Health Gate
Volume 4 Number 2 April 2026 ISSN 2986-1098
Homepage: https://healthgate.ppnikotablitar.com

DOI : http://dx.doi.org/10.70111/hg4208
Submitted : April, 8 2026
Reviewed : April , 16 2026
Accepted : April, 23 2026

Community Transformation in Early Detection of Head and Neck Cancer in Bali

Sagung Agung Putri Dwiastuti[1*], IGAA Dharmawati[2]
[1,2] Department of Dental Health, Poltekkes Kemenkes Denpasar, Bali, Indonesia
Coresponding author : sagungagungputri@yahoo.co.id

ABSTRACT

Cancer is the second leading cause of death worldwide and the leading cause of death in Indonesia. One type of cancer that causes a large number of deaths in Indonesia is head and neck cancer. In Indonesia, the prevalence of head and neck cancer is quite high, with an incidence of 4.7 per 100,000 population. The purpose of this study is to determine the community's knowledge, attitudes, and behaviors regarding head and neck cancer. A cross-sectional study was conducted in the working area of the Community Health Center in Bali, with a cadre population spread across eight villages. Samples were taken using the Slovin formula with a total of 70 respondents, using simple random sampling. The type of analysis used was Spearman's correlation test. The results obtained showed that the majority of respondents were female, 54.3%, with the highest level of education being a bachelor's degree, 51.4%. The highest level of knowledge was good, 48.6%, and the majority of respondents stated that knowledge about head and neck cancer was very important, 88.6%. Bivariate analysis using Spearman's correlation test to examine the relationship between the three components of knowledge, attitude, and behavior showed a significant relationship between behavior and knowledge ($p<0.05$). It can therefore be concluded that there is a significant relationship between knowledge and behavior and values ($p<0.05$).

Keywords: community; head and neck cancer; transformation

Background

Second leading cause of death in Indonesia is cancer.(1) Based on Basic Health Research (*Riset Kesehatan Dasar*) data, the prevalence of cancer in Indonesia shows an increase from 1.4 per 1,000 population in 2013 to 1.79 per 1,000 population in 2018. Meanwhile, data from the World Health Organization (WHO)'s Global Burden of Cancer Study (Globacan) recorded a total of 396,914 cancer cases in Indonesia in 2020 and a total of 234,511 deaths.(2,3)

One type of cancer that causes a large number of deaths in Indonesia is head and neck cancer.(4) In Indonesia, the prevalence of head and neck cancer is quite high, with an incidence of 4.7 per 100,000 population. Head and neck cancer is an epithelial malignancy of the upper aerodigestive tract (UADT), which includes the paranasal sinuses, nasal cavity, oral cavity, pharynx, and larynx.(5–7) Head and neck cancer has various types of tumors that arise from various anatomical structures, including the craniofacial bones, soft tissues, salivary glands, skin, and mucous membranes. Most, or more than 90%, are squamous cell carcinomas.

Head and neck cancer is most commonly found in the late stage (IV).(8) Several factors contribute to the delay in detecting head and neck cancer, including a very low level of knowledge about cancer, patients using herbal medicines, and a lack of visits to health facilities.(9) Delayed detection leads to delayed treatment, which significantly increases treatment costs, lowers survival rates, and, even if the patient survives, reduces quality of life.

The Ministry of Health prioritizes cancer services through promotional and preventive programs, especially screening and early detection.(10) The problem is that there are not enough health workers who can carry out promotional and preventive activities in the working areas of community health centers, so assistance and community participation are needed to support the success of government programs. The role of cadres in recognizing and detecting head and neck cancer early is very important because cadres

are part of the community and can help improve the community's health status from a promotional and preventive perspective. Cadres will be able to motivate or even educate high-risk communities to have their health checked at health centers or by doctors. Therefore, training is needed to equip cadres with the knowledge, attitudes, and skills to detect high-risk head and neck cancer early so that they can motivate and educate high-risk individuals to undergo further examination. Repeated training of cadres can improve their understanding of the material provided. Mentoring of cadres by health workers from community health centers and academics is essential to improve the knowledge of cadres.[11]

The objective of this study is to determine the community's knowledge, attitudes, and behaviors regarding head and neck cancer.

Methods

In the first phase of the study, a cross-sectional survey design and a non-interventional research design were used. The sample size was determined using the Slovin Formula, resulting in 70 respondents. Data collection: Before the study, an explanation of the purpose and objectives of the study was provided, and consent was obtained from potential respondents. Participation in this study was voluntary; only respondents who agreed to be interviewed were included. Those who agreed to participate were asked to sign a statement of willingness to participate. Data were collected using instruments of a structured questionnaire and an interview guide. The questionnaire consisted of variables related to the study objectives, i.e., knowledge, attitude, behavior, and respondents' experiences regarding head and neck cancer.

Analysis of research results was carried out using bivariate analysis, a statistical analysis used in this study to evaluate the relationship between two variables and determine whether the three are related, correlated, different, influenced, or other things that are in accordance with the proposed hypothesis. Bivariate analysis has the following steps: namely, proportion or percentage analysis by comparing the cross-distribution of the two variables concerned. If the data is normally distributed, a difference test is carried out between the two variables based on the results of the Paired T-test statistical analysis.[12]

This study has obtained ethical approval from Poltekkes Kemenkes Denpasar No. DP.04.02/F.XXXII.25/743/2025.

Results

Head and neck cancer remains a significant global health challenge, characterized by its complex etiology, diverse clinical manifestations, and substantial impact on patients' quality of life. Understanding the underlying risk factors, early detection, and effective management strategies is essential to improving clinical outcomes and reducing disease burden. In this context, the present study discusses the findings in relation to the community's knowledge, attitudes, and behaviors towards head and neck cancer.

Table 1. Frequency distribution of respondents based on knowledge

Knowledge Level	Frequency	Percentage (%)
Good	34	48.6
Fair	11	15.7
Poor	25	35.7
Total	70	100

Based on Table 1, the level of respondents' knowledge about head and neck cancer is mostly at a good level, namely 34 respondents (48.6%).

Table 2. Frequency distribution of respondents based on attitude

Attitude Level	Frequency	Percentage (%)
Not Important	2	2.9
Less important	2	2.9

Publisher: Regional Representative Council of the Indonesian National Nurses Association of Blitar City
Correspondent*

Health Gate
Volume 4 Number 2 April 2026 ISSN 2986-1098
Homepage: https://healthgate.ppnikotablitar.com

Quite important	4	5.7
Very important	62	88.6
Total	70	100

Table 2 shows that the majority of respondents' attitudes regarding head and neck cancer considered it very important to inform the public, namely 62 respondents (88.6%).

Table 3. Frequency distribution of respondents based on behavior

Willingness to participate	Frequency	Percentage (%)
Not willing	8	11.4
Undecided	4	5.7
Yes, if training is available	37	52.9
Yes, very willing	21	30
Total	70	100

Based on Table 3, it can be seen that the majority of respondents' behavior regarding head and neck cancer detection stated that they were willing if there was prior training, namely 37 respondents (52.9%).

Table 4. Frequency distribution of respondents based on experience

Suggestion	Frequency	Percentage (%)
Massage	1	1.4
Leave as painless	2	2.9
Refer to a Health Center/doctor	62	88.6
Drink warm water and massage	5	7.1
Total	70	100

Based on Table 4, it can be seen that the respondents' experiences/suggestions when finding head and neck cancer sufferers, most of them suggested referral to a community health center/doctor, namely 62 respondents (88.6%).

A bivariate analysis using the Spearman correlation test was conducted to examine the relationship between the three components of knowledge, attitudes, and behavior, as shown in Table 5.

Table 5. Relationship between knowledge, attitude, and behavior

	Knowledge	Attitude	Behavior
Knowledge	-	0.172	0.006
Attitude	0.172	-	0.053
Behavior	0.006	0.053	-

According to the results in Table 5, it can be seen that there is a significant relationship between behavior and knowledge ($p<0.05$). Meanwhile, there is no significant relationship between knowledge and attitude, and between attitude and behavior ($p>0.05$).

Discussion

The results of the study, conducted in the Kerambitan II Community Health Center area, with 70 respondents, showed that there were more female respondents than male respondents (38 respondents (54.3%), with the majority having a diploma/bachelor's degree (36 respondents (51.4%), and with the most retirees (29 respondents (41%). The results of the study showed that the level of knowledge of head and neck cancer was mostly in the good category (48.6%). This indicates that the public already has a basic understanding of the early symptoms of head and neck cancer, but this knowledge is not yet

Publisher: Regional Representative Council of the Indonesian National Nurses Association of Blitar City
Correspondent*

widespread and in-depth. Some respondents were still unable to recognize early signs, such as small lumps in the neck, canker sores that do not heal, or persistent hoarseness. This finding aligns with research that stated that the lack of access to information and health education results in limited public knowledge about head and neck cancer.[13]

In terms of attitudes, the majority of respondents (88.6%) expressed a positive attitude, recognizing the importance of early detection efforts and a willingness to participate in prevention activities. This positive attitude can be influenced by educational factors, personal and family experiences, and trust in health professionals. According to the Health Belief Model, a positive attitude arises when someone feels vulnerable (perceived susceptibility) and recognizes the benefits of early detection (perceived benefit). Therefore, despite limited knowledge, a positive attitude is crucial for developing education and prevention programs. [14,15]

Respondents' experiences/advice regarding mild cases of head and neck cancer symptoms are still good, but uneven. Some respondents had positive experiences, such as advice to see a health professional, but others chose inappropriate actions or were simply unsure of what to do. This lack of experience may be influenced by minimal exposure to cases in their local community and limited training or practical outreach activities. Research also found a similar finding: that people who rarely participate directly in health activities are more likely to make incorrect decisions when faced with early symptoms of serious illness.[13]

The correlation results indicate a fairly strong relationship between knowledge and behavior, which aligns with Notoatmodjo's (2023) theory that knowledge is a primary factor shaping a person's behavior toward health. The higher the knowledge, the greater the tendency for individuals to value the importance of early detection of head and neck cancer. The relationship between attitude and experience is only weak. This can be explained by the fact that practical experience in dealing with health problems is often influenced by external factors such as access to health services, opportunities for examinations, and the cultural preference for traditional medicine.[16–19] Besides, family support also takes part in the success of the educational program.[20,21]

The lack of a significant correlation between knowledge and experience indicates a gap between respondents' knowledge and actual behavior. This finding aligns with research that found that although people have sufficient knowledge about head and neck cancer, most have never undergone early screening or self-health consultations.[22] Therefore, it can be concluded that increasing public knowledge is important, but not sufficient to improve actual experiences. Practice-based interventions, such as mass screening programs, early detection simulations, or case-based counseling, are needed to translate positive knowledge and attitudes into real-world experiences.[23–25]

Conclusions and Recommendations

Overall, this study reveals a gap between public knowledge, attitudes, behavior, and experience. Although respondents' attitudes were relatively positive, their knowledge and experience do not fully support effective preventive measures. This situation emphasizes the need for public health interventions, including continuously improving education through health education, print, and digital media, practical training on early detection of head and neck cancer, especially for health workers and rural communities, and strengthening collaboration between health facilities (community health centers, hospitals) and the community to raise awareness of the importance of early detection. Along with appropriate interventions, it is expected that the community will not only have good knowledge but also a positive attitude, followed by real-life experience in taking preventive measures against head and neck cancer.

Acknowledgment

The authors would like to express their sincere gratitude to the Department of Dental Health, Poltekkes Kemenkes Denpasar, Bali, for their support and facilitation of this study. The authors also extend their appreciation to Kerambitan II Community Health Center as well as all respondents who willingly participated and contributed valuable data to this research.

References

1. Gondhowiardjo S, Nurhidayat W, Zhafirah NF, Jayalie VF, Sekarutami SM, Koesmedi Priharto R, et al. Cancer Profile in Jakarta: A 5-year Descriptive Study. Open Access Maced J Med Sci [Online]. 2023;11(E):1857–9655. Verfügbar unter: https://doi.org/10.3889/oamjms.2022.8200.
2. Kementerian Kesehatan RI. Hasil Utama Riskesdas 2018 (Indonesia Basic Health Research). 2018.
3. Setiabudi J, Wardhana M, Indira IGAA, Puspawati NMD. Profil Pra Kanker dan Kanker Kulit di RSUP Sanglah Periode 2015-2018. Jurnal Medika Udayana. 2021;10(3):83–9. https://doi.org/10.24843/MU.2021.V10.i3.P13
4. Marlinda Adham, Sari AA, Putranto R, Suroyo I, Safitri ED. Palliative management of advanced stage head and neck cancer. The Indonesian Journal of Cancer Control. 2023;2(1):21–31. https://doi.org/10.52830/inajcc.v2i1.68
5. Kemenkes RI. Kanker Nasofaring. Pedoman Nasional Pelayanan Kedokteran [Online]. 1. Aufl. Bd. 5. 2017 [zuletzt aufgerufen am 08.04.2026]. 89 S. Verfügbar unter: http://kanker.kemkes.go.id/guidelines/PNPKKNF.pdf%0Ahttps://www.depkes.go.id/article/view/19020100003/hari-kanker-sedunia-2019.html.
6. Sharma J, Deo SVS, Thulkar S, Iyer VK, Pathak M, Bhoriwal S, et al. Clinicoradiological Versus Pathological Neck Staging in Locally Advanced Oral Cavity Cancers. Oral Oncology Reports. 2023;7:100088. https://doi.org/10.1016/j.oor.2023.100088
7. Kotronoulas G, Papadopoulou C. A Primer to Experimental and Nonexperimental Quantitative Research: The Example Case of Tobacco-Related Mouth Cancer. Semin Oncol Nurs. 2023;39(2):151396. https://doi.org/10.1016/j.soncn.2023.151396
8. Gormley M, Creaney G, Schache A, Ingarfield K, Conway DI. Reviewing the epidemiology of head and neck cancer: definitions, trends and risk factors. Br Dent J. 2022;233(9):780–6. https://doi.org/10.1038/s41415-022-5166-x
9. Hasbie NF, Rafie R, Erianto M, Puspita S. Faktor-Faktor Keterlambatan Penatalaksanaan Pada Pasien Kanker Kepala Dan Leher Di RSUD Dr.H.Abdul Moeloek Provinsi Lampung. MAHESA : Malahayati Health Student Journal. 2022;2(1):82–94. https://doi.org/10.33024/mahesa.v2i1.4549
10. Icanervilia A, Choridah L, Van Asselt A, Vervoort J, Postma M, Rengganis A, et al. Early Detection of Breast Cancer in Indonesia: Barriers Identified in a Qualitative Study. Asian Pacific Journal of Cancer Prevention. 2023;24(8):2749–55. https://doi.org/10.31557/APJCP.2023.24.8.2749
11. Lestari R, Warseno A, Trisetyaningsih Y, Kartika Rukmi D, Suci A. Pemberdayaan Kader Kesehatan dalam Mencegah Penyakit Tidak Menular Melalui Posbindu PTM. Jurnal ADIMAS. 2020;4(1):48–55. https://doi.org/10.24269/adi.v4i1.2439
12. Xu M, Fralick D, Zheng JZ, Wang B, Tu XM, Feng C. The differences and similarities between two-sample t-test and paired t-test. Shanghai Arch Psychiatry. 2017;29(3):184–8.
13. Mandasari M, Astuti AK, Indrastiti RK, Treister NS, Karsono J, Sulisfianty SA. Head and Neck Cancer Awareness Exploratory Survey in Undergraduate Students. Journal of International Dental and Medical Research. 2022;15(2):728–34.
14. Ali S, Bakti DK, Atika DB, Juliansyah AR. Using the Health Belief Model (HBM) to Assess Young Aduly Behavior in Health Information Searching and Sharing. In: ICOMESH 2024-2nd International Conference OnMedical Science and Health. 2024. S. 50–8.
15. Chundawat DS. Positive Attitude and Self-Esteem: Key to Mental Health. Asian Journal of Nursing Education and Research. 2018;8(4):555. https://doi.org/10.5958/2349-2996.2018.00117.9
16. Syafridah A, Deriansyah M, Fadian N, Yasin M, Naufal MA, Nasywa I. Relationship between Knowledge Level of Clean and Healthy Living Behaviour (PHBS) with Dental and Oral Hygiene at the Quranic House Bustanul Mustafa Lhokseumawe. AVERROUS: Jurnal Kedokteran dan Kesehatan Malikussaleh. 2024;10(2):98–107. https://doi.org/10.29103/averrous.v10i2.16136
17. Schwarz T, Schmidt AE, Bobek J, Ladurner J. Barriers to Accessing Health Care for People with Chronic Conditions: a Qualitative Interview Study. BMC Health Serv Res. 2022;22(1):1037.

https://doi.org/10.1186/s12913-022-08426-z
18. Dawkins B, Renwick C, Ensor T, Shinkins B, Jayne D, Meads D. What Factors Affect Patients' Ability to Access Healthcare? An Overview of Systematic Reviews. Tropical Medicine & International Health. 2021;26(10):1177–88. https://doi.org/10.1111/tmi.13651
19. Tian Y. A Review on Factors Related to Patient Comfort Experience in Hospitals. J Health Popul Nutr. 2023;42(1):125. https://doi.org/10.1186/s41043-023-00465-4
20. Hastutik AS, Fata UH, Romadhon WA. Family Nursing Care for Clients With Diabetes Mellitus in Community Health Center. Health Gate. 2025;3(4):136–44. https://doi.org/10.70111/hg3402
21. Yudhawati SK, Mujito M, Hariyanto T. Analysis of Demographic Characteristics of Elderly Hypertension Patients at Sananwetan Primary Health Centerimary Health Center. Health Gate. 2025;3(4):166–74. https://doi.org/10.70111/hg3405
22. Pinkas W, Jankowski M, Wierzba W. Awareness of Head and Neck Cancers: A 2021 Nationwide Cross-Sectional Survey in Poland. J Clin Med. 2022;11(3):538. https://doi.org/10.3390/jcm11030538
23. Zakiyah RA, Abiddin AH. The Effectiveness of Swimming Intervention and Supplementary Feeding on the Growth of Malnourished Children. Health Gate. 2026;4(1):1–7. https://doi.org/10.70111/hg4101
24. Lyu X, Li J, Li S. Approaches to Reach Trustworthy Patient Education: A Narrative Review. Healthcare. 2024;12(23):2322. https://doi.org/10.3390/healthcare12232322
25. Agure S, Miyeso B, Abdullahi L. Interventions to Enhance The Use of Evidence Based Decision Making for Quality Care among Nurses: A Systematic Review. East African Health Research Journal. 2024;8(1):148–53. https://doi.org/10.24248/eahrj.v8i1.763

Correspondent*