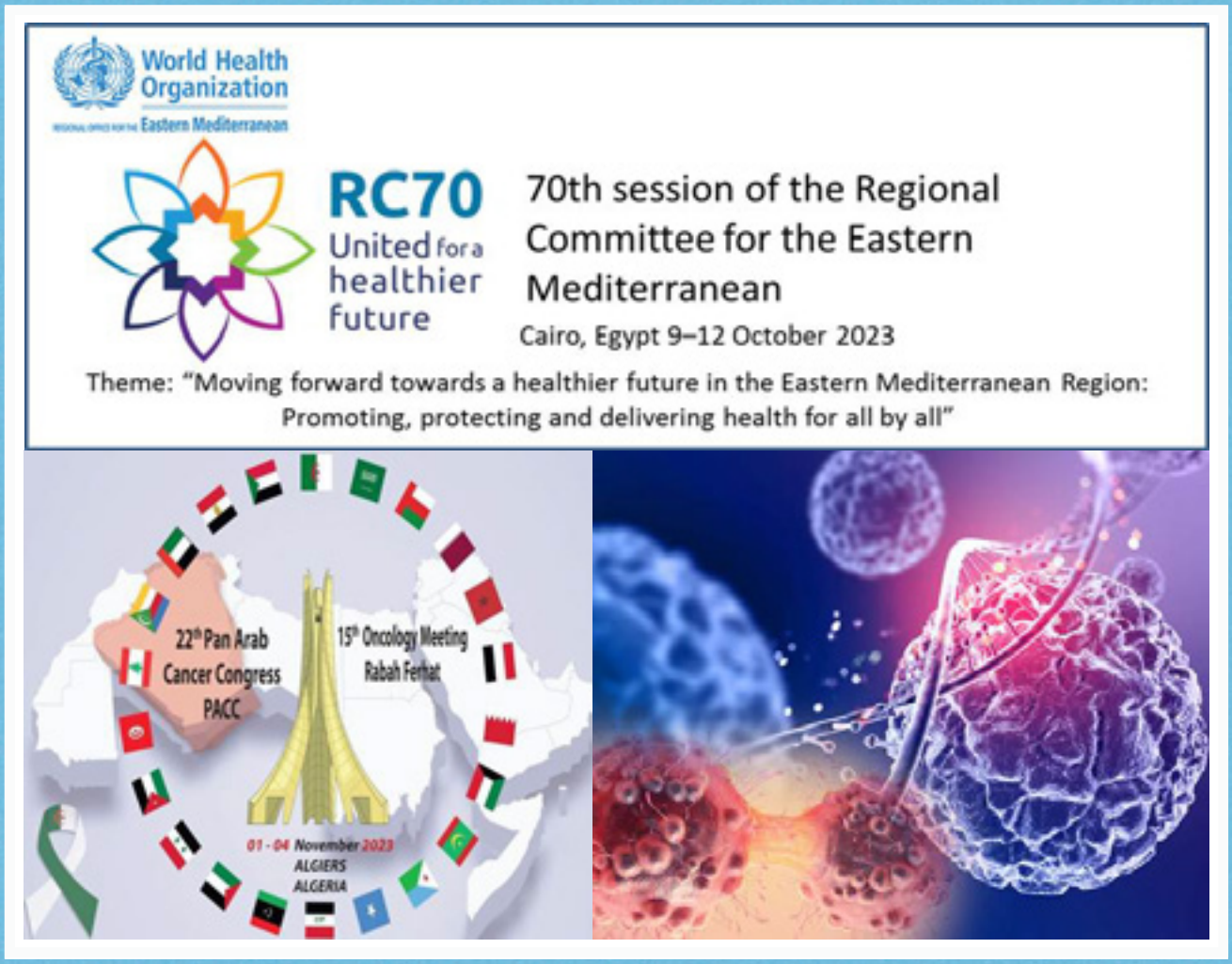
The Gulf Journal of Oncology

Indexed By PubMed and Medline Database

Issue 43, September 2023
ISSN No. 2078-2101



The Official Journal of the Gulf Federation For Cancer Control

Table of Contents

Original Articles

Review Article

Case Reports

Conference Highlights/Scientific Contributions

Original Article

Barriers related to Oral Cancer Screening, Diagnosis and Treatment in Karnataka, India

Vijay C R[1], Ramesh C[1], P Sridhar[2], C Ramachandra[3], Madhu kumar[1]

[1]Department of Epidemiology and Biostatistics, Kidwai Memorial Institute of Oncology, Bangalore–29.
[2] Department of Radiation Oncology, Kidwai Memorial Institute of Oncology,Bangalore–29.
[3] Department of Surgical Oncology, Kidwai Memorial Institute of Oncology, Bangalore–29.

Abstract

Background: The most predominant cancer in India is Oral cancer. Annually 130,000 people yield to oral cancer in India, which translates into about 14 deaths per hour and 60–80% of patients present with advanced disease as compared to 40% in developed countries.

Aim: To decide factors associated with primary, secondary and tertiary delays and identify reasons for a lack of follow–up.

Materials and Methods: This study was conducted at the Kidwai Memorial Institute of Oncology, Bengaluru. A hospital–based cross–sectional study using the direct personal interview method was done. A total of 200 oral cancer patients were included in the study.

Results: 34.5% were men and 65.5% were women. About 97.5% of patients were engaged with either one of the habits like smoking, chewing or alcohol consumption. 84% of patients were not aware of the risk of getting oral cancer. 29% of people agreed that tobacco and alcohol are risk factors for oral cancer and they know about the signs of oral cancer. If detected early, cure rates were higher compared to illiterate people and this difference is statistically significant $p<0.05$.

83.5% of patients did not know that oral cancer can be diagnosed early by regular screening of the oral cavity. The cost of staying near a Regional cancer centre, job security, and the social and economic burden on relatives were significant barriers to incomplete treatment and a decreased follow–up rate.

Conclusion: Low awareness is the main barrier to oral cancer detection. Conducting cancer awareness and screening camps frequently will detect oral cancers at an early stage.

Key words: Oral Cancer, Barriers, Cancer awareness, Oral Screening

Introduction

Oral cancer is responsible for 3–10% of cancer mortality worldwide and the highest incidence rates are reported in India[(1)] accounting for over 30% of mortality worldwide[(2).] Oral cancer is among the first three leading sites of cancer in the hospital–based cancer registry, KMIO[(3).] It has various predisposing factors for screening, diagnosis and treatment outcomes[(4).] The age–adjusted incidence rate varies from over 20 per 100,000 population in India to 10 per 100,000 in the U.S[(5).] 60–80% of patients present with an advanced stage. Early–stage oral cancer has a better survival rate compared to advanced–stage disease: 60% versus 30%[(6).]

Aims:

This study's aim is to identify the barriers related to screening, diagnosis, incomplete treatment and follow–up. The primary aim of this study is to identify the barriers related to this late–stage registration and lack of follow–up

Corresponding Author: Dr. Ramesh C:
Emeritus Consultant, Department of Epidemiology and Biostatistics,
Kidwai Memorial Institute of Oncology, Bangalore–29.
E–mail address: ramesh_kidwai@yahoo.co.in
Tel: 9845462496

Material and Methodology

The basic design was a hospital–based cross–sectional study. The direct personal interview method was employed to collect data from oral cancer patients, which included

the lip, tongue, buccal mucosa and other parts of the oral cavity (ICD10–C00 to C06.9) in this study. Diagnosed and histopathologically proven oral cancer cases at the Kidwai Cancer Institute, Bengaluru, were considered in this study A total of 200 patients with oral cancer were included, including 69 men and 131 women. A structured questionnaire was made to collect data. A trained social investigator was recruited to interview patients in the oral cancer department after consulting with doctors during their follow–up time. The items included in the questionnaire were: demographic data, which includes age, gender, education, marital status, income, number of children, head of the family, religion, mother tongue, languages known, habits (like smoking, beedis, chewing tobacco and alcohol), awareness about cancer,4 whom to consult about treatment, and survival. The variables are converted into ranks; hence, most variables are on an ordinal scale. There were no missing values in the data because the direct personal interview method was followed to capture the data. All items in the questionnaire were coded manually and checked for range and consistency errors after entry into the computer.

The study was categorized into three parts:

1. Patient demographic profile which will correlate with other variables
2. cause for the delay in seeking treatment
3. cause for incomplete treatment and lack of follow–up.

Analysis

Descriptive statistics, frequency tables were used for categorical variables. Binomial tests and chi–square tests were calculated with a 5% level of significance. Multinomial and logistic regression analyses were used to find the relationship between variables.

Results:

A total of 200 oral cancer patients were interviewed for this study, out of whom 34.5% were men and 65.5% were women. The mean age of the patients was 59.2 years, with a 12–year standard deviation. 72% of patients are illiterate, 14% of patients studied up to primary school, only 2.5% completed their college–level education. About 95% of patients are married. More than 50% of patients had 4 or 5 children, which means about 55% of patients are heading the family, which means they have a key role in maintaining a family. Most of the patients are Hindu (93.1%), followed by Muslims (4.5%), and Christians (2.5%) The detailed summary is given in (Table1) and (Table 2). About 97.5% of patients were engaged 5 in either one of the habits like smoking, chewing or drinking alcohol or a combination of the above. In men, smoking and alcohol consumption were

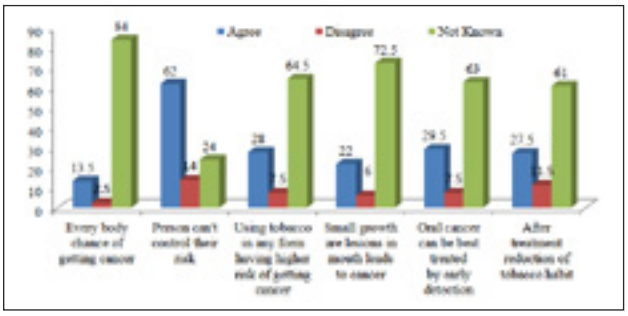


Fig1: Participants Knowledge about Oral Cancer

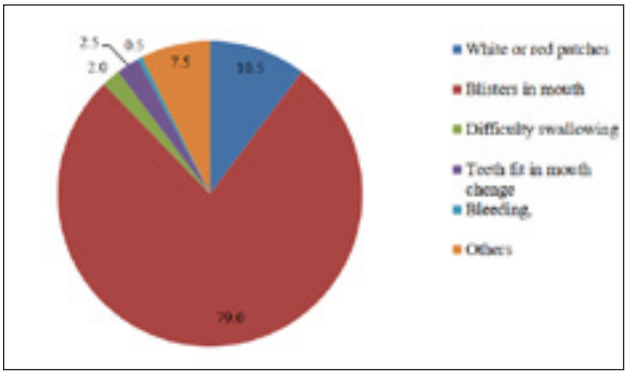


Fig 2: Symptoms observed before Oral Cancer by patients

	#	%
Mean Age	59.2 ±11.5	
Median Income	1000	
Sex		
Male	69	34.5
Female	131	65.5
Education		
Illiterate	144	72.5
Primary School	28	14.0
Secondary School	23	11.5
College	5	2.5
Marital Status		
Married	191	95.5
Divorced	2	1.0
Widowed	2	1.0
Separated	4	2.0
Single	1	0.5

Table1: Demographic Characteristics

the most common habits and in women chewing tobacco was the most common habit in our study. The detailed summary is given in Table 3.

To identify the cause for the primary delay, raising awareness about cancer in the community plays an important role. About 84% of patients are not aware of the

No of children	#	%
None	1	0.5
One	16	8.0
Two	20	10.0
Three	61	30.5
Four	51	25.5
Five or more than Five	51	25.5
Relationship to head of household		
Head of the House	110	55.0
Wife	78	39.0
Son/Daughter	10	5.0
Mother/Father	2	1.0
Religion		
Hindu	186	93.0
Muslim	9	4.5
Christian	5	2.5

Table2: Family and Religion Characteristics

Habits	Males		Females		Total	
	#	%	#	%	#	%
No Habits	1	1.4	4	3.1	5	2.5
Only Smoking	20	29.0	0	0.0	20	10.0
Only Chewing	5	7.2	85	64.9	90	45.0
Only Alcohol	10	14.5	12	9.2	22	11.0
Smoking+ Chewing	7	10.1	0	0.0	7	3.5
Smoking+ Alcohol	16	23.2	0	0.0	16	8.0
Chewing+ Alcohol	7	10.1	30	22.9	37	18.5
All the above	3	4.3	0	0.0	3	1.5
Total	69	100.0	131	100.0	200	100.0

Table3: Personal Habits of Patients

Characteristics	Awareness			
	Not Known	Disagree	Agree	p–value
Education				
Illiterate	115(79.3)	8 (5.5)	22 (15.2)	< 0.001
Primary & Secondary School	18 (26.0)	10 (20.0)	22 (44.0)	
College	1 (20.0)	0 (0.0)	4 (80.0)	
Gender				
Male	38(55.1)	7 (10.1)	24(34.8)	0.024
Female	96 (73.3)	11 (8.4)	24 (18.3)	
Income Per month				
Rs < 1000	129 (67.2)	18 (9.4)	45 (23.4)	0.880
Rs 1000–2000	1 (100)	0 (0.0)	0 (0.0)	
Rs 2000–5000	3 (60)	0 (0.0)	2 (40.0)	
Rs >5000	1 (50.0)	0 (0.0)	1 (50.0)	

Table 4: Association Between Overall Awareness with respect to demography

Characteristics	#	%	p–value
Knowledge of oral cancer screening			
Yes	33	16.5	< 0.001
No	167	83.5	
Oral examination with Doctor			
Yes	81	40.5	0.009
No	119	59.5	
Primary health facility near Residence			
Yes	155	77.5	<0.001
No	45	22.5	
Time required to reach hospital			
< 1 hr	84	42.0	<0.001
> 1 hr 33		16.5	
Amount spent per time (day)			
< 50 Rs	15	7.5	<0.001
>50 Rs	185	92.5	

Table 5: Descriptive statistics awareness and Barriers

risk of getting cancer, 62% of patients believe that cancer occurs due to committing sin in the past and that it is not in our control, about 64.5% of persons do not know that using tobacco in any form has a high risk of getting cancer. 72% of people in our study concurred that a blister or lesion in the mouth may turn to cancer, but most of the patients (63%) do not know that early diagnosis increases cancer–free survival (Figure 1).

Table 4 explains the association of median awareness with respect to education, sex, age group, and income level. As education increases, the unknown frequency of cancer decreases (85% to 0.7%) and education increases

	Yes		No		P–value
	#	%	#	%	
Understand recommendation	91	45. 5	109	55.5	0.229
Able to ask questions	92	46.0	108	54.0	0.289
Provided information on side effects	92	46.0	108	54.0	0.289
Satisfied with treatment	95	47.5	105	52.5	0.525
Information about follow up	103	51.5	97	48.5	0.724

Table 6: Understanding about treatment and care after discharge

	Yes		No		P-value
	#	%	#	%	
Expense of transportation	109	55.0	91	45.0	0.229
Cost of staying near the center	148	74.0	58	26.0	<0.001
Cost of treatment	42	21.0	158	79.0	<0.001
Burdens on relative	172	86.0	28	14.0	<0.001
Nobody avail company to treatment	45	23.0	155	78.0	<0.001
Get back to employment	146	73.0	54	27.0	<0.001
Waiting time	157	79.0	43	21.0	<0.001
Side effects from treatment	101	51.0	99	50.0	0.944
Effectiveness of treatment	88	44.0	112	56.0	0.104

Table 7: Reasons for Incomplete treatment and lack of Follow

awareness about cancer. About 29% of people agreed that tobacco, alcohol, and signs of oral cancer, if detected early, had a higher cure rate than illiterate patients (22%), and this difference is statistically significant (p–value 0.05). Awareness among the male group is higher compared to the female group. 28% to 71.6% of respondents, respectively, answered that we don't know. Income does not impact awareness among people.

The barriers related to screening are explained in (Table 5. According to this table, 83.5% of the people does not know that by regularly examining the mouth, oral cancer can be diagnosed at an early stage and that this is statistically significant. More than 59% of people never met a dentist or any kind of doctor for a regular dental or oral checkup, and 67% of the people visited a dentist or any doctor within six months before coming to the regional centre when the disease became advanced. One more barrier related to screening or delaying screening was the lack of health care facilities near the residence. About 77% of patients revealed that there was a healthcare facility nearer to their residence; the remaining 33% of patients expressed that they needed to travel for more than an hour (42%) to reach the nearest health center by spending more than 50 rupees per visit (92%).

To identify the barriers related to diagnosis, the time taken to consult a doctor, kinds of signs patients observed and kind of health facility taken were analysed. About 79% of patients experienced delayed wound healing in the mouth, followed by leukoplakia and erythroplakia for a long duration. The detailed symptoms experienced by the patient are given in [Figure 2]. The median time to consult a doctor after the appearance of cancer signs was 60 days. Nearly 50% of patients understand recommendations after treatment, side effects of treatment, next follow–up after discharge, all the parameters are statistically not significant (Table 6).

The reason for incomplete treatment and lack of follow–up is explained in (Table no 7). Transportation expense, side effects and treatment effectiveness are not significant with incomplete treatment and follow–up. The cost of staying near a regional cancer centre, the burdens on relatives, getting back to their job to maintain a family significantly increased the rate of incomplete treatment and decreased the follow–up rate. The cost of treatment and the availability of the accompanying person to come to the regional cancer centre significantly contribute to incomplete treatment and a lack of follow–up.

Discussion:

The goal of the National Cancer Control Programme of India is the primary prevention of tobacco–related cancers the early detection of cancers at easily accessible sites and the establishment of treatment facilities throughout India[7]. Identifying the cofactor that can be modifiable through an appropriate intervention programme related to barriers (delaying) related to screening, diagnosis and treatment initiation and completion of treatment. The different definitions of delays, measurements of delays, cofactors for delays, analytical procedures and reporting the study findings are the most common and well–recognized study problems[8]. The study has aimed to identify various delays and their associated nonmedical and medical factors in oral cancer patients diagnosed and treated at the Kidwai Memorial Institute of Oncology. The demographic variables

like education, age group, gender, income level directly influence on awareness of cancer. Demographic and socioeconomic factors influence the health transition, with a sharp escalation of chronic disease burdens expected over the next 20 years[9]. The illiterate's percentage was higher, a majority of the patients, more than 80%, come to the institute from rural or semi–urban areas. Male and female literacy rates in Karnataka 75% men and 68% women[10] The probable reason may be that the median age of patients in our study is 59 years. More than 72% of patients in our study were engaged in one or another form of tobacco habit. Recent studies[11,12,13] have shown that chewing or smoking tobacco or its products and consumption of alcohol have been considered significant risk factors in the development of precancerous lesions and oral cancer.

In this study, we tried to access the knowledge of the patient with respect to cancer because these factors have a direct impact and involved them in oral cancer screening and self–examination[14]. More than 65% of patients answered as unknown, as they are not aware of risk factors, signs, or the benefits of early diagnosis and treatment.

Cancer awareness was higher in literate people than illiterate, awareness about oral cancer is the same in both genders, but the response from women (not known) was higher compared to men. About tobacco awareness, a similar result was found in a study conducted in the Belagavi district of Karnataka state, where they also observed that only 9.5% of the participants had noticed warnings on tobacco and alcohol products. This may be due to the lower literacy level coupled with the fact that warnings on tobacco products are so small that they are negligible. In a cross sectional study conducted in India involving five states of the country, the pictorial warnings were inadequate in creating awareness of the consequences of tobacco on health and hence failed to discourage the users from consuming tobacco products, especially people with lower literacy rates. Both genders may attribute it to a potential health threat, such as cancer[15].

The majority of the patients have no knowledge about oral cancer screening, only 40% of the patients visited the doctor regarding oral check–ups. In a population–based study conducted in rural Bangalore about 31.6 % of patients knew whom to consult regarding queries about oral cancer and gave answers like doctor or dentist[16]. Most patients have health care facilities close to their homes, and they can reach the health care centres in less than an hour, but they must pay more than 50 rupees to do so.

The study conducted by Carol Vlassoff PHC demonstrated that exemplary leadership, a sound understanding of local issues and a focus on the centrality of people in public health are important to providing competent and adequate services[17,18]. Mouth ulcers were a common symptom (79%) in a study conducted in the Sangli, Miraj, cupwad corporation Corporation areas. The distribution of symptoms of oral cancer is as follows: recurrent bleeding gums: 74.24%, difficulty opening the mouth (40.98%), presence of an ulcer: 40.7%, difficulty swallowing (27.6%), and bad oral breath (27.5%)[19]. In a study conducted by Roopali Sankeshwari, Anil Ankola, et al. on awareness regarding symptoms, most participants visited between 1 to 2 months after cancer symptoms were identified. A study was conducted by Jayalakshmi and Gangadharan in Kollam and they reported that only 17% of the participants could identify the seven symptoms listed in the questionnaire as those of oral cancer and 27.8% recognised that all the given symptoms are those of oral precancerous lesions. Similar reports have been published by other authors[20, 21]. The low educational level of the study population is the main cause. Of the participants, 89% thought that oral cancer and oral precancerous lesions were dangerous diseases that could be treated. More than 50% of patients understand the recommendations given by doctors and patients are able to ask anydoubts regarding treatment, diet, and side effects and are satisfied with treatment and instructions to follow at home after discharge.

The incomplete treatment with chemotherapy and radiotherapy after surgery was 30 to 40% and the follow–up rate was less than 40% in the hospital. Patients express that there is no significant burden for transportation because the institute provides free train passes for patients; however, the cost of staying close to the institute is higher, despite the fact that the institute provides free dormitory and food for patients and attendees; and the cost of treatment is not a barrier for incomplete treatment and follow–up.

Most of the patients expressed their opinion about the stay for complete treatment and follow–up: it burdens relatives and the waiting time for treatment is longer because Kidwai Memorial Institute of Oncology registers around 18,000 new cases per year, including follow–up of 2,80, 000 per year. In this study, the patient's opinion was that oral cancer treatment side effects and efficacy were not a significant barriers regarding treatment effect. KMIO registers more than 60% of cancer cases in the advanced stage and curative treatment cannot be executed in this condition. Hence, awareness of cancer staging and treatment was lower, hence more than 50% of patients expressed that treatment was not effective.

Education provides an opportunity for patients to have service or work and exposes them to direct interaction with colleagues, group discussions and printed health educational material. This leads to increased awareness,

changing the attitude and putting it into practice by accepting early cancer screening and diagnostic procedures. So it is evident that 'patient delay' is due to a lack of awareness about precancerous oral lesions, signs and symptoms of oral cancer and not the utilisation of health centre facilities, which is the main reason for the late diagnosis of cancer.

Conclusion

Low awareness is the main barrier to undergoing cancer screening and early detection, although health care facilities are available. There is a need for effective health education programmes in all parts of the state and country. Conducting cancer detection camps frequently will pick up oral cancers at an early stage. The financial burden due to the increased cost of staying near the Regional cancer centre and staying away from their home town is also the main barrier. Being a burden to the relatives, apprehension of their jobs, financial security and maintenance of a family with dependents are significant barriers to availing of cancer care at the right time.

Acknowledgement:

Nill

Conflict of Interest:

I/We declare that we have no Conflict of Interest.

References

1. Indian Dental association retrieved on jan 2017, retrieved from http://ocf.org.in/professional/IncidenceAndPrevalence.aspx.
2. Ken Russell Coelho1. "Challenges of the Oral Cancer Burden in India". Journal of Cancer Epidemiology, Volume 2012 (2012), Article ID 701932, 17 pages.
3. Annual Report 2013: Kidwai Memorial Institute of Oncology, Bengaluru, 2015.
4. Subramanian S, Sankaranarayanan R, Bapat B, Somnathan T, Thomas G Mathew B, Vinoda J, Ramdas K. Cost–effectiveness of oral cancer screening: results from a cluster randomized controlled trial in India. Bull World Health Organ 87:200–206, 2009.
5. Ferlay J, Soerjomataram I, et al. GLOBOCAN 2012 V1.0, Cancer Incidence and MortalityWorldwide: IARC Cancer Base No11 (Internet). Lyon, France: International Agency for Research on cancer; 2013.
6. Stefano Tiziani*, Victor Lopes†, Ulrich L. Günther*, "Early Stage Diagnosis of Oral Cancer Using 1H NMR–Based Metabolomics. Neoplasia, Volume 11, Issue 3, March 2009, Pages 269–276.
7. Dinshaw KA, Shastri SS, Patil SS, "CANCER CONTROL PROGRAMME IN INDIA: CHALLENGES FOR THE NEW MILLENNIUM". Health Administrator Vol: XVII, Number 1: 10–13.
8. Almuammar, A., Dryden, C. and Burr, J.A. (2010) Factors associated with late presentation of cancer: A limited literature review. Journal of Radiotherapy in Practice, 9, 117–123.
9. Prof K Srinath Reddy, DM and Bela Shah et al, "Responding to the threat of chronic diseases in India". The Lancet, Volume 366, Issue 9498, 12–18 November 2005, Pages 1744–1749.
10. Karnataka population census 2011, retrieved from http://www.census2011.co.in/census/state/karnataka.html.
11. Rogers SN, Pabla R, McSorley A, Lowe D, Brown JS,Vaughan ED. An assessment of deprivation as a factor in the delays in presentation, diagnosis and treatment in Patients with oral and oropharyngeal squamous cell carcinoma. Oral Oncol. 2007; 43: 648–655.
12. Martin D. Where next in oral cancer prevention and control? Community Dent Health. 2007;24: 66–69.
13. Singh KK, Reddy KS, Prabhakaran D. What are the evidence based public healthinterventions for prevention and control of NCSs in relation to India. Indian J Community Med. 2011; 36: S23–S31.
14. M Niksic1, B Rachet2, F G Warburton1, J Wardle3, A J Ramirez1 and L J L Forbes1 ."Cancer symptom awareness and barriers to symptomatic presentation in England—are we clear on cancer?". British Journal of Cancer (2015) 113, 533–542.
15. Roopali Sankeshwari and AnilAnkola et.al Awareness regarding oral cancer and oral precancerous lesions among rural population of Belgaum district, India. IUHPE – Global Health Promotion Vol. 23, No. 3 2016.
16. S P Shah and B N Praveen, "Awareness of Oral Cancer in Rural Bangalore Population: A Questionnaire Based Study". International Journal of Scientific Study,March 2014,Vol 1,Issue 6, p14–16.
17. Macfarlane S, Racelis M, Muli–Musiime F. Public health in developing countries. Lancet. 2000;356:841–6.[PubMed].
18. Carol Vlassoff, Marce Tanner, Mitchell Weiss, ShobhaRao "Putting People First: A Primary Health Care Success in Rural India". Indian J Community Med. 2010 Apr; 35(2): 326–330.
19. Yugantara R. Kadam, Sanjay R. Quraishi, Randheer V. Dhoble, Minaxi R. Sawant, and Alka D. Gore. "Barriers for Early Detection of Cancer Amongst Urban Indian Women: A Cross Sectional Study". Iran J Cancer Prev. 2016 February; 9(1): e3900.
20. Jayalakshmi PA, Gangadharan P, Akiba S, Koriyama C, Nair RR. Oral cavity cancer risk in relation to tobacco chewing and bidi smoking among men in Karunagapply, Kerala, India. Cancer Sci. 2011; 102: 460–467.
21. Elango JK, Sundaram KR, Gangadharan P, SubhasP,Peter S, Pulayath C, et al. Factors affecting oral cancer awareness in a high–risk population in India. Asia Pac J Cancer Prev. 2009; 10: 627–630.