

## Profile of Surgical Oncological Patient Care Services Provided for Oral Cancer Patients by a Premier Public Dental Hospital in Sri Lanka Amidst COVID-19 Pandemic

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### ABSTRACT

**Background:** Oral cancer dominates as the number one cancer among males and number eight cancer among females in Sri Lanka. Its high incidence and prevalence requires efficient and effective cancer treatment care services. National Dental Hospital (Teaching) Sri Lanka as the premier multispecialty tertiary care public dental hospital in the country comprising four Oral & Maxillofacial Units is in the forefront of providing surgical oncological patient care services. In this backdrop, this study aims to explore the profile of surgical oral cancer patient care services provided by National Dental Hospital (Teaching) Sri Lanka amidst COVID-19 pandemic.

**Methods:** Selected core data were extracted from patients' records and databases of four OMF Units of National Dental Hospital (Teaching) Sri Lanka for the period from 1<sup>st</sup> January to 31<sup>st</sup> December 2020. This period overlapped four crucial periods: pre-COVID-19 period (January/February), stringently imposed lock down of 1<sup>st</sup> wave of COVID-19 (March-May), Transition period (June- September) and second wave of COVID-19 pandemic (October-December, 2020). The data entry and analysis was performed using SPSS-21 Statistical Software Package.

**Results:** A total of 132 oral cancer patients underwent surgeries demonstrating a wide age distribution ranging from 31-95 years with the mean  $\pm$  SD (58.97  $\pm$  12.73). However, the majority (56.8%) belonged to 50-69 year-age group. The overwhelming majority (75%) were males. Despite, stringently imposed island-wide lock down that followed detection of the first local case of COVID-19 in Sri Lanka on 11th March 2020, the highest number of surgeries were performed in March (n=18) whilst the lowest number was performed in May (n=4). An array of surgeries was performed ranging from wide lesion excision, mandibulectomy, glossectomy and including reconstruction with flaps for lost soft tissues as well as reconstruction.

**Conclusions:** The National Dental Hospital (Teaching) Sri Lanka provided uninterrupted surgical oncological patient care services for oral cancer patients amidst COVID-19 pandemic during the year 2020.

## Keywords

COVID-19, Oral cancer, Dental hospitals, Surgeries.

## Introduction

Oral cancer denotes a multifaceted public health burden as the number one cancer category among males in Sri Lanka, whilst being the number eight cancer among females [1]. Moreover, as a whole it is the second most common cancer in Sri Lanka, giving rise to detection of 6 new cases and 3 deaths per day [1]. Oral cancer data 2012, revealed ASR (age specific incidence) of 16.6 % and 7.5% mortality for males and 3.6% ASR incidence and 2.0% mortality for females [1]. Betel chewing with or without tobacco, smoking and alcohol consumption are among the well-established aetiological factors for oral cancer in Sri Lanka [2,3]. High oral cancer burden in the country contributes to a huge economic cost. Despite tobacco use was linked to lung cancer epidemiologically, the highest proportion of total economic cost attributed to tobacco in Sri Lanka was due to cancers of lip, oral cavity and pharynx [4]. Moreover, managing oral cancer patients adds a considerable burden to public health care delivery model as the public sector caters to the great majority of oral cancer patients who belong to low-socioeconomic backgrounds [5]. As emerged from the findings of a recent costing study, the mean cost of managing a single stage II oral cancer patient for 1 year was calculated as Sri Lankan rupees (SLR) 58 979 (US\$394), at the midyear exchange rate in 2016, to the public health system. Furthermore, the calculated mean household cost was SLR 77 649 (US\$518) [6]. Furthermore, the annual cost of managing a stage III or IV patient was SLR 303 620 (US\$2027), with household costs of SLR 71 932 (US\$480) [7].

Surgical mode of management dominates the management modalities of oral cancer as the common first line of treatment at times combined with radiotherapy and chemotherapy. The National Dental Hospital (Teaching) Sri Lanka is the premier, multispecialty public dental hospital in Sri Lanka possessing four Oral & Maxillofacial Units aspired to be the centre of excellence in providing state-of-the-art, research evidence-based oral & maxillofacial patients care services. COVID-19 pandemic, the atrocious global public health emergency indelibly impacted on the patient care services in the country as well as almost all the countries across the globe, including oral & maxillofacial practices [7]. Moreover, availability of and access to routine treatment care services was a major issue encountered by oral cancer patients during the stringently imposed COVID-19 lock down in March 2020, that was attempted to address by providing over the phone supportive care services by incorporating a novel, simple intervention [8]. Furthermore, public health care system got heavily impacted by the COVID-19 pandemic and its burden and still grappling with the negative effects imposed by this contagious disease of respiratory origin. Against this backdrop, this study aims to explore the profile of surgical oral cancer patient care service provided by the four, Oral & Maxillofacial (OMF) Units of National Dental Hospital (Teaching) Sri Lanka amidst COVID-19 pandemic.

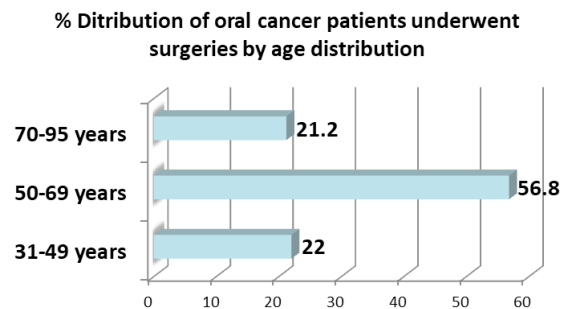
## Methodology

Selected core data were extracted from patients' records and databases of four OMF Units of National Dental Hospital (Teaching) Sri Lanka for the period from 1<sup>st</sup> January to 31<sup>st</sup> December 2020. This period overlapped four crucial periods: pre-COVID-19 period (January/February), stringently imposed COVID-19 lock down of 1<sup>st</sup> wave of COVID-19 (March-May), Transition period (June-September) and second wave of COVID-19 pandemic (October-December, 2020). Age, Gender, Month of Surgery, Key procedure comprised the core data collected. The data entry and analysis were performed using SPSS-21 Statistical Software Package. Data are presented using descriptive statistics and frequency distributions.

## Results

A total of 132 oral cancer patients were managed by surgical mode by four OMF units of National Dental Hospital (Teaching) Sri Lanka. Age distribution of those oral cancer patients are illustrated in Figure 1.

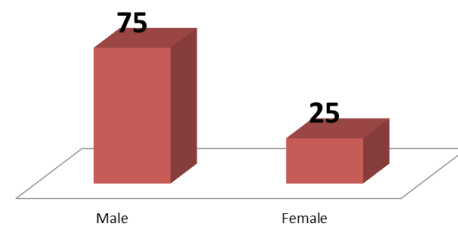
Mean age  $\pm$  SD (58.97  $\pm$  12.73)



**Figure 1:** Age distribution of oral cancer patients managed by surgical mode.

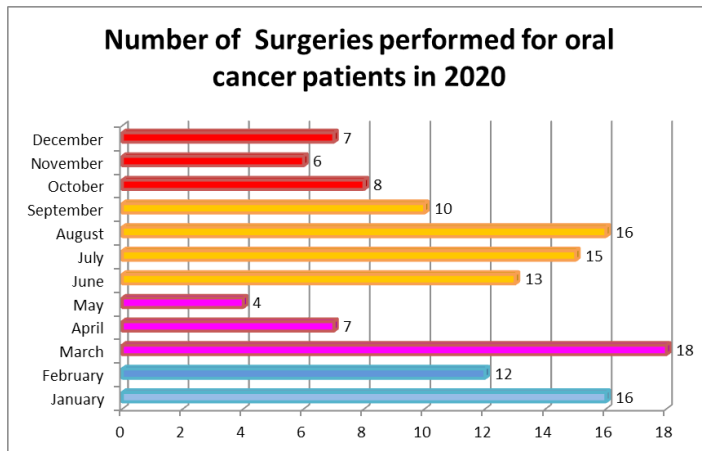
As demonstrated in Figure 1, there was a wide age distribution of oral cancer patients managed by surgical mode at National Dental Hospital (Teaching) Sri Lanka ranging from 31-95 years with the mean  $\pm$  SD (58.97  $\pm$  12.73). However, the majority (56.8%) belonged to 50-69 years; with another 21.2% were aged 70-95 years whilst similar 20.0% were aged 31-49 years thus reflecting relatively younger age group of 31-49 years.

## Gender distribution (%) of oral cancer patients underwent surgeries



**Figure 2:** Gender distribution of oral cancer patients managed by surgical mode.

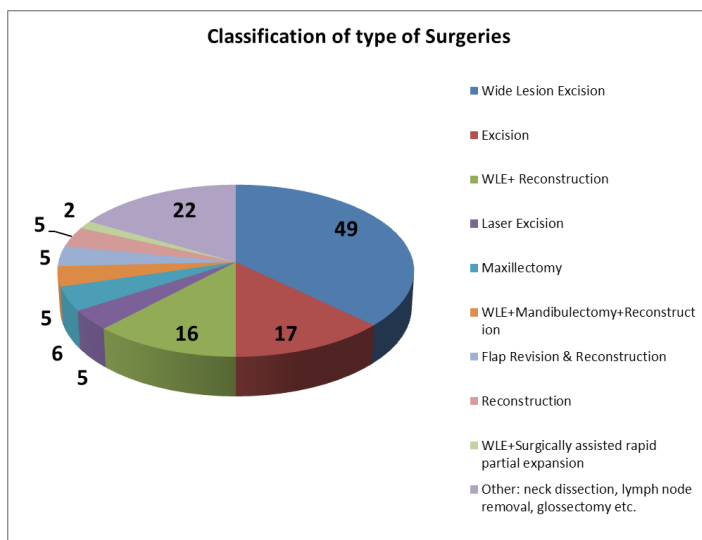
By gender distribution, the overwhelming majority (75%) of oral cancer patients who underwent surgical mode of management were males as shown in Figure 2.



**Figure 3:** Monthly performance of surgeries for oral cancer patients for 2020.

January to February: Pre-COVID 19 era, March to May: (since mid-March to May: 1<sup>st</sup> wave of COVID-19, June to September: Transitional period, October to December: aggressive and persistent 2<sup>nd</sup> wave of COVID-19 pandemic.

As illustrated in Figure 3, the total number of surgeries performed for oral cancer patients ranged from 4-18 in the year 2020, that overlapped with 1<sup>st</sup> and 2<sup>nd</sup> waves of COVID-19 pandemic with consequent oral & maxillofacial practice modifications. Despite, stringently imposed island-wide lock down that followed detection of the first local case of COVID-19 in Sri Lanka on 11th March (n=18) 2020, the highest number of surgeries were performed in March whilst the lowest number was performed in May (n=4).



**Figure 4:** Type of surgeries performed for oral cancer patients.

Type of oral cancer surgeries performed are being classified into 10 groups is depicted in Figure 4.

Accordingly, wide lesion excisions dominated the type of surgeries performed (n=49) followed by excision (n=17) and excision and reconstruction (n=16). Moreover, combined category defined as other comprising neck dissection, lymph node excision, glossectomy etc. contributed another high number of surgeries (n=22).

### Discussion

The year 2020, marked a challenging period for providing comprehensive cancer care services for oral cancer patients, the most common cancer category among males in Sri Lanka similar to other oncological patient care services. Availability of and accessibility to routine treatment services for oral cancer patients fraught with difficulty as a stringently imposed island-wide lock down to combat transmission of the devastating pandemic negatively impacted on those services. Consequently, routine patient care services in almost all public and private hospitals in the country transformed into emergency services, underpinned by physical and social distancing, triaging of patients and deployment of health staff for emergency/urgent patient care provision. Against this backdrop, present analysis provides important first-hand information on oral cancer surgeries performed by the four OMF units of National Dental Hospital (Teaching) Sri Lanka, for the year 2020, covering the pre-COVID 19 period, first wave of COVID-19, Transitional period after successful control of community transmission of the infection and emergence of devastating second wave of COVID-19.

Despite ¾ of patients who underwent surgeries being males, and dominance of 50-69 year-age group, both young and older ages ranging from 31 to 95-years were presented among oral cancer patients. This finding provided new insights into special health needs of young as well as very-old age groups needing surgery for oral cancers compounded by COVID-19 context that negatively affected health care services. Considering the vulnerability of younger and older age groups for oral cancer highlights the importance of heightened strategies on prevention, control and early detection of oral cancer among all age groups in Sri Lanka. On the other hand, an array of surgeries were performed ranging from wide lesion excision, excision, mandibulectomy, glossectomy and including reconstruction with flaps for lost soft tissues as well as reconstruction of the mandible using ileac crest bone grafts. This reflected the advances in surgical treatment modalities and technology in attempting to reconstruct lost tissues affected by oral cancer, Moreover, most of those patients were referred for adjuvant radiotherapy and chemotherapy as needed.

As supported by present findings, National Dental Hospital (Teaching) Sri Lanka as the premier, tertiary care public dental hospital in the country, successfully was able to maintain surgical oncological treatment services for discerning cancer patients. This finding corroborates the reported findings of maintaining oncological services as priority care of oral & maxillofacial practices amidst COVID-19 pandemic however, demonstrating

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wide variations across countries and regions [7,9-11]. Early discharge was a common practice among countries in this regard, as revealed by the world-wide survey on impact of COVID-19 on oral & maxillofacial practices, and Sri Lanka and Kenya were among those countries adopted this strategy [7]. Accordingly, patients were discharged when it was determined no longer stay was necessary. However, some oral cancer patients who underwent recent surgeries needed advice on managing pain and difficulties in swallowing in addition to information on navigating existing health care services to obtain their medicine [7]. Therefore, a special over-the-phone supportive care advice was provided for a sub-sample of oral cancer patients in need [8]. Nevertheless, present analysis merits further research on efficiency and effectiveness of provided oral oncological surgical care services, the perceptions of service recipients and the barriers and lapses encountered. Such findings provide the evidence-base for streamlining and planning of future oral oncological surgical patient care services amidst COVID-19 pandemic and similar public health threats in future.

### Conclusion

The National Dental Hospital (Teaching) Sri Lanka provided commendable uninterrupted surgical oncological patient care services for oral cancer patients amidst COVID-19 pandemic during the year 2020. Service recipients were predominantly dominated by males comprised of young as well as very old age groups and across a range of advanced surgical procedures. Further research warranted in this regard to assess the efficiency and effectiveness of the services provided and barriers encountered.

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