

KNOWLEDGE AND AWARENESS AMONG DENTAL STUDENTS ON DENTINAL HYPERSENSITIVITY

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ABSTRACT

This study was to describe and enhance the awareness and knowledge about the etiology and management of dentine hypersensitivity (DH) and it was perceived by a random questionnaire with the dental students. 100 Dental students (mean age 20-23 years) were randomly participated in the self-explanatory questionnaire based survey.

KEYWORDS: Dentine hypersensitivity; questionnaire; perception and analysis; etiological factors; predisposing predisposing factors; management.

INTRODUCTION

Dentine hypersensitivity (DH) can be defined as “the sharp pain arising from exposed dentine, characteristically in response to an array of stimuli including thermal, tactile, evaporative, osmotic or chemical, which cannot be attributed to any other form of dental defect, disease or pathology.”^[1] It is a chronic condition that is dependent on dentine exposure as well as the patency of the dentinal tubules. The reported prevalence of DH presents a large variation, but by general consensus, it is said that between 10% and 30% of adults report the condition globally and thus has been referred to as the “common cold” of dentistry.^[2,3] It is mandatory when analysing dentinal hypersensitivity as other differential diagnosis such as caries, defective restorations, traumatized teeth, fractured or cracked teeth and gingival conditions that shows the similar signs and symptoms. The first premolar are the most affected teeth reaching more than half of the teeth & the most affected region is the cervical area of the buccal surface.^[4]

Several studies shows the knowledge and awareness of managing dentinal hypersensitivity among the dental students. It shows their knowledge in periodontics and their treatment modalities. It was a questionnaire based survey for the dental students at the age of (17-25) to know the perception of dentine hypersensitivity. Experience of discomfort in daily life and function is common among sufferers with significant impact on their quality of life (QoL).^[5] Though there is lot of non-invasive treatments available, there is also a lack of diagnosis which is major obstacle for the success of any sound treatment plan. This had led to the management

and treatment of the condition by dentists. The objective of the study was mainly to describe the perception and awareness of a randomly selected sample of dental students based on the predisposing factors, triggers, diagnosis and the management of dentine hypersensitivity.

MATERIALS AND METHODS

The cross sectional study was conducted among dental students of Thai moogambigai Dental college and Hospital Chennai, India.

Dental survey was undertaken for 100 dental students currently doing their final year of bachelor of dentistry exploring their clinical knowledge. Students were briefed about the study and concern was obtained from the students. Ethical committee approval was obtained from the university. The questionnaire was primarily created to validate the knowledge of dental students on hypersensitivity. The questionnaire was based on the etiology, management, distribution and its prevalence. This study will increase the knowledge on the quality of treating dentinal hypersensitivity among dental students.

The instructions were properly explained for the participants about the study. The initial set of questionnaire were totally based on their experience and knowledge of DH and then followed by distribution and prevalence of dentinal hypersensitivity. The remaining set of questionnaire were about the etiology, diagnostic aids and management of dentinal hypersensitivity. This study will help us to formulate the knowledge of dental students and to focus on the future scope and

management of dentinal hypersensitivity. This help us to maximize the response rate from dental students to enable ease of data handling and analysis. Conclusively, these were mainly to analyse the knowledge and advancement used to treat dentinal hypersensitivity among dental students and bring awareness among them and future scope and improvement on its management with recent advanced technology in dentistry.

RESULTS

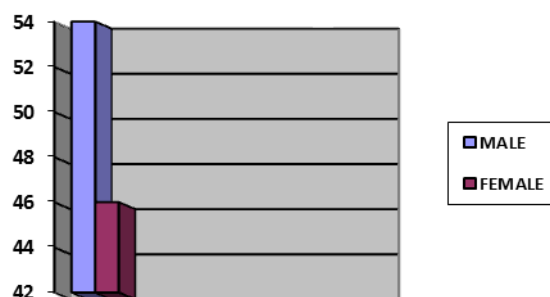
Data were collected in a shot span of time to maximize the individual response in appropriate manner and to analyse the result of the study .A descriptive statistics was done using SPSS (IBM SPSS statistics for windows, version, 20.0) 100 students actively participated in the self- explanatory questionnaire based survey. Based on the analysis, most of them participated in the study had knowledge about the dentinal hypersensitivity. To evaluate the dental students knowledge the questionnaire was based on the experience, etiology, predisposing factors, and management. The respondents mainly were 42 male participants and 58 female participants.(Chart1) Based on the survey responses 95 % of them had known about hypersensitivity and 51 % of them had experienced it Mostly the symptom they experience on hypersensitivity was sensitivity to hot and cold foods and 55 % of them have sensed it. In concern to the oral hygiene related to dentinal hypersensitivity 37% of them think it was due to improper brushing technique. Mostly females were affected by dentinal hypersensitivity than males but the study shows only 46% had knowledge about it.

The most common affected age group is 20-50 years of age whereas,48 % of them were aware about it and then 42 % of them answered buccal surface is the most common site of dentinal hypersensitivity and 48 % were unaware about it. (Chart2) Premolars were the predominately affected teeth by dentinal hypersensitivity.^[4] and second most is canines then incisors and later is the molars. 39 % of them gave the correct order of tooth affected by DH. There are so many recent advancement in detecting dentinal hypersensitivity .46 % were aware about all the frequently used test to detect hypersensitivity .Cements and varnishes are the cost effective and less invasive in managing dentinal hypersensitivity and 48 % were aware about this management. Many of them assumed dental caries as a cause of DH, but in this study 46 % had said that dental caries as not the sign of dentinal hypersensitivity Only 44% of them treated a case of dentinal hypersensitivity Only 22% of them were aware on steroids, potassium salts and fluorides, Arginine and calcium being used as good dentifricers. Desensitizing dentifricers causes occlusion of dentine tubules thus reduces dentine hypersensitivity. Substances used for desensitization of dentine are strontium chloride, formaldehyde, potassium nitrate, potassium chloride and sodium citrate.^[6] According to a study conducted by Burwell A. Et al, Nova Min adheres to exposed dentin surface and reacts

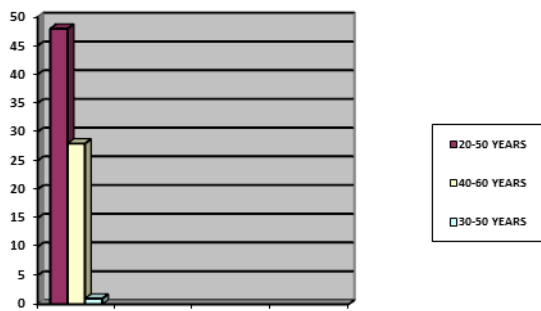
with it to form a mineralized layer, occluding dentin tubules and hence decrease hypersensitivity.^[7] 57 % of the study group repeated that the mouth rinse will help in treating DH and it is good that they known there will be some relief will be on the regular use of mouth rinses.

Dental bleaching (tooth bleaching procedures have become increasingly popular world wide,^[8]) is the known cause of dentinal hypersensitivity. The sensitivity is caused by the passage of the oxygen ion through the enamel and dentin, reaching the pulp tissues, which will result in sensitivity.^[9] 63 % has knowledge about it. Desensitizing agents (sodium fluoride, stannous fluoride, potassium oxalate, calcium phosphate, calcium carbonate) are one of the management of DH,^[10] and only 26 % were aware about the use of desensitizing agents. Tongue thrusting is a parafunctional habit extending the tongue between the maxillary and the mandibular teeth or alveolar ridges during the initial stage of swallowing,^[11] and it does not have any effect on DH and 49% had knowledge about it Hydrodynamic theory is the most accepted theory. This theory states that stimuli causes displacement of the fluids within the dentinal tubules which indirectly stimulates the extremities of the pulp nerves causing pain sensation.^[12] which distribute the pathology on DH and 55 % of them had knowledge on this theory.34% of them aware that there is lot of measure to visualize and analyse the depth of hypersensitivity like MC Gill PAIN, Visual analog scale and Verbal rating scale.51 % think that DH is not a genetic disorder and 17 % says it is a genetic disorder and 32 % were not aware about it . 69% were accurate that vital tooth bleaching.^[8] will lead to dentinal hypersensitivity y. This study shows the status of the dental students knowledge and awareness about DH. There should be some need to make them focus at this cause and make them assure with a good knowledge to provide the sound treatment plan for the patients suffering from dentinal hypersensitivity.

Chart 1: Gender Prediction



2: Age Distribution OF DH.



DISCUSSION

The study was mainly to provide the complete knowledge and awareness about Dental hypersensitivity among dental students about the etiology, predisposing factors, distribution, and its management. The questionnaire was mostly to acquire the knowledge among dental students regarding DH. The result showed reveals half of them were unaware about managing DH and they must be taught to treat to excel their knowledge in dentistry. The “at home” treatment agents includes dentifrices, mouthwashes and chewing gums. Tooth pastes are the most widely used dentifrices for delivering over the counter desensitising agents with as high as 67.9% of individuals reporting DH using a desensitising toothpaste on a regular basis in a study done by Lavigne,^[10] In treating dental hypersensitivity cold test, thermal test and electric pulp tester are the most common diagnostic investigations that provide valuable diagnostic and treatment planning information for the clinician.^[13] The validity of any diagnostic test is the best described by its sensitivity and specificity, whereas its clinical usefulness is described by its positive predictive value (PPV) and negative predictive value (NPV).^[13,14] Improper oral hygiene and improper brushing technique, acidic foods, wasting diseases are major etiological factors and they should be educated about its management. They should also acquire some knowledge about recent advancements in management and less invasive and cost effective treatment modalities to assure the patient with sound treatment plan. To treat the known case of dental hypersensitivity they must know about their prevalence, distribution and etiological factors and examine the patient with complete knowledge to provide the effective treatment plan for the patients with dental hypersensitivity. One of the good recommendation was to do stepwise management strategy where the first line of management of DH should be removal / modification of causes and /or predisposing factors of DH coupled with daily use of Desensitizing toothpastes. Desensitizing pastes are the easy and economical option to relieve dental hypersensitivity, and majority of them contain potassium salts to numb the pain of hypersensitivity.^[15] They should have an knowledge on the predisposing factor and prevent further discomfort. Before doing vital bleaching patient should be educated

about it being are cause of dental hypersensitivity. This study results shows their poor knowledge and they must be given proper knowledge on DH and access to advancement in technology for better treatment

CONCLUSION

In conclusion, the results from the present study was based on the prevalence, etiology, as well as diagnosis and management of DH. It was only based on the self-explanatory questionnaire to analyse the particular group of dental students to analyse their knowledge on dental hypersensitivity. On pertaining to the results obtained 50% of them had poor knowledge on DH. They should acquire more knowledge to provide sufficient treatment for the patients welfare and to feature their level in dentistry.

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