DOI: https://doi.org/10.53350/pjmhs211581785

ORIGINAL ARTICE

The Role of Socioeconomic Status and Literacy in the treatment delay in Oral Cancer patients Visiting Mayo Hospital Lahore, Pakistan – A Tertiary Care Hospital

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ABSTRACT

Background: One of the most important prognostic factors of oral cancer is the stage at the time of diagnosis. Unfortunately, most of the patients present in the late stages (stage III and IV).
Aim: To assess the role of socioeconomic status and literacy in the treatment delay in patients of oral cancer. By identifying their role, we can educate the general public and healthcare doctors to detect and treat oral cancer.
Method: This was a prospective study conducted in the Mayo hospital, a tertiary care hospital of Pakistan, from June 2018 to June 2020.
Results: Out of 120 patients, 84 (70%) were males and 36 (30%) were females. The age range was 14 to 85 years. One hundred and eight patients (90%) presented with the late stages (stage III and IV). These late-stage presenter patients belonged to the low socioeconomic status (88.88%) and 83.33% of them were illiterate (<high school education). Only twelve patients (10%) presented with the early stage at the time of diagnosis.
Conclusion: Low socioeconomic and lack of education have a significant association with the late presentation of oral cancer patients in the Pakistani population.
Keywords: squamous cell carcinoma, treatment delay, socioeconomic status

INTRODUCTION

Oral cancer is the tenth most common malignancy[1] and the sixth most common cause of death worldwide[2]. India has a high incidence of oral cancer; the most common cancer in males and third most common in females[3].

The risk factors for oral cancer include smokeless tobacco[4], alcohol consumption, betel nuts, and infection with HPV (subtypes 16, 18)[5]. The prognosis of oral cancer depends upon many tumors related and patient-related factors. The stage of the disease at the time of diagnosis is crucial for prognosis. Early diagnosis ensures a better prognosis. The five-year survival rate for early-stage (stage III, IV) ranges from 60% to 80%[6].

Among the patient-related factors, socioeconomic status has played its role in the incidence, stage at the time of diagnosis of oral cancer, and its prognosis[7]. Most of the patients present in late-stage (stage III, IV) in Pakistan[8]. Lack of knowledge, health-seeking behavior patterns, and socioeconomic status have been documented in the previous studies as the factors for treatment delay[9].

This study aimed to see the role of socioeconomic status and education level as a treatment delay in the patients of oral cancer in our population so effective preventative measures can be taken to prevent cancer and educate the general public.

Received on 03-03-2021
Accepted on 19-07-2021

MATERIALS AND METHODS

One hundred and twenty patients with biopsy-proven oral squamous cell carcinoma were included in this prospective study after permission from Ethical Review Board; those were treated surgically in the department of oral and maxillofacial department of King Edward Medical University/ Mayo Hospital, Lahore, Pakistan from June 2018 to June 2020. All these patients were staged clinically according to the TNM staging of the American Joint Commission of Cancer Staging before the surgery.[10] Informed consents were taken for treatment and research protocol. A datasheet was filled for every patient. It has its demographic data showing age, gender, presenting complaint, personal habits, duration of use of etiological agents, the knowledge about the etiological agents that they cause cancer, site of the lesion, education status and socioeconomic status were recorded. Baseline investigations were obtained and all patients were surgically treated according to the standard protocols.

RESULTS

Of the 120 patients, 84(70%) were male and 36(30%) were female patients. The mean age of male patients was 49.72±10.00 (Minimum age=30, Maximum Age=70) and the mean age of female patients was 46.02±16.26 (Minimum age=14, Maximum Age=85). The most common risk factor among them was pan (betel quid) chewing, followed by betel nuts chewing, cigarette smoking, and alcohol abuse. The patients who were aware of these habits' carcinogenic effects were 80(66.66%) and

40(33.33%) were unaware of the potential carcinogenic effects of their habits.

Most of the patients, 107(89.16%), had well-differentiated squamous cell carcinoma on histological grading, whereas 10(8.33%) patients have moderately differentiated and 8(2.5%) had poorly differentiated carcinoma. On clinical inspection of oral hygiene, eight patients (6.66%) had good oral hygiene, 89 patients (74.16%) had bad oral hygiene and only 23 patients (19.16%) had good oral hygiene. The most common site of lesion was buccal mucosa (47.5%), followed by the tongue (20%) and mandibular alveolus (18%).

Table 1: Education of patients in different stages of cancer presentation

Education	Stage 1	Stage 2	Stage 3	Stage 4	Total
<high school	0	10	18	82	110
high school	1	0	5	2	8
graduate	0	1	0	1	2
>graduate	0	0	0	0	120

Table 2: Socioeconomic status of patients of different stages

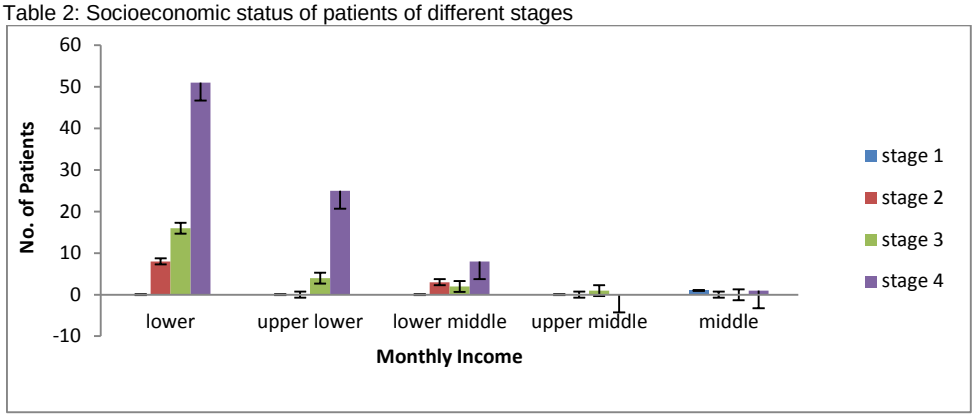

Table 3: Site of oral cancer among different stages

Site of oral cancer	stage 1	stage 2	stage 3	stage 4	Total
Cheek	0	5	11	40	56
Tongue	1	3	9	11	24
Alveolus	0	0	0	21	21
Maxillary	0	1	1	3	5
Lip	0	0	0	1	1
Palate	0	1	0	5	6
Mucosa	0	0	1	0	1
Commissure	0	0	1	0	1
Retro	0	1	0	2	3
Nose	0	0	0	1	1
Mandible	0	0	0	1	1
Total	1	11	23	85	120

Table 4: reasons for late-stage presentation

Reasons for late stage presentation	Stage 1	Stage 2	Stage 3	Stage 4	Total
financial problems	0	1	1	12	14
late diagnosis	0	2	4	16	22
Didn't notice	0	4	8	21	33
Not willing for treatment	0	2	3	31	36
treatment by non-professional	1	2	7	5	15
Total	1	11	23	85	120

DISCUSSION

Oral cancer is a notorious malignancy of the head and neck region. It is the 10th most common malignancy worldwide.[1] India shares the world's quarter burden of oral cancer.[11] It is a common malignancy in Pakistan as well, but there are few published data on it to be put as a reference. Most of the literature on oral cancer is published in western literature.[12]

Most of the cancers are presented in late stages,[7] and so is with Pakistan. Many factors are responsible for the late presentations. Lack of knowledge, age of patient and site of cancer, careless attitude of health-seeking behavior, socioeconomic status[13], literacy, access to the primary health centers, and lack of primary physicians' diagnostic skills are well-documented factors for late presentation[14]. A study in 2019 which aimed at studying diagnostic delay in head and neck cancer patients included two different racial groups and assessed their approach to a health care facility and its relationship with their socioeconomic status. The study included European American (EA) and African

Americans (AA) patients with similarities in most of the sociodemographic factors. AAs had a higher trend presenting to health care professionals, resulting in disease progression into later stages, whereas EAs presented themselves to earlier health care providers in terms of stage of progression of the disease, thus reducing diagnostic delay. Details of the study mentioned that 62% of AA origin patients had later stage pathologic disease at the time of presentation. Moreover, it was also documented in the study that AAs had a considerable increase in time to avail treatment. One variable worth mentioning was that AAs had less probability of completing high school or college education and had low economic status than their EA counterparts. The study results concluded that patients who belonged to the black ethnic group, especially males, had more than 90 days early mortality hazard compared to other ethnic groups and female gender[15].

Prognosis of oral cancer drops significantly with the late-stage. That is why early detection and early treatment are necessary. We studied in our population the role of socioeconomic status and literacy in delayed presentation of oral cancer. Most of the patients in our study were males, which coincide with the other studies,[8] whereas some other studies[13] reported the high incidence in female patients. Most of the patients (92.5%) presented in the late stage (stage III, IV). Other studies[8,15] also showed that their patients presented in late oral cancer stages, which is similar to our study result. Among the patients who presented late, most were male patients and this finding is similar to the study conducted in Canada[7]. The role of socioeconomic disparities alone and it is a critical factor in the diagnostic delay. It is debatable. Some studies have indicated a link between low socioeconomic status alone and presentation in later stages of the lesion at the time of diagnosis, which in turn negatively impacts prognostication of the lesion. Work by Llewellyn et al. suggests that patients who had lower socioeconomic status (SES) or high levels of deprivation presented with a later stage of head and neck carcinoma (HNC)[16].

CONCLUSIONS

Other studies show that socioeconomic disparities alone do not play a critical role in the diagnostic delay of head and neck squamous cell carcinoma. These studies suggest there is no evidence that SES measured at the level of the individual or the neighborhood had a statistically significant effect on the stage of presentation of lesion[17,18].

Conflict of interest: Nil

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