Awareness On Prosopagnosia Syndrome Among Dental Students

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Abstract

INTRODUCTION : Prosopagnosia is a neurological disorder characterized by the inability to recognise faces. Prosopagnosia is also known as face blindness or facial agnosia.Prosopagnosia can be acquired or hereditary.The prevalence can approach 2.5% of the population.

Aim: The aim of this study is to create an awareness of prosopagnosia syndrome among the dental students

MATERIALS AND METHOD: A random survey sampling using a self structured questionnaire of 15 questions was circulated among 100 dental practitioners of Saveetha dental college. The data were compiled in excel and the results were statistically analyzed using spss software.

RESULTS : Within the limits of this study, we arrive at the results that female respondents (67.55%) had greater awareness than male respondents (32.45%) on prosopagnosia syndrome . The results of this study also show that the respondents are least aware about prosopagnosia syndrome ,the cause, treatment and measures taken for this syndrome.

CONCLUSION: Thus from the results obtained, most of the practitioners were unaware of this syndrome and its causes. Hence every dentist and dental practitioner has to be aware of prosopagnosia syndrome to treat such patients who address them in an effective way.

Keywords: prosopagnosia, recognised faces, blindness, acquired.

INTRODUCTION:

Prosopagnosia also known as face blindness refers to the inability of a person to remember faces. People affected with Prosopagnosia often have difficulty recognizing family members, close friends, and even themselves. They tend to use alternative routes for recognition, but these routes are not as effective as recognition via the face. This syndrome is nowhere related to eye blindness(1). Prosopagnosics have difficulty knowing whether they have seen a face before, and they often have problems recognizing faces they have encountered many times. In extreme cases, prosopagnosics have trouble recognizing even those people that they spend the most time

with such as their spouse and children(2). It is important to note that prosopagnosia is defined by problems recognizing faces, not recalling names. Many articles stated that, before the 21st century, most cases of prosopagnosia syndrome result from abnormalities, damage, or impairment in the right fusiform gyrus, a fold in the brain that appears to coordinate the neural systems that control facial perception and memory(3) . Prosopagnosia can result from stroke, traumatic brain injury, or certain neurodegenerative diseases. These cases due to brain damage were named as acquired prosopagnosia. Prosopagnosia syndrome were also present early in life and are caused by neurodevelopmental impairments that impact face processing mechanisms which are named as developmental prosopagnosia or congenital prosopagnosia. Congenital prosopagnosia appears to run in families, which makes it likely to be the result of a genetic mutation or deletion. Some degree of prosopagnosia is often present in children with autism and Asperger's syndrome, and may be the cause of their impaired social development (4). Other less common etiologies include carbon monoxide poisoning, temporal lobectomy, encephalitis, neoplasm, right temporal lobe atrophy, injury, Parkinson's disease, Alzheimer's disease,and autism spectrum disorder(5) .

Prosopagnosia syndrome can be identified and diagnosed in patients through certain tests. One commonly used test is Benton Facial Recognition Test (BFRT) to assess face recognition skills. Even though modern medications are developed in high standards there is no such specific treatment provided for such patients (6). Management strategies for acquired prosopagnosia, such as a person who has difficulty recognizing people's faces after a stroke, generally have a low rate of success(7) . Acquired prosopagnosia sometimes spontaneously resolves on its own.

Many articles state that most people were unaware of the prosopagnosia syndrome and only few were known about the effects and pathology of it (8). According to Susilo, there are both acquired forms secondary to brain damage and developmental forms without obvious structural lesions in prosopagnosia syndrome.(9,10).

Brundson in his study proposed that only half of the dentist population were aware of the management and treatment of prosopagnosia syndrome.((9,10)). A widely held belief by clinicians and researchers is that prosopagnosics cannot significantly improve their face processing ability.Our team has extensive knowledge and research experience that has translate into high quality publications(11–19),(20–25),(26–32).The aim of the study was to assess the awareness of prosopagnosia among the dental students.

MATERIALS AND METHOD

A cross sectional study was conducted among the students of Saveetha dental college ,Chennai ,India. Ethical approval was obtained from the international review board prior to the start of the study.A questionnaire was set up and circulated among the dentist population of 106 people. The sampling method used in this study was random survey sampling. To minimize sampling bias certain measures were taken which included framing straight forward questions which sounded simple and the questions were kept short and clear.

A self-structured survey questionnaire was prepared which consists of 20 Questions. These questions were self framed and the validity checking of these questions was made by three internal experts in the university. The dependent variables included the Awareness, causes, treatment and management and the independent variables include Test, diagnosis and formulations. Google forms were used to circulate the questions and the responses were collected, the data analysis was carried out using SPSS software. Chi square test was used for statistical analysis and p value < than 0.05 was considered as significant.
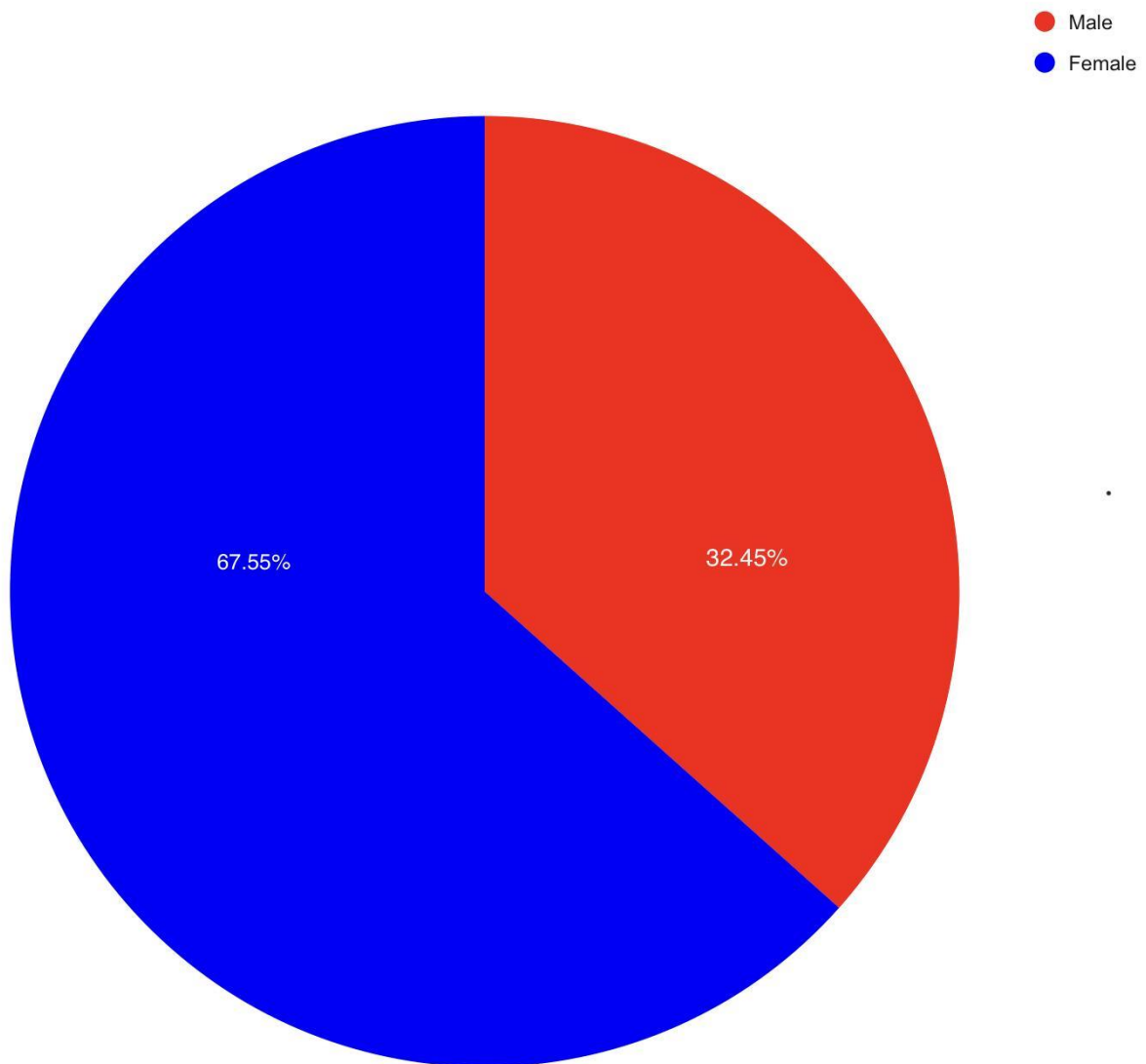
RESULTS

Figure 1 depicts the pie chart of the dental students involved in this study. Red colour denotes males and blue colour denotes females. 32.45% were males and 67.55% were females.
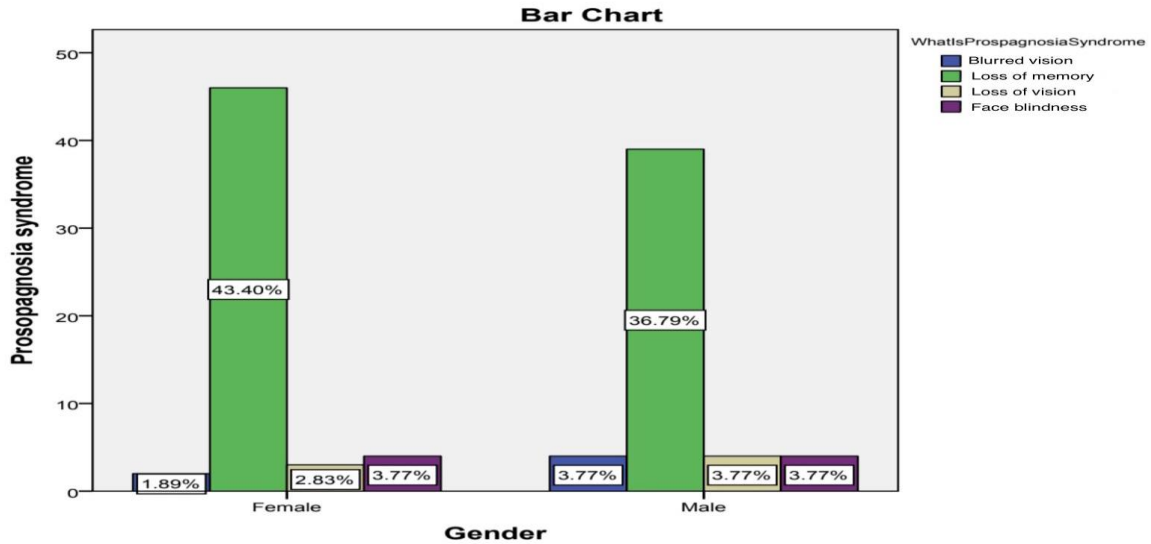
Figure 2 represents the correlation graph between gender of the students participated and their awareness towards prosopagnosia syndrome. Blue colour denotes blurred vision, green colour denotes face blindness, yellow colour denotes loss of memory and purple colour denotes other symptoms. Among the female population , 43.40% answered loss of memory, 1.89% answered blurred vision, 2.83% answered loss of vision and 3.77 % answered face blindness. Whereas among males 36.79% answered loss of memory, 3.77% answered loss of vision, 3.77% answered blurred vision and 3.77 % of males answered face blindness.
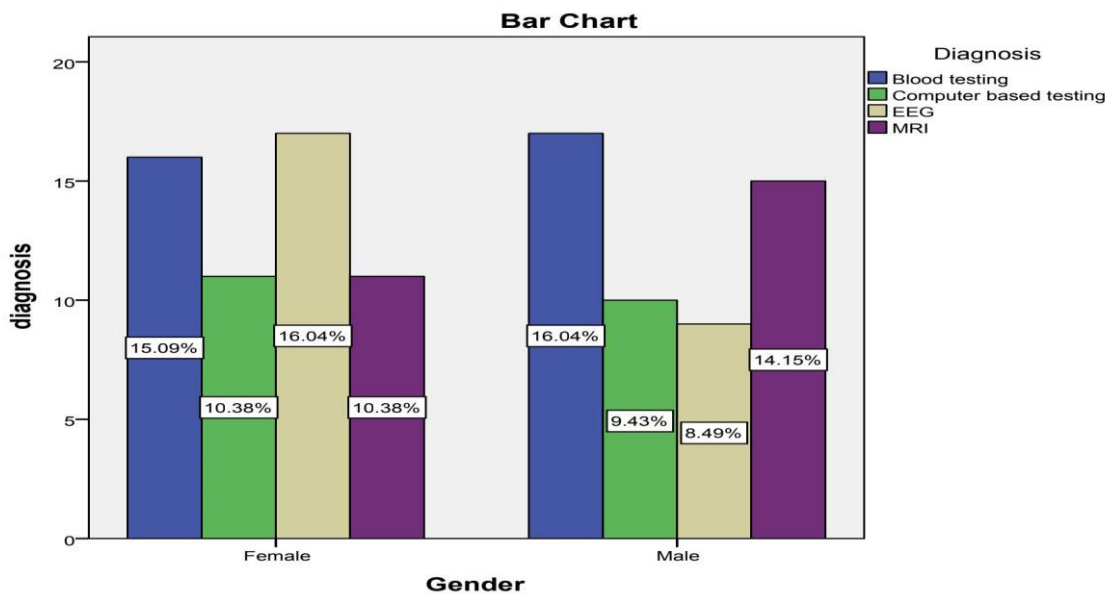

Figure 3 depicts the correlation graph between gender of the participants and the knowledge of the participants on diagnosis for prosopagnosia syndrome. Blue colour denotes blood testing , green colour denotes computer based testing, yellow colour denotes EEG and purple colour denotes MRI. Among the female participants, 15.09% answered blood testing, 10.38% computer based testing, 16.04% answered EEG, 10.38% answered MRI. Among male participants, 16.04% answered blood testing,

9.43% answered computer based testing, 8.49% answered EEG and 14.15% answered MRI.
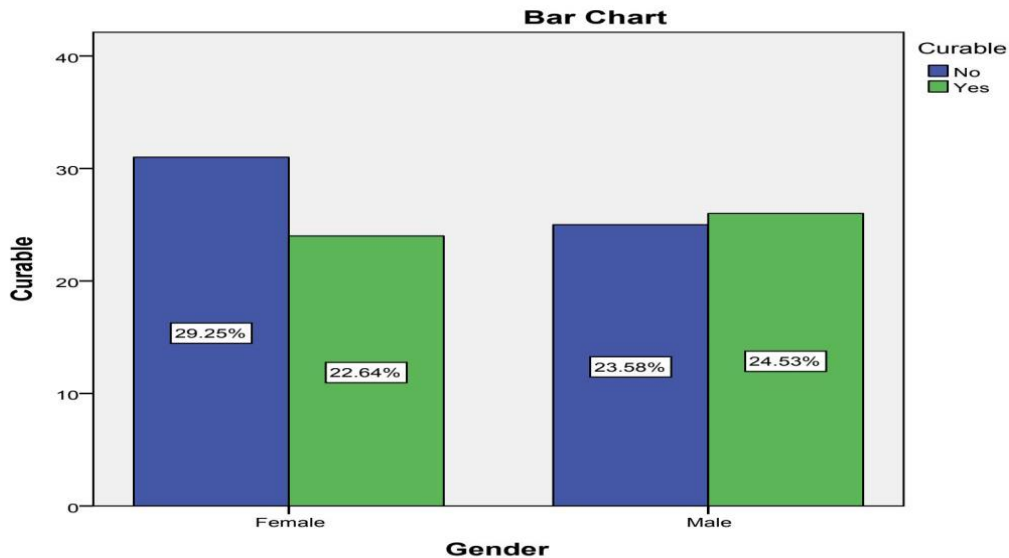
Bar Chart

Figure 4 depicts the correlation graph between gender and to the question as the prosopagnosia syndrome be cured. Blue colour denotes no and green colour denotes yes. 29.25% of females and 23.58% of males answered that the syndrome can be cured. Whereas 22.64% of females and 24.53% of males replied that the syndrome cannot be cured.
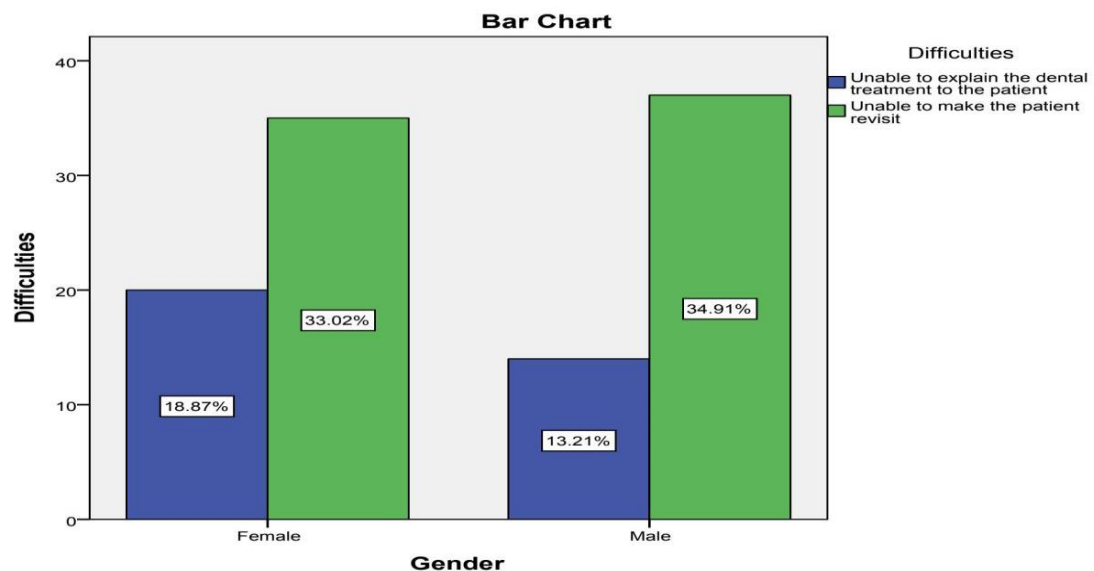
Bar Chart

Figure 5 depicts the association graph between gender and the difficulties that could be faced by the dentist when treating a prosopagnosia patient. Blue colour denotes unable to explain the dental treatment to the patient and green colour denotes unable to make the patient revisit. 18.87% of females and 13.21% of males answered as unable to explain the dental treatment to the patient, and 33.02% of females and 34.91% of males answered as unable to make the patient revisit.
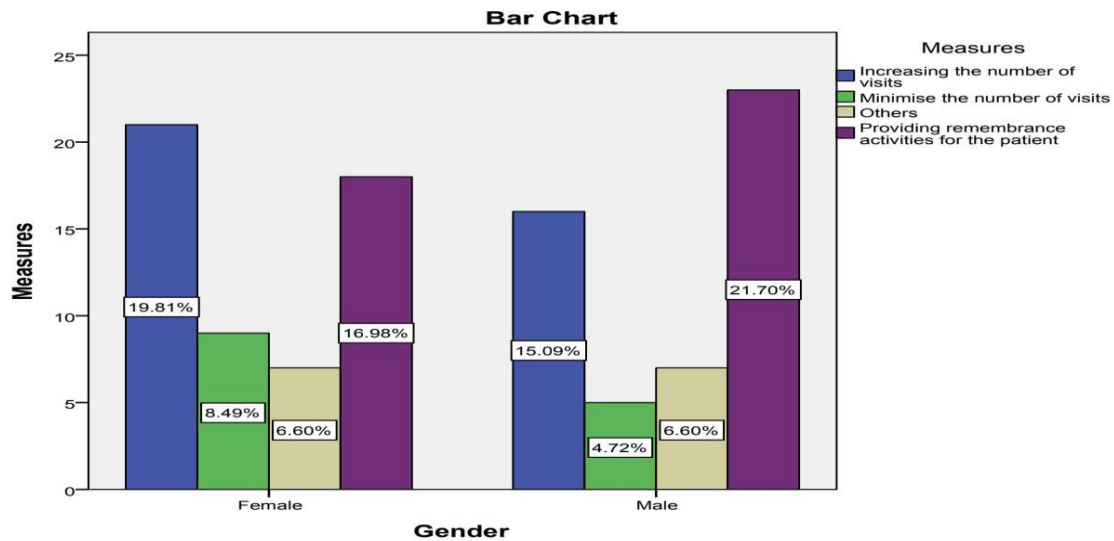
Figure 6 represents the association graph between gender of the participants and the measures taken to provide dental treatment for prosopagnosia affected patients. Blue colour denotes increasing the number of visits, green colour denotes minimise the number of visits, yellow colour denotes others, purple colour denotes providing remembrance activities for the patients. Among the females, 19.81% answered increasing the number of visits, 8.49% answered minimising the number of visits, 6.60% answered others, 16.98% answered providing remembrance activities for the patients. Among the males, 15.09% answered increasing the number of visits, 4.72% answered minimising the number of visits, 6.60% answered others, 21.70% answered providing remembrance activities for the patients.

A total of 109 dental students participated in this study. There was a dominance in the female population with 67.55% more than the male population. A positive correlation was found between the participants with a better knowledge on prosopagnosia syndrome (figure 2). A negative association was found among the study population on knowledge of diagnosis of prosopagnosia syndrome (figure 3). Negative correlation was obtained between the student population having low awareness of the curable state of prosopagnosia syndrome (figure 4). Negative association was obtained between the study population with the least awareness of the difficulties faced as a dentist on patients with prosopagnosia syndrome (figure 5). Most of the dental students who participated in the study had the least knowledge on the measures to be taken as a dentist for treating the patients with prosopagnosia syndrome (figure 6).

DISCUSSION:

In this study about 109 dental students participated wherein 67.55% were females and 32.45% were females (figure 1). A predominance of female population was observed in this study. From the results we observe that most of the dental students were least aware of the term prosopagnosia syndrome and misled with some other syndromes. Only a few students(3.77%) were known to use the term prosopagnosia syndrome as face blindness disorder (figure 2). According to Kennerknecht, Prosopagnosia is an impairment in the ability to recognize faces and can be acquired after a brain lesion or occur as a developmental variant. (33)

In figure 3, a correlation was observed between the dental students and their awareness on the diagnosis for prosopagnosia syndrome. The diagnosis for prosopagnosia syndrome is generally done as a computer based testing or using a test known as Benton Facial Recognition Test (BFRT) to check the facial recognition capacity of the patient. These tests are used to confirm the patient to be having prosopagnosia syndrome . Most of the students were unaware,

only few answered as computer based / recognition testing (10.38%).

Figure 4 incorporates the graph showing the awareness of participants towards the prognosis and the curable state for prosopagnosia patients. Most of the students answered that it can be cured (29.25%) but prosopagnosia is a disorder for which the treatment provided is still unknown. The patients with prosopagnosia cannot be completely cured and the disorder has a poor prognosis rate.(34) The treatment for prosopagnosia syndrome is still under research and these patients are only advised for other remembering techniques and methods to move on.

In figure 5, the question of what difficulties a dentist has while treating a prosopagnosic patient is established. A bond between the patient and a dentist develops only if there is a "trust" prevailed among them. This trust lags when treating a prosopagnosia patient, thus understanding the patient's difficulties and the difficulties faced as a dentist has to be emphasised by each dental student. The prosopagnosia patient often finds it difficult to recognise and identify the dentist, hence as a dentist the handling of such a patient is important.

Figure 6 explains the measures to be taken by a dentist while treating a prosopagnosia patient. The dentist should ensure the difficulties and the complications faced by the patients with prosopagnosia syndrome before treating such patients, such that they provide a better treatment for such patients. As a dentist, they must look after the patient's concern and take measures accordingly to reduce the stress and difficulties. Such measures include minimising the number of visits, preferably completing the procedures on the same day of primary visit, explaining the procedures and treatment to the patient as well for the guide who is taking care of the patient, and making the patient feel comfortable while taking treatment, etc. It is the primary responsibility of the dentist to take these measures and to have knowledge of the syndrome to treat the patient efficiently .

The lacunae of this study include the sample size which was taken within a limited geographical area. The other factors also include that there is no restriction of age mentioned and the dentist was alone concentrated to fill this survey, where other medical and non-medical professionals could have also been included to create awareness among people.

The study constraints within the geographical limit as dental practitioners but the further studies can be developed by creating awareness among other medical professionals and common people. Thus people can be well aware of rare syndrome and treat those patients in the right way.

CONCLUSION:
Thus, from the results we conclude that most of the students are unaware of prosopagnosia syndrome. These syndromes are rare but every student has to be known to handle such patients and to provide the best treatment for them. Hence, every dentist is emphasised to reinforce these syndromes priorly such that they provide the best treatment for those patients in future days.

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