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Original Article

Oral Health-related Quality of Life in Patients Presenting with Dentine Hypersensitivity: A Randomized Controlled Study of Treatment Effect

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Abstract

Objective: Dentine hypersensitivity (DH) remains a common chronic dental pain affecting the daily life of sufferers. Patients' perception of the impact of oral conditions on their quality of life as well as treatment outcome has become popular. Little is however known about the impact of DH on the oral health-related quality of life (OHRQoL) among these patients. The aim of this study was therefore to assess and compare the OHRQoL before and after treatment among patients presenting with DH. **Materials and Methods:** Conducted as a randomized, controlled study, the patients were randomized into experimental (n = 51) and control groups (n = 17) for the application of three in-office desensitizing agents: copal fluoride; 2-hydroxyethyl methacrylate and glutaraldehyde (Gluma desensitizer); arginine-calcium carbonate (Pro-Argin); and distilled water. The English version of the Oral Health Impact Profile with 14 items (OHIP-14) was administered to all patients before treatment and afterward at 1, 2, and 4 weeks to assess the OHRQoL. **Results:** Prevalence of impact (24.7%), extent of impact (12.9 ± 4.1), and severity of impact (10.56 ± 5.55) all revealed impact on the OHRQoL. The OHIP-14 scores reduced significantly among the patients treated with the desensitizing agents (P = 0.000), with no significant reduction in patients treated with the placebo (P = 0.901). There were no gender differences in the overall OHIP-14 scores. Regression analysis revealed age and number of hypersensitive teeth as predictors of pretreatment impact of DH on OHRQoL. **Conclusions:** DH had a significant impact on the OHRQoL of patients suffering from the condition. Treatment resulted in significant improvement in OHRQoL.

Keywords: Dentine hypersensitivity, Oral Health Impact Profile, oral health-related quality of life, quality of life

Introduction

The pain of dentine hypersensitivity (DH) is described as short and sharp, resulting from the response of exposed dentine to stimuli such as thermal, evaporative, tactile, osmotic, or chemical in the absence of any other dental defect or pathology that may produce similar symptoms.[1] Discomfort and pain are thus common complaints from individuals suffering from DH. These symptoms are important to the patient and they often have a considerable adverse impact on their daily quality of life (QoL).[2] There are several definitions for QoL, but a common feature of all the definitions is that they only have meaning at a personal level and is concerned with the degree to which each person enjoys the important possibilities that life has to offer.[3,4] These possibilities can be affected by oral diseases or conditions. A sizeable number of individuals with DH are affected by the symptoms to an extent that it interferes with daily activities such as eating, drinking, breathing, talking, and oral hygiene habits.[5,6] The oral health-related quality of life (OHRQoL) therefore reflects, among other things, on people's comfort, eating, sleeping, social interaction, self-esteem, and satisfaction with respect to oral health in everyday life.[7,8] Bekes *et al*. in their study showed that the patients have substantially decreased OHRQoL in comparison with the general population.[9] Sufferers of DH have been noted to avoid pain-causing stimulus as well as alter their behavior to avoid the pain. This altered behavior may include neglecting

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oral hygiene, noncompliance with oral care instructions, or avoiding dental visits, all of which can increase the risk of dental complications.[10] The goal of treatment, therefore, in DH is to prevent the discomfort and pain associated with it, thus improving the OHRQoL. Patients' perception of the effect of an oral disease as well as the outcome of treatment, especially as it relates to health-related quality of life, is gaining popularity among researchers and clinicians.[2] The impact of oral diseases on the OHRQoL of those affected has been studied for several oral conditions. Patients' report of the effect of DH on their daily life is however limited in the literature.

Clinical assessment of DH for diagnosis and treatment outcome has relied solely on the intensity aspect of pain following dentine stimulation. These response-based techniques assess the patients' pain with the use of visual analog or verbal rating scales.[1,11] Ide *et al*. stated that the reproducibility of these methods is difficult to achieve.[12] Furthermore, these pain scales do not reflect the new concept of health defined by the World Health Organization, particularly the aspect of mental and social well-being, and thus give no indication of the impact of DH on these domains of health.[7] The possibilities of assessing OHRQoL in these patients include but not limited to providing evidence to make treatment of DH a priority, and providing an alternative measure of treatment outcome for DH that is patient centered to be used as a quality control tool in clinical practice.

Multiple item questionnaires as opposed to global self-ratings and social indicators are the most widely used method to assess OHRQoL. Among these, the Oral Health Impact Profile (OHIP) developed by Slade and Spencer is the most widely used instrument with several modifications to adapt it to different conditions.[13] It has been shown to have good discriminant and construct validity, and due to its focus on problems specific to oral health, it has a great utility for measuring the outcomes of oral disorders. The short form of the OHIP with 14 items (OHIP-14) has been deemed appropriate and best suited for clinical practice, reproducible as well as responsive enough to detect meaningful clinical change.[14,15] There are however very few studies that have assessed the OHRQoL among patients suffering from DH. The aim of this study was thus to assess patients' perception of the impact of DH on their OHRQoL and to determine the effect of treatment as a measure of treatment outcome using the OHIP-14.

Materials and Methods

This is a randomized controlled study conducted among patients presenting with DH at the University of Maiduguri Teaching Hospital, in Maiduguri, Nigeria. The study protocol was approved by the Ethical Committee of the teaching hospital. All patients before inclusion into the study received verbal and written information about the study and signed an informed consent form. Patients who received the placebo treatment were not subjected to any risk of serious or irreversible harm. The patients who received the placebo were treated after the 4 weeks study period before discharge.

The study included all adults in good general health who presented with symptoms of DH and were diagnosed to have a minimum of three hypersensitive teeth. Patients with symptoms of sensitivity resulting from other dental pathologies, use of prosthesis, those with planned periodontal procedures, those who have undergone treatment that may predispose to sensitivity, those presently on treatment for DH, eating disorders, and pregnant and lactating mothers were excluded from the study.

Patients who met the inclusion criteria (at least three hypersensitive teeth confirmed with a probe and air blast and at least 10 mm score on a visual analog scale for each hypersensitive tooth) were allocated to four groups by simple randomization. Each group was assigned to either an experimental or control group by the first patient enrolled into each group picking a folded ballot paper with the name of a desensitizing agent written on it (randomization by balloting). Hence, the four groups were assigned to three experimental groups, for application of three different in-office desensitizing agents: hydroxyethyl methacrylate and glutaraldehyde (Gluma desensitizer™); arginine and calcium carbonate (Pro-Argin™); and Copal varnish with fluoride (Copal F™), and a control group. The hypersensitive teeth of the patients in the experimental groups were charted according to the Federation Dentaire Internationale notation and randomized to the three treatment agents. Thus, every patient in the experimental group was treated with all the three desensitizing agents. The hypersensitive teeth of patients in the control group were also charted but for application of the placebo (distilled water). The patients were blinded to the agent used on each tooth.

The patients were then given the English version of OHIP-14 questionnaire to fill before commencing treatment to get the baseline pretreatment scores. The OHIP-14 questionnaire has 14 items organized into seven dimensions, namely, functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap. Each domain has two questions. The responses were scored on a 5-point Likert scale ranging from 0 to 4 (0 = never, 1 = hardly ever, 2 = occasionally, 3 = fairly often, 4 = very often). The questions had already been preweighed to get the range of score for each of the seven domains and the overall score for the questionnaire. The weights, predetermined, reflect population judgments about the relative unpleasantness of each impact.[14] Coded responses (ranging from 0 to 4) within each dimension were multiplied by the weights for all the 14 questions. The sum of the products within each dimension represented subscale scores, and summation of the subscale scores produced a standardized score for each patient. This ranged from 0 to 4 for the subscales and 0–28 for the overall score. A high score represented a more impaired OHRQoL, and a low score represented a better OHRQoL.

The desensitizing agents were applied according to the manufacturers' instructions following administration of the

OHIP-14 questionnaire for baseline scores. Each hypersensitive tooth received the application of a single desensitizing agent or the placebo and received no further treatment at subsequent visits. Following treatment, the OHIP-14 questionnaire was administered to the patients at 1 week, 2 weeks, and 4 weeks.

Data analysis

The paired Student's *t*-test statistics was used to compare the pre- and post-treatment prevalence of impact, mean domain, and overall OHIP-14 scores within age groups and also within and between the genders. ANOVA statistics was used to compare baseline and posttreatment mean domain and overall OHIP scores followed by Bonferroni's *post hoc* test where necessary. Statistical significance was inferred at $P < 0.05$.

Results

Sixty-eight patients (36 males, 32 females) with ages ranging from 20 to 53 years and a mean age of 33.8 ± 9.2 years met the inclusion criteria and took part in the study. Fifty-one patients received treatment with the three desensitizing agents while 17 were treated with the placebo. The OHIP-14 scores obtained were evaluated in three ways: the prevalence of impact, the extent of impact, and change in severity of impact. The prevalence of impact was calculated as the number of patients who responded with "very often" or "fairly often" to all the 14 questions in the OHIP-14 questionnaire expressed as a percentage of the total number of patients in the study. There was a significant reduction in the prevalence of impact after treatment (0.9%) for patients treated with the desensitizing agents compared to baseline (24.7%), $P < 0.05$, [Table 1]. No appreciable change was noted in the values for patients who received the placebo (22.6%–21.9%).

Table 1: Percentage of patients who expressed impact of dentine hypersensitivity on oral health-related quality of life based on the 14 items rated at baseline and 4 weeks posttreatment

Domains (n=51)	Items	Percentage at baseline	Percentage at 4 weeks	P
Functional limitation	P1	9.8	0	0.000
	P2	11.8	2.0	0.000
Physical pain	P3	37.5	0	0.000
	P4	64.7	2.0	0.000
Psychological discomfort	P5	39.2	0	0.000
	P6	23.5	0	0.000
Physical disability	P7	37.2	2.0	0.000
	P8	45.1	2.0	0.000
Psychological disability	P9	13.7	0	0.000
	P10	13.7	0	0.000
Social disability	P11	17.6	0	0.000
	P12	9.8	0	0.000
Handicap	P13	11.9	3.9	0.000
	P14	9.8	0	0.000
Total		24.7	0.9	0.000

The extent of impact of DH on OHRQoL was calculated as the mean number of items reported as "very often" or "fairly often" by the patients. The value of the extent of impact at baseline, 12.9 ± 4.1, reduced significantly ($P < 0.001$) to 0.4 ± 0.2 at 4 weeks posttreatment for patients treated with the desensitizing agents. Patients in the control group perceived little or no difference in the extent of impact, 11.7 ± 3.8 – 12.4 ± 4.6 ($P > 0.05$). The severity was determined by the OHIP-14 mean score for the seven domains. There was a progressive and statistically significant reduction in the mean domain and overall scores for patients in the experimental groups [Table 2].

Post hoc analysis (Bonferroni) showed that the significant reduction in the mean scores occurred within the domains and overall OHIP-14 scores for all comparisons at the different review periods ($P < 0.05$). Comparison of the mean scores revealed no significant difference from baseline through the posttreatment periods for patients who received the placebo ($P > 0.05$) [Table 3].

There was a significant improvement in all the domains and total OHIP-14 mean score of age group < 30 years 4 weeks posttreatment ($P < 0.05$). In contrast, only one domain (psychological discomfort) showed significant improvement in the age group of 50–59 years posttreatment ($P < 0.05$) [Table 4]. Analysis of variance showed no significant variation in the baseline and posttreatment mean scores of the patients irrespective of the age group in all the domains and total OHIP-14.

Irrespective of gender, all domains and overall OHIP-14 scores showed significant improvements 4 weeks posttreatment compared to baseline. However, there was no gender difference in the response of the patients to all the domains and total OHIP-14 at both baseline and 4 weeks posttreatment ($P > 0.05$) [Table 5].

Using Spearman correlation, a weak but significant association was found between age and the OHIP-14 scores of the patients at baseline (r = -0.245, p = 0.044). A significantly weak association was also found between the number of hypersensitive teeth and OHIP-14 scores at baseline (r = 0.315, P = 0.009). Linear regression analysis revealed that the impact of DH on the OHRQoL of the patients as measured by OHIP-14 may be explained by the age of patients and number of hypersensitive teeth [Table 6].

Discussion

This study used the OHIP-14, a generic questionnaire to assess the OHRQoL among patients presenting with DH before and after treatment. This tool was chosen over the 49-item OHIP (OHIP-49) and the only available and relatively new specific QoL measure for DH, the 48-item Dentine Hypersensitivity Experience Questionnaire.[13,16] This choice was based on the extensive use of the OHIP-14 in the assessment of oral conditions as well as its short form

Table 2: Analysis of variance of the mean scores of the domains and overall Oral Health Impact Profile with 14 items at baseline and over the recall periods after treatment

Domains (n=51)	Mean±SD of weighed scores before and after treatment				*F*	*P*
	Baseline	1 week	2 weeks	4 weeks		
Functional limitation	0.90±0.96	0.30±0.58	0.21±0.52	0.09±0.31	16.31	0.000
Physical pain	2.60±0.99	1.31±0.85	0.89±0.77	0.50±0.61	62.00	0.000
Psychological discomfort	2.01±1.07	1.09±0.87	0.51±0.69	0.26±0.46	47.57	0.000
Physical disability	2.10±1.11	1.12±0.89	0.73±0.80	0.30±0.58	40.15	0.000
Psychological disability	1.27±1.09	0.52±0.64	0.25±0.50	0.13±0.35	27.11	0.000
Social disability	0.79±0.91	0.34±0.50	0.20±0.50	0.10±0.35	13.054	0.000
Handicap	0.91±1.07	0.37±0.66	0.18±0.52	0.08±0.35	14.159	0.000
Total	10.56±5.55	5.06±4.15	2.97±3.66	1.46±2.56	47.587	0.000

SD – Standard deviation

Table 3: Oral Health Impact Profile scores before and after treatment with placebo

Domains (n=17)	Mean±SD of weighed scores before and after treatment				*F*	*P*
	Baseline	1 week	2 weeks	4 weeks		
Functional limitation	0.33±0.51	0.30±0.44	0.27±0.45	0.27±0.45	0.193	0.899
Physical pain	2.17±0.55	2.23±0.59	2.02±0.74	2.03±0.86	0.140	0.334
Psychological discomfort	0.77±0.80	0.72±0.76	0.75±0.78	0.81±0.87	0.113	0.953
Physical disability	1.94±0.73	2.03±0.76	2.06±0.73	2.00±0.88	0.221	0.881
Psychological disability	0.47±0.53	0.42±0.50	0.31±0.50	0.34±0.50	1.062	0.366
Social disability	0.04±0.13	0.04±0.13	0.02±0.09	0.00±0.00	1.785	0.151
Handicap	0.27±0.48	0.23±0.48	0.23±0.48	0.20±0.47	0.185	0.907
Total	6.00±3.11	5.98±3.04	5.66±3.01	5.66±3.25	0.193	0.901

SD – Standard deviation

containing questions derived from representative patient groups which makes it suitable for clinical use.[13]

None of the patients in this study reported an OHIP-14 score of zero. This means DH did have an impact on their QoL. The results revealed that age of the patients and the number of hypersensitive teeth are predictors of pretreatment OHRQoL. It showed an inverse relationship between age and impact of DH on OHRQoL and a direct one between the number of hypersensitive teeth and OHRQoL, an indication that the OHRQoL is more affected among those with more number of hypersensitive teeth and those in the younger age groups. It may be that the process of attrition, erosion, and abrasion in the older individuals would have resulted in secondary dentine formation with a reduction in the number and diameter of the patent dentinal tubules and thus lesser symptoms and impact. Furthermore, the older individuals may have learned to avoid triggering stimuli in their daily activities. In addition, DH has been documented to be more common among the younger age group.[10,17] Bekes *et al*. also in a study involving patients presenting with DH reported an increasing impact among the younger age group up to the age of 50 years after which the impact decreased into the older age groups.[9]

All items of the OHIP-14 and the overall scores showed statistically significant improvement in the prevalence of impact of DH on OHRQoL at 4 weeks posttreatment among the patients treated with the desensitizing agents. Also statistically significant is the difference in the extent of impact of DH on OHRQoL from baseline to 4 weeks posttreatment among the patients. At the posttreatment phase, the handicap domain was observed to have the highest prevalence of impact. This may be due to the inability of the patients to take foods and drinks of their choice, and may thus account for the patients feeling "less satisfied with life generally." It would have been enlightening to compare the baseline prevalence of impact (24.7%) in these patients with prevalence results from the general population, but presently there is no data from any Nigerian study on the prevalence of impact of oral health on QoL. There is also paucity of data in the literature, and hence more studies should be done to evaluate the impact of oral health and DH on QoL.

Improvement in severity of impact was observed to be statistically significant in all the domains and in the total of the OHIP-14 scores at 4 weeks posttreatment, that is, the OHRQoL of the patients did get better after treatment. This improvement was observed as a decrease in the OHIP-14 mean score from baseline through the different posttreatment intervals. Lima *et al*. reported similar findings of significant reduction in OHIP-14 scores among patients with DH 180 days after treatment with laser and cyanoacrylate.[18] In our study, assessment of the severity of impact among the

Table 4: The effect of age on the oral health-related quality of life at pre- and post-treatment phases among the patients

Domains (n=51)	Mean score±SEM				*F*	*P*
	20-29	30-39	40-49	50-59		
Prefunctional limitation	1.07±0.21	0.87±0.23	0.80±0.35	0.37±0.48	0.65	0.587
Postfunctional limitation	0.10±0.04	0.12±0.12	0.00±0.00	0.12±0.12	0.35	0.791
t, *P*	4.96, 0.00	2.96, 0.01	2.28, 0.05*	1.00, 0.39*		
Prephysical pain	2.89±0.20	2.37±0.29	2.56±0.29	2.07±0.55	1.25	0.301
Postphysical pain	0.44±0.11	0.50±0.18	0.50±0.18	0.83±0.42	0.43	0.731
t, *P*	13.9, 0.00	6.72, 0.00	11.2, 0.00	1.52, 0.23*		
Prepsychological discomfort	2.27±0.25	1.82±0.27	1.89±0.34	1.65±0.32	0.76	0.521
Postpsychological discomfort	0.28±0.09	0.35±0.14	0.05±0.04	0.36±0.36	1.04	0.382
t, *P*	7.73, 0.00	5.75, 0.00	5.38, 0.00	6.17, 0.01		
Prephysical disability	2.52±0.23	1.68±0.25	2.31±0.27	1.02±0.73	3.71	0.018
Postphysical disability	0.28±0.09	0.35±0.14	0.05±0.04	0.36±0.36	1.04	0.383
t, *P*	9.62, 0.00	7.43, 0.00	8.63, 0.00	0.81, 0.48*		
Prepsychological disability	1.50±0.25	1.23±0.29	1.00±0.28	0.80±0.46	0.76	0.517
Postpsychological disability	0.21±0.09	0.37±0.20	0.40±0.16	0.25±0.25	0.32	0.807
t, *P*	4.98, 0.00	2.52, 0.02	2.85, 0.02	1.45, 0.24*		
Presocial disability	1.20±0.23	0.47±0.16	0.50±0.23	0.59±0.23	2.81	0.050
Postsocial disability	0.05±0.50	0.17±0.14	0.00±0.00	0.00±0.00	1.02	0.391
t, *P*	5.16, 0.00	1.93, 0.07*	2.16, 0.06*	1.07, 0.36*		
Prehandicap	1.28±0.25	0.62±0.21	0.84±0.39	0.25±0.25	1.84	0.153
Posthandicap	0.31±0.21	0.31±0.20	0.51±0.29	0.00±0.00	0.632	0.598
t, *P*	5.16, 0.00	2.72, 0.02	2.14, 0.06a	1.00, 0.39*		
Pre-OHIP	12.74±1.2	9.07±1.08	5.67±1.79	6.76±2.34	2.31	0.088
Post-OHIP	1.42±0.43	2.07±0.96	0.98±0.38	2.12±1.71	0.41	0.747
t, *P*	9.40, 0.00	7.17, 0.00	5.34, 0.00	1.66, 0.195		

*$P \geq 0.05$. SEM – Standard error of mean, OHIP – Oral Health Impact Profile

patients treated with placebo did not show any appreciable reduction in all the domains and total score of the OHIP-14. Using the German version of the OHIP-49 questionnaire, Bekes *et al*. found a statistically significant ($P < 0.001$) difference in the mean score of patients seeking treatment for DH when compared to a sample of the general German population.[9] This indicated that patients with hypersensitive teeth reported considerably more impaired OHRQoL than patients in the general population. In a separate study and also in a German population, a comparison was made using OHIP-49 before and after treatment in patients with DH.[19] They noticed a considerable improvement in OHRQoL at 21 days after treatment with a mean change of 13.5, which was statistically significant. In the present study, using the OHIP-14, a mean change of 9.1 was observed at 4 weeks posttreatment. Although Bekes *et al*.,[9,19] used the long version of the OHIP as opposed to the short version used in our study, both studies did however show impact of DH on OHRQoL as well as improvement in the OHRQoL after treatment.[9,19]

Although the younger patients (<50 years old) had a higher impact on their QoL, they were observed to have a statistically significant improvement in OHRQoL when compared to the older patients, as shown by the total OHIP-14 mean scores. The older age group (above 50 years) showed no significant improvement at the posttreatment phase in all the domains of the OHIP-14 except psychological discomfort. This is in contrast to findings of Bekes *et al*. where there was little difference among the age groups in the pre- and post-treatment period results of the OHIP-49.[19] The reason for the findings in our study is not known but could be due to the higher prevalence of periodontal diseases and gingival recession and subsequently DH among the elderly. Dababneh *et al*. did suggest that the DH associated with periodontal disease may have a different etiology, possibly related to bacterial penetration of the dentinal tubules.[17] This may explain why the QoL did not show significant improvement among the older patients except for psychological discomfort.

At the pre- and post-treatment phases, there was no significant difference between the OHIP-14 scores between the genders. In contrast, Bekes *et al*. reported higher OHIP scores among the female patients seeking treatment for DH. They however also found that the OHIP scores were higher in males in the general German population, and thus concluded that gender influence is dependent on the population studied.[9] The major limitation of this study was the lack of relevant literature on the OHRQoL among patients suffering from DH, which limited the extensive comparisons of the result.

Table 5: Effect of gender on oral health-related quality of life pre- and post-treatment

Domain (n=51)	Mean score±SEM		t	P
	Male	Female		
Prefunctional limitation	0.82±0.18	1.00±0.20	0.43	0.307
Postfunctional limitation	0.08±0.01	0.09±0.04	0.03	0.955
t, P	3.39, 0.001	4.77, 0.000		
Prephysical pain	2.48±0.20	2.75±0.18	0.93	0.339
Postphysical pain	0.47±0.12	0.54±0.13	0.184	0.669
t, P	10.65, 0.000	10.69, 0.000		
Prepsychological discomfort	2.03±0.21	2.07±0.20	0.06	0.805
Postpsychological discomfort	0.25±0.08	0.28±0.10	0.103	0.759
t, P	8.63, 0.000	7.55, 0.000		
Prephysical disability	1.94±0.19	2.30±0.25	1.280	0.264
Postphysical disability	0.25±0.08	0.29±0.10	0.103	0.750
t, P	10.04, 0.000	7.281, 0.000		
Prepsychological disability	1.29±0.21	1.31±0.24	0.075	0.785
Postpsychological disability	0.28±0.13	0.35±0.08	0.328	0.569
t, P	4.45, 0.000	3.87, 0.001		
Presocial disability	0.66±0.13	0.84±0.19	1.250	0.268
Postsocial disability	0.10±0.07	0.14±0.06	0.016	0.900
t, P	4.26, 0.000	3.68, 0.001		
Prehandicap	0.84±0.19	1.00±0.24	0.271	0.605
Posthandicap	0.09±0.07	0.10±0.05	0.174	0.678
t, P	4.13, 0.000	4.06, 0.000		
Pre-OHIP	10.09±0.97	11.21±1.29	0.47	0.494
Post-OHIP	1.59±0.56	1.61±0.48	0.01	0.984
t, P	9.52, 0.000	7.40, 0.000		

SEM – Standard error of mean, OHIP – Oral Health Impact Profile

Table 6: Regression analysis of the influence of the variables in the equation on the Oral Health Impact Profile with 14 items scores at baseline

Variables	Unstandardized coefficients		Standardized coefficients	t	Significant
	B	SE	β		
Constant	9.350	2.133		4.384	0.000
Gender	0.229	1.256	0.021	0.182	0.856
Age	−0.856	0.351	−0.290	−2.437	0.018
Duration of sensitivity	−0.916	1.104	−0.100	−0.830	0.410
Number of teeth involved in sensitivity	0.563	0.166	0.400	3.385	0.001

R^2=0.29. SE – Standard error

Conclusions

This study concluded that DH had a significant negative impact on the OHRQoL of patients suffering from the condition. The severity of impact is directly related to the number of hypersensitive teeth but inversely to age. Treatment resulted in significant improvement in the prevalence of impact, extent of impact, and severity of impact of DH on OHRQoL. The findings from this study may be used to propose a recommendation for the incorporation of QoL measure into pre- and post-treatment assessment of DH in addition to the other subjective clinical measures.

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Conflicts of interest

There are no conflicts of interest.

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