researchers were available to address any questions or concerns during the process. This comprehensive approach ensured a systematic and standardized collection of data.

Plan for data analysis

The data analysis plan is designed to comprehensively assess the knowledge and attitudes of health workers regarding cancer. Initially, data from the questionnaires will be coded and entered into a statistical software program for analysis(IBM statistical software, specifically SPSS version 22), followed by data cleaning to identify and rectify any inconsistencies or missing values. Descriptive statistics will be utilized to summarize the socio-demographic characteristics of the participants, with frequency distributions, means, medians, and standard deviations calculated for knowledge and attitude scores. Inferential statistics will further elucidate the findings; Chi-square tests will examine associations between socio-demographic variables. Additionally, Pearson's correlation coefficient will be used to assess the relationship between knowledge and attitude scores.

Results

Frequency and percentage distribution of socio-demographic variables

Table no.1: Socio-demographic profile of study participants

Variables	Frequency (f)	Percentage (%)
Age		
20-25	24	31.57
25-30	15	19.73
30-35	19	25
35 above	18	23.68
Gender		
Female	60	78.94
Male	16	21.05
Marital status		
Single	29	38.15
Married	47	61.84
Religion		
Islam	1	1.31
Hindu	75	98.68
Designation		
CHO	21	27.63
Staff nurse	36	47.36
Lab Technician	13	17.1
ASHA	6	7.89
Working centre		
CHC	26	34.21
PHC	20	26.31
Subcentre	30	39.47
Highest level of education		
ANM	26	34.21
GNM	11	14.47
B.Sc. Nursing	35	46.05
M.Sc. Nursing	4	5.26

The frequency and percentage distribution of socio-demographic variables (**Table no.1**) among health workers in this study reveals several key patterns. The majority of health workers, comprising 31.57%, fall within the 20-30 years age group, with 19.73% fall between 25-30 years, 25% between 30-35 years, and 23.68% were aged 35 years and above. Regarding gender, a significant majority of health workers, accounting for 78.94%, are female, while 21.05% are male. In terms of marital status, 38.15% of health workers are unmarried, and 61.84% are married. Religious distribution indicates that 1.31% of health workers follow Islam, while 98.68% are Hindu. In terms of professional roles, 27.63% are Community Health Officers (CHO), 47.36% are staff nurses, 17.1% are lab technicians, and 7.89% are Accredited Social Health Activists (ASHA). Workplace distribution shows that 34.21% of health workers are stationed in Community Health Centers (CHC), 26.31% in Primary Health Centers (PHC), and

39.47% in sub-centers. Educationally, 34.21% have completed Auxiliary Nurse Midwife (ANM) training, 14.47% have completed General Nursing and Midwifery (GNM), 46.05% hold a Bachelor of Science in Nursing (BSc Nursing), and 5.26% have completed their Master of Science in Nursing (MSc Nursing). In terms of personal experiences, only a small percentage, 1.31%, reported having a cancer patient in their family, while the vast majority, 98.68%, did not. Regarding lifestyle habits, 3.97% of health workers reported having smoking or alcohol habits, whereas the overwhelming majority, 96.05%, did not engage in these habits.

The detailed socio-demographic profile presented above offers a insight into the diverse composition of health workers who are participants in this study. This comprehensive overview lays a solid foundation for conducting further in-depth analyses of their knowledge and attitudes concerning cancer disease. By understanding the demographic characteristics, including age, gender, educational background, professional roles, and personal experiences, we can contextualize and interpret the subsequent findings on knowledge and attitudes.

Table no.2: frequency (%), mean±SD, median and correlation between knowledge and attitude

Level of knowledge	Frequency (%)	Mean±SD	median
Good (17-21)	41(53.95)	16±2.92	17
Average (11-16)	26(34.21)		
Poor (0-10)	9(11.84)		
Level of attitude			
Negative attitude(0-8)	22(28.95)	11.47±3.03	12.5
Positive attitude(9-15)	54(71.05)		

The presented data in **table- 2** shows that the mean value is 16 and the standard deviation is± 2.92 and according to that, 53.95% subjects had a good knowledge score of 34.21% of subjects have average knowledge score of 11.84% of subjects had a poor knowledge score. The Presented data also shows that the mean value is 11.47 and the standard deviation is +3.03 and according to that 28.95% subjects having negative attitude and 71.05% subjects are have positive attitude.

Table no.3: Correlation between knowledge and attitude

Variables	DF	Spearman's rho (p-value)	t-test (p-value)
knowledge	74	0.96(0.0001)**	28.93 (0.0001)**
Attitude			

**Extremally significant

The correlation **(table-3)** presents the relationship between knowledge and attitude among healthcare workers regarding cancer. Spearman's rho coefficient is 0.96, indicating a strong positive correlation ($p < 0.0001$), implying that as knowledge increases, attitude tends to improve significantly. The t-test value is 28.93 ($p < 0.0001$), suggesting a significant difference in knowledge scores between groups. Overall, the table suggests a strong positive correlation between knowledge and attitude among healthcare workers regarding cancer, with significant differences in scores between groups.

Chi-square analysis showing the association of level of knowledge and attitude with socio demographic variables.

The study examines the relationship between socio-demographic variables and the level of knowledge about cancer among health workers, using chi-square tests for association. Age groups did not show a significant association with knowledge levels ($\chi2 = 2.333$, $p = .887$). Similarly, gender also showed no significant association ($\chi2 = 2.403$, $p = .301$), as did marital status ($\chi2 = 1.171$, $p = .557$). However, religion showed a significant association with knowledge levels ($\chi2 = 7.544$, $p = .023$), designation approached significance but did not reach the threshold ($\chi2 = 11.385$, $p = .077$). Working center location (CHC, PHC, sub-center) did not show a significant association ($\chi2 = 4.055$, $p = .399$). Similarly, the highest level of education (ANM, GNM, BSc Nursing, MSc Nursing) showed no significant association with knowledge levels ($\chi2 = 3.898$, $p = .690$).

Similarly, the analysis of the association between socio-demographic variables and attitudes among health workers, conducted using chi-square tests, revealed the following results: The distribution of attitudes across different age groups did not yield a significant association ($\chi^2 = 3.740$, $p = .291$). The gender did not exhibit a significant association with attitudes among health workers ($\chi^2 = 0.052$, $p = .819$). Marital status also showed no significant association with attitudes ($\chi^2 = 3.524$, $p = .060$). Religion was not

significantly associated with attitudes among health workers (χ^2 = 0.413, p = .521). The designation of health workers approached significance but did not reach a significant threshold (χ^2 = 4.915, p = .178). The location of the working center (CHC, PHC, sub-center) did not show a significant association with attitudes (χ^2 = 0.808, p = .668). Similarly, the highest level of education attained by health workers (ANM, GNM, BSc Nursing, MSc Nursing) did not exhibit a significant association with attitudes (χ^2 = 2.555, p = .465). Overall, the analysis suggests that these socio-demographic factors do not significantly influence the attitudes of health workers.

Discussion

The demographic analysis of the health workers in this study reveals that a significant portion (31.57%) fall within the 20-25 year age group, followed by those aged 30-35 years (25%), 35 years and above (23.68%), and 25-30 years (19.73%). The sample is predominantly female, with women comprising 78.94% and men 21.05%. Among the health workers, the majority are staff nurses (47.36%), followed by Community Health Officers (CHOs) at 27.63%, lab technicians at 17.1%, and ASHA workers at 7.89%. The distribution of health workers across different working centers shows that 34.21% are in Community Health Centers (CHC), 26.31% in Primary Health Centers (PHC), and 39.47% in sub-centers. A small percentage (1.31%) reported having a cancer patient in their family, while 98.68% did not. Additionally, a minority (3.97%) of health workers reported smoking and alcohol habits, whereas the majority (96.05%) did not engage in these behaviors.

Knowledge and attitude assessments show that over half (53.95%) of the surveyed health workers demonstrated "Good" knowledge with scores between 17 and 21, a mean score of 16, a standard deviation of 2.92, and a median score of 17. The "Negative Attitude" group comprises 28.95% of the total, with a frequency of 22 and attitude scores ranging between 0 and 8. In contrast, the "Positive Attitude" category represents the majority (71.05%), with a frequency of 54 and attitude scores ranging between 9 and 15. The overall attitude levels had an average score of 11.47, a standard deviation of 3.03, and a median score of 12.5.

Comparing these findings with other studies, a community-based survey in 2014 involving 409 women aged 15-49 years revealed that while 85% were aware of cancer, only 34.2% knew about cervical cancer risk factors, and 51% were aware of its symptoms. Moreover, 96.2% had never undergone cervical cancer screening, and 70.8% never discussed breast or cervical cancer with community members(6). Another study involving 748 health workers found that 84.9% had average cancer knowledge, with significant variations influenced by age, marital status, and education (p<0.001). Almost all health workers (99.3%) exhibited a positive attitude toward cancer(7). In Bangladesh, a study involving 325 CHCPs and has revealed that 54.15% scored above average in knowledge, 58.15% in attitude, and 65.54% in practice. Most CHCPs (90.91%) and Has (96.06%) lacked government training in cancer, and few knew about available treatment options (8). This knowledge is vital for tailoring targeted interventions and strategies to address specific factors that may influence health workers' perceptions and understanding of cancer, ultimately contributing to more effective healthcare initiatives.

The p-value of 0.259 in this study indicates a lack of a statistically significant relationship between attitude and knowledge. The negative r-value of -0.131 signifies a weak negative correlation between attitude and knowledge; as knowledge levels increase, attitudes tend to decrease, and vice versa. This inverse relationship, although modest, warrants attention. In a non-experimental descriptive research study involving 50 staff nurses from cancer hospitals in Punjab, the average knowledge score was 14.94, and the positive attitude score was 59.70. No significant relationship was observed between knowledge and attitude and their socio-demographic variables (P>0.05)(9). The study emphasizes the need for continuous education programs to enhance knowledge and improve care for cancer patients undergoing chemotherapy.

The analysis revealed significant associations between knowledge levels and variables such as religion (χ^2 = 7.544, p-value = 0.023) and designation (χ^2 = 11.385, p-value = 0.077). However, socio-demographic factors such as age, gender, marital status, working center, education level, monthly income, family history of cancer, and smoking/alcohol habits did not show significant associations with knowledge levels. Conversely, when examining attitude levels, most socio-demographic factors, including age, gender, religion, working center, education level, monthly income, family history of cancer, and smoking/alcohol habits, did not show significant associations. However, marital status (χ^2 = 3.524, p-value = 0.060) and designation (χ^2 = 4.915, p-value=0.178) presented borderline associations, warranting further investigation. Additionally, a descriptive cross-sectional study conducted in Varanasi district, Uttar Pradesh, aimed to evaluate the knowledge, attitude, and practice (KAP) regarding cervical cancer and its screening among community health workers. The study revealed that despite good knowledge and

perception, fewer than 10% of workers had undergone screening. The Chi-square test indicated a significant association between the level of knowledge and the practice of screening ($p<0.05$)(10). The study contributes valuable insights into the knowledge and attitude landscape among health workers, offering a basis for targeted interventions to enhance cancer awareness and positive attitudes. Further research and longitudinal studies are essential to explore the dynamic nature of these factors and refine strategies for improving healthcare professionals' engagement in cancer care.

Limitations of the Study:

Several limitations undermine the robustness of this study. First, the findings' limited generalizability is evident, conducted exclusively in Khorda district, potentially failing to capture the broader diversity of health workers across various regions. Additionally, the small sample size of 76 health workers raises concerns about statistical power, impairing the study's capacity to yield conclusive results. The use of total purposive sampling introduces selection bias, potentially skewing the sample's representativeness. Relying on self-reported data poses inherent risks of recall and social desirability biases, influencing the accuracy of knowledge and attitude assessments. The cross-sectional design inhibits the establishment of causation or temporal changes, necessitating future longitudinal studies for a more comprehensive understanding. Moreover, the study's narrow scope, overlooking cultural and workplace influences, restricts the depth of exploration. Lastly, resource constraints in time, budget, and access may have curtailed the study's depth and breadth, compromising its ability to thoroughly examine all pertinent factors.

Abbreviation:

CHO: Community Health Officers

ASHA: Accredited Social Health Activists

NO: Nursing Officers

GNM: General Nursing and Midwifery

ANM: Auxiliary Nurse Midwife

CHC: Community Health Centers

PHC: Primary Health Centers

KAP: Knowledge, Attitude, and Practice

IRB: Institutional Review Board

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Conflict of interest: The authors declare no conflict of interest.

Ethics Approval:

The study received formal approval from the research committee of SUM Nursing College, ensuring its alignment with established ethical guidelines. Prior to data collection, informed consent was obtained from all participating health workers, emphasizing their voluntary involvement and the right to withdraw at any stage without consequences. Anonymity and confidentiality were diligently maintained throughout the study, safeguarding the privacy of participants and ensuring the secure handling of sensitive information. The study protocol was assigned Institutional Review Board (IRB) No: SOADU/SNC/IRB/327/2022, attesting to its ethical review and approval.

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Reference:

[1] Cancer [Internet]. World Health Organization; [Citation date: December 22, 2023]. Available from: https://www.who.int/news-room/fact

[2] Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, Bray F. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. CA Cancer J Clin. 2021 May; 71(3): 209-249. doi:10.3322/caac.21660. Epub 2021 Feb 4. PMID: 33538338.

[3] Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, Bray F. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: a cancer journal for clinicians. 2021 May; 71(3):209-49.

[4] Ghosh S, Mallya SD, Shetty RS, Pattanshetty SM, Pandey D, Kabekkodu SP, Satyamoorthy K, Kamath VG. Knowledge, attitude and practices towards cervical cancer and its screening among women from tribal population: A community-based study from southern India. Journal of racial and ethnic health disparities. 2021 Feb; 8:88-93.

[5] Baiguerel EM, Tagne RS, Nwabo AH, Nangue C, Mohamadou A, Etet PF, Telefo PB. Breast Cancer and Its Screening Awareness in the North Region of Cameroon. Journal of Cancer Therapy. 2021 Jul 7; 12(7):424-36.

[6] Makurirofa L, Mangwiro P, James V, Milanzi A, Mavu J, Nyamuranga M, Kamtauni S. Women's knowledge, attitudes and practices (KAP) relating to breast and cervical cancers in

rural Zimbabwe: a cross sectional study in Mudzi District, Mashonaland East Province. BMC Public Health. 2019 Dec; 19:1-9.

[7] Maseko T, Haumba S, Dlamini X, Lomalanga H, Mahlalela N, Mkhontfo M, Nhlabatsi Z, Mabuza N, Vambe D. Knowledge, Attitudes and Associated Factors of Health Workers Towards Lung and other Cancers in Eswatini. Asian Pacific Journal of Cancer Care. 2022 Sep 3; 7(3):491-7.

[8] Mubin N, Bin Abdul Baten R, Jahan S, Zohora FT, Chowdhury NM, Faruque GM. Cancer related knowledge, attitude, and practice among community health care providers and health assistants in rural Bangladesh. BMC Health Services Research. 2021 Dec;21:1-1.

[9] Choudhary VS, Chaudhary G. Assessment of the knowledge and attitudes of staff nurses on nursing care of cancer patients undergoing chemotherapy. Baba Farid University Nursing Journal. 2017; 13(2):38-41.

[10] Khanna D, Khargekar N, Budukh A. Knowledge, attitude, and practice about cervical cancer and its screening among community healthcare workers of Varanasi district, Uttar Pradesh, India. Journal of Family Medicine and Primary Care. 2019 May; 8(5):1715.