

**PREVALENCE OF HEADACHE, NECK PAIN AND EAR PAIN/OTALGIA IN
PATIENT WITH TEMPOROMANDIBULAR JOINT DISORDERS**

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Abstract

Introduction : The temporomandibular joint (TMJ) is considered the most complex joint in the human body. Pain in the chewing muscles and/or jaw joint (most common symptom) Pain that spreads to the face or neck., Jaw stiffness, Limited movement or locking of the jaw. Painful clicking, popping, or grating in the jaw joint when opening or closing the mouth. Ringing in the ears, hearing loss, or dizziness. A change in the way the upper and lower teeth fit together. Earache or otalgia is quite common among both children and adults. It can vary from mild pain to an excruciating severe, dull, aching, or lancinating pain. Otagia may be associated with sensations such as a sense of fullness in the ear, burning, throbbing, tenderness or itching.

Materials and methods : The study was an online survey conducted among patients who visited Saveetha dental college.. The study was based on temporomandibular disorders occurring among the patients visiting the institution. The study was approved by the Institutional Review board. A self-structured standard online questionnaire was prepared on the basis of TMD, its prevalence, risk factors, its severity of pain, etc among the young and middle aged patients. The questionnaire was uploaded in the online survey portal and the responses were collected. A total of 100 responses were obtained and the data was evaluated statistically. Using SPSS, IBM version 23.0 the data were analysed. The statistical method used is descriptive statistics represented in frequency distribution. For correlation analysis Chi square test was done. The type of analysis used was the Chi Square test. The dependent variable used for this study was age, occupation, gender. The independent variables considered were

location, food habits, ethnicity. The obtained results were analysed and represented graphically using and bar charts.

Results and discussion:

According to certain research, women made up the majority of patients by a factor of five times more than men. This result is consistent with the literature, which names hormonal and sociocultural factors as possible causes of this phenomena. However,our investigation found that slightly more male patients had temporomandibular problems than female ones. Males made up 15% of the sample, while females made up 14%. 77% do not experience any headache or pain in the neck and ear region.the rest 23% experience some form of headache or neck pain. The data found showed a moderate prevalence of TMD and the importance of its prevention in order to improve the health and well-being of the population is required.

Introduction

The temporomandibular joint (TMJ) is considered the most complex joint in the human body because it allows rotational and translational movements due to the double articulation of the condyle, where any movement performed on one side effects the opposite

There are three main classes of TMDs:

1. Disorders of the joints, including disc disorders.
2. Disorders of the muscles used for chewing (masticatory muscles).
3. Headaches associated with a TMD.

Many TMDs last only a short time and go away on their own. However, in some cases they can become chronic, or long lasting. In addition, TMDs can occur alone or at the same time as other medical conditions such as headaches, back pain, sleep problems, fibromyalgia, and irritable bowel syndrome.

Injury to the jaw or temporomandibular joint can lead to some TMDs,

following symptoms may signal a TMD:

Pain in the chewing muscles and/or jaw joint (most common symptom).

Pain that spreads to the face or neck.

Jaw stiffness.

Limited movement or locking of the jaw.

Painful clicking, popping, or grating in the jaw joint when opening or closing the mouth.

Ringing in the ears, hearing loss, or dizziness.

A change in the way the upper and lower teeth fit together

Earache or otalgia is quite common among both children and adults. It can vary from mild pain to an excruciating severe, dull, aching, or lancinating pain. Otalgia may be associated with sensations such as a sense of fullness in the ear, burning, throbbing, tenderness or itching.

The areas most commonly involved in causing pain, or becoming infected, are the external ear and the middle ear. Pain in the external ear radiates most often to the vertex and to the temple, but may sometimes spread towards other areas of the head

TMD is defined as a group of disorders involving the masticatory muscles, the temporomandibular joint (TMJ) and associated structures.⁽²⁾⁽¹⁾ FPS, in general, is characterized by high levels of psychological distress (anxiety, health-seeking behavior and markers of somatization) and abnormalities in motor function, autonomic balance and sleep.^{(1)(2),3(3)} Although these disorders frequently occur concomitantly, the relationship among them remains unclear.⁽³⁾⁽³⁾ Moreover, FPS typically does not respond well to conventional therapies, indicating that a better understanding of its etiology and mechanism should be highly relevant to the medical field.⁽²⁾

A large proportion of patients with painful TMD also present a significant disability, with consequences that impact their lives. The simultaneous presence of pain in other body areas seems to increase the magnitude of the impact. Moreover, it has been demonstrated that painful TMD is strongly associated with other painful conditions,⁽⁴⁾⁽⁴⁾ such as fibromyalgia,^{5,6} widespread pain,^{(5)(5),6(6)} cervical spine dysfunction,⁽⁷⁾⁽⁷⁾ neck pain, low back and joint pain⁸ and primary HA.

The aetiology of TMD is still not well understood. It is generally accepted that they are multifactorial conditions with both psychosocial and neurobiological aspects as important aetiological co-factors⁽⁸⁾⁽⁸⁾.

Several clinical and epidemiological studies have demonstrated an association between headache and TMD, indicating that individuals with headache and TMD have a number of symptoms and signs in common^{(9)(9),10(10)}.

randomly selected sample of persons in each of four age cohorts (25-year-olds, 35-year-olds, 50-year-olds, and 65-year-olds) residing in a county of Sweden was surveyed concerning the presence of various kinds of "headaches" (11(10,11)). Also age- and gender-specific prevalence rates of pain "in or near the ear" (which, in the context of the other questions, was presumably interpreted primarily as joint pain) ranged from 0.5% to 7.9%, with an overall rate of 2.5% for men and 4.9% for women.(11)

psychosocial domain, life stress, depression, and the presence of multiple somatic symptoms have often been proposed as possible risk factors for temporomandibular pain(12,13)(12),(13)

Materials and methods :

The study was an online survey conducted among patients who visited Saveetha dental college.. The study was based on temporomandibular disorders occurring among the patients visiting the institution. The study was approved by the Institutional Review board. A self-structured standard online questionnaire was prepared on the basis of TMD, its prevalence, risk factors, its severity of pain, etc among the young and middle aged patients. The questionnaire was uploaded in the online survey portal and the responses were collected. A total of 100 responses were obtained and the data was evaluated statistically. Using SPSS, IBM version 23.0 the data were analysed. The statistical method used is descriptive statistics represented in frequency distribution. For correlation analysis Chi square test was done. The type of analysis used was the Chi Square test. The dependent variable used for this study was age, occupation, gender. The independent variables considered were location, food habits, ethnicity. The obtained results were analysed and represented graphically using pie charts and bar charts.

Results :

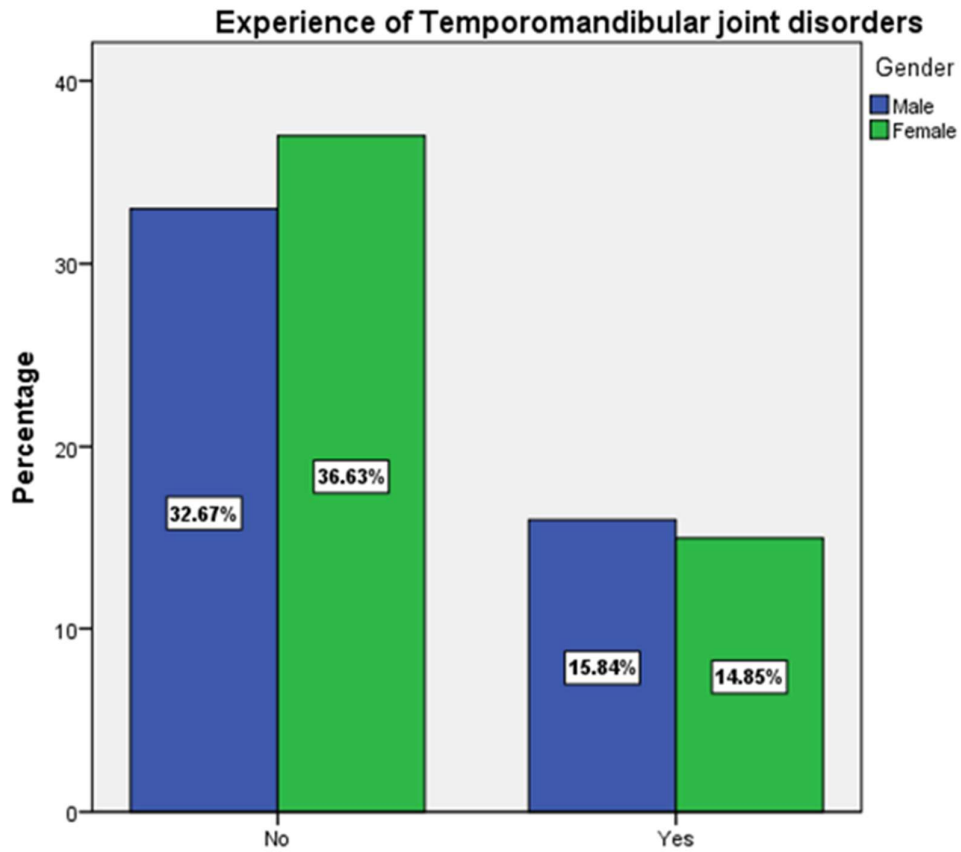


Figure 1 : figure depicting percentage distribution considering TMJ as self limiting.35% of the study population believe that it is self limiting, 26% consider TMJ to not be self limiting and 36% are unsure out of this the age groups are between 20 to 30, 30 to 40 and 40 to 50.

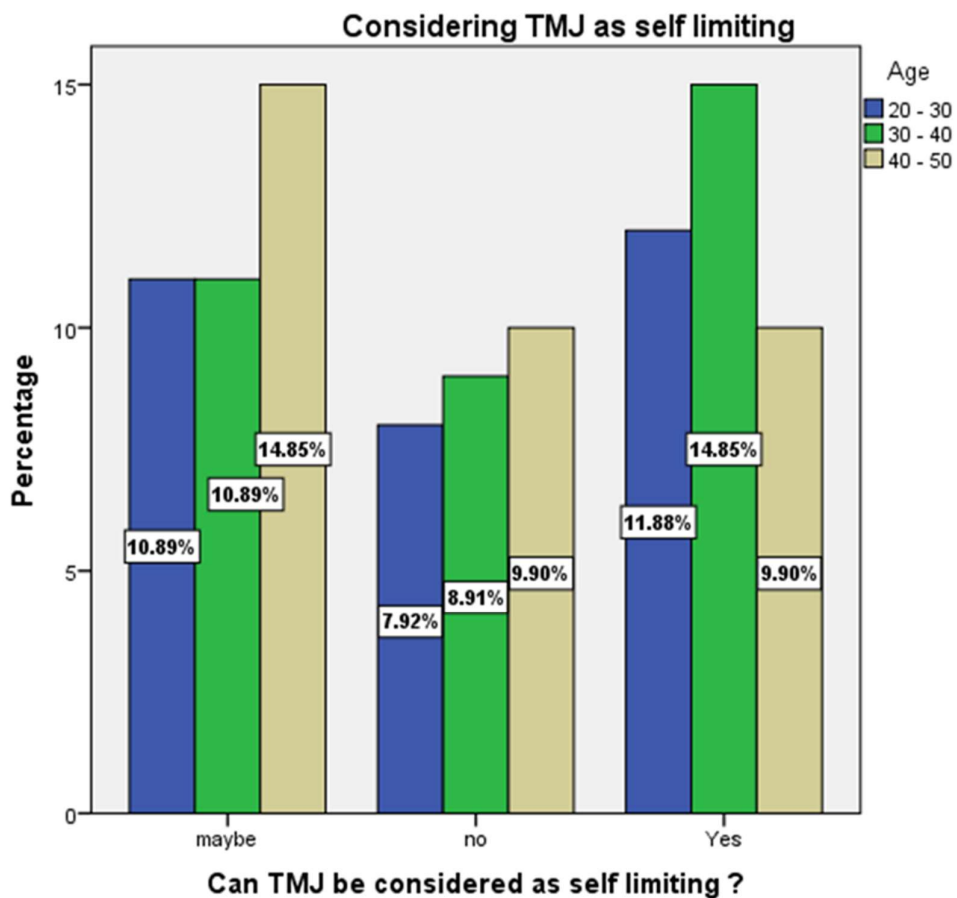


Figure 2: figure depicting the percentage distribution of the experience of TMJ disorder.

58% weren't aware of the symptoms caused by TMJ issues, 39% were aware of the symptoms and the rest 2% were unsure. The age groups were between 20 to 30, 30 to 40 and 40 to 50.

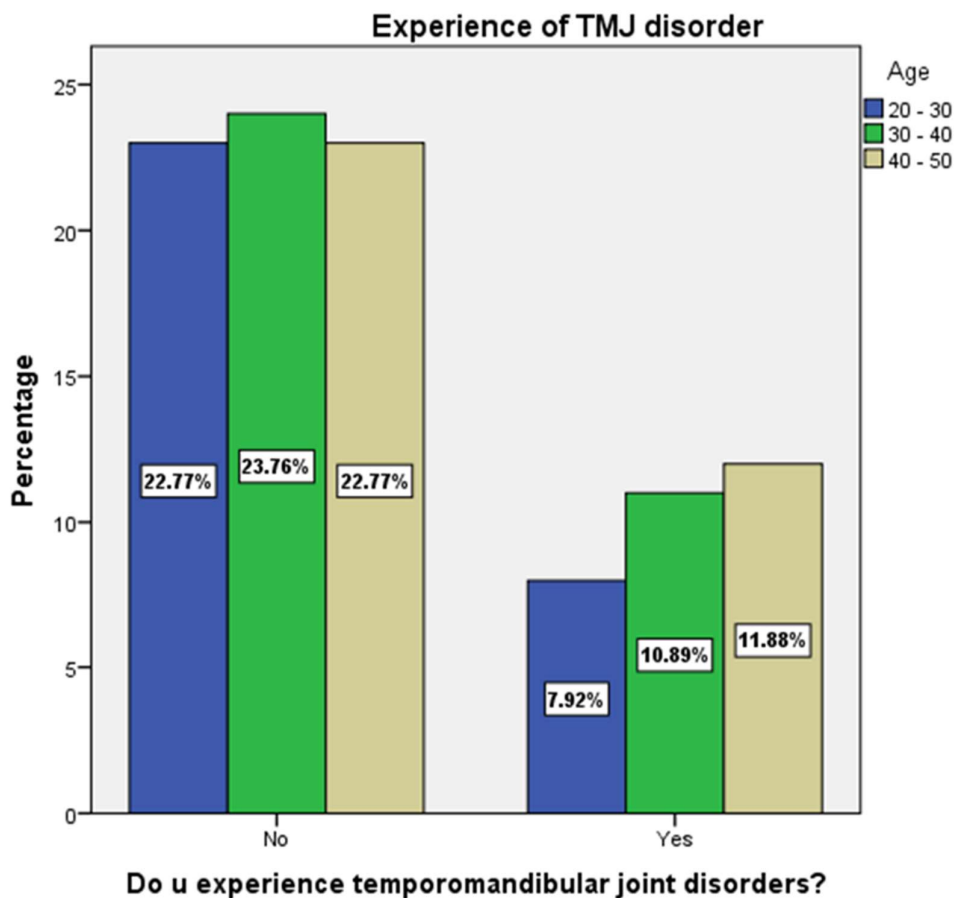


Figure 3 : figure depicting the percentage distribution of awareness of TMJ disorders.53% werent aware of what TMJ disorders were whereas the other 46% had an idea of what TMJ disorders were.

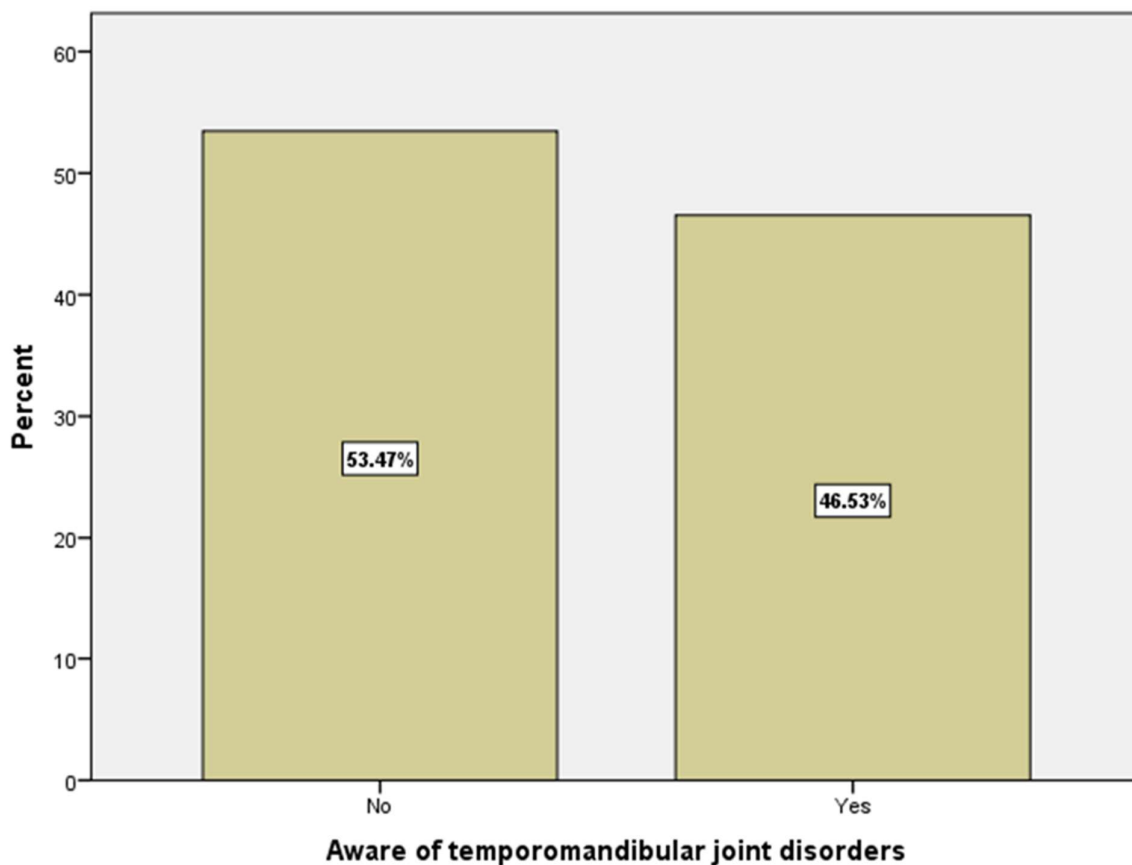


Figure 4: figure depicting the percentage distribution of patients experiencing TMJ disorders

Nearly 70% werent experiencing any symptoms of temporomandibular disorders whereas the rest 30 % were experiencing temporomandibular joint disorders.

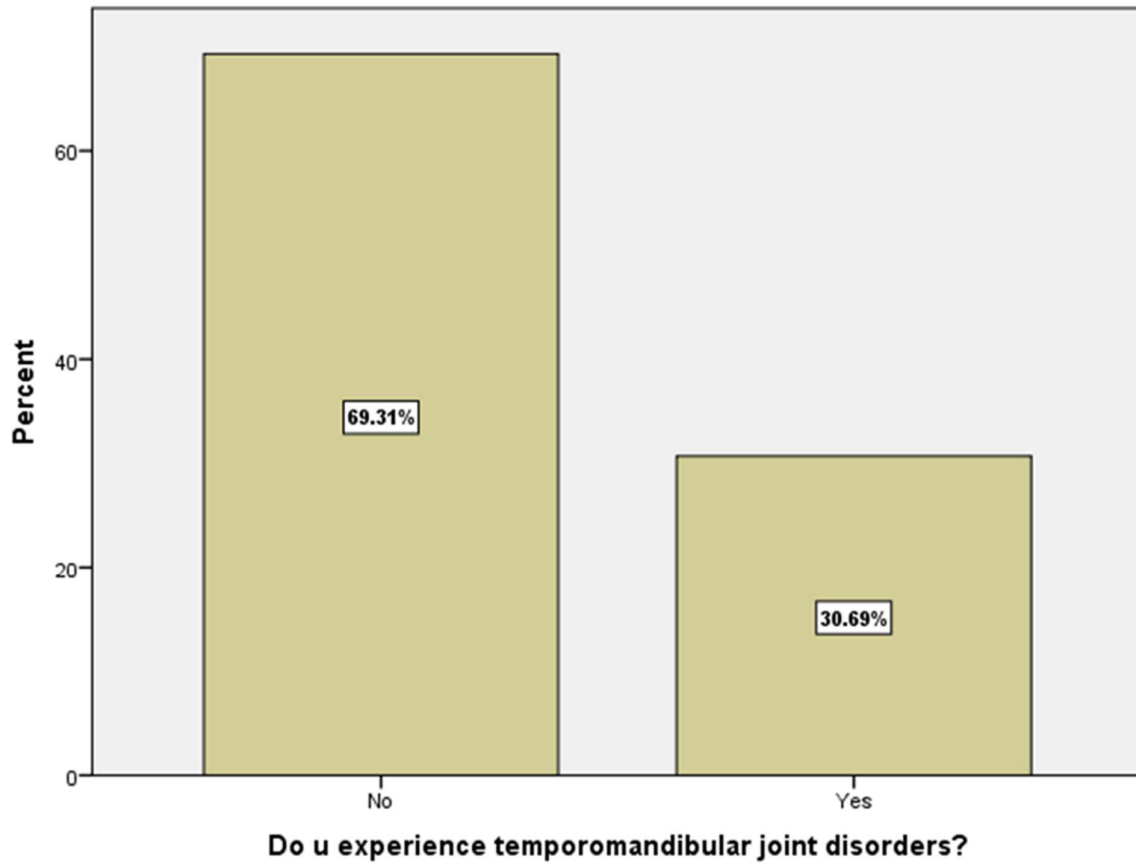


Figure 5: figure depicting the percentage distribution of awareness of the symptoms of TMJ disorders. 58% werent aware of the symptoms caused by TMJ issues, 39% were aware of the symptoms and the rest 2% were unsure.

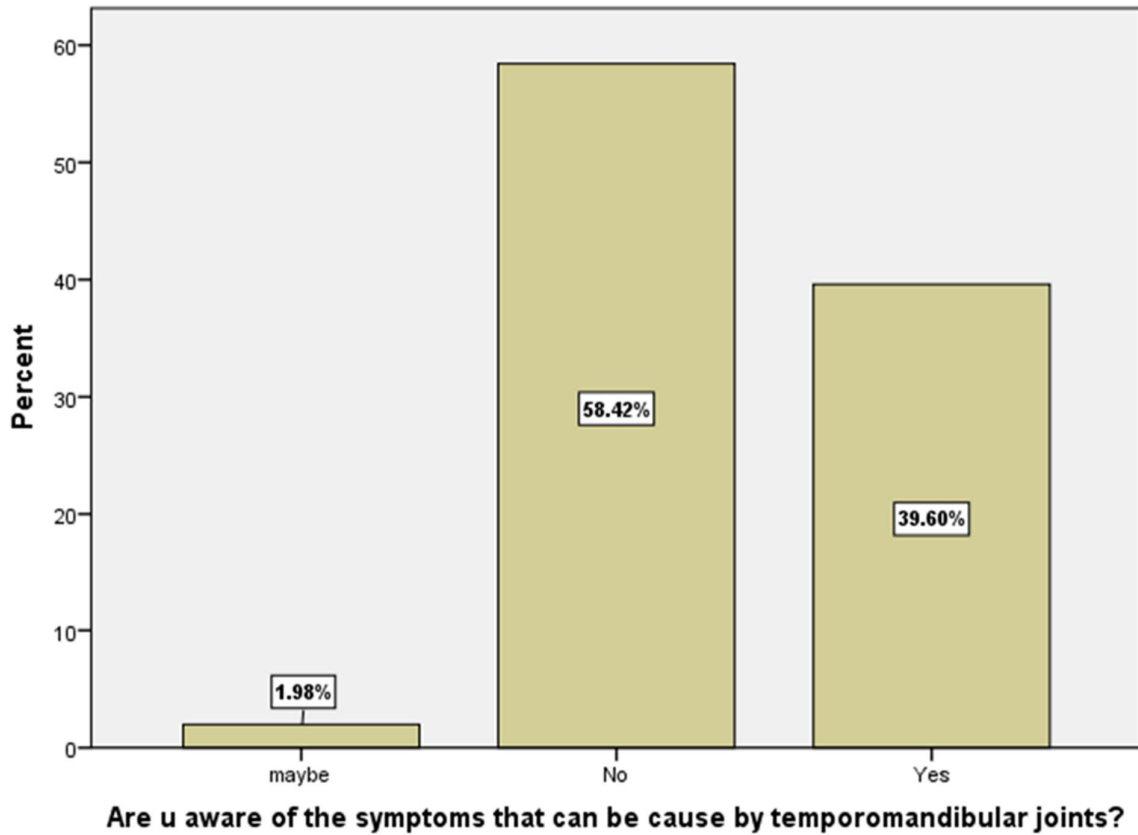


Figure 6 : figure depicting the percentage distribution of otalgia occurring due to TMD. 63% believe that otalgia can be caused due to temporomandibular disorders whereas the rest 36% believed that it cannot occur due TMJ issues.

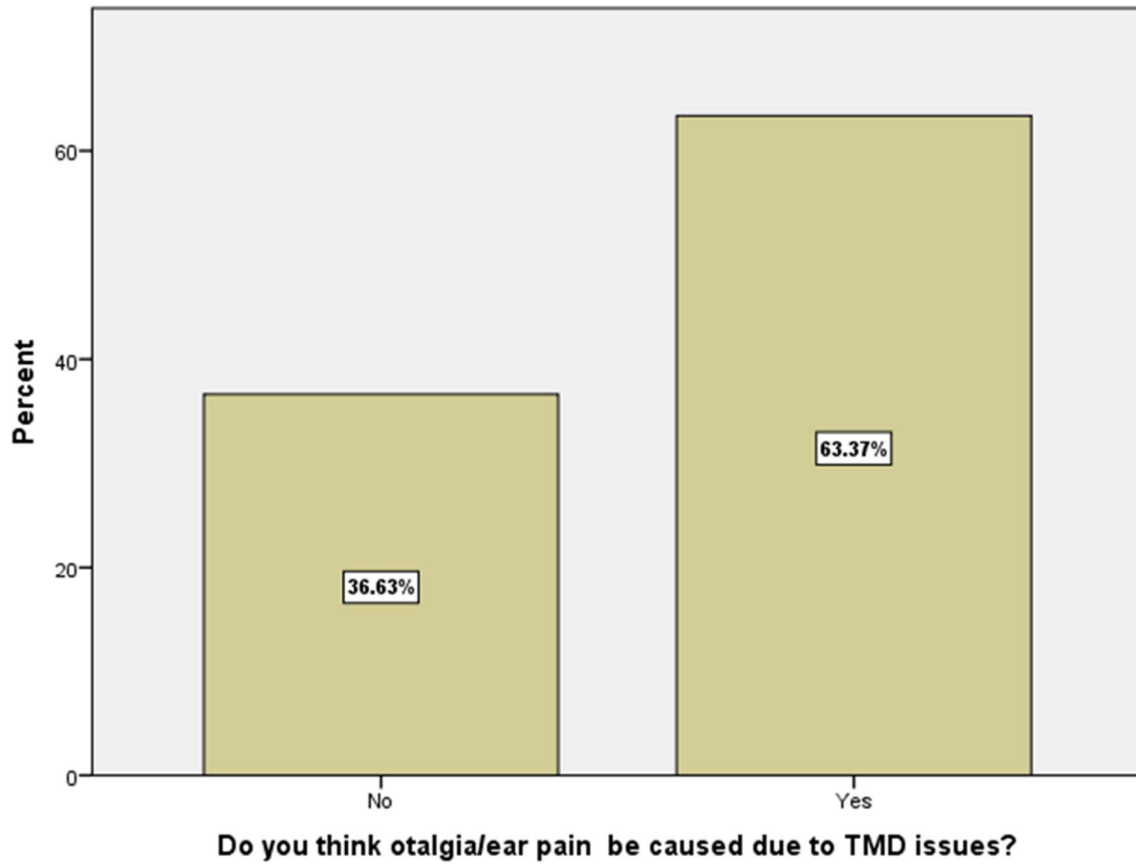


Figure 7: figure depicting the percentage distribution of awareness of the surgical method of treatment for TMD. 28% were aware of the presence of the surgical method for the treatment for TMD. 355 were unsure whereas 35% weren't aware of the availability of the treatment procedure.

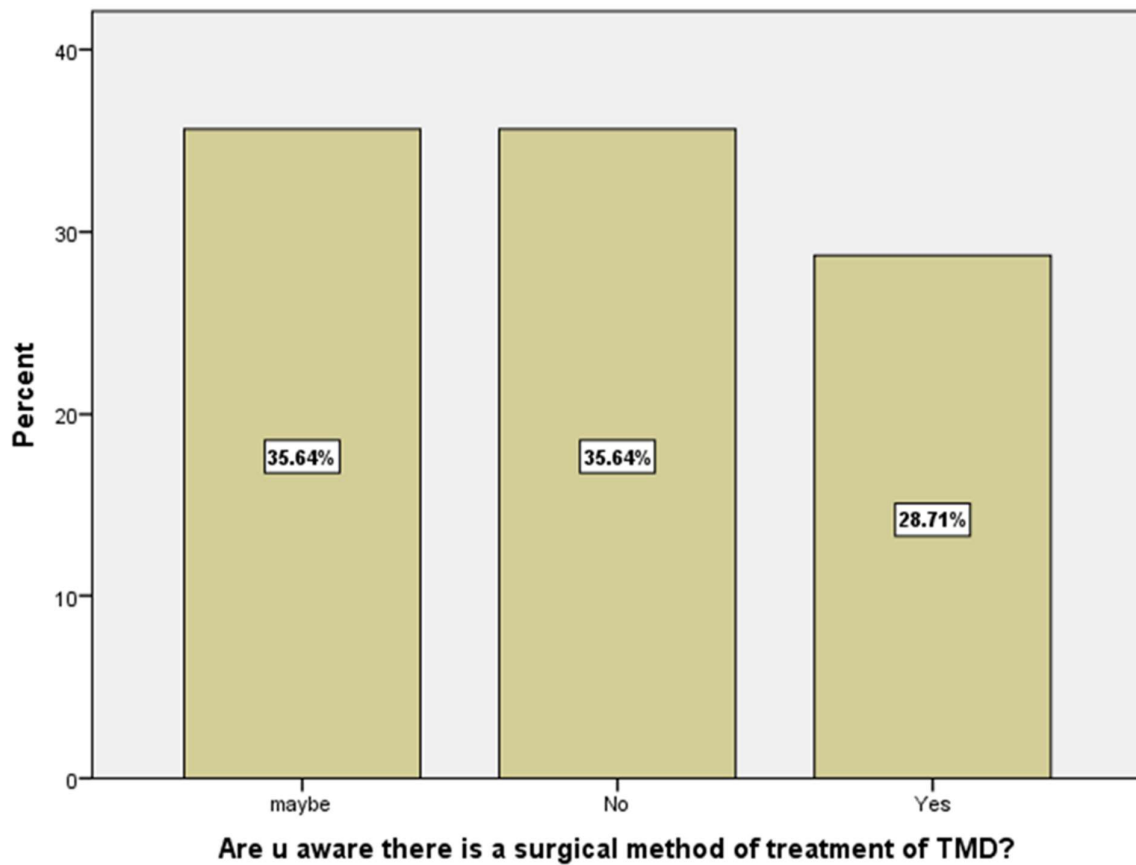


Figure 8: figure depicting the percentage distribution of the type joint is TMJ. 47% thought it to be a ttype of ball and socket joint,18% thought it to be a type of compound joint and the remaining 33% considered it to be an ellipsoid joint.

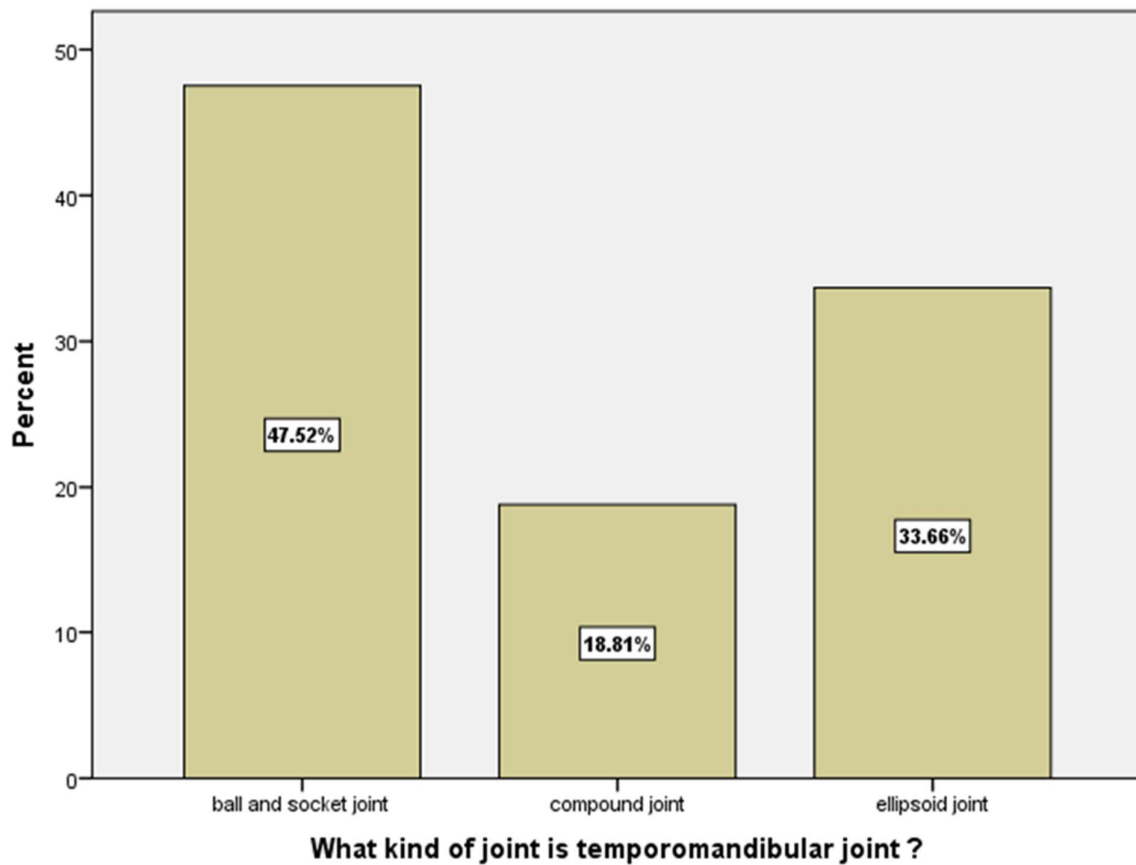


Figure 9: figure depicting the percentage distribution of the main cause of temporomandibular joint. 25% believed grinding of teeth is one of the main reasons for temporomandibular joint disorders. Nearly 12% opted for rheumatoid arthritis as a major cause of TMJ disorders whereas 61% were unaware of the reason.

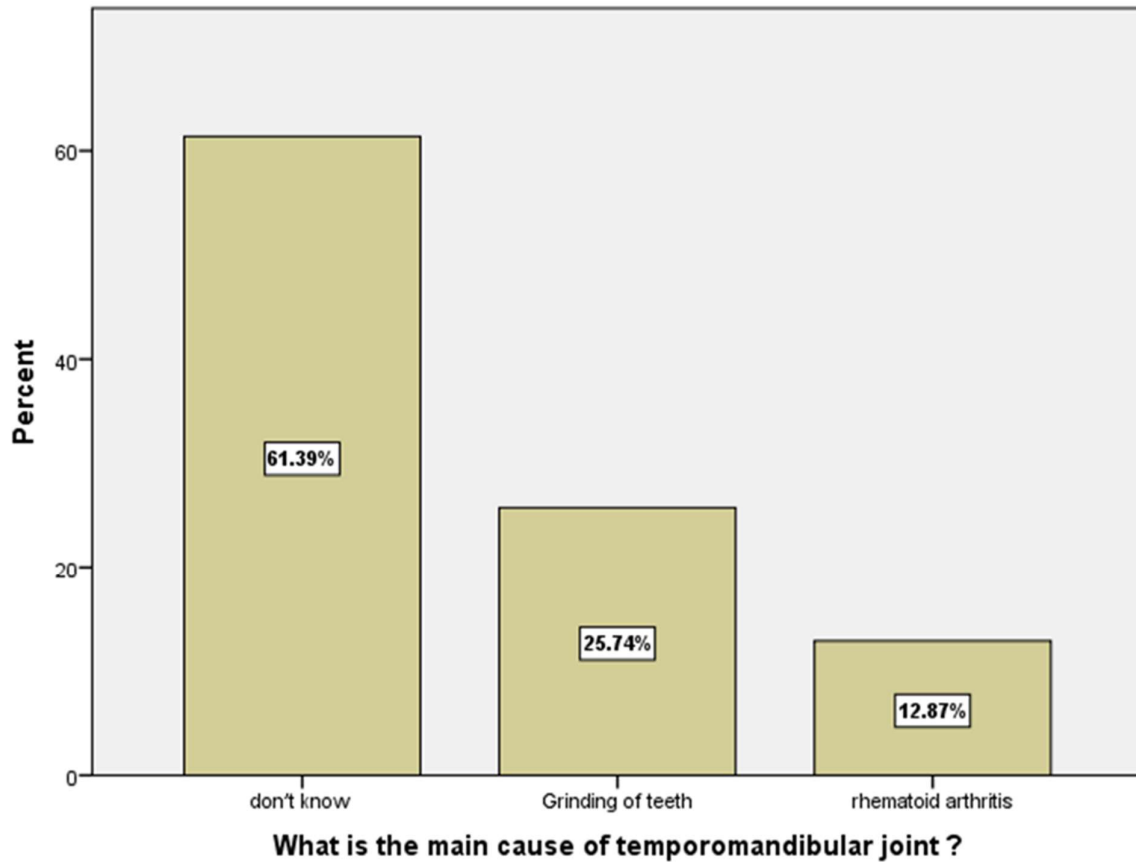


Figure 10: figure depicting the percentage distribution of whether TMJ disorders are worse in the night . 37% believe that TMJ disorders bring mire discomfort in the night than any other time of the day whereas 35% are unsure and 26% do not think TMJ disorders are worse in the night.

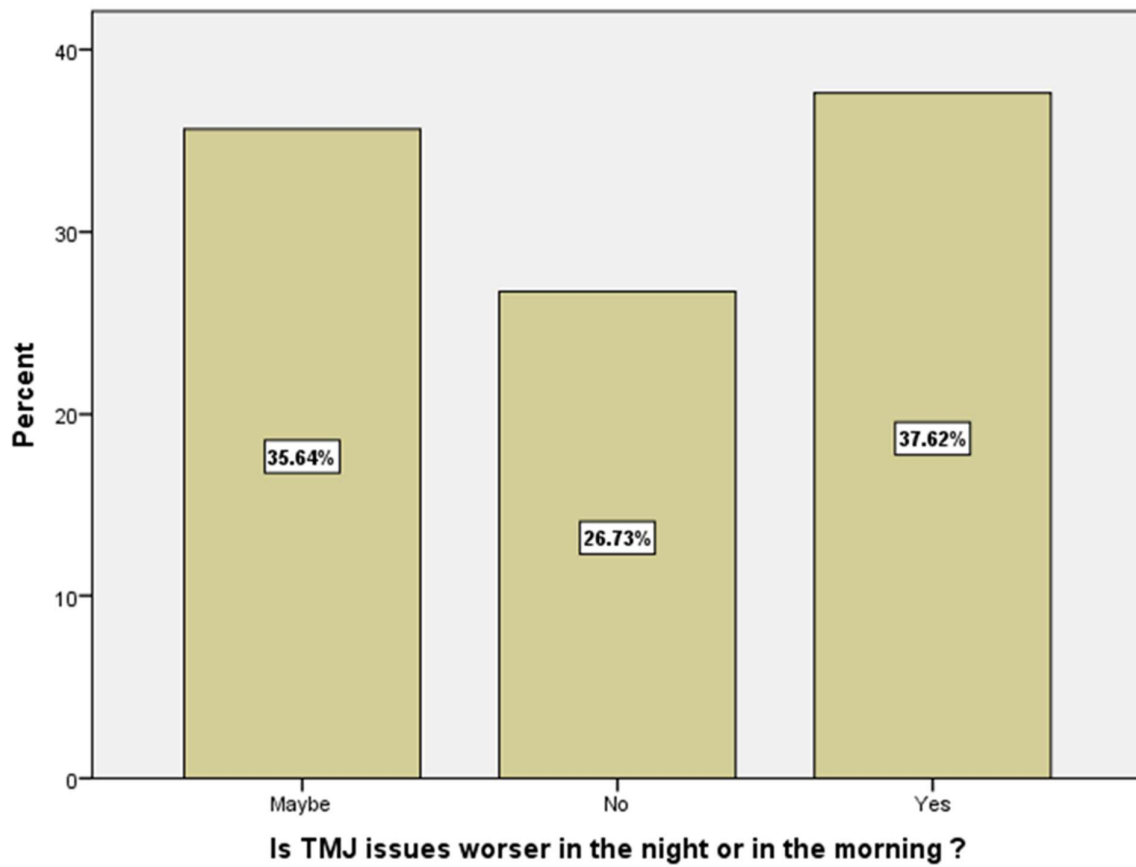


Figure 11 : figure depicting the percentage distribution of whether TMJ disorders can be considered as self limiting. 36% consider TMJ disorder to be self limiting whereas 36% don't consider TMJ disorder to be self limiting and the rest 26% are unsure.

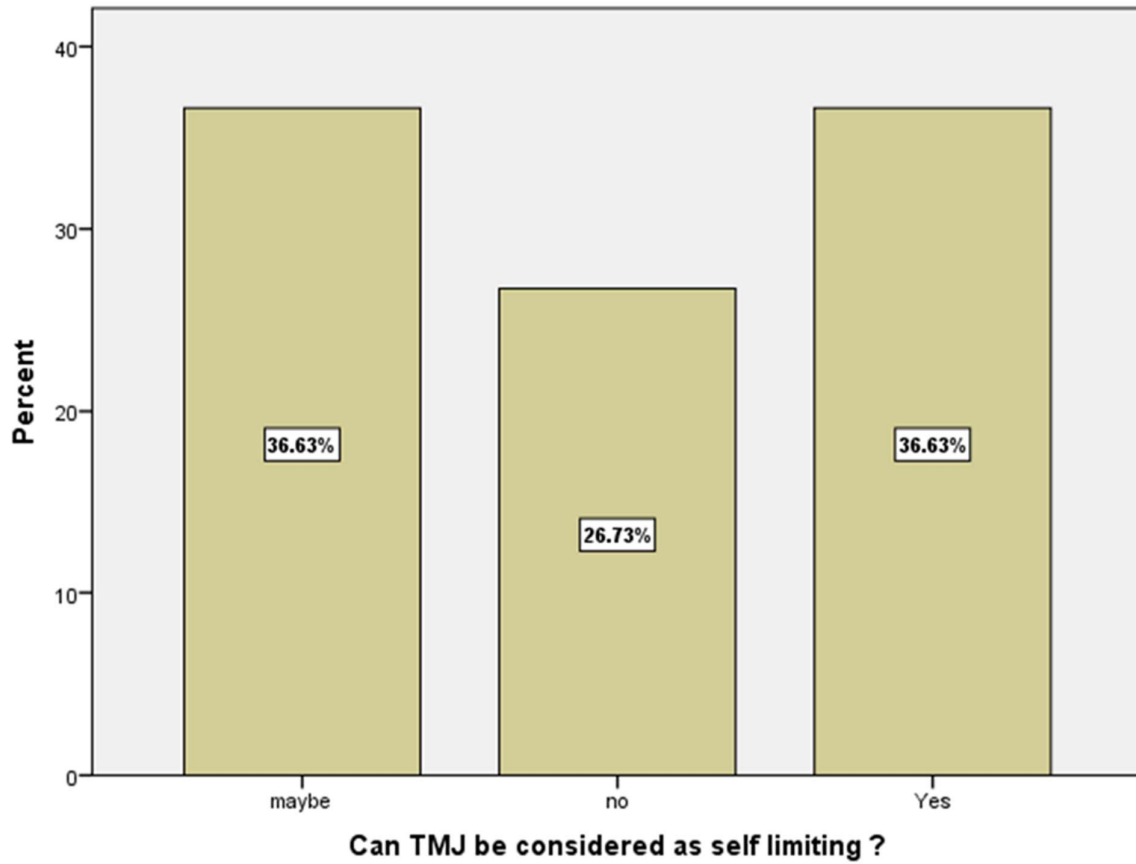


Figure 12 : figure depicting the percentage distribution of experience in any headache,pain in the neck and ear. 77% do not experience any headache or pain in the neck and ear region.

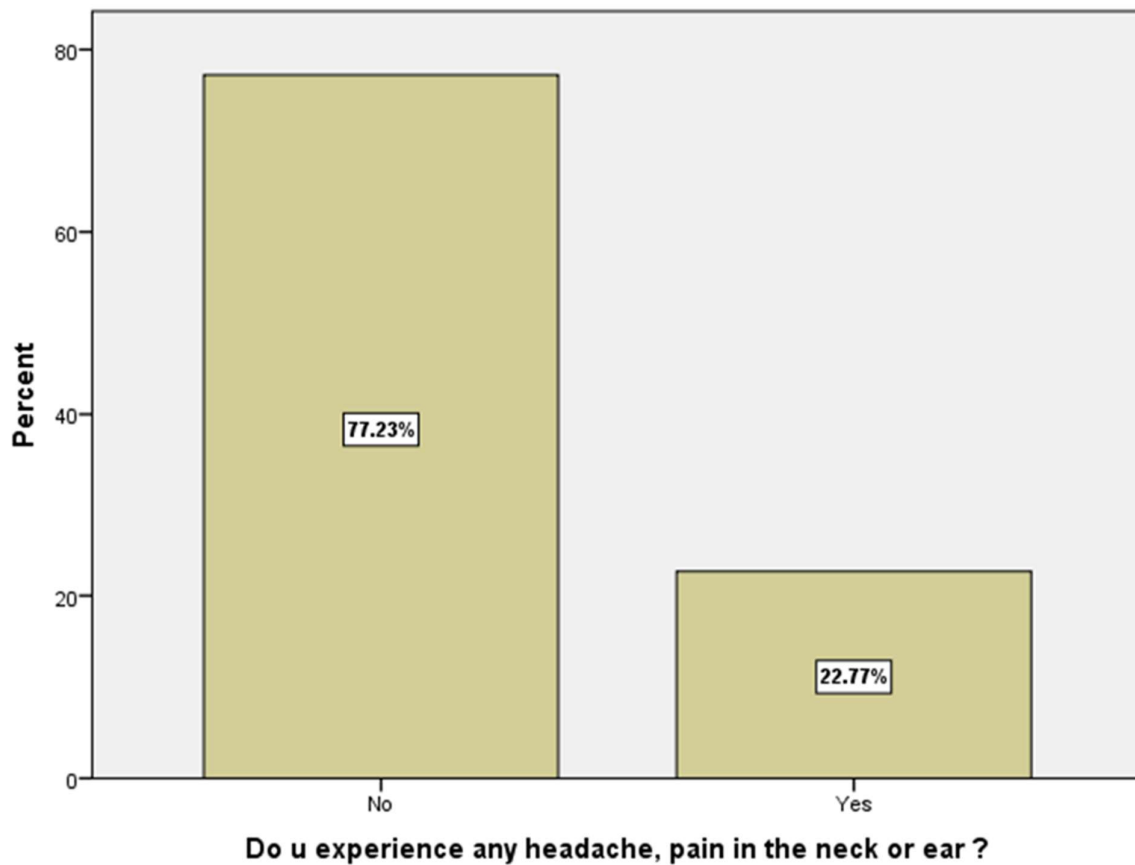


Figure 13 : figure depicting the percentage distribution of pain in the upper jaw region. 68%

Do not experience any pain in the upper jaw region, 18% experience pain in the upper jaw region whereas approximately 12% are unsure.

RESULTS AND DISCUSSION:

According to certain research, women made up the majority of patients by a factor of five times more than men. This result is consistent with the literature, which names hormonal and sociocultural factors as possible causes of this phenomena. However, [14,15] our investigation found that slightly more male patients had temporomandibular problems than female ones. Males made up 15% of the sample, while females made up 14%..

Results regarding age indicated a difference, with a higher frequency of TMD sufferers in the 20 to 39 age group, in line with the literature review [16(Schmid-Schwap et al. 2013),] despite the study's findings regarding women. As a distinction, no gender difference was discovered for any of the age categories examined. The most impacted age group also happens to be when people are at the height of their fertility, as the authors point out; presumably the hormonal

issue plays a role in this. Our study found that TMJ problems were more common in the age ranges of 30 to 40 and 40 to 50 than in the age range of 20 to 30. Age groups 30 to 40 and 40 to 50 each had about 32% of the population, however 20 to 30 only had about 28%.

Figure 1 : figure depicting percentage distribution considering TMJ as self limiting.35% of the study population believe that it is self limiting, 26% consider TMJ to not be self limiting and 36% are unsure out of this the age groups are between 20 to 30, 30 to 40 and 40 to 50.

Figure 2: figure depicting the percentage distribution of the experience of TMJ disorder.58% werent aware of the symptoms caused by TMJ issues, 39% were aware of the symptoms and the rest 2% were unsure.the age groups were between 20 to 30, 30 to 40 and 40 to 50.

Figure 13 : figure depicting the percentage distribution of pain in the upper jaw region. 68% Do not experience any pain in the upper jaw region, 18% experience pain in the upper jaw region whereas approximately 12% are unsure.

Figure 12 : figure depicting the percentage distribution of experience in any headache,pain in the neck and ear. 77% do not experience any headache or pain in the neck and ear region.the rest 23% experience some form of headache or neck pain.

This echoes the findings of a study conducted by Camacho et al. (17(14). The signs and symptoms survey revealed that muscle discomfort, TMJ pain, facial pain, and clicking were more prevalent. Parafunctional behaviors, TMJ pain, facial pain, clicking, and bruxism were discovered to a lesser extent. In that order, the clinical records showed how frequently mouth opening limitations, tension headaches, and occlusal interferences occurred.

Figure 11 : figure depicting the percentage distribution of whether TMJ disorders can be considered as self limiting. 36% consider TMJ disorder to be self limiting whereas 36% don't consider TMJ disorder to be self limiting and the rest 26% are unsure.Another study(18 Tanaka et al. 2008)(19(15,16)) claims that Physical therapeutic techniques work as anti-irritants to lessen pain and inflammation. Exercise may be safe if pain is sufficiently reduced by localized, superficial, warm, moist heat or cold. Therapeutic exercises aim to preserve a functional range of motion, strengthen muscles, and reduce joint contractures. Techniques including massage, electrogalvanic stimulation, and ultrasound can also assist to lessen pain and inflammation.

Figure 10: figure depicting the percentage distribution of whether TMJ disorders are worse in the night . 37% believe that TMJ disorders bring more discomfort in the night than any other time of the day whereas 35% are unsure and 26% do not think TMJ disorders are worse in the night. This result was similar to a study which showed that sleep bruxism causes pain that results in muscle spasms, thus leading to further pain.(20(15,16))

Figure 8: figure depicting the percentage distribution of the type joint is TMJ. 47% thought it to be a type of ball and socket joint, 18% thought it to be a type of compound joint and the remaining 33% considered it to be an ellipsoid joint.

Figure 7: figure depicting the percentage distribution of awareness of the surgical method of treatment for TMD. 28% were aware of the presence of the surgical method for the treatment for TMD. 35% were unsure whereas 35% were not aware of the availability of the treatment procedure.

Figure 4: figure depicting the percentage distribution of patients experiencing TMJ disorders

Nearly 70% were experiencing any symptoms of temporomandibular disorders whereas the rest 30% were experiencing temporomandibular joint disorders.

Figure 6: figure depicting the percentage distribution of otalgia occurring due to TMD. 63% believe that otalgia can be caused due to temporomandibular disorders whereas the rest 36% believed that it cannot occur due to TMJ issues. According to study (21(17)) A significant fraction of patients seeking treatment due to pain in the ear have no findings in the ear, but in the TMJ and in the masseter muscle.

Figure 5: figure depicting the percentage distribution of awareness of the symptoms of TMJ disorders. 58% were aware of the symptoms caused by TMJ issues, 39% were aware of the symptoms and the rest 2% were unsure. (18)

Figure 3: figure depicting the percentage distribution of awareness of TMJ disorders. 53% were aware of what TMJ disorders were whereas the other 46% had an idea of what TMJ disorders were. according to a study (22(19)) An enhanced awareness of the functioning of the masticatory system with updated knowledge of the management of disorders of the TMJ will benefit the patients suffering from TMD. Our team has extensive knowledge and research experience that has translated into high quality publications (20–29)(30)

CONCLUSION:

77% do not experience any headache or pain in the neck and ear region. the rest 23% experience (30) some form of headache or neck pain. The data found showed a moderate prevalence of TMD and the importance of its prevention in order to improve the health and well-being of the population is required.

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CONFLICT OF INTEREST

The author declares that there were no conflicts of interests in the present study.

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