Original Article

POST-COVID SYNDROME – A Psychosomatic Burden for the Rima Oris. An Original Research

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ABSTRACT

Background: Long COVID syndrome (LCS) is increasingly being recognized as a new clinical entity after SARS-CoV-2 infection. Symptoms persisting for more than three weeks after the diagnosis of COVID-19 characterize LCS. Incidence of it ranges from 10% to 35%. We conducted this study via digital platform, to evaluate the psychosomatic disorders of the oral cavity associated with LCS. **Aim and Objectives:** To assess the association of long COVID syndrome with oral psychosomatic disorders and to identify patients with long-COVID symptoms, Prevalence of psychosocial impact on the population and to do Comparative analysis among male and female. **Materials and methods:** In this study a Pan-India survey was conducted in which a questionnaire was prepared on Google platform and shared online to participants who had suffered from SARS-CoV-2. Data was collected on a four phase record and statistical analysis was done. Comparisons of proportions between male and female were carried out with Chi square (χ^2) test. **Results:** Results showed females being more affected mentally and psychologically. Males were affected by oro-pharyngeal problems. Majority of participants in the survey were not absolutely healthy after acquiring SARS-CoV-2 infection. **Conclusion:** LCS is a multisystem disorder. There's a lack of knowledge in literature in the association of oral lesions with psychosomatic disorders in such individuals. The oral specialist can help diagnose such patients and help plan their lifestyle modification. Further research is required to formulate a standard classification for Long COVID Syndrome which will be help plan a multidisciplinary therapeutic approach.

KEYWORDS: *COVID 19, pandemic, Long Covid Syndrome, stress, psychosomatic disorder, prevalence*

INTRODUCTION

The novel coronavirus, SARS-CoV-2, was recognized as the causative agent for a cluster of pneumonia cases detected in Wuhan, a city in China in January 2020. COVID- 19, a disease caused by SARS-CoV-2, has a very extensive clinical range, that is, asymptomatic cases to development of bilateral pneumonia which could progress to respiratory failure and, in some cases, multiorgan failure and even death.

Long COVID syndrome (LCS) is increasingly being recognized as a new clinical entity in the context of SARS-CoV-2 infection. Symptoms persisting for more than 3 weeks after the diagnosis of COVID-19 characterize the long COVID syndrome. Its incidence ranges from 10% to 35%; however, rates as high as 85% have been reported among patients with a history of hospitalization. Currently, there is no consensus on the classification of post- COVID syndrome. This study was conducted via a digital platform to evaluate the psychosomatic disorders of the oral cavity associated with LCS.

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Aim

To assess the association of LCS with oral psychosomatic disorders.

Objectives

1. To identify patients with long-COVID symptoms
2. To identify prevalence of psychosocial impacts on the population.
3. Comparative analysis among males and females.

Materials and Methods

The Ethical Committee approval of the Institution was obtained. Voluntary consent was obtained, and the purpose of the study was explained to all the volunteers before participating in the study.

Study design

Selection and Description of Participants: This was a Pan-India survey in which a questionnaire-based observational study was prepared on a Google platform and shared online to participants who had suffered from SARS-CoV-2. Demographic data with close-end format were taken from the patients, and the data were collected on a four-phase record (i.e., personal data, general health status data, psychological status data, and oral cavity status data). Random sampling was done, and the sample size was determined. Participants aged 18 years and above with no comorbidities before COVID but had suffered from COVID-19/COVID-19-like symptoms were selected for the study. The method of measurement used was modified Hamilton's anxiety scoring system.

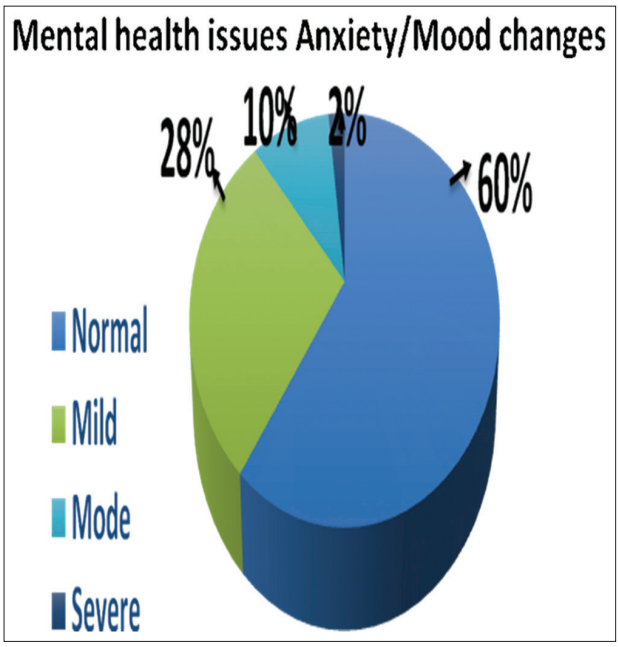


Figure 1: Distribution of mood changes among the study population

Statistical analysis

The data collected were subject to statistical analysis using SPSS (version 26 SPSS IBM, Chicago). Comparative analysis was performed on long COVID patients to know the following:-

1. The prevalence of psychosocial impacts on the population.
2. The prevalence of the oral psychosomatic disorders in the population.
3. The association of LCS on the psychological and oral psychosomatic disorders among males and females.

One-way analysis of variance (ANOVA) with *post hoc* test was used to find significant differences between age and gender. A P value ≤ 0.05 was considered statistically significant. Comparisons of proportions (percentages) between male and female were carried out with Chi-square (χ^2) test.

Results

Males were more affected than females.

A total of 120 of them had symptoms after COVID, of which 83 were between 18 and 33 years of age.

Mental health

It was observed that 40% of the participants had mental health issues like anxiety or mood changes. However, the values were not statistically significant [Figure 1].

Out of the 299 volunteers, 85% had mild, 29% had moderate, and 6 had severe mental health issues.

Sleep-related problems

A total of 108 participants had difficulty in sleeping properly, of which 58 were females. Most of the patients were between 18 and 33 years of age [Figure 2].

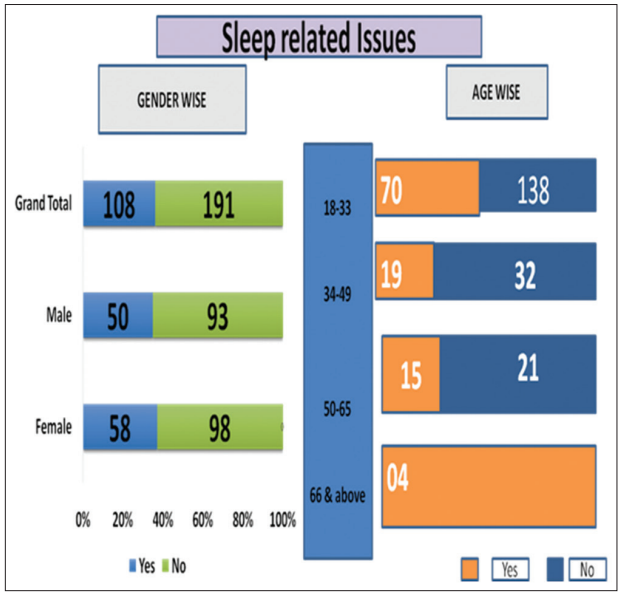


Figure 2: Distribution of sleep related issues among the study population

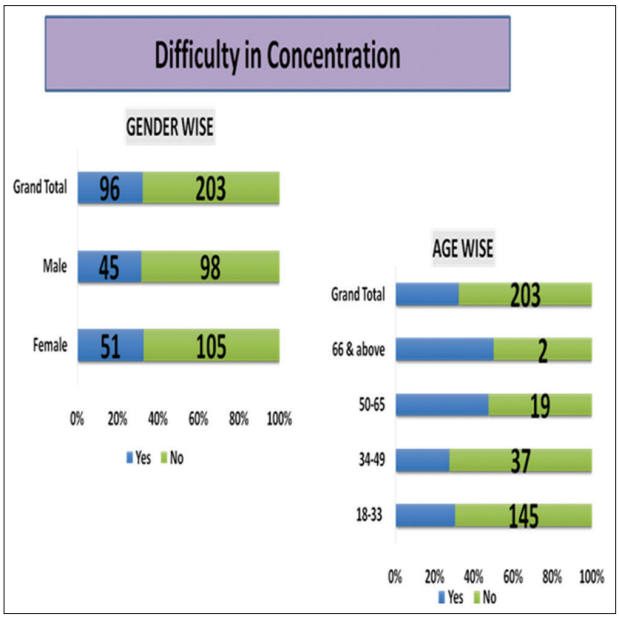


Figure 3: Distribution of concentration difficulty among the study population

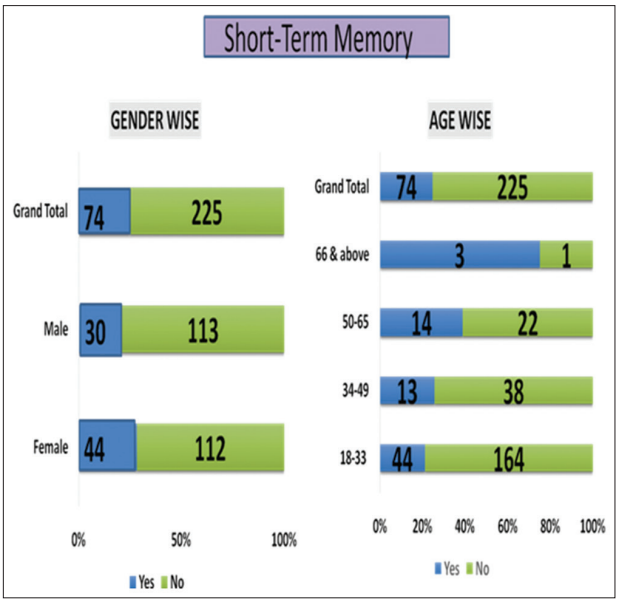


Figure 4: Distribution of short term memory among the study population

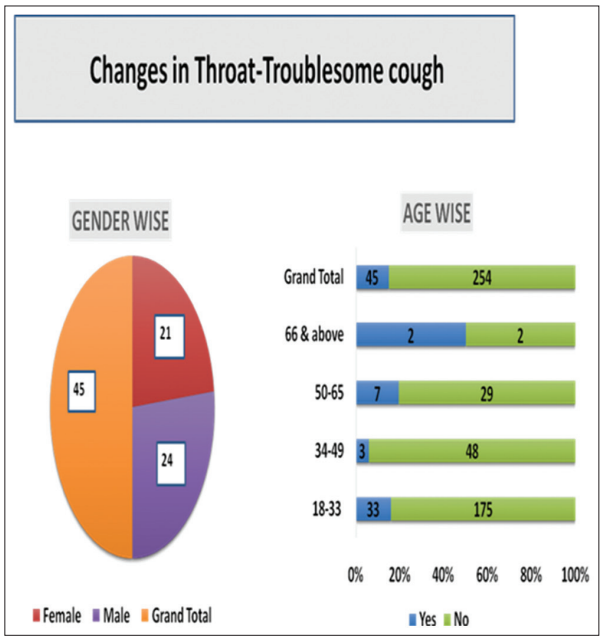


Figure 5: Distribution of changes in throat and cough among the study population

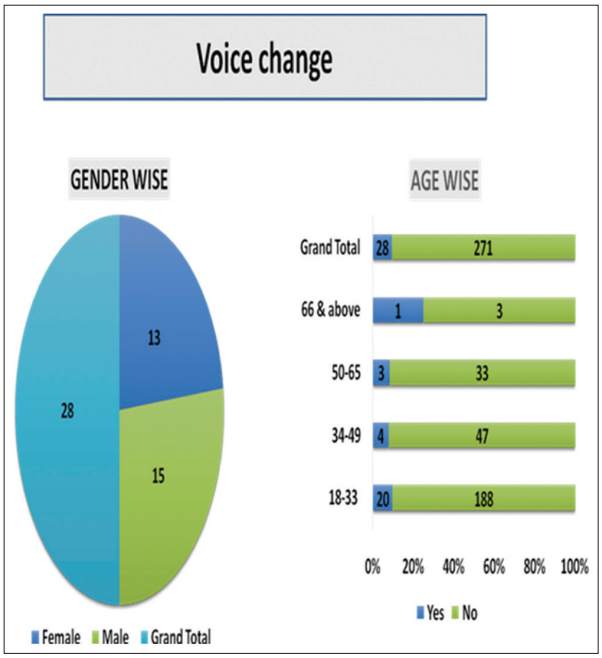


Figure 6: Distribution of voice chang among the study population

Difficulty in concentration

Ninety-six participants had difficulty in concentrating for a long period as compared to normal participants, and there was a slight bias toward female subjects. Participants above 50 were more severely affected [Figure 3].

Short-term memory

Seventy-four participants had cognitive problems, where females were more affected and most of them were between 18 and 33 years of age [Figure 4].

Changes in the throat

Forty-five participants complained of throat-related issues like troublesome cough and voice change. Most of them were below 33 years of age. There was not much difference between genders [Figure 5].

Change in the voice

Twenty-eight participants complained of change in voice. They were mainly in the second or third decade of life [Figure 6].

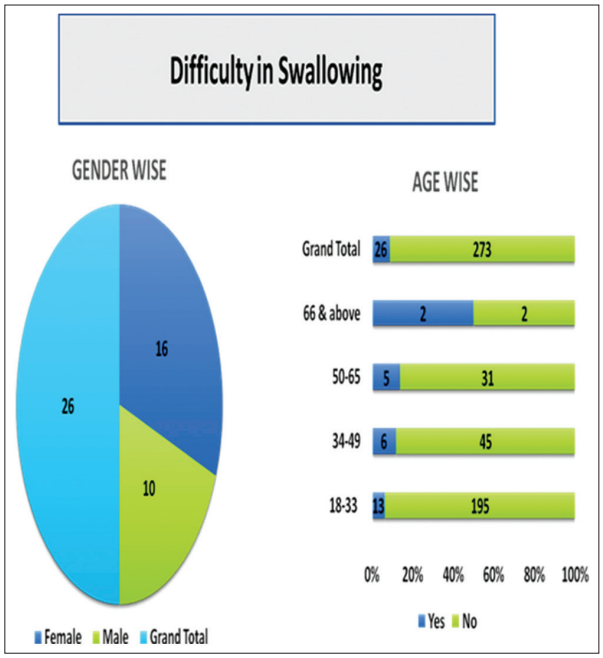


Figure 7: Distribution of swallowing difficulty among the study population

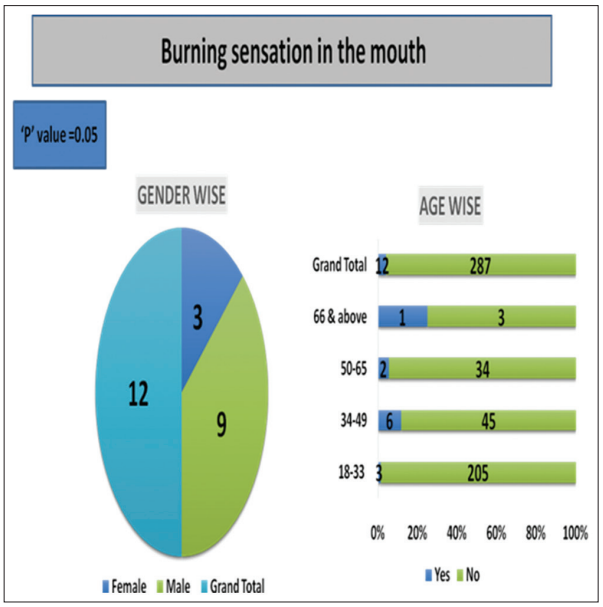


Figure 8: Distribution of oral burning sensation among the study population

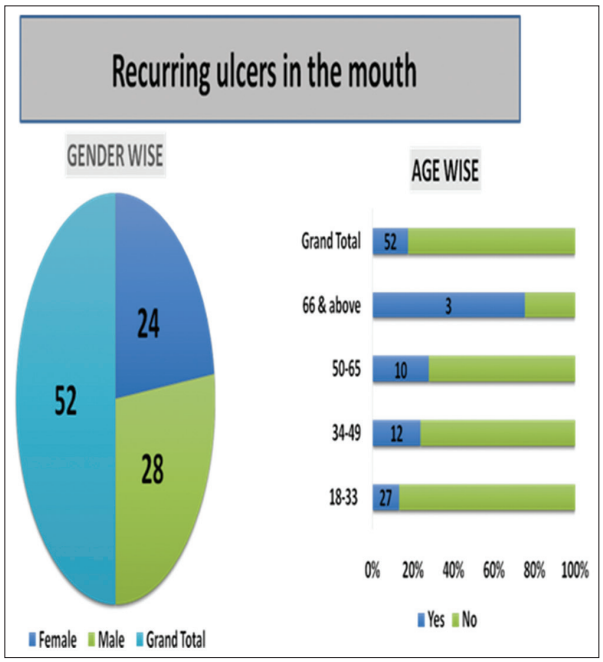


Figure 9: Distribution of recurring oral ulcers among the study population

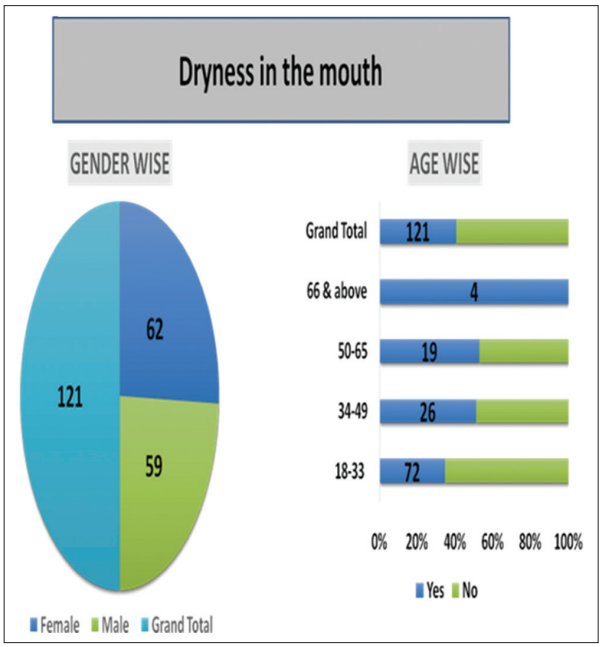


Figure 10: Distribution of oral dryness among the study population

Difficulty in swallowing

Twenty-six out of 299 participants had difficulty in swallowing and were mostly below 33 years of age [Figure 7].

Glossopyrosis

Twelve patients complained of burning sensation of the mouth [Figure 8].

Oral ulcers

Fifty-two patients complained of recurrent oral ulcers; most of them were in the second or third decade of life [Figure 9].

Oral dryness

A total of 121 patients complained of oral dryness, and 72 of them were between 18 and 33 years of age [Figure 10].

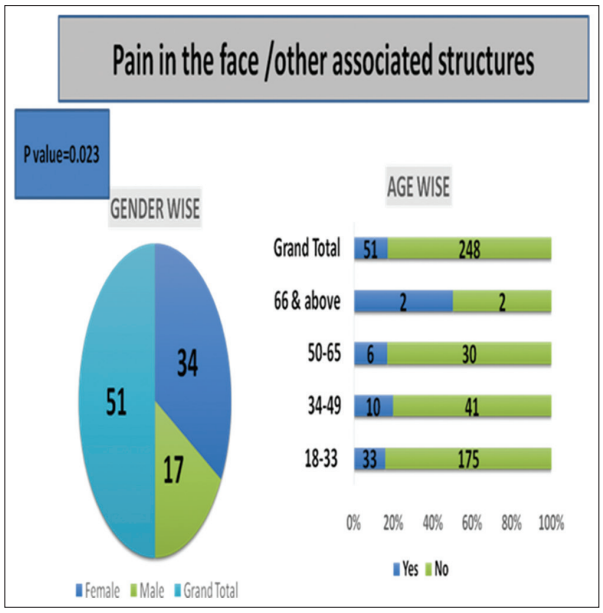


Figure 11: Distribution of pain in face and other structures among the study population

Orofacial pain: Fifty-one patients complained of pain in the orofacial structures. Thirty-three of them were in the age group of 18 to 33 years [Figure 11].

Gender inequality was seen with females being more affected mentally and psychologically, and males are more affected by oropharyngeal problems based on the statistical analysis. It was observed that the majority of participants in the survey study are not absolutely healthy after acquiring SARS-CoV-2 infection.

Discussion

Maltezou *et al.* (2021) and Tsakris *et al.* (2021) defined long/post COVID syndrome for the first time as "COVID-19-associated illness extending for more than three weeks after the onset of symptoms, and chronic COVID-19 as persistent symptoms extending beyond 12 weeks after the onset of symptoms".[1]

National Comprehensive Guidelines for Management of Post-COVID Sequela (Ministry of Health and Family Welfare Government of India) stated that many patients have been experiencing short- to long-term sequelae of the disease.[2]

H.C. Maltezou *et al.* (2021)[3] in their article stated that the pathogenesis of post-COVID syndrome is multifactorial and more than one mechanism may be implicated in several clinical manifestations.

On looking at the oral psychosomatic disorders associated with LCS, it was found in the study that the majority of the participants in the survey study are affected by stress, anxiety, and some other health-related problems in some way or the other after acquiring SARS-CoV-2 infection. Other common complaints were stomatopyrosis, dysgeusia, difficulty in concentration, short-term memory troublesome cough, change in the voice, difficulty in swallowing, recurrent oral ulcers, xerostomia, and orofacial pain. The deep impact of financial burden, health issues, love and relationship matters, family matters, and peer pressure has served to create a great burden on the oral cavity, forming a burden on rima oris.[4-7]

Burning sensation in the mouth

Stomatopyrosis is the most common cause of stress and anxiety in the oral cavity. This study had male predilection and was predominant within the age range of 18–33 years. Descending dopaminergic controls, steroid dysfunction, endocrinal dysfunction, and thermal inhibition, caused by stress and anxiety, are believed to be the etiopathology of burning mouth syndrome.[8-11]

Recurrent oral ulcers

Fifty-two out 299 volunteers complained of recurrent oral ulcer after the pandemic. Disturbance of immune-regulatory mechanisms led to increased secretion of leucocytes and other chemical mediators, thus exaggerating the epithelial disruption and thereby leading to painful ulcerations.[12]

Xerostomia or subjective oral dryness

A decreased salivary flow rate is due to the depressive illness. Management for subjective oral dryness does not require the administration of antidepressants and anticholinergics.

Myofacial pain dysfunction syndrome and temporomandibular joint syndrome

Psychophysiological pain in the facial region, mainly the temporomandibular joint region, leads to temporomandibular joint disorders. Thus, temporomandibular joint disorders are considered as an oral psychosomatic disorder prevalent in females.[13-15]

Conclusion

In our study, mental health issues like anxiety/mood changes, burning sensation in mouth and pain in the face, and other associated structures were significant statistically ($P \leq 0.05$). The majority of the participants were in the age range of 18–33 years. 41% of the participants suffered from oral dryness, although it was statistically insignificant. More than a year after the declaration of the COVID-19 pandemic, the world continues to face its devastating impact on not only morbidity, mortality, and healthcare services but also

its tremendous societal and economic consequences globally. LCS is a multisystem disorder. There is paucity in literature in the association of oral lesions with psychosomatic disorders in such individuals. It is the responsibility of the oral medicine specialist to diagnose such patients and help plan their management. Further research may be required to identify a standard classification for LCS, which will help plan a multidisciplinary therapeutic approach and lifestyle modification for such patients.

Abbreviations

SARS-CoV-2 = Severe Acute Respiratory Syndrome Coronavirus -2.

LCS = Long COVID syndrome.

χ^2 = Chi-square test.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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