

Cancer awareness and attitude towards cancer screening in India: A narrative review

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ABSTRACT

Cancer awareness is the key to early detection and better health-seeking behaviour. Cancer is quite common in both developing as well as developed countries, but awareness is yet poor among the general population. Poor awareness may lead to poor uptake of screening modalities and delay in diagnosis. One factor that has been consistently shown to be associated with late diagnosis and treatment is a delay in seeking help for cancer-like symptoms. This paper reviews the literature on cancer awareness among the general population and attitude towards screening modalities. The poor awareness level among the Indian population shows the need for health education and sensitisation regarding cancer and its different aspects. This will be helpful in the successful implementation of health programmes related to cancer.

Keywords: Attitude, awareness, cancer, India, narrative review, review

Introduction

Cancer is a global disease and is spreading rapidly. Healthcare systems across the world are facing stiff challenges to tackle this issue. This appears formidable when India's 1.3 billion population, which is considered to, spread across 29 states and 7 union territories with varying degree of population genetics, environment, lifestyle, etc. lead to a heterogeneous distribution of disease burden.^[1]

In low- and middle-income countries, patients with cancer generally have a poorer prognosis compared with patients in high-income countries; the reasons being lack of awareness, late diagnosis and inequitable access to affordable curative services.^[2] Lack of awareness contributes to the late reporting of cancer

cases to the healthcare facility. Data from four major centres in India showed that the majority of individuals with cancer seek healthcare for the first time at late stages.^[3] The importance of cancer awareness has been emphasised as a means of ensuring behaviour that facilitates early detection, whereas the absence of cancer awareness has been seen as a detriment to this end.^[4] Delay in health-seeking is also attributed to factors such as illiteracy, financial constraints, as well as myths and superstitions along with lack of awareness and these go hand-in-hand, most of the time.

Screening is an important preventive measure in cancer control. Even though the national programme in India has a screening component, it is yet to take root in most part of the country. At present, most of the screening tests are available at higher centres only. The available screening methods to the population are also not adequately utilised. Efforts should be made to learn why such gaps occur in service delivery and utilisation, and for that, it is pertinent to understand the attitude of people towards screening practices.

With the increasing trend of cancer in India, the awareness

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level is expected to change, so is the attitude towards cancer screening. Studies on cancer awareness and attitude towards screening in India are limited. Awareness about cancers and cancer screening procedures will help in early diagnosis and subsequent treatment and a better outcome. Thus, the authors have tried to collate information related to cancer awareness and attitude towards screening methods to get an overall view of the situation. With rolling out of the screening services in the country, there is the need to synthesise a review on cancer awareness. Such information would aid in making systematic changes in the programme if required to improve uptake of the screening programme and overall awareness related to cancer in the population. This study was commenced after receiving ethical approval from the All India Institute of Medical Sciences, Bhubaneswar.

Awareness about Common Cancers

Most of the studies focused on awareness about specific cancers, with very few studies on overall cancer. Only four studies were identified that studied awareness about overall cancers, one of the earliest of which was by Ray *et al.* in West Bengal, which observed that 98.3% of participants had heard about cancer. Another study with a high level of overall cancer awareness was by Raj *et al.*, which found that 87% of the population had heard about cancer in the five Indian states.^[5] However, the other two studies did not find the same level of awareness with Seshachalam *et al.* in Mysore reporting that only 60.48% and Puri *et al.* Chandigarh reporting only 57.2% of their study participants had heard about cancer.^[6] These differences could be partly explained by the difference in literacy rates of the study population. If one considers the literacy rate alone, the level of awareness should not be as low as 57% and not as high as 98%^[7,8] Cancer awareness is likely to be associated with many other factors besides literacy rate; one of which was found to be level of income. Gadgil *et al.* in urban women of Mumbai found a significant association between breast cancer awareness and family income level. High-income group participants had better knowledge than that of low-income groups.^[9] This is plausible as a better income level would equip them with better access to knowledge.

Regarding awareness about specific cancers, for this review, only those cancers having screening methods in practice were considered. Therefore, cancers of the lip and oral cavity, cervical and breast cancers have been reviewed. Lip and oral cavity cancers are currently the most common cancers in India. We found five Indian studies regarding awareness about oral cancer. The highest level of awareness was found by Sankheswari *et al.* (93.5%) at Belgaum regarding oral cancer, followed by 91% by Agrawal *et al.*, 86.9% by Thilak *et al.* and 86% by Elango *et al.*^[10-13] In contrast to these, Reddy *et al.* in Hyderabad found 60.2% awareness about oral cancer.^[14] In the multistate study conducted by Raj *et al.*, mouth cancer was mentioned as one of the most common cancers at 57.9%.^[7] Similar to the overall cancer awareness studies, the low level of awareness in Reddy *et al.* study could be explained by the educational qualification of the study participants where most

of them were educated below high school. A higher level of awareness may be attributed to the frequent oral cancer-related advertisement and the warning signs of cancer in tobacco packets. This shows the need for similar education to improve the awareness of cancers.

Cervical cancer is one of the common cancers among females in India and around the globe. Despite this, the level of awareness was observed to be low from various studies. Few studies that focused on cervical cancer reported a wide range of knowledge variability ranging from 3.6% to 55%. Sabeena *et al.* found an awareness level of 3.6%, whereas it was 50% by Dahiya *et al.* in the urban area of New Delhi and 55% by Kadian *et al.*^[15-17] Awareness regarding cervical cancer was poor among Indian women and was affected by educational status and urban-rural variation. This also shows the need for specific cancer awareness, especially the female cancers which are associated with stigma.

Breast cancer is the most common cancer among females in the world and India, was also found to be the most common cancer known to the participants. It was the most commonly mentioned cancer in the studies by Puri *et al.* (67%) and Sharma *et al.* (73.8%).^[8,18] Overall, the level of awareness for breast cancer was good as compared to cervical cancer. Strangely, in a hospital-based study conducted by Rao *et al.* only 18.8% of the participants were aware of breast cancer.^[19] Educational level was found to be associated with an awareness level of cancer.

Specific cancer awareness was also in a similar range to that of overall cancer. The awareness about cervical cancer was quite poor. Considering that it was the most common cancer among Indian women till recently and is still the second most common, its awareness is abysmally low. This could be due to two reasons; firstly, dangers signs of breast cancer are more appreciable than cervical cancer and secondly, wide-spread publicity about breast cancer through mass media. One also cannot rule out the sociocultural aspect of stigma and not talking about genital areas in the Indian milieu. This highlights the need for qualitative research methods to find out the reasons and ways to deal with it, without which intervention will be difficult to implement and success limited. One common observation in most studies was the association of education with awareness level. This association could also be linked with the better awareness found among higher income groups, as it is a well-known fact that high levels of education beget higher income levels. Thus, if cancer burden in terms of reduced mortality and morbidity is to be achieved, there has to be better awareness levels than what is prevalent and also improvement in education. Better awareness about oral and breast cancer also indicates that maybe in some areas, mass education and health information are penetrating the community. There is a dire need to strengthen the awareness of other cancers also, especially cervical cancer.

Awareness about the source of cancer information

The level of cancer awareness was affected by the accessibility to a

different source of information regarding cancer.^[20] Television was the major source of information mentioned in the studies by Raj *et al.* (37.7%), Ray *et al.* (36.3%), Reddy *et al.* (43.2%) and Sharma *et al.* ^[5,7,14,18] Healthcare personnel were the major source of information for cervical cancer as mentioned by Sankheshwari *et al.*^[10] In contrast to this, few studies showed that friends and relatives were the sources of information about cancer (Rao *et al.* 89%, 36.1% in Raj *et al.*, Patra *et al.* and 17% in Siddharthar *et al.*).^[7,19,21,22] As cancer awareness is a vital component of the cancer control programme, careful consideration of the source of information may be useful to generate awareness. Outdoor patients can be considered as an opportunity for generating cancer awareness as it is less talked about in the community and less advertised. Awareness generation campaigns can be a better way to impart information to the communities. Community health education on cancer needs to be emphasised. Proper utilisation of mass media and the internet can be useful in creating awareness.^[23,24]

Awareness about danger signs of cancer, preventability and curability of cancer

Most of the cancers remain in the precancerous stage for a longer period and early diagnosis will help in reducing mortality. Awareness of early signs of cancer is related to better health-seeking behaviour and early detection of common cancer. The most common reason for delayed healthcare seeking was the failure to recognise a symptom as suspicious.^[25] Information about early signs and symptoms for specific cancer was collected in a few of the studies. Ray *et al.* reported, 88% of participants could identify at least one sign of cancer, but none could identify all the seven cancer warning signs.^[5] Unusual bleeding was the most mentioned cancer sign (66.4% in Puri *et al.*, 41.5% in Veerkumar *et al.* and 23.9% in Raj *et al.*).^[7,8,26] Dahiya *et al.* mentioned pain or discharge from the breast (67%) as the commonest symptom of breast cancer followed by breast lump (57%) in a study done for breast cancer.^[27] Awareness was seen to be higher in the study by Dahiya *et al.* probably due to the better educational level of the participants. This shows educational status plays a significant role in cancer awareness. Change in the shape and size of the breast, any growth, or discharge is perceived to be abnormal by the general population. In a study done by Sankheshwari *et al.* only 17% of participants could identify the signs of oral cancer.^[10] Signs of oral cancer were less known to the general population despite oral cancer being the commonest cancer in India. Similarly, 90% population was found to be unaware of warning signals of cervical cancer in a study by Raychaudhuri *et al.*^[28] This shows the lack of complete awareness regarding cancer in the general population. More comprehensive awareness generation strategies need to be developed. As most of the cancer cases are diagnosed at a later stage, awareness about signs and symptoms can improve the health-seeking behaviour regarding cancer and uptake of screening procedures, subsequently the outcome of cancer patients.

Awareness about the curability of cancer has an impact on health-seeking behaviour towards cancer. Results of different

Indian studies showed that the perception regarding the curability of cancer was quite different. Three fourth of the participants considered cancer as curable in a study done by Sheshachalam *et al.*,^[6] it was less in other Indian studies (39.8% in Puri *et al.*, 58.3% in Ray *et al.*).^[5,8] Raj *et al.* reported that 57.1% of participants were aware of the fact that cancers can be cured if detected at an early age.^[7] The positive association between awareness about the curability of cancer and an increase in educational status was also demonstrated by Elangovan *et al.*^[29] The results of the studies done for specific cancer showed varied results, where the awareness about the curability of cancer ranged from 34.8% by Thilak *et al.* for oral cancer to 64% by Agrawal *et al.* for breast cancer.^[11,12] Though people know about cancer, there is a substantial gap in knowledge about the curability aspect.

Common cancers such as oral, cervical, breast and lung cancers are preventable to some extent with appropriate preventive measures. Awareness about the preventability of cancer will affect their practice of preventive measures. Very few studies have collected data regarding this. Cancer as preventable was mentioned by 74% of the respondents by Agrawal *et al.* for oral cancer in Gorakhpur.^[12] In contrast to this awareness level of preventability was found to be very low (3.6%) in a study by Raychaudhuri *et al.* for cervical cancer.^[28] Though the population characteristics of both the studies are similar, the large difference can be due to the widespread advertisement of tobacco use attributed to oral cancer.

Awareness about Risk Factors of Cancers

Awareness about risk factors of cancer and its preventive aspects is essential for early detection through screening and treatment of the precancerous lesion. The awareness about risk factors of cancer was limited to only tobacco and alcohol. Tobacco was identified as the most common risk factor in most of the studies. Smoking was the most mentioned risk factor followed by tobacco chewing. Awareness level about smokeless tobacco as a risk factor was found to be 74.7% by Puri *et al.*, 77% by Elango *et al.*, 79.2% by Raj *et al.* and 91.8% by Thilak *et al.*^[7,8,12,13] Study by Sankheshwari *et al.* found smoking as a major risk factor mentioned by 22.6% of participants.⁽¹⁰⁾ In some of the Indian studies, smokeless tobacco was considered as a major risk factor for cancer (79.3% by Raj *et al.*, 79% by Elango *et al.*, 57.7% by Dahiya *et al.*, 25.3% by Sankheshwari *et al.*).^[7,10,13,27] Better awareness about smokeless tobacco as a risk factor could be the result of frequent use of a smokeless form of tobacco in India and the pictorial warning on the tobacco packet. Similarly, other risk factors mentioned were alcohol (58.8% in Raj *et al.* and 60% in Puri *et al.*) and radiation (17.8% in Raj *et al.*).^[7,8] A study done for cervical cancer in North Bengal showed that only 14.6% were aware of the human papillomavirus.^[28] A family history of cancer was mentioned as a risk factor for breast cancer in a study done by Dahiya *et al.*^[27] Awareness about risk factors was mostly limited to tobacco in the population. This differential awareness can be the result of the focus on prevention strategies by the government

to reduce the use of tobacco products. Comprehensive health education regarding other risk factors of cancer is the need of the hour.

Awareness and attitude towards screening and the prevailing screening practice

For better survival rates of cancer patients, the knowledge and awareness of cancer and its screening are important. Screening leads to early detection and a better chance of survival. However, awareness regarding screening was abysmally low in the study done by Raychaudhuri *et al.* (9.5%).^[28] Though cervical cancer is one of the most common cancers in females, yet its awareness was low among Indians which might be the cause of a lower level of awareness regarding its screening. A similar lower level (12.2%) of awareness was observed by Siddharthar *et al.*, which also showed a significant difference in awareness among various educational groups.^[22] A higher level of awareness about cervical cancer screening was reported by Dahiya *et al.* (48.6%) and Manikandan *et al.* (69%).^[17,30]

Dahiya *et al.* collected information regarding awareness of breast cancer screening in Delhi, where 48.6% were aware of mammography as a screening method.^[27] This higher level of awareness is probably due to the better accessibility to a tertiary healthcare facility in an urban population. In contrast to this Siddharth *et al.* found none knew about breast self-examination in a hospital-based study in central India.^[19] Attitude towards screening test has an impact on the practice of the screening procedure. Patra *et al.* found only one-fourth of the participants willing to participate in cervical cancer screening.^[21] A study by Gangane *et al.* in Wardha reported an attitude score of 6.2 out of 7 in rural and 6.7 out of 7 in an urban area, but very few had undergone screening.^[31] The studies clearly show the attitude and practice gap. A positive correlation was seen between knowledge and practice.^[32]

The practice of cancer screening is much less as compared to the awareness and attitude towards screening. Screening practice for cervical cancer with pap smear was much less (2.4%) in an Indian study done by Sabeena *et al.*^[15] Similarly poor practice score was seen in Gangane *et al.* study for the same.^[31] Poor screening practice (10%) was reported by Agarwal *et al.* and Khanna *et al.*, where hospital attendees and health workers were studied, respectively.^[33,34] However, a good screening practice of 49% BSE was reported by Dahiya *et al.*^[27] This difference could be due to the better educational status of the participants of the study, where around 60% of the participants had an education of 15 years or more. Gadgil *et al.* reported better screening practice among those women having adequate awareness.^[9] This shows that a good level of awareness is necessary for opting for the screening practice.

Conclusion

General awareness of cancer was poor among the Indian population; similarly, it was also poor for curability,

preventability and screening methods. Education and place of residence (rural or urban) plays a vital role in cancer awareness. Studies are done in different periods, which may affect the awareness level of cancer as the burden of cancer is increasing. Television, friends, relatives and health personnel were the common source of information for cancer-related information. Awareness about the risk factor of cancer was largely limited to tobacco and alcohol. Attitude towards screening modalities was found to be good among the Indian population. The screening practice was poor. Screening practice can be improved by creating community-level awareness.

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Conflicts of interest

There are no conflicts of interest.

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