Research Article
J Nepal Soc Perio Oral Implantol. 2022 Jan-Jun;6(11):24-8.

Submitted: Jan 25, 2022
Accepted: Jul 10, 2022
Published: Aug 05, 2022

Periodontists' Knowledge, Perception, and Professional Behaviour Regarding Patients' Psychosocial Factors and Treatment Outcomes in Nepal

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ABSTRACT

Introduction: Psychosocial factors when present in patients affect their treatment decision making and prevent them from seeking dental care. It also plays an important role in predicting the severity of pain, periodontal disease, and wound healing. Periodontists can provide the best treatment plan but may fail to obtain expected outcomes as patients may not follow the recommendation made by them.

Objective: To assess knowledge, perception and professional behaviour of Periodontists' regarding patients' psychosocial factors and responses to periodontal treatment in Nepal.

Methods: A descriptive, online cross-sectional survey using Google Forms was conducted among the Periodontists practicing in Nepal from June 2021 to August 2021. A questionnaire developed by Kloostra et al. was modified according to our practice setup and used for the survey. A total of 48 periodontists practicing in the country responded to the questionnaire. Results were analysed using SPSS v.11.5. A p value <0.05 was considered statistically significant at 95% confidence interval.

Results: A significant difference in response for relation with perceived pain, perception of pain, wound healing and wound integrity between stress and depression was observed in this study. There was a significant difference (P=0.001) in preparedness for communicating with patients after postgraduate training and after undergraduate training.

Conclusions: Periodontists agreed that there is role of stress, anxiety and depression in their patients' responses to treatment. The lack of preparation at dental school to consider impact of psychosocial factors when treating patients is highlighted.

Keywords: Knowledge; Periodontists; Psychosocial factors.

INTRODUCTION

Periodontal disease is a multifactorial disease where many underlying factors affect treatment. Psychosocial factors can influence periodontal conditions possibly by modification of patients' behaviour (negligent oral hygiene, smoking or eating habits) with negative reflexes to immune functions which are harmful to periodontal health.[1] Stress also plays role in predicting pain severity, periodontal disease[2] and wound healing.[3,4] Thus patients with anxiety often experience greater post-operative pain.[5] The association of psychosocial factors and periodontal diseases and its effect on treatment outcome has been studied[6] where it was found that patient with depression had a negative effect on treatment outcome after one year of periodontal treatment.[7]

Although periodontists can provide the best treatment, they may fail to obtain expected outcomes, as patients with psychosocial factors may not follow their recommendation. Research has also shown relationship between the quality of dental education and future professional attitudes and behaviours of practitioners.[8] It seems crucial to explore role of dental education. Hence, aim of this study was to assess knowledge, perception, and professional behaviour of Periodontists' regarding patients' psychosocial factors and responses to periodontal treatment in Nepal and how well their education prepared them to consider these issues while treating their patients.

METHODS

This descriptive, online cross-sectional survey was conducted from 2021 June to 2021 September among all the Periodontists of Nepal to find out their knowledge,

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Citation
Adhikari K, Shrestha S, Baral D. Periodontists' Knowledge, Perception, and Professional Behaviour Regarding Patients' Psychosocial Factors and Treatment Outcomes in Nepal. J Nepal Soc Perio Oral Implantol. 2022 Jan-Jun;6(11):24-8.

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perception, and professional behaviour regarding patients' psychosocial factors and treatment outcomes. Ethical clearance for the study was obtained before conducting the study from the Institutional Review Committee, B. P. Koirala Institute of Health Sciences, Dharan, Sunsari, Nepal (Ref. 615/077/078-IRC).

A sample size of 71 was calculated using the formula, $n=z^2pq/d^2$; where Z=1.96 at 95% confidence interval, p=85.4 % (periodontists think of using pharmacological agents for managing anxious patients) with reference to the study done by Kloostra et al.,[9] q=1-p and d= margin of error=8.5 (10%). At the time of sample size calculation, a total of 54 periodontists were registered in the Nepal Medical Council. Therefore, the sample size had to be adjusted for finite population and 15% of non-response was added and adjusted sample size became 48. Convenience sampling method was used for sampling.

Questionnaire by Kloostra et al.[9] was modified according to the study site practice setup. Face and content validity were done by experts. Internal consistency was determined by using Cronbach's alpha for reliability. Periodontists with a registered Nepal Medical Council number were included in the study. Periodontists not willing to participate in the study and who did not fill the questionnaire completely were excluded. A consent form was attached as a first page along with the information sheet and the participants who agreed to be a part of this study responded to the questionnaire. A link to the questionnaire was generated through Google Forms (Alphabet Inc., USA) and shared via various social media platforms like Viber and Facebook Messenger to all the participants. A reminder message was again sent to all the participants through the same medium.

First part of the questionnaire was regarding socio-demographic and academic background of the periodontists. One main question with two sub questions regarding continuing dental education (CDE) on communication with patients was also included (Response: Yes /No). There were two questions on their preparedness during undergraduate and postgraduate training to communicate with special needs patients also added (Response: 5-point Likert scale ranging from 1= not at all to 5 = very well. Second part consisted of 18 statements based on knowledge specifically concerning the impact of anxiety, stress and depression on patients' responses to periodontal treatment (Response: 5-point Likert scale ranging from 1= disagree strongly to 5 = agree strongly). Third part consisted of five questions related to their professional behaviour when treating patients with psychosocial factors (Response: Yes /No).

The form was closed for responses after the data collection period was over.

Data collected was entered in Microsoft excel 2007 and exported into Statistical Package for Social Sciences (SPSS) for Windows, Version 11.5. Chicago, SPSS Inc. for statistical analysis. The descriptive statistics were calculated as percentage, mean, standard deviation(SD) along with tabular and graphical presentation. For the inferential statistics, one-way analysis of variance (ANOVA) was applied to find out significant differences between their knowledge and perception of psychosocial factors in their patients and outcomes of periodontal treatment. Paired t test was applied for their levels of knowledge in undergraduate and postgraduate education at 95% CI, where level of significance is considered as $P < 0.05$.

RESULTS

Forty-eight periodontists responded to the questionnaire. Mean age of the participants was 36.56±6.01 years. Majority of the study participants were female (28, 58.3%, Table 1).

In regard to their practice setup, 23 (47.9%) were practicing in private hospital, 17 (35.4%) were in government hospitals, 4 (8.3%) in both solo and group private practice. Their location of practice was 1 (2.1%) in rural areas, 7 (14.6%) in suburbs, 20 (41.7%) in both moderate sized city and urban areas of the country. They are mostly concentrated (24, 50%) in Province-3 of the country, followed by 8 (16.7%) in Province-1, and 2 (4.2%) in Province-4. They are equally distributed (4, 8.3%) in Province-2 and -5. While there are no periodontists in Province-6, only 1 (2.1%) is present in Province-7. Majority of the participants (26, 54.2%) had not attended a CDE program within the past two years on communicating with patients. Only 23 (47.9%) think it to be useful. While, most participants (30, 62.5%) believed that CDE has an impact on the management of patients.

Difference in response for stress, anxiety, and depression across different domains along with pairwise comparison of the same was done (Table 2, 3). A statistically significant difference in response was found for relation with perceived pain (P=0.006) and perception of pain (P=0.035) for different psychosocial factors. Post hoc pairwise comparison showed statistically significant difference for relation with perceived pain and perception of pain between stress and depression P=0.005 and P=0.039 respectively. A statistically significant difference in response for stress, anxiety, and depression in correlation with wound healing (P=0.001) and wound integrity (P=0.022) was also found. Post hoc pairwise

Table 1: Demographic characteristics of Periodontists of Nepal.

Characteristics		Number of periodontists (%)
Gender	Female	28 (58.3)
	Male	20 (41.7)
Age	≤35 years	23 (47.9)
	>35 years	25 (52.0)
	Experience	
	≤10 years	27 (56.3)
	>10 years	21 (43.8)
Country of undergraduate study	Nepal	36 (75.0)
	India	7 (14.6)
	Bangladesh	4 (8.3)
	Pakistan	1 (2.1)
Country of postgraduate study	Nepal	37 (77.1)
	India	8 (16.7)
	Philippines	1 (2.1)
	China	2 (4.2)
Year of postgraduate study	Before 2000	1 (2.1)
	2000-2010	4 (8.3)
	2011-2021	43 (89.6)

Table 2: Comparison of response scores for different psychosocial factors across different domains.

Parameter	Stress (n=48)	Anxiety (n=48)	Depression (n=48)	Total (N=144)	P value
Confidence	4.02±0.758	4.02±0.758	3.88±0.937	3.97±0.819	0.605
Relation with perceived pain	4.50±0.652	4.31±0.829	3.98±0.887	4.26±0.819	0.006
Perception of pain	4.31±0.829	4.23±0.722	3.88±1.024	4.14±0.882	0.035
Use of pain medication	4.13±0.890	4.17±0.859	3.79±1.110	4.03±0.968	0.114
Correlation with wound healing	4.48±0.714	3.92±0.919	3.75±1.000	4.05±0.934	0.001
Wound integrity	4.25±0.812	3.71±1.202	3.79±1.010	3.92±1.041	0.022
One-way ANOVA.					

Table 3: Pairwise comparison of response for different psychosocial factors across different domains.

	Pairwise comparison	Mean difference	95% CI	P value
Relation with perceived pain	Stress-depression	0.521	0.14-0.91	0.005
Perception of pain	Stress-depression	0.438	0.02-0.86	0.039
Correlation with wound healing	Stress-anxiety	0.563	0.13-0.99	0.006
	Stress-depression	0.729	0.30-1.16	0.001
Wound integrity	Stress-anxiety	0.542	0.05-1.04	0.028
Tukey's honestly significant difference test.				

Table 4: Level of education of periodontists and their preparedness for communication with patients.

Education level	Mean±SD	95% CI	P value
Postgraduate	3.94±1.060	0.14-0.91	0.001
Undergraduate	3.33±1.018	0.02-0.86	
Paired t test.			

Table 5: Professional behaviour of the periodontists when dealing with patients with psychosocial factors, n (%).

Professional behaviour of periodontists	Multiple response
Special scheduling arrangements	21 (43.8)
Special instructions before treatment	28 (58.3)
Special visual aids for communication	14 (29.2)
Special office setup	5 (10.4)
Use of pharmacological behaviour management, such as nitrous oxide inhalation	3 (6.3)
Are there any special technique you use with special needs patients?	8 (16.7)

comparison for wound integrity showed statistically significant difference between stress and anxiety (P=0.028).

A paired samples t-test was carried out to compare level of education of periodontists and their preparedness for communicating with patients. There was a significant difference (P=0.001) in preparedness after postgraduate training (3.94±1.060) and after undergraduate training (3.33± 1.018; P=0.001, Table 4).

The professional behaviour of the periodontists when dealing with patients with psychosocial factors. They rely more on special instructions before treatment (28, 58.3%) and less on use of pharmacological behaviour management, such as nitrous oxide inhalation (3, 6.3%) when dealing with such patients (Table 5).

DISCUSSION

All 48 periodontists responded to the questionnaire._The response rate was 100% which is very high when compared to with that of a similar study by Kloostra et al.[9] Participation of the periodontists shows their keen interest in the topic. Therefore, the findings can be assumed to be a close estimate of awareness and significance of psychosocial factors when treating patients by Periodontists in Nepal. Their age ranged from 29 to 56 years, while most of them being in their thirties. More than 50% periodontists had less than 10 years of experience, which shows that Nepal is in the beginning phase of postgraduate course in periodontology. Most of them have completed both their undergraduate and postgraduate training in Nepal itself. There has been a remarkable increase in number of periodontists in Nepal in the last decade, as there was limited provision for postgraduate study then, in Nepal. Practicing in private hospitals is more prevalent among them, this may be due to lack of adequate positions for dental faculty in the government health plan of Nepal. Their distribution can also be seen in the developed areas of the country rather than the rural areas with a greater number of them practicing in province 3.

The number was comparable among periodontists who did or did not attend continuing dental education program on communicating with patients within the past two years. They also believed that CDE had an impact on the management of patients. Therefore, the role of continuing dental education on patient communication, its impact and usefulness in daily practices of periodontists cannot be overlooked during their training and post training years as well.

Patients' pain perception, their use of pain medication, and wound healing is affected by high levels of anxiety, stress, and depression. [4,10-12] Periodontists in Nepal strongly agreed that there is a relation with perceived pain and wound healing when their patients are stressed, anxious and depressed. They also believed that presence of stress, anxiety and depression in patients affect perception of pain and better wound integrity occurs in the absence of these factors. They were not confident in their ability to perceive stress, anxiety and depression in their patients and did not believe that use of pain medication by their patients is influenced by the presence of psychosocial factors. A significant difference in response was evident for stress than anxiety and depression in relation with perceived pain, perception of pain, wound healing and wound integrity. In contrast, depression was found to have the most significant impact, when the relationships among anxiety, stress, and depression was investigated with pain perceptions; the use of pain medication; and wound healing following periodontal surgery.[13] Therefore, it seems mandatory to educate periodontists about the significance of these psychosocial factors on patients' response to treatment.

In a study with dental students and general dentists, a positive relationship was seen between their self-perceived quality of education regarding treating patients from all segments of society.[14] A significant difference was found when the level of education of periodontists and their preparedness for communicating with patients was compared in this study. Their preparedness increased after their post graduate training. It also highlights the need of inclusion of these topics in dental school curricula at the undergraduate level itself. However, practitioners need to update their information about these topics from time to time. Therefore, it seems important to develop continuing education programs and educational materials about this topic proper that can be availed easily by busy practitioners at any given time.

A study had reported a lack of knowledge and clinical experiences in dentists concerning providing care and treatment for patients with special needs during dental school.[15] In regard to their professional behaviour in this study, periodontists relied more on special instructions before treatment (58.3%) when they recognised the underlying psychosocial factors in patients. At the very beginning of the treatment, ways to reduce anxiety, stress, and depression in patients should be considered and various pharmacological and non-pharmacological techniques could be used to reach this objective. But it was observed

to be very less frequently practiced by the periodontists of Nepal. Therefore, providing knowledge and skills needed to respond in the best professional way when treating patients with anxiety, stress, and depression for effective treatment outcomes must be emphasised. Subjective response may not reflect the true practice of periodontists is one limitation of this study.

CONCLUSIONS

Periodontists agreed that there is role of stress, anxiety, and depression in their patients' responses to treatment. They seem less confident to detect and consider those factors while treating patients. The lack of preparation at dental school to consider impact of psychosocial factors when treating patients is highlighted. Regular CDE programs on this topic proper is the need of the hour. Further, future research should focus on developing and practicing patient targeted interventions for managing psychosocial factors to improve overall treatment outcomes in periodontal practice.

ACKNOWLEDGMENTS

The authors would like to acknowledge Prof. Dr. Shivalal Sharma, Head, Department of Periodontology and Oral Implantology and Dr. Ujwal Gautam, Resident in Public Health Dentistry, College of Dental Surgery, B. P. Koirala Institute of Health Sciences, Dharan, Sunsari, Nepal. The authors are also grateful to all the Periodontists of Nepal for their active participation.

Conflict of Interest: None.

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