
Knowledge Awareness And Practice Regarding Bell's Palsy Among Dental Students In Chennai

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Abstract: Introduction: Bell's palsy is an idiopathic, acute peripheral palsy of the facial nerve that results in muscle weakness on one side of the face, characterized by sudden onset, and unilateral facial paralysis, lower motor neuron weakness of the facial nerve with no other neurological abnormalities and no readily identifiable cause. The aim of this study was to measure the knowledge and attitude among dental students. A self-administered questionnaire consisting of 17 questions regarding knowledge and awareness of Bell's palsy. Data was collected through Google Forms. Responses were analysed and statistical data is represented as pie charts. From the results 69% of the people selected facial nerve is affected by Bell's palsy and 75% of the people selected that Bell's palsy affects only one side of the face and 25% disagreed with it. 60% of the study participants said that recovery duration of immediate type facial paralysis is 4 hours. The knowledge of anatomy, diagnosis and treatment was satisfactory and suggest that they have sufficient awareness. Dental students and dentists should be exposed to any medical condition that could happen because of iatrogenic reasons.

Keywords: Bell's palsy, Electroneurography, Facial nerve, Prednisolone.

INTRODUCTION

Bell's palsy is the most frequent cranial neuropathy and may originate from various kinds of damage to the seventh nerve including its motor nucleus. In the majority of cases, however, investigations fail to establish a definite etiology. Sir Charles Bell in 1821 was the first to describe the facial nerve, and eight years later presented two cases of idiopathic facial paralysis, since then idiopathic facial paralysis has been termed as Bell's palsy (Bell and Davy, 1833). Bell's palsy is an idiopathic, acute peripheral palsy of the facial nerve that results in muscle weakness on one side of the face, characterized by sudden onset, and unilateral facial paralysis, lower motor neuron weakness of the facial nerve with no other neurological abnormalities and no readily identifiable cause. The incidence of Bell's palsy is 20-30 cases for 100,000 and accounts for 60-70% of all cases of unilateral peripheral facial palsy. Either sex is affected equally and may occur at any age, the median age is 40 years. The incidence is lowest under 10 years of age and highest in people over the age of 70. Left and right sides are affected equally (Gronseth, Paduga and American Academy of Neurology, 2012). Other features may include facial creases and nasolabial fold disappear, the forehead unfurrows, and the corner of the mouth droops. The eyelids will not close and the lower lid sags; on attempted closure, the eye rolls upward (Tiemstra and Khatkhate, 2007). Although the reason for Bell's palsy remains unclear. The first step in the diagnosis is to determine whether facial weakness is central or peripheral. Peripheral facial palsy involves all the facial muscles ipsilateral to the side of facial nerve involvement where as central weakness involves lower facial muscles contralateral to the lesion in the brain stem above pons and cerebral hemisphere. Bell's palsy is differentiated from other causes of facial palsy such as diabetes mellitus, human immunodeficiency virus (HIV) infection, Lyme disease, Ramsay Hunt syndrome (peripheral facial palsy with zoster oticus), sarcoidosis, Sjogren's syndrome, parotid-nerve tumors, leprosy, polyarteritis nodosa and amyloidosis, by its rapid onset over several hours. Facial palsy secondary to other causes progresses over days to months. (Morales et al., 2013). Bell's palsy is believed to be caused by inflammation of the facial nerve (Salinas et al., 2010). Recently, attention has focused on infection with herpes simplex virus type 1 (HSV-1) and/or herpes zoster virus from the geniculate ganglion is thought to be the mostly likely cause (Murakami et al., 1996; Linder, Bossart and Bodmer, 2005; Stjernquist-Desatnik, Skoog and Aurelius, 2006). A careful history of the onset and progress of paralysis is important. Medical history should include recent rashes, arthralgias, or fevers; history of peripheral nerve palsy;

exposure to influenza vaccine or new medications.. The clinical skills and experience is of utmost importance for managing the patients in emergency situations Normally drugs of choice for Bell's palsy corticosteroid used which reduce inflammation, antiviral medication if virus is the cause and pain medication ibuprofen or acetaminophen for mild pain are used. Vitamin B-12 and B-6 are B-complex vitamins that are important for preventing Bell's palsy. The nerve excitability test determines the excitation threshold by recording the minimum electrical stimulus required to produce visible muscle contraction(Adour et al., 1978). A difference greater than 3.5 mA between affected and unaffected sides is considered to be significant in terms of poorer outcome. Measuring the peak-to-peak amplitude of the evoked compound action potential of the involved side compared to the normal side has prognostic importance. If there is a 90% or greater reduction in the amplitude of the affected side, the prognosis is poor Currently the trigeminal blink reflex is the only test to measure intracranial pathway of the facial nerve and also useful test to study various post paralysis sequelae such as synkinesis and hemifacial spasms. With recovery of facial function the ipsilateral R1 latency becomes less prolonged and the amount of initial prolongation of this response correlates with greater loss of facial motor function.(Katusic et al., 1986)

Physical therapies exercise facial muscles helpful for preventing this from occurring and plastic surgery may be needed to correct lasting facial nerve problems. Good nutrition and rest are helpful for the body as it heals. In some cases Bell's palsy is a "one-off" and about 1 in 10 people have a Bell's palsy can have a further episode in the future happen often several years afterwards and no ways to prevent the development of this disease.Previously our team had conducted numerous clinical trials and invitro studies (Chagani et al., 2011; Holla et al., 2015; Jesudasan, Wahab and Sekhar, 2015; Christabel et al., 2016; Kumar and Snena, 2016; Patturaja and Pradeep, 2016; Mp, 2017a, 2017b; Packiri, Gurunathan and Selvarasu, 2017; Patil et al., 2017; Rahman and Mp, 2017; Rao and Kumar, 2018; Abhinav et al., 2019; Jain et al., 2019; Ong et al., 2020) over the past 5 years now we are focussing on surveys the idea of this survey stemmed from the current interest in our community. Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J et al., 2018; Menon et al., 2018; Prabakar et al., 2018; Rajeshkumar et al., 2018, 2019; Vishnu Prasad et al., 2018; Wahab et al., 2018; Dua et al., 2019; Duraisamy et al., 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and Ezhilarasan, 2019; Malli Sureshababu et al., 2019; Mehta et al., 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran et al., 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma et al., 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi et al., 2020; Samuel, Acharya and Rao, 2020)

The aim of the study is to Analyze and evaluate the knowledge and Awareness toward Bell's palsy Among Dental student.

MATERIALS AND METHODS

An online survey was done with the structured questionnaire based on knowledge, attitude, practice survey among the dental students about bells palsy. Ethical permission and approval for the project was obtained from the Institutional Review Board of Saveetha Institute of Medical and Technical Sciences, Chennai, India on Date 29/04/2020. This cross sectional survey was conducted among dental undergraduate students. A structured questionnaire consisting of 14 questions was shared online and 100 responses were obtained. Data entry was made in the Excel sheet, SPSS software was used to analyze the data. The descriptive statistics were used to determine the responses given by the participants. Statistical analysis, Chi square test was used to assess the association between the year of study and the responses.

RESULTS & DISCUSSION

From the results[fig1] there are 36 males and 64 males in the study. [fig2] 82% of the people selected facial nerve is affected by bell's palsy and [fig 3] 76% of the people selected that bell's palsy affects only one side of the face 24% disagreed with it.[fig 4] 60% of the participants said they do not know about the early ocular complications. [fig 5] 34% of the participants responded bells palsy last more than a year. [fig 6] 45% of the study participants said that recovery duration of immediate type facial paralysis is 4 hrs.[fig7] 41% of the participants said delayed type facial paralysis starts within several hours to several days. [fig8] 71% of the study participants agreed with the fact that bell's palsy can happen during inferior alveolar nerve block. [fig 9] 52% of the study participants were aware of the fact that electroneurography is used to measure the nerve degeneration in bell's palsy. [fig 10] 50% of the participants said reassuring patient as first step in the management of bell's palsy. [fig11] majority of the participants (44%) said magnetically evoked myoneurography is used to measure conduction status of facial nerve. [fig12] 51% of the study participants said that corticosteroids as the widely accepted treatment for bell's palsy.[fig 13] 49% of the study participants selected prednisolone as the drug of choice to treat bell's palsy where as 38% of the respondents selected carbamazepine.[fig14] majority of the participants said they do not know the dosage of prednisolone used to treat the bells palsy. [fig 15] 40% of the respondents selected facial nerve decompression as the most common surgical intervention for bell's palsy

where as 33% selected tarsorrhaphy and the other 15% selected facial nerve grafting as a choice of treatment for bell's palsy.

According to this study the dental students and dentist awareness of bell's palsy was inadequate, the participants generally have reasonable information about bell's palsy This present study examines the knowledge and attitude among the dentists on Bell's palsy. The survey showed that participants have a fair knowledge about the anatomy of the disease the majority (69%) reported that facial is affected in a patient with Bell's palsy and (75%) reported that affect one side. A study was conducted in Karachi, Pakistan on the knowledge of Bell's palsy among students of pharmacy, science and arts faculties. It is observed that out of 120 students' only 61.67% students knew about Bell's palsy. It was concluded that the knowledge of Bell's palsy among students was inadequate (Naveed and Tasleem, 2014). AlYahya et al., 2018 reported that the level of knowledge about Bell's palsy risk factors and its treatment was poor in Al-Hasa, the participants generally have limited information about bell's palsy and the community awareness of bell's palsy is low they are not aware enough (AlYahya, Al-Qernas and Al-Shaheen, 2018). The main cause of the disease is not yet clear, it is linked to exposure to a viral infection such as the varicella-zoster virus and Epstein-Barr viruses, both of herpes family (Gantz et al., 1999), in this study 73% have awareness about the etiology. Another study conducted by aboras et al on the awareness and knowledge of neurological complications while administering local anesthesia among the dental professionals which included students and practitioners, it was found that 82% of the participants were aware of facial paralysis as a possible complications of inferior alveolar nerve block (Al Meslet et al., 2019). However, this study did not mention the type of facial paralysis. According to a study done by (Danielides et al., 1994) Electroneurography is a valuable diagnostic test and should be done several times in different points of Bell's palsy since in most cases nerve degeneration lasts for the first two weeks. In this study 51% of the participants answered that Electroneurography is useful in measuring facial nerve degeneration in patients with Bell's Palsy which is a satisfactory proportion compared to 44% who choose " I don't know". As for treatment, 51% of participants chose corticosteroid as the most widely accepted and the other majority were 27% for I don't know. Follow up only. Previous studies reported that initial treatment of Bell's palsy is corticosteroid to improve facial function recovery and reduce inflammation, antiviral medication which may be prescribed if a virus caused Bell's palsy. (Kumar and Others, 2016) Surgical decompression as primary treatment is also controversial and it's not currently recommended (Vakharia and Vakharia, 2016). In a case report study by Chevalier et al., (Chevalier et al., 2010) it was found that after two hours of administration of inferior alveolar nerve block the patient felt the complete onset of paralysis on the left-side of the facial muscles which the neurologists diagnosed as Bell' s palsy after looking into other medical history of the patient . A complete recovery of the signs and symptoms of Bell's palsy is seen in a period of two months among 70-80% patients. A varying degree of residual dysfunction among the other 20-30% patients (Owais, Ahmad and Rehman, 2013).Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh et al., 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai et al., 2019; Sridharan et al., 2019; Vijayashree Priyadharsini, 2019; Mathew et al., 2020)It is important that a dentist has adequate knowledge on Bell's Palsy as he may be treating a patient with existing facial palsy, or may be the first medical professional to observe it in a patient, or may be the one to induce iatrogenic reactions causing Bell's palsy to the patient during dental treatment (Ilea et al., 2014). In a study on Bell palsy's and its clinical significance, it was concluded that knowledge of the anatomy and clinical significance of Bell's palsy may help to make accurate diagnosis and give proper treatment (Bulstrode and Harrison, 2005)

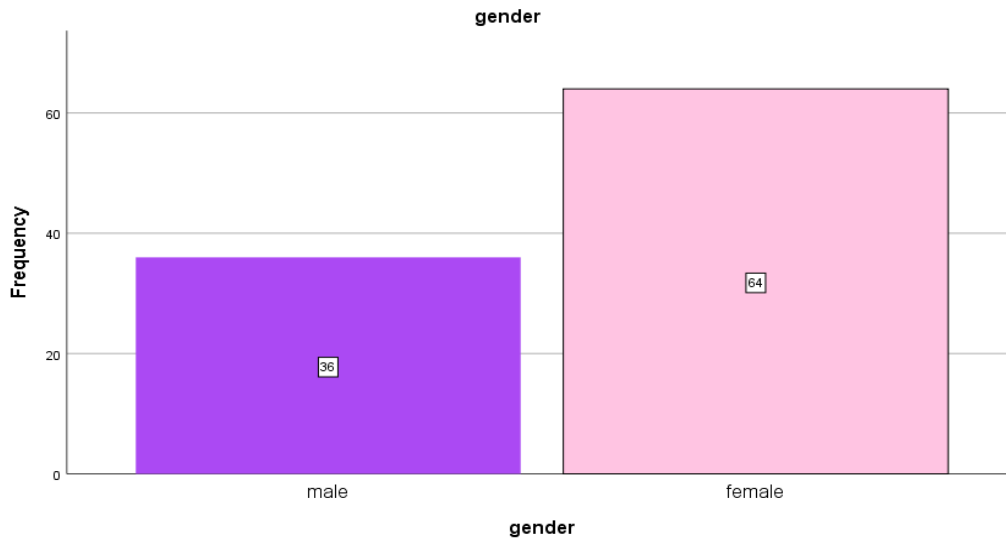


Fig.1: Bar graph represents the frequency and gender. X axis represents the year of study and Y axis represents number of respondents. Majority of the respondents were males(36%) followed by females (64%)

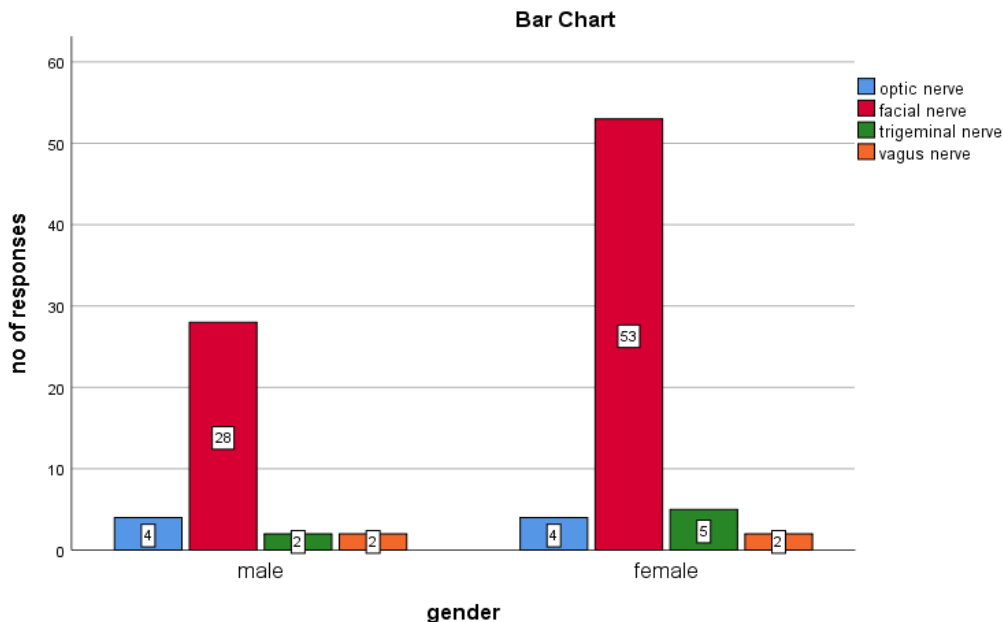


Fig.2: Bar graph represents the association between gender and number of responses . X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.739, (p>0.05)].Most of the participants were aware of “facial nerve” is affected in bell's palsy. However females have more awareness than males.

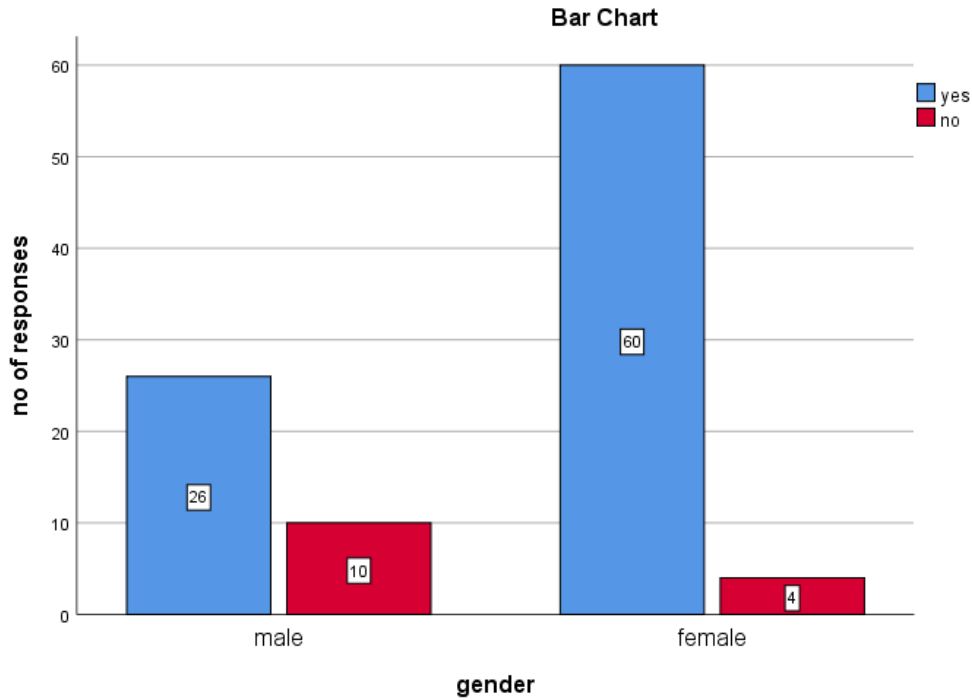


Fig.3: Bar graph represents the association between gender and number of responses. X axis represents the gender and Y axis represents the number of respondents. Chi square test shows significant statistical difference in responses between gender. [Pearson chi square p value = 0.003, (p<0.05)]. Most of the participants were aware that “facial nerve palsy” affects one side of the face in bell's palsy. Males have more awareness than females.

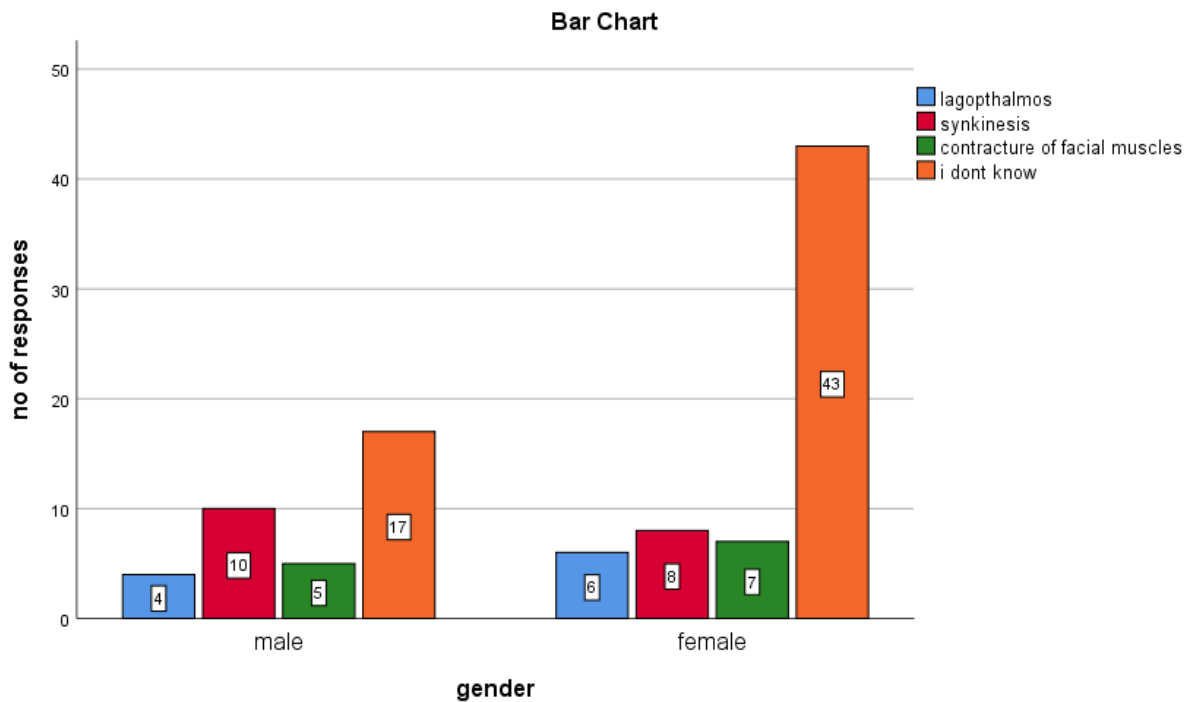


Fig.4: Bar graph represents the association between gender and number of responses. X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.191, (p>0.05)].

Most of the participants were unaware of the ocular complications of bell's palsy. However females are more unaware than males.

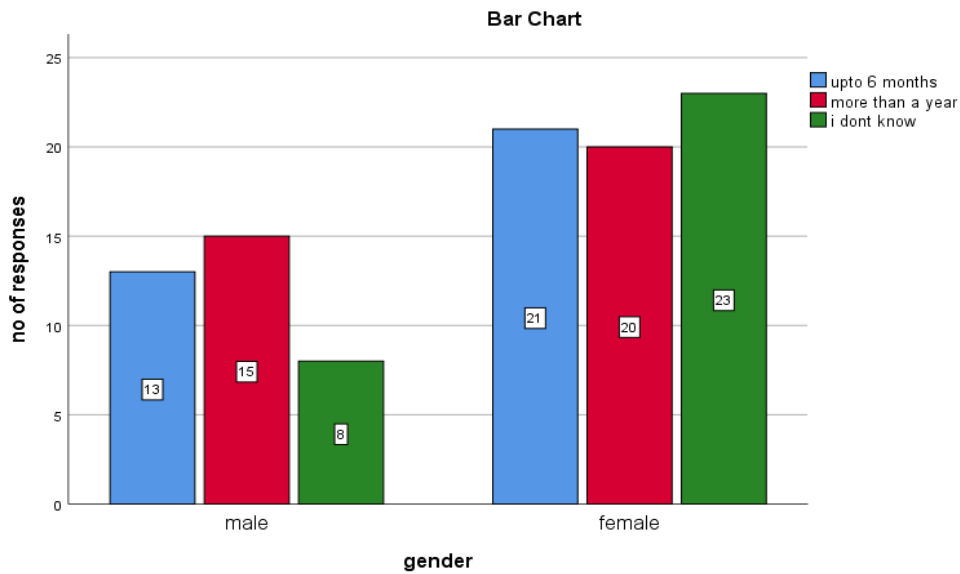


Fig.5: Bar graph represents the association between gender and number of responses . X axis represents the gender and Y axis represents the number of respondents. Chi square test shows significant statistical difference in responses between gender. [Pearson chi square p value = 0.012, (p<0.05)]. Most of the females were unaware how long Bell's palsy last . most males were aware that bells palsy would last more than a year. Males have more awareness than females.

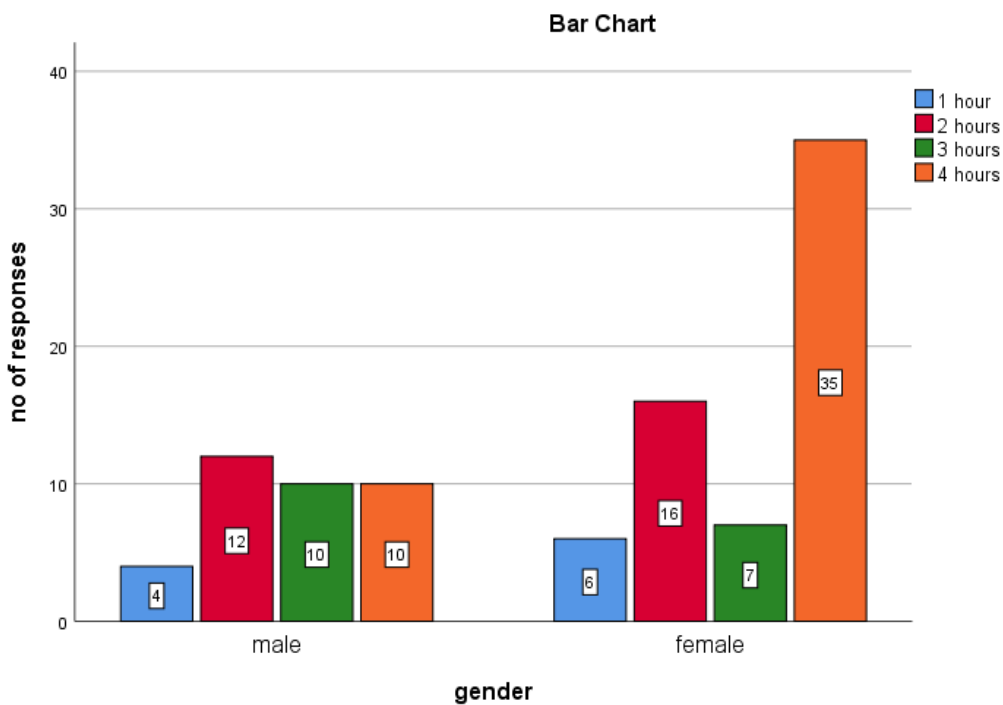


Fig.6: Bar graph represents the association between gender and number of responses. X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.256, (p>0.05)].

Most of the participants were aware that 4 hours is the maximum recovery duration of immediate type facial paralysis. However Females have more awareness than males.

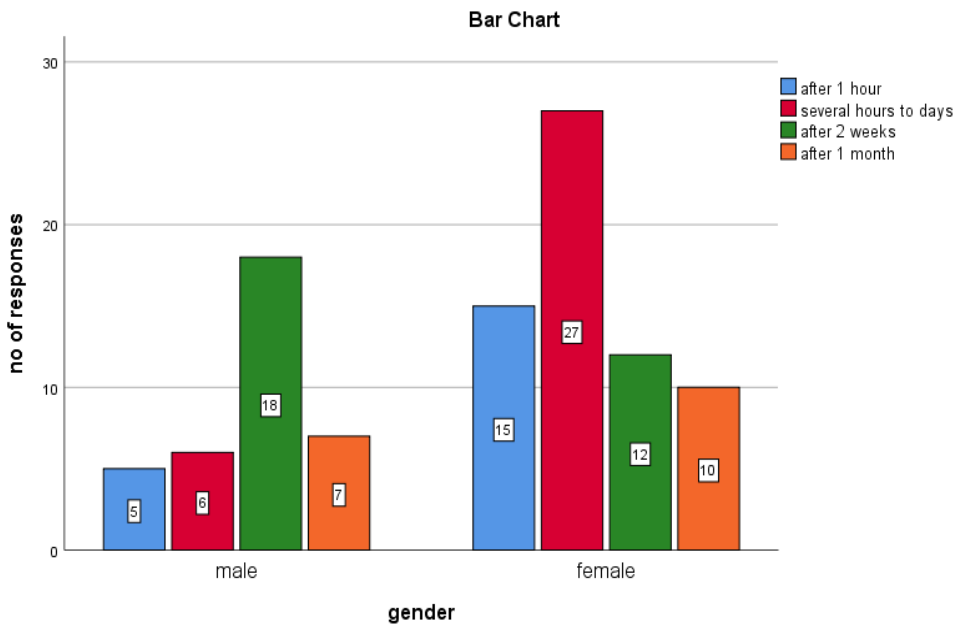


Fig.7: Bar graph represents the association between gender and number of responses . X axis represents the gender and Y axis represents the number of respondents. Chi square test shows significant statistical difference in responses between gender. [Pearson chi square p value = 0.004, (p>0.05)]. Most of the participants were aware that delayed type facial paralysis starts within several hours to several days. Males have more awareness than females.

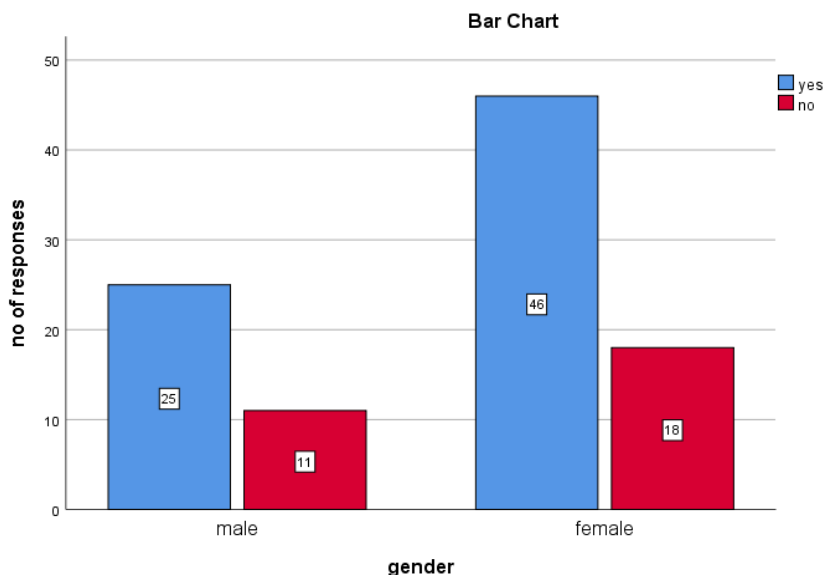


Fig.8: Bar graph represents the association between gender and number of responses . X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.797, (p>0.05)]. Most of the participants were aware that bells palsy can happen during inferior alveolar nerve block. However Females have more awareness than males.

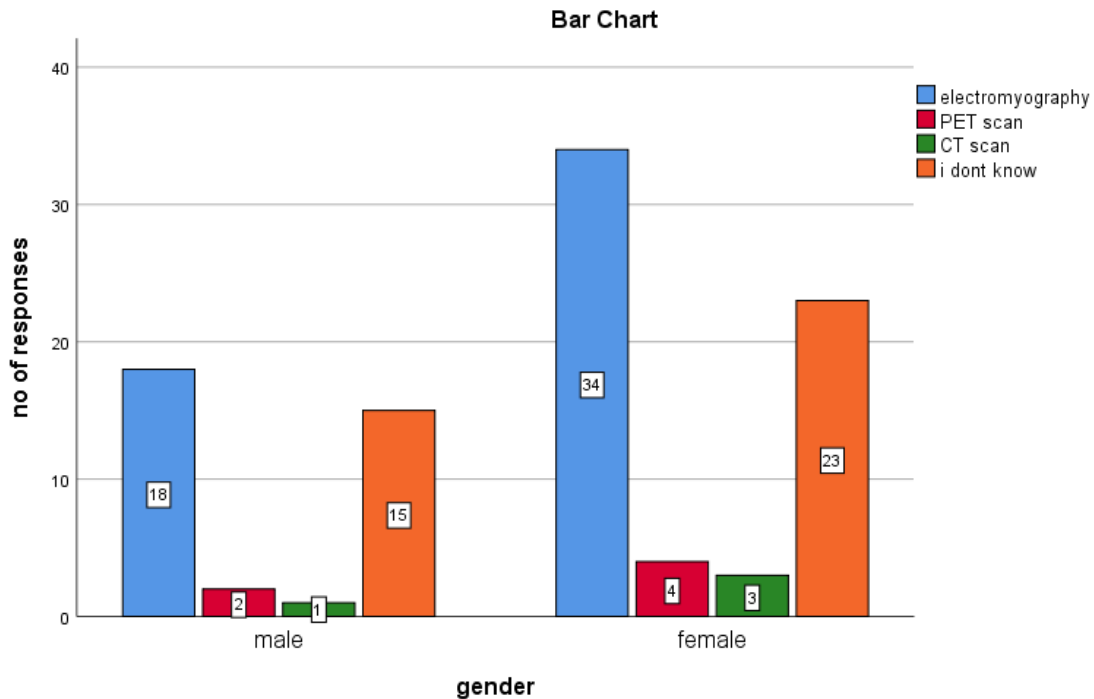


Fig. 9: Bar graph represents the association between gender and number of responses. X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.925, (p>0.05)]. Majority of the participants were aware that electroneurography is used to measure nerve degeneration in bell's palsy. However Females have more awareness than males.

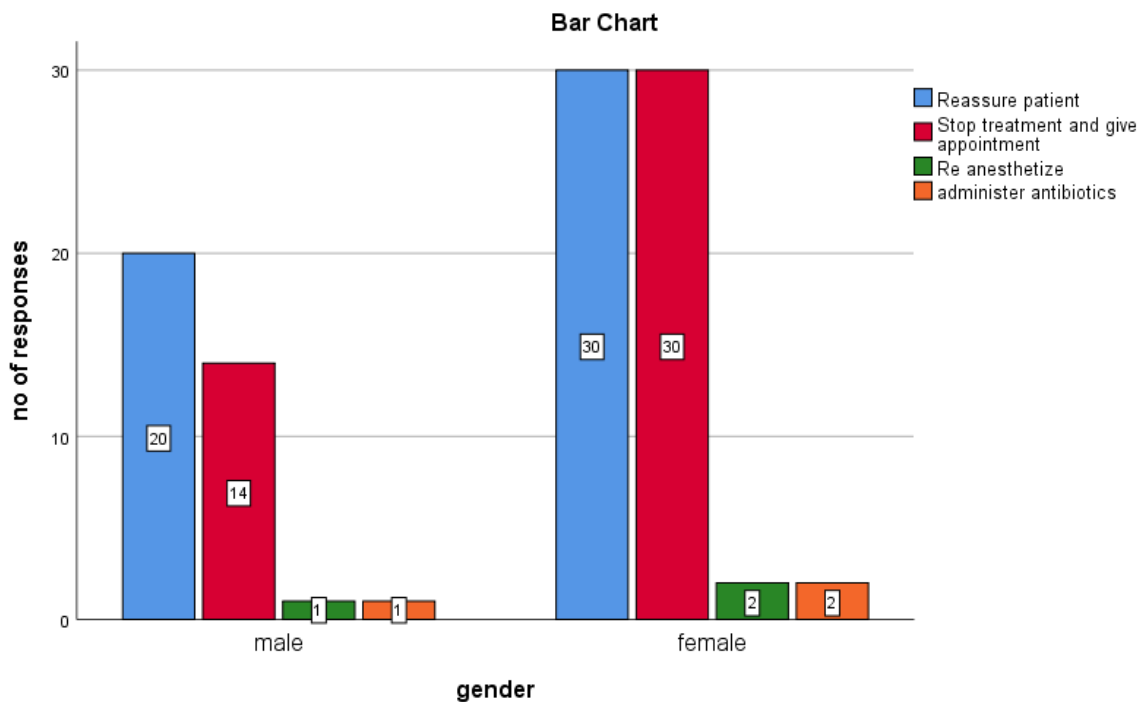


Fig.10: Bar graph represents the association between gender and number of responses. X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.873, (p>0.05)].

Majority of the participants were aware that reassuring the patient is the first step in management of facial paralysis. However Females have more awareness than males.

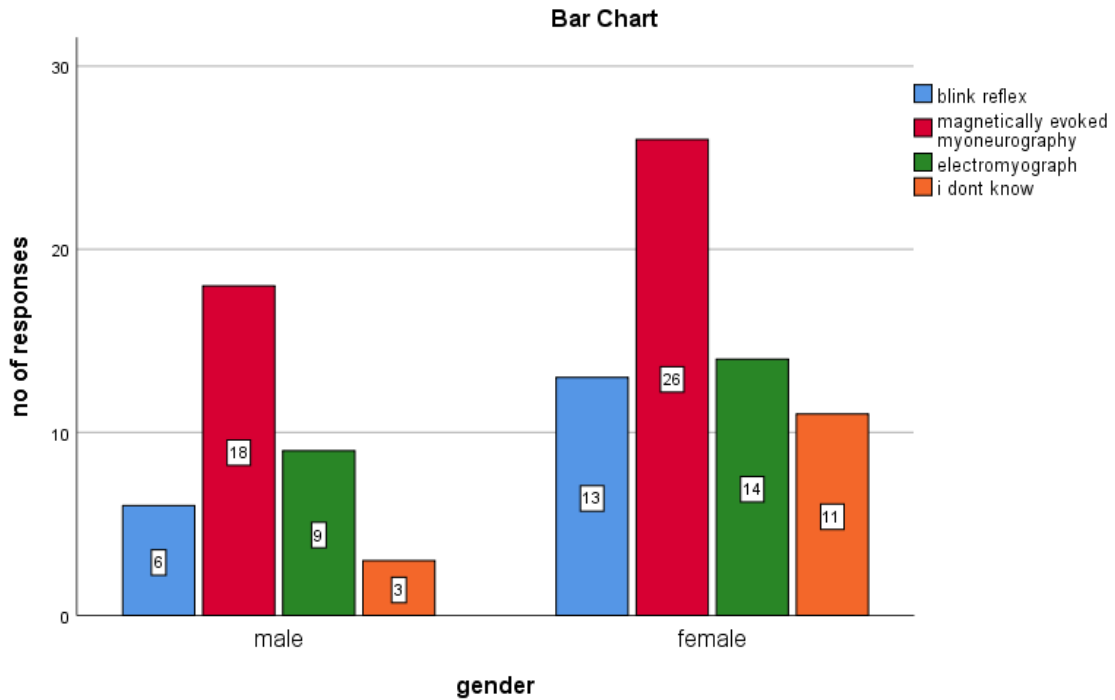


Fig.11: Bar graph represents the association between gender and number of responses. X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.623, (p>0.05)]. Majority of the participants were aware that magnetically evoked myoneurography is used to measure conduction status of the facial nerve However Females have more awareness than males.

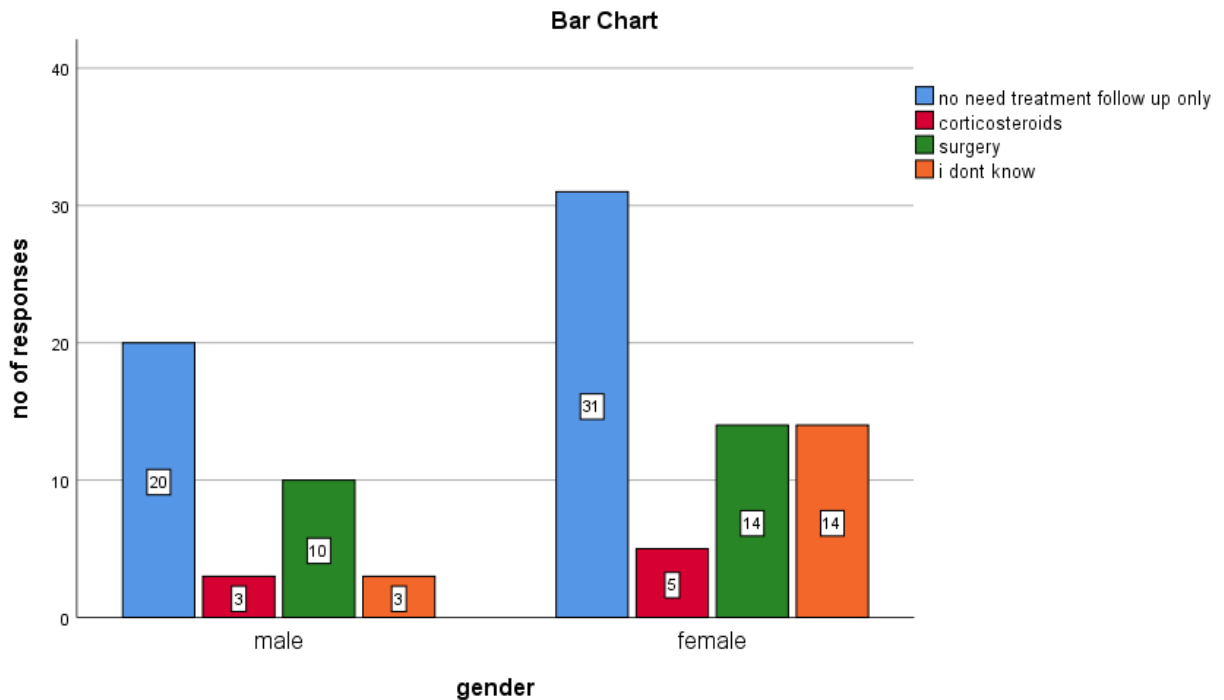


Fig.12: Bar graph represents the association between gender and number of responses. X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.383, (p>0.05)].

Majority of the participants were aware that no need for treatment follow up only . However Females have more awareness than males.

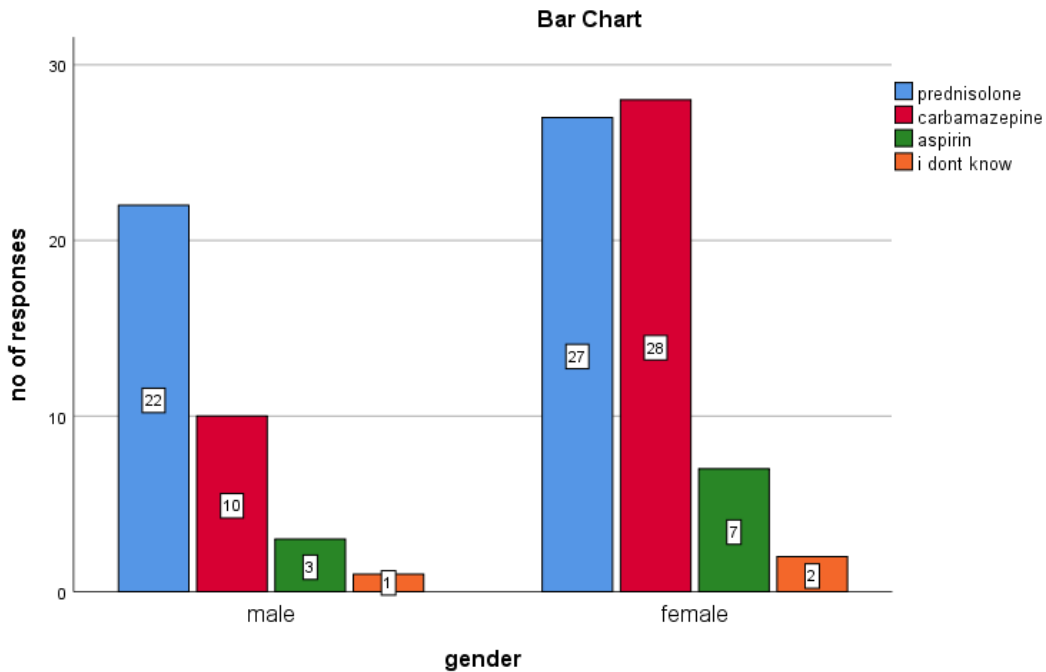


Fig.13: Bar graph represents the association between gender and number of responses. X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.334, (p>0.05)]. Majority of the participants were aware that prednisolone is used to treat bells palsy . However Females have more awareness than males.

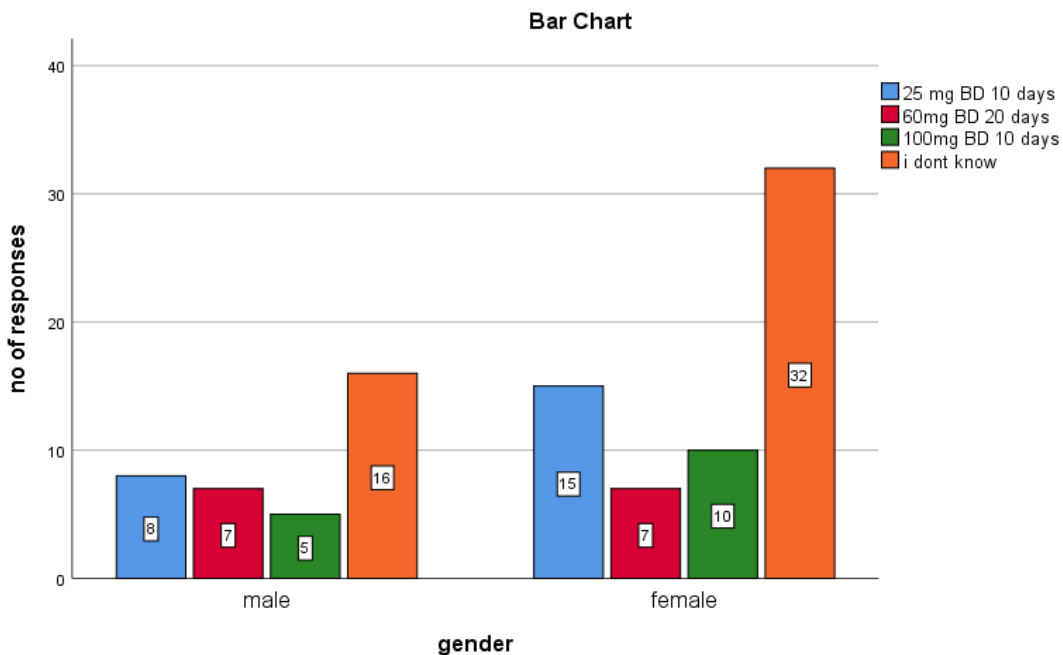


Fig.14: Bar graph represents the association between gender and number of responses. X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.705, (p>0.05)]. Majority of the participants were unaware of the dosage of prednisolone . However Females were more unaware than males

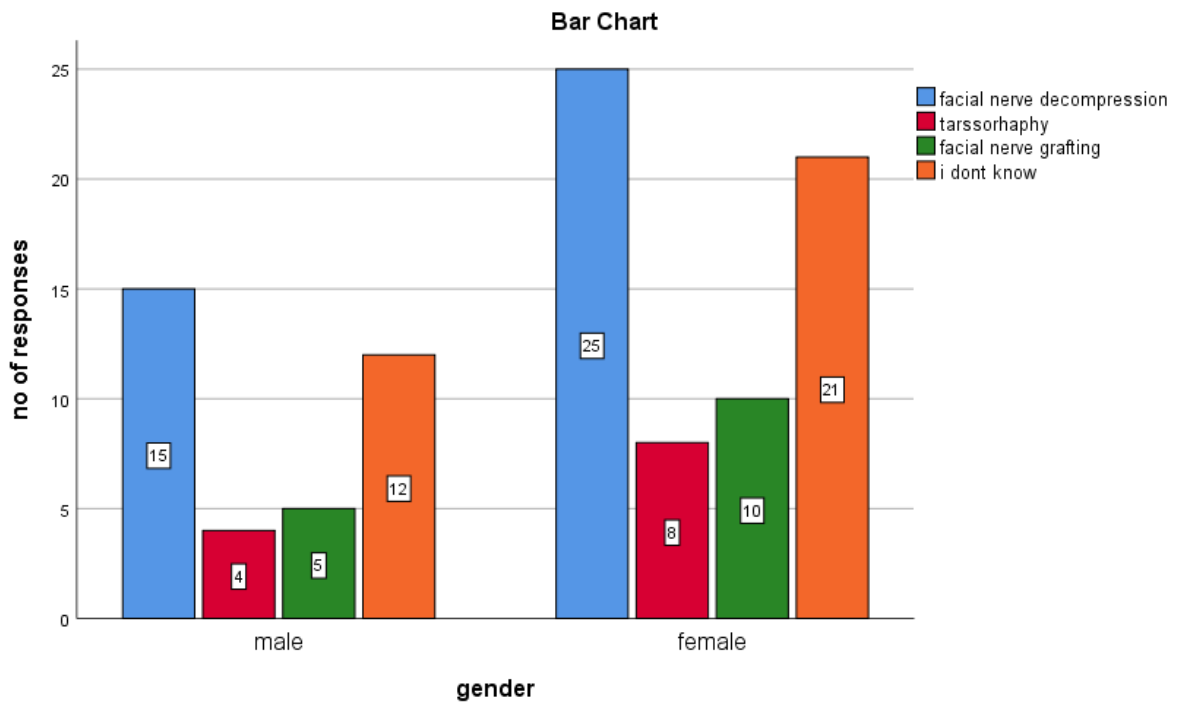


Fig.15: Bar graph represents the association between gender and number of responses. X axis represents the gender and Y axis represents the number of respondents. Chi square test shows no statistical difference in responses between gender. [Pearson chi square p value = 0.989, (p>0.05)]. Majority of the participants were aware that facial nerve decompression as the surgical intervention of bell's palsy . However Females were more unaware than males

CONCLUSION

The present study concluded that most of the subjects had limited knowledge regarding bells palsy, yet there were significant knowledge gaps in some of the important aspects like diagnosis and treatment for bell's palsy. Knowledge of the anatomy and clinical significance of Bell's palsy may help to make accurate diagnosis and provide appropriate treatment These findings clearly indicate the importance of improving subjects' bell's palsy knowledge via health education and training programs through webinars for bell's palsy among dentists..

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