

## **Knowledge Attitude and Awareness of Dental Students about the Role of Acupuncture in Controlling Gag Reflex**

**Godlin Jenita**

Undergraduate student

Department of Prosthodontics

Saveetha Dental college, Saveetha Institute of Medical and Technical Sciences  
Chennai

**Dhanraj Ganapathy**

Professor and Head

Department of Prosthodontics

Saveetha Dental college, Saveetha Institute of Medical and Technical Sciences  
Chennai

### **CORRESPONDING AUTHOR:**

**Dhanraj Ganapathy**

Professor and Head

Department of Prosthodontics

Saveetha Dental college, Saveetha Institute of Medical and Technical Sciences  
Chennai

**Email: dhanrajmganapathy@yahoo.co.in**

### **Abstract:**

#### **Introduction:**

Gagging is a normal reaction to safeguard the airway from foreign body entry. In some patients this is exaggerated and hence may hinder the dental treatment. There are many methods to control gagging and one of it is acupuncture which is a traditional Chinese method.

#### **Aim:**

This survey is done to assess the knowledge attitude and awareness of dental students about the role of acupuncture in controlling gag reflex.

#### **Materials and methods :**

A questionnaire with 11 questions based on the acupuncture and its effect in gagging were prepared and distributed through an online link to a total of 80 students and the results were obtained.

#### **Results:**

45% of the students are aware of acupuncture used for preventing gagging and no one has ever done acupuncture in their clinical practice.

#### **Conclusion:**

Awareness should be created about the acupuncture and its benefits in controlling the gag reflex since it is an effortless and effective treatment.

**Keywords:**Awareness,acupuncture,gag reflex

### **Introduction:**

The gag reflex (GR) is a physiological mechanism that occurs in order to prevent foreign objects or noxious material from entering the pharynx, larynx or trachea and is considered normal .(1) There are people who has exaggerated gag reflex and the exact prevalence in relation to dental treatment is unknown. (2) Gagging can be either somatic which is stimulated by sensory nerve stimulation on direct contact or psychogenic which is without the direct contact, example; the thought of the dental treatment, is sufficient enough to induce gagging. (3) Other minor factors that can increase the risk and the severity of gagging are anatomical variation, for example, the anatomy of the soft palate(4), Medical abnormalities like nasal obstruction(5), psychological factors and iatrogenic factors like fault in the design of the dentures (6). Gagging becomes a conditional response to people who had bad dental experience(7).

Some people avoid dental treatment because of their problematic gagging reflex, while others have to accept general anaesthesia or sedation in order to cope up with dental treatment. Many strategies have been attempted to control gagging in the dental settings, so that the patient can cope up with the treatment and dentists can provide it. This includes relaxation, distraction, desensitisation techniques, behavioural and psychological techniques, local anaesthesia, general anaesthesia, conscious sedation techniques, and complementary therapy's like acupuncture and hypnosis (2). These strategies have met with varied success and it is necessary to try a number of them to find the appropriate technique for an individual (8).

Acupuncture has been used successfully to control the gag reflex. A controlled study states that acupuncture at point Pericardium 6 (PC-6), located on the forearm, had a significant effect on the reduction of the gag reflex(9). An uncontrolled study demonstrated that ear acupuncture was able to control the severe gag reflex of 10 patients sufficiently well to allow dental treatment to be carried out(3). And in 2003 a controlled study showed that acupuncture at Conception Vessel 24 (CV-24), located on the chin, could control the gag reflex in patients having trans oesophageal echo cardiography(10).

Acupuncture is an alternative form of medicine in which fine needle are inserted to a particular depth and then removed after sometime. It is one of the range treatment option that can be employed in an effort to control gagging(3).

This technique is done by recognising anti gagging point in the ear and are inserted into the site and left undisturbed and the needles should be kept out of the patients vision. This technique involves the insertion of one, fine, single-use disposable needle of 7 mm length into the anti-gagging point of each ear to a depth of 3 mm. The needles are manipulated for 30 seconds prior to carrying out dental treatment. The needles remain in situ throughout treatment and are removed before the patient is discharged(3)

Acupuncture is an ancient medicine followed in Eastern countries and China and is being used in

the current days also to maintain their oral health. This study is done to evaluate the knowledge Attitude and Awareness of dental students about the role of acupuncture in controlling gag reflex.

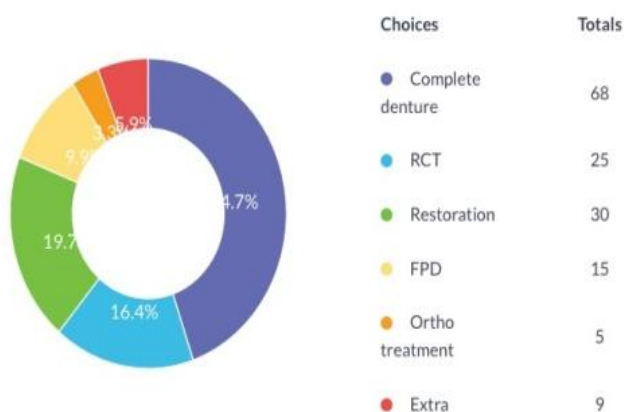
## Materials and methods:

This study was conducted among dental student who were doing their graduation in dental school in Chennai. A self administered questionnaire consisting of 11 questions was prepared to analyse the knowledge of acupuncture to prevent gagging. 80 questionnaires were distributed through an online link and the results were collected.

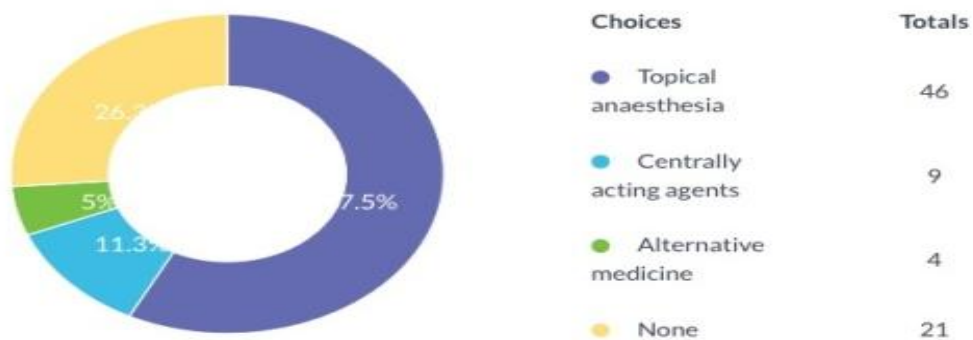
## Results:

The results of this current survey shows that almost all the students have experienced patients with gagging. 44.7% of the students have encountered gagging in complete denture which is followed by 19.7 during restorations, 16.4% in RCT, 9.9% in FPD, 5.9 during Extractions and 3.3 during orthodontic treatment , 67.5 % of the students preferred topical anaesthesia as the treatment, 11.3% of them used centrally acting agents and only 5% preferred alternative medicine like acupuncture. 45% of them were aware that acupuncture can be used in dentistry while 55% of the students are not aware about the therapy. 37.5% of the students are aware of the pressure point for gagging. 100% of the students have never tried using acupuncture therapy to prevent gagging. 38.8% of the students are aware of usage of acupuncture of treatments other than gagging. 34.3% are aware of the adverse effects and 73.8% are willing to use acupuncture as an alternative to prevent gagging in their clinical practice.

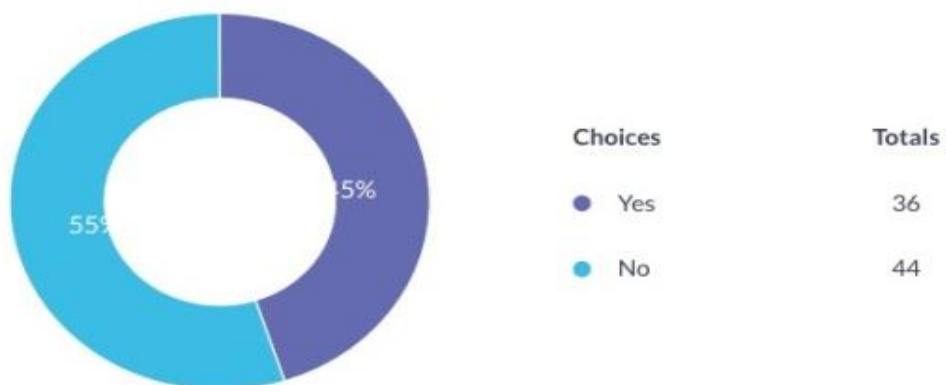
**Figure 1: Treatment in which patient experience severe gagging**



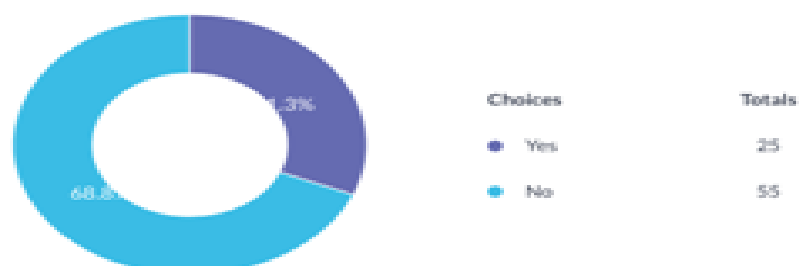
**Figure 2: Treatment measures taken for patient with exaggerated gag reflex**



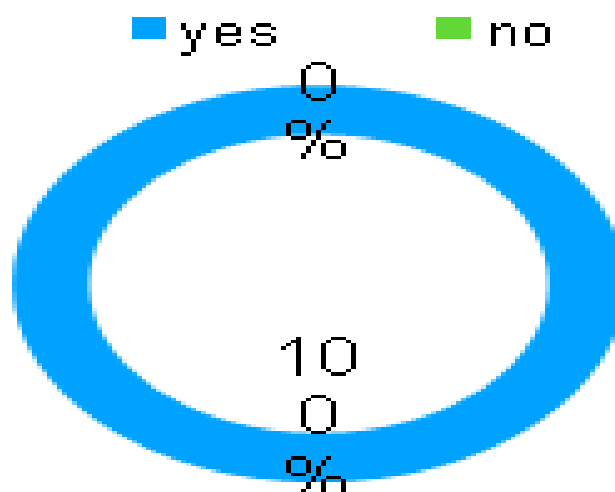
**Figure 3: Awareness on acupuncture in dentistry**



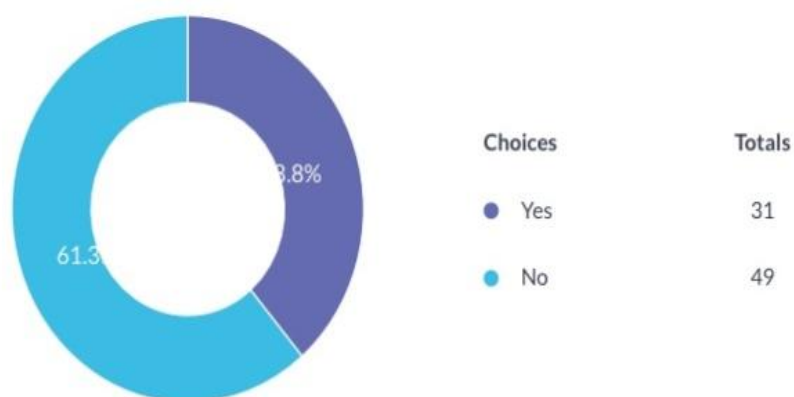
**Figure 4: Ever used acupuncture to prevent gagging in clinics**



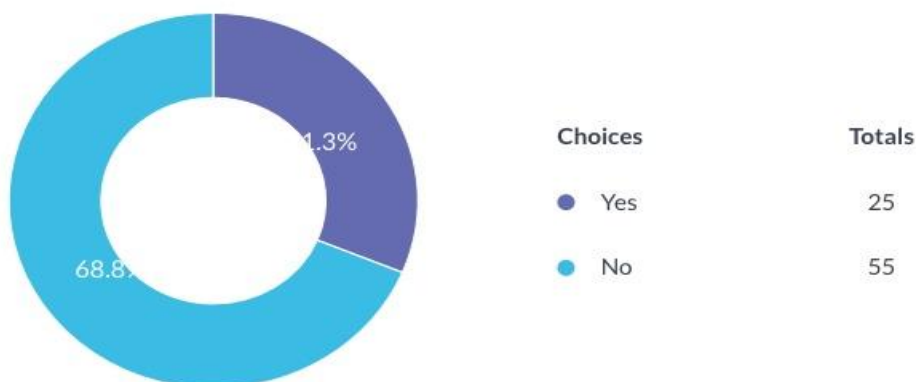
**Figure 5: Aware of different acupuncture techniques used**



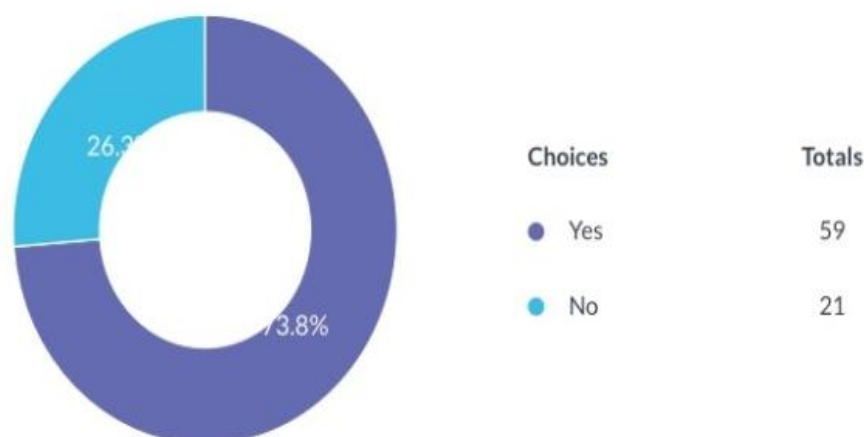
**Figure 6: Aware of any dental conditions in which acupuncture is used other than gagging**



**Figure 7: Aware of any adverse effects caused by acupuncture**



**Figure 8: Are you willing to use acupuncture as an alternative technique to prevent gagging in your clinical practice**



### Discussion:

Gagging is also called as retching(11). Gagging is a normal protective reflex for preventing foreign body entry into the airway , upper gastro intestinal tract and oropharynx. The reflex interferes with treatment provided by the dental practitioner for dental patients which in return will lead to increased levels of stress suffered by patients during treatment sessions . Treatment plans may be compromised by the need to limit the impact of the reflex, and in some cases, unnecessary levels of intervention may be needed, for example, general anaesthesia. In addition, the reflex can be so troublesome that it inhibits patient to visit the dentist for treatment, and induces anxiety related to dental treatment in certain patients. In severe cases, patients avoid dental treatment. Therefore, any appropriate method of controlling the reflex is should be tried for each individuals (12).

Five intra oral areas known to be “Trigger zones” are (i) palate glossal and palate pharyngeal folds, (ii) base of tongue, (iii) uvula, (iv) palate, and (v) posterior pharyngeal wall. Gagging commonly occurs during dental procedures such as making a maxillary impression (13). Gagging is associated with lacrimation, excessive salivation, sweating, and fainting and sometimes can also be a panic attack (14). The patients develop a fear of further visits to dentists if the experience gagging during any dental treatment.

Acupuncture works by stimulating certain points present in our body. These points are called as pressure points. The mode of action in controlling GR through acupuncture is not fully understood. The needles inserted at these pints are manipulated gently by hands or with slight electric stimulation. Acupuncture mainly acts by stimulating the nervous system .

The mode of action in controlling gag reflex through acupuncture is not completely understood. The possible explanation to the mechanism of action of this technique is that the vagus nerve, which is one of the main nerves involved in swallowing, also supplies the part of the ear contains the anti-gagging acupuncture point. The point is adjacent to a branch of the trigeminal nerve. The trigeminal and vagus nerves are responsible for much of the sensory and motor functions of the larynx,

pharynx, and palate. Therefore, stimulating and modulating these anti-gagging points activates mechanisms that inhibit the muscle activity of the GR (12).

Modern scientific researchers have revealed various actions of acupuncture which includes,

Regulating various physiologic functions

Inducing analgesia

Modulating the limbic- para limbic - neocortical network

Increasing local micro circulation

Protecting the body from infections

Acupuncture is considered as a non specific therapy with a broad spectrum of indications, particularly in functional disorders. This is due to its regulatory actions in various systems (15)

Various dental procedures in which acupuncture can be used are dental pain, dental anxiety and gag reflex, Temporo mandibular joint pain and Temporo mandibular joint disorders, Clicking and locking of Temporo mandibular joint, chronic muscle pain or spasm, atypical facial pain, head ache ( tension head ache or migraine), Xerostomia ( dry mouth), Nerve pain ( neuralgia, especially trigeminal neuralgia, neuropathic pain, nerve injury), paresthesia or anaesthesia of the oral and the para oral structures (16).

Various studies have shown that ear acupuncture is as effective as intra nasal midazolam for reducing the gag reflex. A clinical study by Sari and Sari et al (17) assessed the role of acupuncture for treating orthodontic patients who experienced a gag reflex. The study investigated 2 acupuncture approaches and concludes that acupuncture points used were effective in controlling the gag reflex in orthodontic patients.

The anti gagging point located on the ear corresponds with the skin of the external acoustic meatus which is innervated by the auricular branch of the vagus nerve and that adjacent to the auricle which is innervated by the auriculo temporal branch of the mandibular division of the trigeminal nerve. Both the vagus and trigeminal nerves have branches responsible for the sensory and motor function of the larynx, pharynx, and palatal region. Thus it can be postulated that stimulation of the anti gagging auricular acupuncture point may inhibit the muscular activity, thus reducing the gag reflex (18, 19)

Fiske and Dickinson reviewed that 9 out of their 10 individual under their study could feel and locate the mirror which was ran across the hard and soft palate after the insertion of the needle but no gagging was present. Hence they stated that stimulation of anti gagging pain some how( mechanism of action is not understood yet) inhibits the muscle activity of the gag reflex (3). Sivinagini and Ashish R Jain states that acupuncture techniques in Chenjiang, Neiguan, and Hegus points were successful. They also stated acupuncture as a productive procedure for patient with severe gag reflux and it was found to be safe, quick, inexpensive, and relatively non- invasive technique. For the patients with severe gag reflex which make the treatment impossible, the acupuncture Therapy was successful in controlling gag reflex(8).

## **Conclusion:**

Gagging is most commonly seen in dental practice and it hinders in normal dental treatment .Patients with exaggerated gag reflex are afraid of many dental procedures. Acupuncture is an effortless method and is very effective. This survey shows that the students are not very much aware of the acupuncture as an alternative for treatment of gag reflex. Awareness should be created about this procedure for the students to know about its wide use in dentistry especially in gagging.

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