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Clinician's Awareness of the Management of Dentine Hypersensitivity. An Overview

David G Gillam*

Institute of Dentistry, Barts and the London School of Medicine and Dentistry QMUL, London, UK

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***Corresponding author:** Institute of Dentistry, Barts and the London School of Medicine and Dentistry QMUL, London, UK. Email: d.g.gillam@qmul.ac.uk

Abstract

Dentine Hypersensitivity (DH) or Dentine Sensitivity (DS) is an enigmatic clinical problem which is difficult to identify and manage effectively. Several published studies or reviews have previously indicated that Dentists may be uncertain about the aetiology, diagnosis, and effective management of dentine hypersensitivity (DH) [1-5]. This paper provides an overview on whether clinicians perceive DH/DS as a major clinical problem or simply a clinical enigma that is difficult to treat as well as determining whether they have confidence in both diagnosis and management of the condition.

Keywords: Dentine Hypersensitivity; Diagnosis and Management; Prevalence; Treatment options

Introduction

It has been stated that Dentine Hypersensitivity (DH) or Dentine Sensitivity (DS) is a common, yet troublesome and enigmatic clinical entity which clinicians find difficult to identify (diagnose) and treat [1-5]. Traditionally DH/DS has been defined as "pain derived from exposed dentine in response to chemical, thermal tactile or osmotic stimuli which cannot be explained as arising from any other dental defect or disease" [1, 6]. According to Gillam [7] current treatment approaches such as professionally applied (In office) or over-the counter (OTC) (At-home application) or a combination of both approaches is based on the Hydrodynamic Theory where minute fluid shifts within the dentinal tubules initiate a pain response. The pain arising from DH/DS can vary in nature ranging from mild, moderate, or severe, although it may be considered a transient pain which is initiated by mainly cold stimuli. From a clinical perspective however, it is important that the clinician excludes other clinical conditions that may have similar pain characteristics to DH/DS [1, 5-6]. The prevalence of the condition varies depending on patient self-reporting or clinical evaluation by a clinician although various studies have suggested a range of up to 69% from self-reporting [8] and up to 15% by clinical examination [2]. Several investigators have also highlighted the challenges facing clinicians in particular the apparent lack of confidence that clinicians have in identifying DH/DS and its subsequent treatment [1, 4-10]. For example, according to

Cuhna-Cruz et al., [4] most clinicians rely on the patient's self-reporting of the problem, other studies also appear to support this observation in that patients' self-report or initiate the conversation rather than the clinician [4-5, 7]. According to Gillam [7, 10] one aspect in the management of DH which is often overlooked is the daily impact of DH on the QoL of patients who suffer from the problem using QoL measures such as the Oral Health Impact Profile (OHIP-14 or OHIP-49) or the dentine hypersensitivity experience questionnaire (DHEQ) [10]. The use of questionnaires or surveys may therefore be beneficial in assessing whether clinicians have 1) an understanding of the problem, 2) an awareness of the effectiveness of the diagnostic methodology and subsequent treatment modalities including preventive strategies and 3) appreciate the impact of DH/DS on the Quality of Life of those who suffer from the problem [7].

Aim

The aim of this paper is to provide an overview on how clinicians perceive DH/DS in their clinical practice and to determine how aware are they in 1) understanding of the problem, 2) being aware of the effectiveness of the diagnostic methodology and subsequent treatment modalities including preventive strategies and 3) appreciating the impact of DH/DS on the Quality of Life of those who suffer from the problem.

Methodology

Selected questionnaire-based studies from 2010 were identified from the published literature based on key words such as "Dentine hypersensitivity or Dentine sensitivity, Clinician's awareness, prevalence, diagnosis and management, impact on the Quality of life of patient's suffering with the problem."

Results

For this overview 14 papers (including one abstract) from 2010 were available for selection. Of these papers two were from the following countries, Brazil, Nigeria, United Kingdom, and the United States of America (USA) (8 papers) [4, 11-17] and one paper from the following countries, Australia, Greece, India, Kuwait, Pakistan,

and Senegal (6 papers) [3,18-22]. These papers were published from 2010 to 2021 and were based on findings from several sources such as clinicians from private and public dental offices, dental hospitals (undergraduate and postgraduate students) or clinicians attending a professional workshop/conference as well as randomly selected clinicians from national dental membership lists. The data was collected using a questionnaire which was either posted by mail, handed out at the venue or through

on-line electronic collection using Survey Monkey or Google Forms tool etc. The number of questionnaires sent out and returned varied with the response rate was in some instances low (see Table 1). Six of the studies [12, 15-16, 18-20] used in this overview were based on a questionnaire developed from an original Dutch study [9]. Subsequently translated into English by one of the co-authors of the Dutch study (MA Eijkman) and used by Gillam et al. [23].

Authors	Country	Setting	Study type	n	Selected observations and conclusions
Amarasena <i>et al.</i> (2010) [3]	Australia	Practice	Questionnaire (postal)	284/800	Response rate 36.9%. Perception of occurrence of DH was <20%. The main conclusion was that Australian dentists' perception of DH was generally consistent with the current scientific consensus on this subject.
Cuhna-Cruz <i>et al.</i> (2010) [4]	USA	General practitioner setting (the Northwest Practice-based REsearch Collaborative in Evidence-based DENTistry) (PRECEDENT) t	On-line questionnaire (internet survey)	209/301	Response rate 69.4%. Clinicians relied on patient self-reporting to assess the severity of DH. Modalities for the diagnosis and treatment of hypersensitivity were diverse in nature. Clinical observation, advice regarding toothbrushing and diet and laser therapy were the least successful treatments. The methods used to diagnose and treat DH in practice were diverse, infrequently used and as such difficult to justify.
Afolabi <i>et al.</i> (2012) [13]	Nigeria	176 Nigerian Dentists attending a Professional Dental workshop	Questionnaire	176	Response rate could not be determined. 73.3% of the responding dentists claimed to see patients with DH. 45.1% of the dentists mentioned cold as the commonest stimulus evoking pain in DH. 56.8% could correctly identified the hydrodynamic theory as the commonest theory of DH (Abstract only)
Benoist <i>et al.</i> (2014) [22]	Senegal	Private Practice and Public Hospitals	Questionnaire (postal)	164/238	Response rate 68.9%. 83% had a good understanding of the pain characteristics related to DH. Most responders (90.9%) failed to recognise the underlying mechanism for pain transmission across the dentine. Both toothpastes and professionally applied treatment were recommended. Root canal therapy was recommended by at least a third of the participants
Oderinu <i>et al.</i> (2017) [14]	Nigeria	Dentists in six geographical zones	Cross-sectional study (questionnaire)	1057	92.8% of dentists described DH as a stimulated brief pain elicited from the tooth; 24.2% indicated that DH can be treated by altering the number of dentinal tubules (Tubule occlusion?). Diagnostic measures included by tapping (20.6%) or scratching (73.4%). Extraction (24.7%) and root canal therapy (34.5%) were also indicated as part of the management of DH. Most dentists correctly identified the aetiological and predisposing factors (98.8%). Counselling was also recommended as part of the management of DH. The conclusions of the study indicated that practicing dentists exhibited gaps in their knowledge of DH and its subsequent diagnosis and management.
Kopycka-Kedzierawskiet <i>al.</i> (2017) [17]	USA	National Dental Practice-Based Research Network clinicians	On-line pre-clinical Questionnaire	185	Majority of network practitioners used multiple methods to diagnose and manage DH. Desensitizing OTC potassium nitrate toothpaste and fluoride formulations are the most widely reported products used to manage DH in the practice setting. The majority reported that recessed gingiva (gingival recession), followed by the abrasion/ erosion; abfraction/attrition lesions and bruxism most likely contribute to DH.
Pereira <i>et al.</i> (2018) [19]	India	Mumbai region membership of IDA 500 dentists randomly selected	Questionnaire (e-mail)	206/500	Response rate 41.2%. Most of these respondents [90.2%] indicated that half of their patients reported problems with DH; 78.2% respondents reported that the patients to usually initiated the conversation on DH; and 83.4% indicated that up to 25% of patients considered DH to be a serious problem. Discomfort due to DH lasted ≤4 weeks. Most participants were aware of mechanisms underlying DH, Majority of dentists (≥66%) reporting inadequate brushing of the teeth as an initiating cause with 50% suggesting that periodontal causes were implicated in DH. Desensitizing agents were recommended for home use. The conclusions from the study agreed with previous studies and generally consistent with the current scientific consensus on the management of DH by dentists.
Izhar <i>et al.</i> (2019) [21]	Pakistan	Private and Public clinics (Lahore)	Questionnaire	527/588	Response rate 89.6%. DH is a highly prevalent condition in dental practice. Recession of gums, aggressive brushing, and frequent use of tooth whitening procedures were identified as the predisposing factors. The application of air blast and spontaneous patient report confirmed by dental examination were the most frequently used diagnostic methods.

Gillam <i>et al.</i> (2019) [20]	Kuwait	A representative sample of Kuwaiti Dentists who were randomly selected using the Kuwait Dental Association membership list	Questionnaire-based survey (Survey Monkey; hard copies).	190/318	Response rate 59.7%. Up to 25% of their patients reported DH. 10% of patients experiencing discomfort from DH which in some cases lasted up to three weeks. 66% (n= 100) of Dentists indicated that the effect of DH on the QoL of their patients was moderate in nature. 51.9% (n=84) indicating that tooth brushing had a major impact on the QoL. 'Gingival recession' and 'periodontal disease' were implicated as predisposing or aetiological factors of DH. Most dentists indicated that they were confident in recommending OTC products for home use. Overall, the perception of most of the participating Kuwaiti dentists on the aetiology, diagnosis, and management of DH, was generally consistent with the current scientific consensus on DH, although there was still confusion concerning some of the aspects of the diagnosis and management of the condition.
Exarchouet <i>et al.</i> (2019) [18]	Greece	Dentists in general dental practice or undertaking postgraduate studies in a Dental School as well as a National Conference	Questionnaire	191/230	Response rate 83%. 39.8% of dentists indicated that 1 in 10 of their patients experienced discomfort from DH. 76.4% of dentists indicating that their patients initiated the conversation on DH. 44% of the dentists indicated that they initiated the relevant conversation. 34.9% of dentists indicated that the duration of discomfort lasted up to 3 weeks. 76.4% indicated that DH had an impact on their patients' quality of life. Incorrect tooth brushing was considered a major etiological factor (68.6%). "Air blast" (37.3%) and "probing" (15%) were the main methods for identification. 83.6% of dentists indicated that they were confident in recommending over-the-counter products for home use. The results of this study suggest that in terms of knowledge and understanding of DH, there is still confusion concerning some aspects of the diagnosis and management of the condition (Questionnaire translated from English into Greek)
Zeola <i>et al.</i> (2019) [11]	Brazil	Dental Practice (Private [70.5%] and public practice [29.5])	Questionnaire electronically sent using the Google Forms Tool	353	Response rate could not be determined. Prevalence was identified as a range (30-60%). Air Blast and/or scratching with a dental probe was identified the main trigger for DH. First choice of management was the application of a dentine desensitizer (48.16%). The results of the study indicated that DH management was a challenge to clinicians in their daily practice.
Hatton <i>et al.</i> (2020) [16].	UK	Dental undergraduate (4th and 5th year students (39%)) and Dental staff (61%)	Questionnaire (by hand)	91/120	Response rate 75.8%. 37.5% of students indicated that 10% of patients suffered from DH whereas 18.9% of dentists indicated that 25% of patients suffered from DH. Both dentists (22.6%) and 27.5% of students indicated that DH lasted >12 weeks. 18.9% of dentists considered that DH was a serious problem for patients although 32.5% of students were unsure. Dentists (66%) and students (62.5%) indicated that DH had a major impact on the quality of life (QOL) with 51.1% (dentists) and 56.3% (students) indicating that it was moderate in nature. The results would suggest that in terms of knowledge and understanding of DH (e.g., hydrodynamic theory) both dentists (90.5%) and students (76.9%) were comparable although in the assessment and subsequent management of DH the results indicated that dentists were more confident than the students.
Gillam <i>et al.</i> (2020) [15]	UK	1100 Dentists and 1100 Dental Hygienists/Therapists (DH/Ts in General and private dental practice	Questionnaire (Postal)	346/2200	Response rate 15.7%, of which 142 Questionnaires were from Dentists (12.9%) and 204 Questionnaires were from DH/Ts (18.5%). The results were consistent with previous studies and, would appear to suggest that, in terms of the knowledge and understanding of DH, both Dentists and DHTs had a broad understanding however there were still some confusion concerning aspects of the diagnosis and management of the condition and clinicians therefore need to be updated on the current recommendations and guidelines in the management of DH to both inform their patients in terms of awareness and prevention and to confidently diagnose and manage DH successfully.

Francisconi-Dos-Rios et al. (2021) [12]	Brazil	Undergraduates and qualified dentists from a Dental School	Questionnaire (by hand)	100/165	Response rate 60.6%. 66.3% of participants indicated that up to 25% of their patients had DH; 41.7%, indicated that the duration of discomfort was up to eight weeks; 78.4% reported that they examined a patient with DH within the last two-four weeks; with 70.4%, indicating that this was initiated following a conversation with the patient. Most of participants indicated DH affected the patients' quality of life. Attrition, exposed dentine, occlusal interference, gingival recession, and abrasion were factors identified in the aetiology of DH. The diagnostic procedures identifying or excluding DH included history of sensitivity, clinical examination, clinical testing, and probing. Differential diagnosis excluding conflicting clinical conditions such as fractured restoration, bleaching sensitivity, marginal leakage, chipped tooth, and periodontal disease. Most respondents indicated they were confident in diagnosing DH and providing advice to their patients. Only 38.8% of participants identified hydrodynamic theory as the underlying mechanism of DH. Methods to clinically evaluate DH included self-assessment, dental examination, dietary analysis, and thermal assessment. The use of desensitizing dentifrices, education on toothbrushing, in-office application of desensitizing products, and restorations were also recommended. From the results of this study there appears to be confusion concerning the aetiology, diagnosis, and the subsequent management of DH. (Questionnaire translated from English into Brazilian Portuguese)
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Table 1: Selected observations and conclusions from the included studies (2010-2021).

Discussion

Dentine Hypersensitivity (DH) as indicated is a relatively common dental condition although there has been conflicting reported as to how the condition is successfully managed by clinicians [1-5]. Furthermore, there has been limited data on whether clinicians are aware of how to manage the problem and whether they have both the confidence to recognise DH (diagnosis) and to successfully manage the condition [1-5, 9-10, 15-16, 23]. The prevalence of DH has been widely reported in the literature and depending on how the data are collected (by questionnaire or clinical examination) up to 69% [6] may experience transient discomfort which may or may not require at-home administration (OTC) of a desensitising toothpaste or professionally applied help through visiting a Dentist. It is also evident that patients do not always seek treatment for DH which indicate that they do not consider it to be a serious problem [1, 5-6]. According to Addy [24] only 48% of those who suffered from DH complained to their Dentist and, they were also less likely to follow the recommendations for the resolution of the problem. There has also been limited data on the perception of Dentists in identifying and treating DH and several published studies or reviews have indicated that Dentists may be uncertain about the aetiology, diagnosis, and effective management of Dentine Sensitivity/Dentine Hypersensitivity (DH) [1, 5, 8, 11, 14, 18, 20]. The previous findings from the Canadian Advisory Board on Dentin Hypersensitivity also highlighted several concerns based on the questionnaire sent to 5000 Dentists and 3000 hygienists in Canada [1]. Although the response rate was only 7%, nevertheless key areas were identified in the participants understanding of the diagnosis and management of the problem. It was evident that the prevalence of DH in the population was underestimated by the participants and there was a lack of understanding on the causes and diagnosis of DH. Of particular concern was that that screening for DH was not routinely undertaken and approximately 50% indicated that they did not have the confidence in managing their patients' pain with a similar percentage indicating that they tried to modify predisposing factors such as erosion, exposed dentine, abrasion etc., initiating the problem. The response rates from the selected studies in this paper also varied depending on how the questionnaire was distributed (e-mail, on-line, mailed by post, by hand) (15.7% to 89.6%) [3-4, 12, 15-16, 18-22]. There are several reasons why some of these response rates are low, for example the question of availability of the target group as well the potential lack of knowledge in the subject matter at hand

which may result in a non-response by the participants [9]. It was also evident from the published literature as well as personal experience as an undergraduate student during training that limited, or no time was allocated in the dental school curriculum for the teaching of DH [1] although this aspect has improved somewhat in the last 10 years, and currently there does appear a requirement to continually update clinicians on the diagnosis and management of DH [3-4, 11-22].

Prior to 2010, several studies attempted to identify the knowledge base and understanding of clinicians when identifying (diagnosing) DH and managing DH, including the effectiveness of the diagnostic methodology, subsequent treatment modalities and preventive strategies used by clinicians [1, 7, 9-10, 23]. One of the concerns previously outlined in the consensus documentation report was that the prevalence was underestimated particularly for young adult patients and as such it was difficult to determine the true prevalence of the problem [1]. From the included studies in the present paper, it was evident that there was a range of prevalence rates up to 60% which to some extent may reflect that these were questionnaire studies [3, 11-12, 15-16, 18-20]. The awareness of clinicians regarding their perception of the prevalence of DH may be based on several factors; for example, the number of patients they may have observed with DH over time, the influence of advertising of the problem from toothpaste manufacturers through the media, basic knowledge from dental school, personal research interest or postgraduate research, continuing professional educational courses (cpd) and the type of dental practice. It is also evident from the published literature and supported by some of the included studies that clinicians relying on patients self-reporting of the problem rather than specifically asking whether they (the patient) have a current or ongoing problem, which may result in specific screening for DH not being undertaken [1]. The clinician should therefore undertake a methodical approach based on a good medical and dental history together with a clinical examination to determine the cause of the patient's pain [4-5]. This may require special investigation such as radiographs to identify the specific problem which will essentially lead to a differential diagnosis to exclude all other causes of dental pain [4-5]. The use of pain scales such as visual analogue scale (VAS) scores may also be relevant to determine the severity of the patient's discomfort [5]. From published studies, it is evident that clinicians view DH as a mild to moderate transient pain that can be easily treated with OTC and professionally applied products [2, 4-5, 7, 12, 15-20, 23] and as such do not consider

the problem to have a lasting impact on the QoL of their patients [5, 10, 25-26]. Furthermore, it is evident that clinicians often neglect to identify, eliminate, or modify predisposing features implicated in the aetiology of DH as recommended by several investigators [1, 3-5, 7].

Several investigators have reviewed the variety of methodological approaches used in the dental clinic to identify (diagnose) DH such as cold air, tactile and thermal stimulation [1, 4-5, 7], it is evident that despite the range of diagnostic tools used by clinicians as reported in the included studies in this paper [3, 11-22], the use of these methodological approaches according to Cunha-Cruz et al. [4] may be difficult to justify.

The question of successful management and treatment of DH has also been raised in the literature and it is reasonable to suggest that clinicians need to have a basic understanding of the underlying mechanism underpinning the transmission of stimuli across dentine to elicit pain in the dental pulp. The current mechanism is based on the hydrodynamic theory which is based on open tubules in the exposed dentine and fluid dynamics within these tubules, it is important for clinicians to recognise this mechanism of action as it is the basis on which OTC and professionally applied products work [1, 5-8]. According to the Canadian consensus report most clinicians failed to identify the accepted mechanism of action [1]. The results from a review of the included studies would indicate that there is still confusion regarding the mechanism of action implicit in DH and as such there is still a requirement for further education on this topic [12-14, 22]. However, several included studies did report that the participants understood the underlying mechanism of action [3, 15-16, 20].

One of the biggest concerns in the management of DH is the vast array or plethora of treatment choices that are available for clinicians to use either as an OTC product (toothpastes, mouth rinse or gel) or professionally applied products and approaches such as fluoride application, restorative materials, laser application and periodontal grafting procedures [1-4, 7-9, 27]. The range of available products was also reported in most included studies in this paper. There is a generally consensus however, that there is no ideal or universally accepted product or treatment of choice when managing DH [1, 2, 4-5, 7-8, 27]. For example, Cunha-Cruz et al. [4] reported that the clinicians in their survey used a vast and diverse range of products and yet reported that they were not convinced of the efficacy or outcomes of any of the treatment choices. It is, however, important for the clinician to acknowledge that simply providing a treatment option for the patient without modifying or eliminating the aetiological or predisposing features initiating the problem in the first instance will not be successful [1, 5, 7, 27]. Several investigators have proposed recommendations and guidelines for the prevention and management of DH in dental practice [1, 5, 7, 27-29]. According to these guidelines and recommendations, changing patient behaviour in terms of tooth brushing, dietary changes, removal of aetiological and predisposing features are essential in the management of DH, together with monitoring the problem following the initial treatment. There appears however some reluctance or scepticism by clinicians in the Cunha-Cruz et al. [4] in considering such an approach to be successful. However, several studies including those included in the present paper considered prevention important in managing DH [1-3, 7, 9, 14, 20, 28].

One aspect of the impact of DH in daily living e.g., an awareness of the Quality of Life (QoL), has until recently been largely ignored by clinicians [10, 25-26]. Several studies in the present paper did however assess the impact of DH on the QoL of those individuals suffering with DH [12, 15-16, 18-20] indicating that they generally considered DH to have a mild to moderate impact on the QoL. It is however important to address this issue in dental practice and several QoL questionnaires have been developed for both research and general practice to help clinicians in determining the impact of DH in daily living [10]. Furthermore, both

clinicians and patients must be realistic with the outcomes in managing DH to avoid any disappointment, the use of VAS scores and a simple QoL questionnaire or equivalent may enable the clinician and patient to monitor and appreciate any improvement of QoL following treatment for DH as well as post-operative sensitivity following dental procedures such as professionally cleaning the teeth (scale and polish) [30]. A reduction in DH following treatment enabling a patient to enjoy an improved QoL and eat and drink without the level of discomfort they previously experienced can be considered a success. Again, both the clinician and patient must realise that absolute elimination may not always be possible and unless continued preventive and managing strategies are employed the condition may deteriorate if changes are not implemented and maintained [1, 7, 27-28].

The results from the included studies would indicate that while improvements in the understanding of DH and its awareness by clinicians together with allied preventive and management strategies have occurred, nevertheless there are still areas that need to be improved upon. Previous issues raised in the Canadian consensus report still need to be addressed and while some improvements have been made in terms of the diagnosis and management, there is still obvious confusion in the basic scientific understanding of DH together with a lack of confidence by clinicians in treating the condition as evidenced in some of the included studies [1, 11-12, 14-15, 18, 20].

Conclusions

The evidence from the included studies would suggest that while some positive improvements have been made since the recommendations of the Canadian consensus report in terms of the diagnosis and management, there is still obvious confusion in the basic scientific understanding of DH together with a lack of confidence by clinicians in treating the condition. The recommendations to include the basic scientific understanding together with current clinical research outcomes in the treatment of DH cannot be overlooked. The implementation of preventive and management strategies in treating DH dental practice is also recommended.

References

1. Canadian Advisory Board on Dentin Hypersensitivity (2003) Consensus based recommendations for the diagnosis and management of dentin hypersensitivity. *JCDA* 69: 221-226.
2. Orchardson R, Gillam D (2010) Managing dentin hypersensitivity. *J Am Dent Assoc* 137: 990-998.
3. Amarasena NJ, Spencer JOY, Brennan D (2010) Dentine Hypersensitivity - Australian Dentists' Perspective Dentine Hypersensitivity. *Aust Dent J* 55: 181-187.
4. Cunha-Cruz J, Wataha JC, Zhou L, Manning W, Trantow M, et al. (2010) Treating dentin hypersensitivity: Therapeutic choices made by dentists of the Northwest PRECEDENT network. *J Am Dent Assoc* 141 :1097-1105.
5. Gillam DG (2013) Current diagnosis of dentin hypersensitivity in the dental office: an overview. *Clin Oral Invest* 17: S21-S29.
6. Addy M (2000) Dentin hypersensitivity: definition, prevalence distribution and etiology. In: Addy M, Embery G, Edgar WM, Orchardson R, editors. *Tooth wear and sensitivity*. London: Martin Dunitz; 2000, pp. 239-248.
7. Gillam, DG (2015) Management of Dentin Hypersensitivity. *Curr Oral Health Rep* 2: 87-94.
8. Gillam D, Orchardson R (2006) Advances in the treatment of root dentin sensitivity: mechanisms and treatment principles. *Endod Top* 13:13-33.
9. Schuurs AH, Wesselink PR, Eijkman MA, Duivenvoorden HJ (1995) Dentists' views on cervical hypersensitivity and their knowledge of its treatment. *Endod Dent Traumatol* 11: 240-244.

10. Gillam DG (2021) The Impact of Dentine Hypersensitivity on the Quality of Life: A Review. *Clinical Oral Science and Dentistry* 4: b1-6.
11. Zeola LF, Teixeira DNR, Galvão ADM, Souza PG, Soares PV (2019) Brazilian dentists' perception of dentin hypersensitivity management. *Braz Oral Res* 10;33:e115.
12. Francisconi-dos-Rios LF, Calabria MP, Pereira JC, Hatton J, Honório HM (2021) Knowledge of Brazilian dentists and students in treating dentine hypersensitivity. *Res., Soc. Dev* v.10, n.9, e28010917194.
13. Afolabi AO, Ogundipe OK, Adegbulugbe IC, Shaba OP, Olojede ACO (2012) Perception of dentine hypersensitivity and its management by a group of Nigerian dentists. *NIG Q J Hosp Med* 22: 216-220.
14. Oderinu OH, Sede MA, Oginni AO, Adegbulugbe IC, Uti OG, et al. (2017) Knowledge, diagnosis and management of dentine hypersensitivity: a national survey of dentists in Nigeria. *Int Dent J* 67: 287-293.
15. Gillam DG, Chana B, Kumar K, Martin E (2020) Knowledge of UK Dental Professionals in Treating Dentine Hypersensitivity. *JSM Dent* 8: 1130.
16. Hatton J, Kumar K, Gillam DG (2020) Knowledge of UK Dental Undergraduates and Dentists in Treating Dentine Hypersensitivity. *Dental Oral Biology and Craniofacial Research* 3: 1-6.
17. Kopycka-Kedzierawski DT, Meyerowitz C, Litaker MS, Chonowski S, Heft MW, et al. (2017) Management of Dentin Hypersensitivity by National Dental Practice-Based Research Network practitioners: results from a questionnaire administered prior to initiation of a clinical study on this topic. *BMC Oral Health* 17: 41.
18. Exarchou C, Betsani I, Sakellari D, Chatzopoulou D, Gillam D (2019) A Survey of Dentists in the Management of Dentine Hypersensitivity: A Questionnaire-based Study. *Eur J Dent* 13: 383-390.
19. Pereira R, Gillam DG, Bapatla S, Satyamurthy P (2018) Awareness of dentine hypersensitivity among general dental practitioners in Mumbai, India. *J Odontol* 2:103.
20. Gillam, D. Dashti N, Chatzopoulou D (2019) A Survey of the Professional Opinions of Kuwaiti Dentists for the Treatment and Management of Dentine Hypersensitivity: A Questionnaire-based Study. *J Dentistry Res* 5: 046.
21. Izhar F, Nazir MA, Majeed A, Almas K (2019) A Study of Dentists about Their Knowledge and Practice of Dentine Hypersensitivity. *Eur J Dent* 13: 540-546.
22. Benoist FL, Ndiaye FG, Faye B, Bane K, Ngom PI, et al. (2014) Knowledge of and management attitude regarding dentin hypersensitivity among dentists from a West African country. *J Contemp Dent Pract* 15: 86-91.
23. Gillam DG, Bulman JS, Eijkman MA, Newman HN (2002) Dentists' perceptions of dentine hypersensitivity and knowledge of its treatment. *J Oral Rehabil* 29: 219-225.
24. Addy M (2002) Dentin hypersensitivity: new perspectives on an old problem. *Int Dent J* 52: 367-375.
25. Gibson B, Boiko OV, Baker S, Robinson PG, Barlow A, et al. (2010) The everyday impact of dentine sensitivity: personal and functional aspects. *Soc Sci Dent* 1: 11-20.
26. Bekes K, John MT, Schaller HG, Hirsch C (2009) Oral health-related quality of life in patients seeking care for dentin hypersensitivity. *J Oral Rehabil* 36: 45-51.
27. Gillam DG (2017) A New Perspective on Dentine Hypersensitivity – Guidelines for General Dental Practice. *Dent Update* 44: 33--6, 39-42.
28. Addy M, Urquhart E (1992) Dentine hypersensitivity: its prevalence, aetiology and clinical management. *Dent Update* 19: 407-408, 410-412.
29. Chinese Stomatological Association Expert Committee on Dentin Hypersensitivity (2009) Guideline for the diagnosis and management of dentin hypersensitivity. *Chin J Dent Res* 18: 13-16.
30. Gillam DG (2020) Management of Postoperative Sensitivity. *Dental Health* 59: 36-40.

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