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Effect Of Socioeconomic Status On Patients Undergoing Oral And Maxillofacial Surgery- A Survey

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ABSTRACT:

AIM: *The aim of the study is to create awareness on impact of socioeconomic status on patients with oral and maxillofacial injuries with a survey.*

MATERIAL AND METHOD: *It is a survey-based study conducted in Department of Oral and maxillofacial surgery. This study includes 150 patients who has met with maxillofacial trauma. A Pre validated questionnaire were circulated among these patients. Results were tabulated and statistical analysis was done using SPSS Software.*

RESULTS: *It was found that Male patients of age group 21-30 were more affected by maxillofacial trauma. The association between monthly income and affordability of surgical treatment was found to be statistically significant*

CONCLUSION: *In conclusion, addressing the impact of socioeconomic status on maxillofacial injury outcomes is essential for promoting health equity and improving the overall standard of care. This study will provide critical insights into the challenges faced by socioeconomically disadvantaged patients and guide the development of effective interventions to support their recovery and well-being.*

KEY WORDS: *Socioeconomic status, Maxillofacial trauma, Affordability, Education*

INTRODUCTION:

Maxillofacial trauma is a devastating aggression seen in large trauma centers that, due to the emotional consequences and the possibility of deformity, usually requires multidisciplinary care from professionals such as otorhinolaryngologists, ophthalmologists, plastic surgeons, neurosurgeons, and Maxillofacial surgeons, and has a significant economic impact on the health system (1). In general, trauma primarily affects young, urban men, and many of these individuals have maxillofacial lesions. These, when present, are most usually linked with severe morbidity, loss of function, significant financial expense and deformity (2).

Various Studies have shown that men compared to women are usually more exposed to maxillofacial trauma or any type of trauma because they represent the largest number of motor vehicle drivers, and they practice more physical contact sports, besides being highly influenced by alcohol and other drugs (3). There are also reports in the literature stating that some population characteristics, such as living in rural and urban environments and socioeconomic or educational levels, influence the etiopathogenesis and severity of facial traumas (4,5).

According to study by Chrcanovic (6), several risk factors contribute to facial trauma, which includes: age, sex, geographical region and its cultural aspects, socioeconomic status and climatic influence, alcohol and drug use, compliance of traffic legislation, domestic violence, medical history and the etiology of maxillofacial trauma; the author also stresses the importance of prevention and intervention programs aimed at reducing the incidence of maxillofacial fractures.

The epidemiological profiling of trauma in the maxillofacial region can be a reflection of problems related to health inequalities between different social groups, which, according to Mackenbach et al. (7), are characterized by their socioeconomic status (measured, for example, by educational level and type of work) and represent one of the main challenges in global public health. Several epidemiological studies have been published in the sense of confronting the socioeconomic condition of the patients with the involvement of maxillofacial fractures (8,9).

In developing countries, there is increase in revenues from the sale of petroleum has directly affected the incidence of face fractures due to the increase in road traffic volume and the social problem of illiteracy; deterioration of road infrastructure, such as roads in poor conditions; increased imports of second hand vehicles which are not maintained properly; driving under the influence of alcohol and other abusing substances; non-compliance with traffic legislation; and failure to wear seat belts and helmets (10).

Thus, the aim of this study is to create awareness on impact of socioeconomic status on patients with oral and maxillofacial injuries through a survey.

MATERIALS AND METHOD:

A cross-sectional survey was done to assess the effect of SES on patients undergoing oral and maxillofacial surgery. This study includes 150 patients who has met with maxillofacial trauma. The survey was conducted from January 2024- June 2024. The questionnaire included information related to the patient's demographics, level of education, diagnosis, comorbidities, employment status, type of insurance etc.

Inclusion criteria: Scheduled for any type of oral and maxillofacial surgery under general anesthesia and Willing to provide informed consent and complete the survey

Exclusion criteria: Patients not willing to provide consent and complete the survey

The ethical clearance was obtained from the Institutional Ethics Committee of RVS Dental college and hospital. Informed consent was obtained from the patients who participated in the study.

Data were entered into Microsoft Excel and analyzed using Statistical Package for Social Sciences version 21.0 software (IBM Inc., Chicago, USA). Descriptive statistics were calculated for each question. Chi-square test was applied for comparison of monthly income and affordability of surgery.

RESULTS:

Majority (73.3%) of the patients undergoing oral and maxillofacial trauma surgery belonged to age group of 21-30 years (n=110) (Figure 1). The study population has a majority of male predilection (n=110) indicating that the OMF trauma is more in males (Figure 2). About 90% of the population were unmarried indicating that unmarried young adults are more prone to maxillofacial trauma (Figure 3).

About 65.3% of the population had no past medical history, followed by 24% of population having cardiovascular disease (n=18) and respiratory disease (n=18) (Figure 4). About 66.7% of the population was insured (n=100) whereas 33.3% of the population was uninsured (n=50) (Figure 5). 50.7% of the study population were employed full time (n=76) but 9.3% population was found to be unemployed (n=14) (Figure 6).

Majority 60% of the population has completed High school diploma (n=90) and 16.7% has not completed high school diploma (n=25) (Figure 7). It was found that most of the population had delay in seeking medical care due to the cost of the treatment due to their less income. Majority 49.3% of the study population had a monthly income of Rs.5000 (n=74) (Figure 8). 99 (66%) out of 150 patients were able to afford the surgery but with great difficulty but 28% of the patients were not able to afford the treatment (n=42) (Figure 9).

74.7% were satisfied with post operative care provided (n=112) (Figure 10). About 102 patients had excellent overall recovery whereas 2% of the population had poor recovery. 130 patients out of 150 had barriers in accessing surgery (Figure 11). 54.7% of the population required family support (for payment) during surgery (Figure 12). About 92.7 of the population feel that their overall treatment experience was affected by low socioeconomic status (Figure 13).

The association between monthly income and affordability of surgical treatment was found to be statistically significant [Pearson's Chi-square test showing p value = 0.0001 (p <0.05)] (Figure 14).

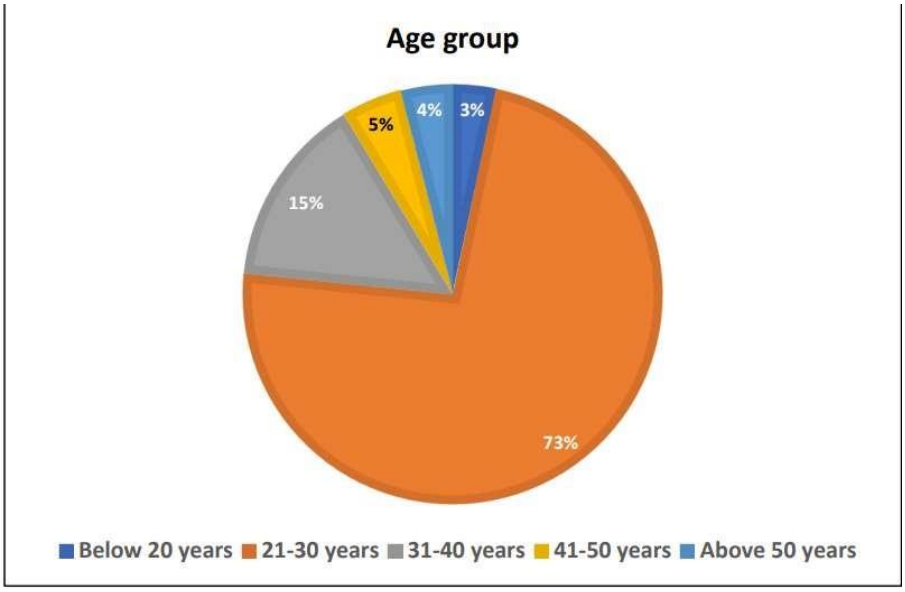

Figure 1. This Pie chart depicts age wise distribution of patients with maxillofacial trauma. Prevalence of maxillofacial trauma was more in the age groups of 21-30 years (73%) (orange colour), followed by 31-40 years (15%) (Grey colour), above 41-50 years (5%) (Yellow colour), Above 50 years (4%) (light blue colour) and below 20 years (3%) (dark Blue colour).

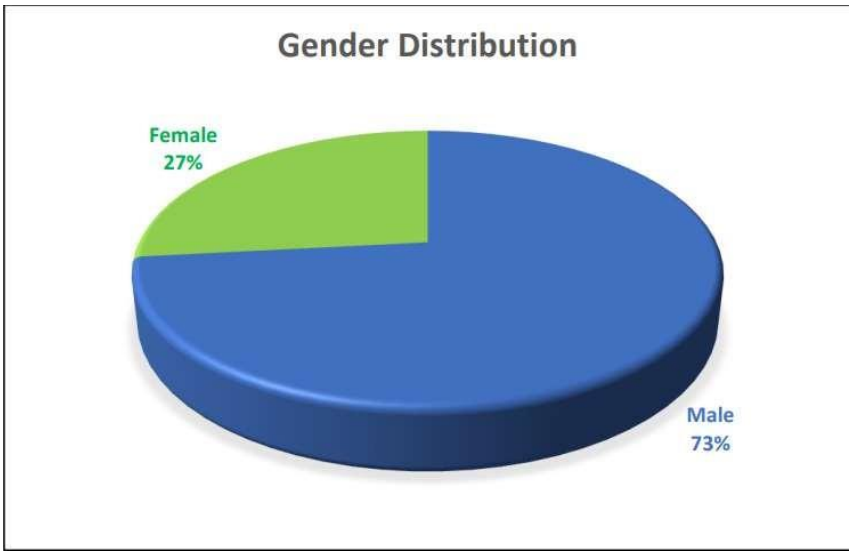

Figure 2. This Pie chart depicts gender wise distribution of patients with maxillofacial trauma. Prevalence of maxillofacial trauma was more in Male (73%) (Blue colour) compared to female (27%) (Green colour).

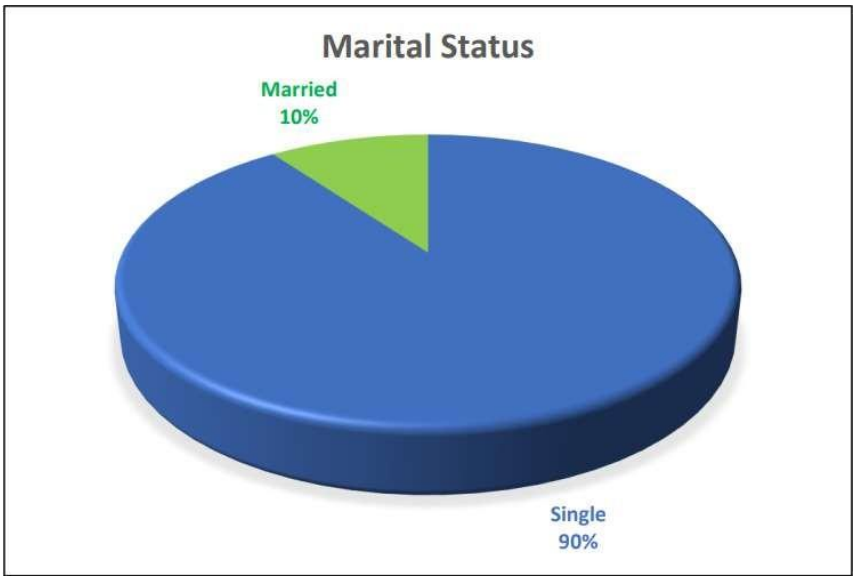

Figure 3. This Pie chart depicts marital status of patients with maxillofacial trauma. Prevalence of maxillofacial trauma was more in unmarried patients (90%) (Blue colour) compared to married patients (10%) (Green colour).

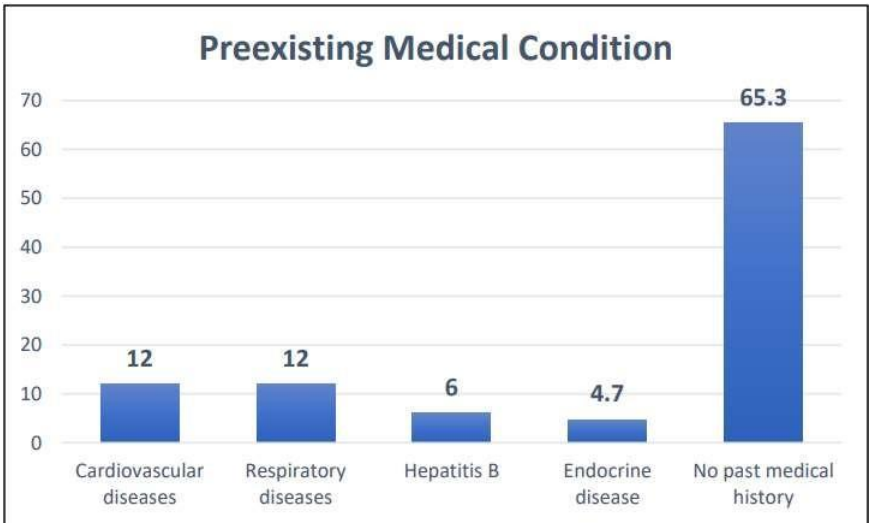

Figure 4. This Bar graph depicts preexisting medical conditions in patients with maxillofacial trauma. Prevalence of no past medical history was more (65.3%) followed by cardiovascular disease (12%) and respiratory disease (12%), hepatitis B (6%) and Endocrine diseases (4.7%).

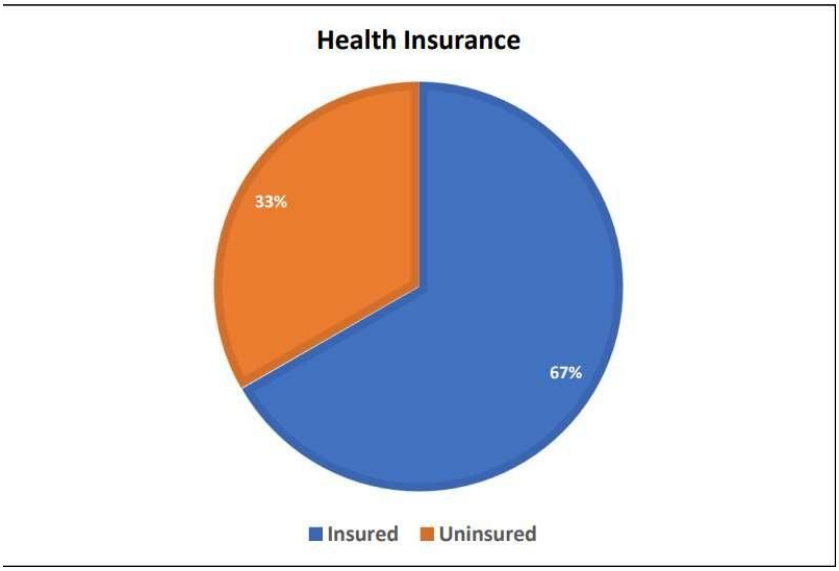

Figure 5. This Pie chart depicts Health insurance status of patients with maxillofacial trauma. Prevalence of maxillofacial trauma was more in insured patients (67%) (Blue colour) compared to uninsured patients (33%) (Orange colour).

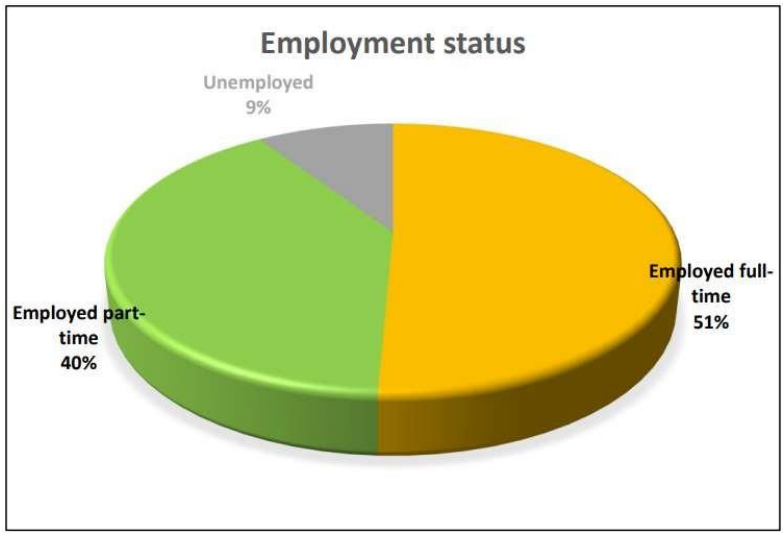

Figure 6. This Pie chart depicts Employment status of patients with maxillofacial trauma. Prevalence of maxillofacial trauma was more in patients who were employed full time (51%) (Yellow colour) followed by patients employed for part time (40%) (Green colour), Unemployed patients (9%) (Grey colour).

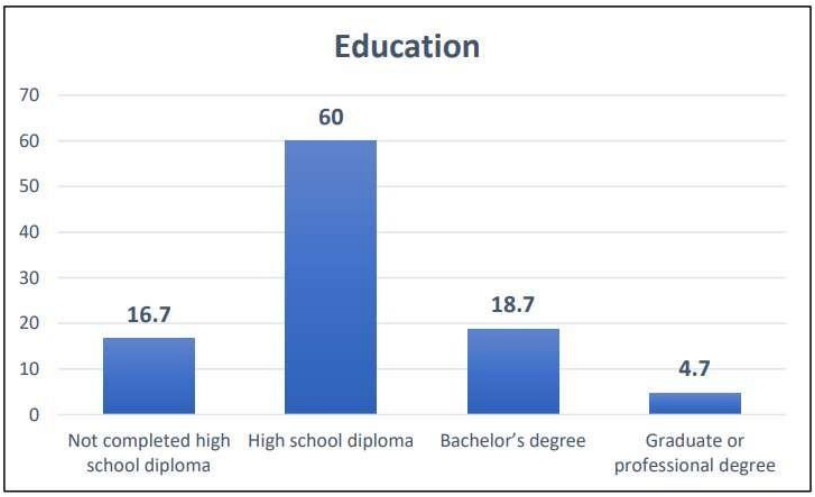

Figure 7. This Bar graph depicts education qualification of patients with maxillofacial trauma. Prevalence of maxillofacial trauma was more in high school diploma graduates (60%) followed by bachelor's degree graduates (18.7%), not completed high school diploma (16.7%) and Professional degree graduate (4.7%).

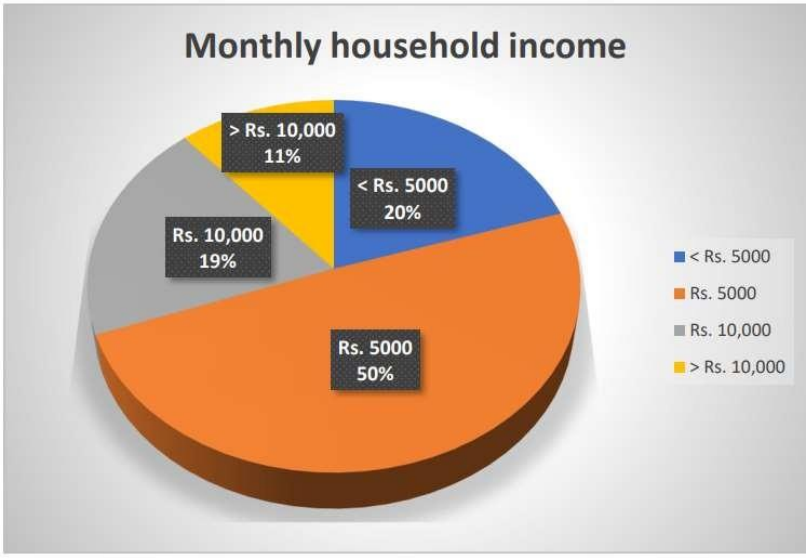

Figure 8. This Pie chart depicts Monthly household income of patients with maxillofacial trauma. Prevalence of maxillofacial trauma was more in patients whose monthly income was Rs.5,000 (50%) (Orange colour) followed by patients with income less than Rs.5000 (20%) (Blue colour), patients with income less than Rs.10,000 (19%) (Grey colour) and patients with income more than Rs.10,000 (11%) (Yellow colour).

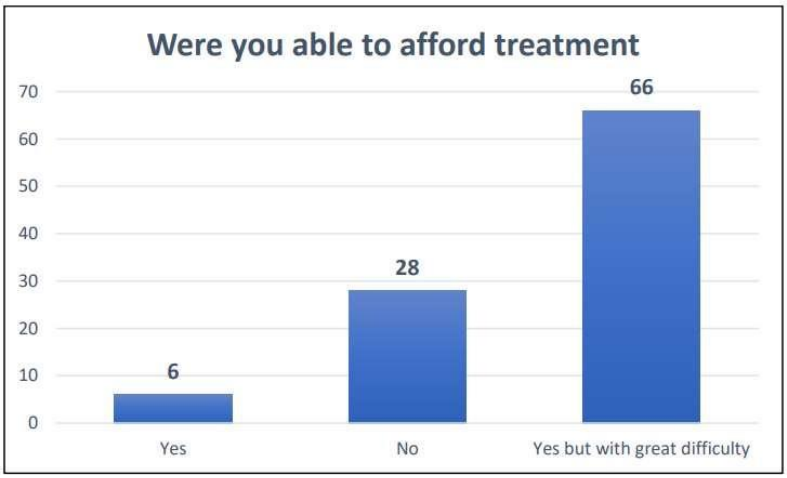

Figure 9. This Bar graph depicts affordability to treatment for patients with maxillofacial trauma. Affordability of maxillofacial trauma was possible but with great difficulty in 66% of the study population.

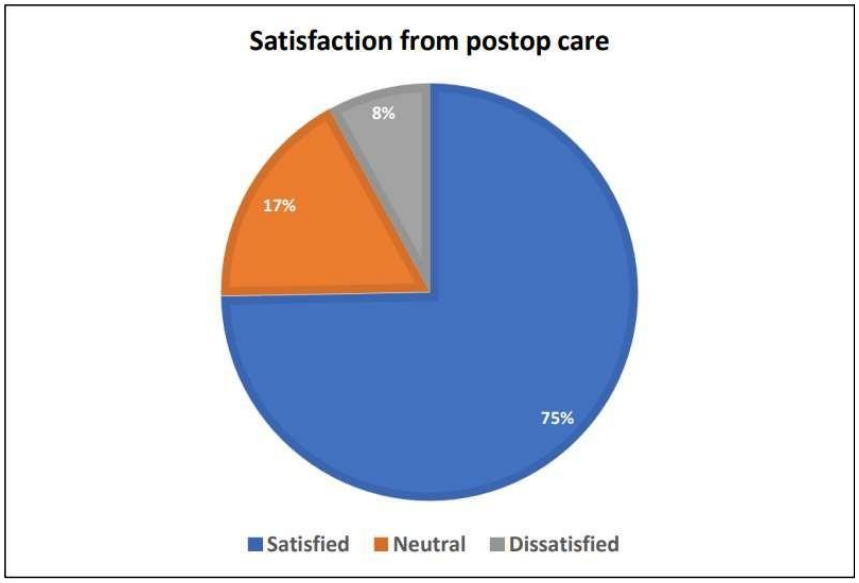

Figure 10. This Pie chart depicts Satisfaction from postop care among patients with maxillofacial trauma. Most of the Patients are very satisfied with the postop care (75%) (Blue colour).

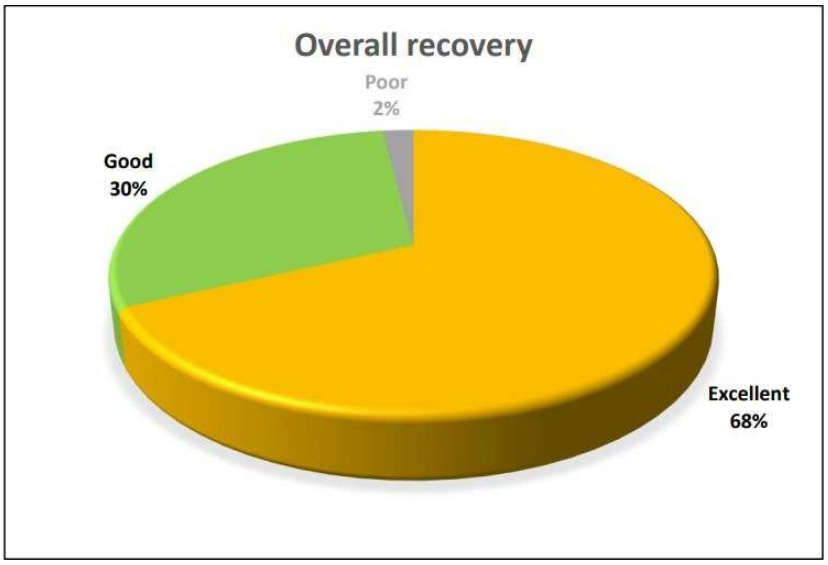

Figure 11. This Pie chart depicts overall recovery among patients with maxillofacial trauma. Most of the Patients had excellent recovery (68%) (Yellow colour).

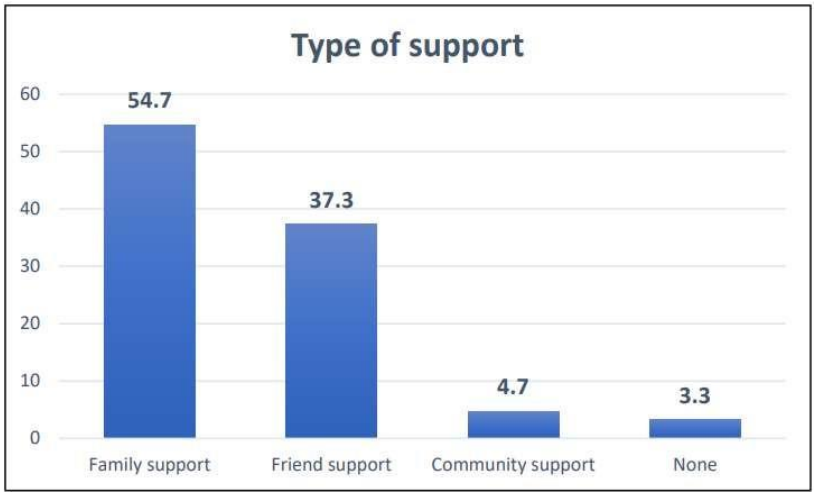

Figure 12. This Bar graph depicts type of support received by patients with maxillofacial trauma. Most of the population required family support (54.7%) to bear the cost of surgical treatment.

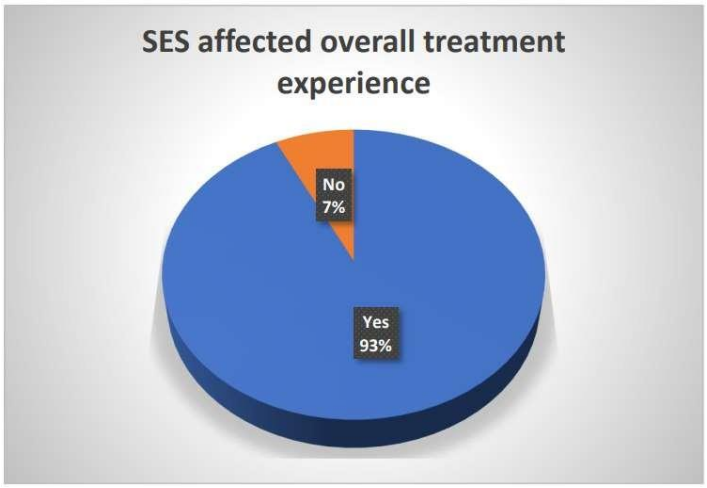

Figure 13. This Pie chart depicts effect of Socioeconomic status on overall treatment experience. Most of the Patients with maxillofacial trauma felt that overall treatment experience was affected by socioeconomic status of the patients (93%) (Blue colour).

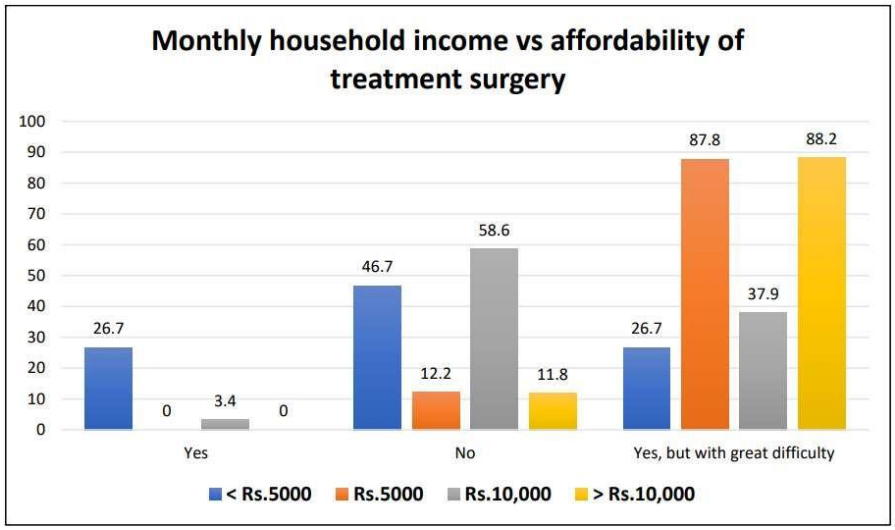

Figure 14. This bar chart depicts the association between monthly household income of patients with maxillofacial trauma and Affordability of treatment. Blue colour denotes Income less than Rs.5000, orange colour denotes Income of Rs.5000, grey colour denotes Rs.10,000, yellow colour denotes Income more than Rs.10,000. Chi square test shows statistically significant. [Pearson's Chi-square test showing p value =0.001 (p >0.05)].

DISCUSSION:

Maxillofacial trauma represents a significant portion of emergency department cases and is influenced by a complex interplay of socioeconomic, demographic, and behavioural factors. Studies have consistently shown that individuals from unmarried, lower socioeconomic, and uninsured groups experience higher incidences of maxillofacial injuries (11,12). According to data from the international literature, traumas are among the main causes of morbidity and mortality. The number of worldwide deaths due to the consequences of trauma in 2015 was estimated at 4.7 million (13,14). This discussion examines the impact of these socioeconomic determinants on the prevalence of maxillofacial trauma.

According to a study by Singaram M, et al. (15) Adults between 20 to 40 years of age were more commonly met with oral and maxillofacial trauma and Gender distribution shows that 74.5% (199/267) of subjects were male and 25.5% (68/267) were female, with a male to female ratio of 3:1, also the test of proportion for males and females shows that there was a statistically significantly higher proportion of males involved in accident and injuries (P<0.001) which was similar to the results obtained in this study.

In a study published by Farneze et al. (16) in 2016 that described maxillofacial trauma of patients at a reference center in oral and maxillofacial service, the mean age was 33.7 years old, with men accounting for 81% of the cases. These findings agree the results obtained in the present study, since it was observed a higher prevalence for males than females.

It is believed that these findings are in association with the fact that patients of this age group are more involved in intense social interaction, dangerous exercises and sports, driving motor vehicles without safety measures, and in situations of interpersonal violence, making them the most susceptible group.

In this regard, Magalhães (17) reports that the educational status is directly related to the lower incidence of facial trauma, since the group composed of individuals with Higher level education presented smaller numbers, which contradicts the results obtained in this study as 60% of the population has completed High school diploma (n=90) and 16.7% has not completed high school diploma (n=25).

In a discussion on employability and mental/physical health, it has been discussed that the existence of an employment status represents something significant in the individual wellbeing and health-related quality of life (18) which contradicts the results observed in this study as majority of the individuals in this study were employed and met with maxillofacial trauma.

Individuals from lower socioeconomic backgrounds are more susceptible to maxillofacial injuries due to factors like high-risk living environments, limited access to preventive care, and increased engagement in physical labor.

According to Lee et al. (19), lower socioeconomic status is a significant predictor of trauma, particularly in maxillofacial cases. This group often lacks access to adequate healthcare and may live in environments with higher crime rates, which increases exposure to violence and subsequent facial injuries. Moreover, limited financial resources contribute to delayed or inadequate treatment, which can lead to more severe outcomes for these patients (20).

Health insurance status is another critical determinant in trauma outcomes. Uninsured individuals tend to delay seeking medical care due to financial constraints, which can lead to worsened conditions by the time treatment is administered.

A study by Roberts et al. (21) emphasized that uninsured patients with maxillofacial injuries were less likely to receive timely and comprehensive care, resulting in a higher risk of complications. These results are consistent with the results obtained in this study. The delay in treatment not only impacts recovery but also contributes to increased healthcare costs when patients require more intensive interventions (22).

Marital status also plays a notable role in the likelihood of experiencing maxillofacial trauma. Unmarried individuals, particularly young individuals (23-27), have been found to exhibit higher incidence rates of facial trauma. Singh et al. (28) explain that this may be due to increased exposure to social situations that carry a higher risk of physical altercations, accidents, or substance abuse. Unmarried individuals may be more frequently involved in such incidents due to lifestyle and social factors that differ from those who are married (29).

Unmarried and lower socioeconomic groups often face stressors that increase their likelihood of engaging in behaviors associated with trauma risk. Psychological stress, coupled with a lack of financial security, can result in higher levels of alcohol consumption and risk-taking behaviors.

A study by Prabhu et al. (30,31) examined how these behavioral factors contribute to trauma incidence, particularly in uninsured and low-income populations. They found that psychological distress among these groups exacerbates trauma incidence due to associated behaviors that increase the likelihood of injury. These results are similar to the findings present in the current study.

CONCLUSION:

In conclusion, addressing the impact of socioeconomic status on maxillofacial injury outcomes is essential for promoting health equity and improving the overall standard of care. This study will provide critical insights into the challenges faced by socioeconomically disadvantaged patients and guide the development of effective interventions to support their recovery and well-being.

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