

# Assessment of Oral Hygiene Instructions and Motivation in Patients by General Dental Practitioners and Periodontists

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## ABSTRACT

**Introduction:** Practicing good oral hygiene behaviour is essential for maintenance of optimal dental condition in patients and prevention of periodontal disease. Oral hygiene instructions and patient motivation are essential to establish good oral health in patients, even after providing optimal service by the dental professionals. Hence, delivering oral hygiene instructions and motivating patients to follow them and maintain good oral hygiene behaviour is an important part of treatment plan by all dental professionals.

**Objective:** To assess and compare oral hygiene instructions and motivation in patients by general dental practitioners (GDPs) and periodontists.

**Materials and Method:** An analytical cross-sectional online survey using Google Forms was conducted among GDPs and periodontists practicing in Nepal from 2021 July to 2021 October. After ethical clearance from BPKIHS, a self-administered questionnaire, developed by Thevissen et al., was modified according to study site practice setup and used in the survey. Convenience sampling technique was used. A total of 92 GDPs and 26 periodontists participated in this survey from all over Nepal. Results were analysed using SPSS v.11.5. P value <0.05 was considered statistically significant at 95% confidence interval.

**Result:** Demographic data along with a statistically significant difference was found between GDPs and periodontists in regard to their age (P = 0.001), work setup (P = 0.003), and duration of practice (P = 0.001). Oral hygiene instructions and patient motivation by periodontists and GDPs showed no significant difference.

**Conclusion:** Present study reports no difference in provision of oral hygiene instructions and patient motivation in GDPs and Periodontists.

**Keywords:** General dental practitioners; motivation; nepal; oral hygiene; periodontists.

## INTRODUCTION

Practicing good oral hygiene behaviour and professional preventive care is essential for the management of caries and periodontitis in general population.<sup>1,2</sup> Dental professionals concentrate more on the curative part of the disease rather

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than ensuring patient adherence to oral hygiene behaviour as a priority<sup>3</sup> which unfortunately affects oral health.<sup>4</sup> General dental practitioners (GDPs) and Periodontists are responsible for providing preventive therapy. Oral hygiene instructions (OHI) and patient motivation (PM) are essential to establish good oral health in patients, even after providing optimal service by all dental professionals.

Poor oral hygiene behaviour at home by the patient may still lead to deterioration or treatment failure.<sup>5</sup> Therefore, dental professionals should dedicate sufficient time in delivering oral hygiene instructions and motivating patients to follow them and maintain good oral hygiene behaviour as an important part of treatment plan.<sup>6</sup> Hence, this study aimed to assess and compare oral hygiene instructions and motivation in patients by GDPs and Periodontists in their routine practice.

## MATERIALS AND METHOD

This analytical, online cross-sectional survey was conducted from 2021 July to 2021 October. Ethical clearance for the study was obtained from the Institutional Review Committee, B.P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Sunsari, Nepal (Ref. 637/077/078-IRC). A sample size of approximately 72 in each group was calculated using the formula,  $n = z^2pq/d^2$ ; where  $z = 1.96$  at 95% confidence interval,  $p = 0.568$  (56.8% of general dental practitioners and 100% in periodontists considered demonstration);<sup>7</sup>  $q = 1-p$ ; and  $d$  (margin of error) = 0.20 (20% of  $p$ ). Adding 10% to the calculated sample size to reduce various biases it became approximately 80 in each group but as the number of periodontists in Nepal are approximately 60 in number. Therefore, all periodontists were included in the study. Thus, sample size became 140. Convenience sampling method was used for sampling. The GDPs and Periodontists who are currently practicing with Nepal Medical Council registration number were included in this study. The GDPs and Periodontists who did not want to participate and did not fill the questionnaire completely were excluded from the study.

The questionnaire developed by Thevissen et al.<sup>7</sup> consisting of multiple-choice questions was

modified and used according to study site setup. 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. The internal consistency was determined by using Cronbach's alpha for reliability; face and content validity was done by experts. 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. Questionnaire consisted of six items on demographics, twelve items on oral hygiene instructions, and seven items on patient motivational action distributed to general practitioners and periodontists in Nepal.

Data collected were imported in Microsoft Excel Sheet 2007 and exported into SPSS statistics for Windows, version 11.5. (SPSS Inc., Chicago Ill., USA) for statistical analysis. For descriptive statistics, percent along with tabular presentation was made. For inferential statistics, Chi-square test was applied to find out the significant association regarding oral hygiene instructions and patient motivation with general dental practitioners and periodontists at 95% confidence interval.

## RESULT

A total of 118 dental professional responded to the questionnaire, which included 26 (48%) of the total Periodontists in Nepal and 92 GDPs. The demographic data along with a statistically significant difference was found between the general dental practitioners and periodontists in regard to their age ( $P = 0.001$ ), work setup ( $P = 0.003$ ) and duration of practice ( $P = 0.001$ , (Table 1).

The provision for oral hygiene instruction was not similar among GDPs and Periodontists, with GDPs more likely to refute role of any factors that complicate oral hygiene instructions (Table 2). Similarly, GDPs believe that type of toothbrush matters for oral hygiene instructions and were less likely to advise use of electric toothbrush as compared to the periodontists.

Repeating instructions in absence of compliance

**Table 1: Distribution of demographics characteristics among general dental practitioners and periodontists, n (%).**

Demographic variables (N = 118)		General dental practitioners	Periodontists	P value
Age	<35 years	89 (89.00)	11 (11.00)	<0.001
	35-54 years	3 (16.70)	15 (83.30)	
Workload	<30 hours/week	33 (78.60)	9 (21.40)	0.999
	>30 hours/week	59 (77.60)	17 (22.40)	
Setup	Government hospital	18 (58.10)	13 (41.90)	0.003
	Private hospital/private practice	74 (85.10)	13 (14.9)	
Area	Rural	16 (76.20)	5 (23.80)	0.779
	Urban	76 (78.40)	21 (21.60)	
Duration of practice	<10 years	89	11	0.001
	≥10 years	3 (16.70)	15 (83.30)	
Chair assistance	With assistance	83 (81.40)	19 (18.60)	0.046
	Without assistance	9 (56.30)	7 (43.80)	

Chi-square test; Level of significance was set at P <0.05.

**Table 2: Response to questions on oral hygiene instruction among general dental practitioners and periodontists, n (%).**

	Questions	Answers	General dental practitioners N = 92	Periodontists N = 26	P value
OH1	How do you give oral hygiene instruction?	Demonstration Outside the mouth	41 (44.60)	12 (46.20)	0.999
		In-mouth	2 (2.20)	-	
		Combination of previous options	49 (53.30)	14 (53.80)	
OH2	I advise a minimum of two minutes of brushing twice daily	No	2 (2.20)	1 (3.80)	0.530
		Yes	90	25	
OH3	I advise brushing technique according to individual need of patients	No	4 (4.30)	2 (7.70)	0.612
		Yes	88 (95.70)	24 (92.30)	
OH4	Do you recommend fluoridated toothpaste for your patients?	No	1 (1.10)	-	0.999
		Yes	91 (98.90)	26 (100)	
OH5	When do you give interproximal hygiene instruction?	To every patient	35 (38.00)	13 (50.00)	0.506
		When I assume the patient will comply	56 (60.90)	13 (50.00)	
		When I have got some time left	1 (1.10)	-	
OH6	Is it difficult for you to reprimand patients on their home care?	No	43 (46.70)	11 (42.30)	0.824
		Yes	49 (53.30)	15 (57.70)	
OH7	Which factor complicates the provision of oral hygiene instruction?	There is no such factor	71 (77.20)	17 (65.40)	0.008
		Lack of time	6 (6.50)	8 (30.80)	
		Lack of patient's interest	7 (7.60)	-	
		Others	8 (8.70)	1 (3.80)	
OH8	Interproximal hygiene instruction is not so important	No	68 (73.90)	17 (65.4)	0.460
		Indeed	24 (26.1)	9 (34.60)	
OH9	For oral hygiene instruction the type of toothbrush does not matter	No	69 (75.00)	15 (57.70)	0.093
		Indeed	23 (25.00)	11 (42.30)	
OH10	I advise use of an electric toothbrush to my patients	No	88 (95.70)	21 (80.80)	0.024
		Yes	4 (4.30)	5 (19.20)	
OH11	Mouthwash must be prescribed for each patient	No	67 (72.80)	22 (84.60)	0.304
		Indeed	25 (27.20)	4 (15.40)	
OH12	Do you sell home-care products in your practice?	No	78 (84.80)	21 (80.80)	0.763
		Yes	14 (15.20)	5 (19.20)	

Chi-square test; Level of significance was set at P <0.05.

**Table 3: Response to questions on patient motivation among general dental practitioners and periodontists, n (%).**

	Questions	Answers	General dental practitioners N = 92	Periodontists N = 26	P value
PM1	I always give patients information about their periodontal condition	No	5 (5.40)	-	0.585
		Yes	87 (94.60)	26 (100)	
PM2	I always inform my patients about their periodontal condition	Verbally	91 (98.90)	24 (92.30)	0.122
		By using disclosing agents	1 (1.10)	2 (7.70)	
PM3	Do your efforts to motivate patients correlated with the results obtained	No	13 (14.10)	4 (15.40)	0.999
		Yes	79 (85.90)	22 (84.60)	
PM4	Do patients with poor oral hygiene show less respect for your work?	No	57 (62.00)	19 (73.10)	0.358
		Yes	35 (38.00)	7 (26.90)	
PM5	What if patients do not comply with your instructions?	I repeat over and over again	66 (71.70)	25 (96.20)	0.025
		I do not address the issue	14 (15.20)	1 (3.80)	
		I would refer to an auxiliary such as a dental hygienist	12 (13.00)	-	
PM6	Factor contributing most to the oral hygiene level of the patient?	Nurture	11 (12.00)	6 (23.10)	0.012
		Socio-economic status	57 (62.00)	7 (26.90)	
		Influence of partner	1 (1.10)	-	
		Influence of media	6 (6.50)	4 (15.40)	
		Influence of dentist	17 (18.50)	9 (34.60)	
PM7	What factor contributes most to motivate patients?	Patient-centred approach	29 (31.50)	13 (50.00)	0.296
		Patient's confidence in dentist	23 (25.00)	3 (11.50)	
		Fear of losing teeth	35 (38.00)	9 (34.60)	
		Persuasiveness of dentist	5 (5.40)	1 (3.80)	

Chi-square test; Level of significance was set at  $P < 0.05$ .

from patients was evident among GDPs and they considered socio-economic status as the factor contributing most to the oral hygiene level of their patient (Table 3).

## DISCUSSION

A total of 118 dental professionals participated in the present study, which included 92 GDPs and 26 Periodontists. The number of participating periodontists were less and represented 48% of the total periodontists in Nepal. Therefore, the groups of practitioners analysed in the present study could be considered as a representative. A self-reported questionnaire was used in this study and introduced the risk of bias as a result of socially desirable answers. Participants reported what they think they should do instead of what they actually did. Although anonymity of respondents was guaranteed, to reduce this possibility, results of this study should be interpreted with caution.<sup>8</sup>

The present study investigated and compared the attitude of general dental practitioners and periodontists towards oral hygiene instructions and patient motivational actions. A questionnaire by Thevissen et al.<sup>7</sup> was modified to retrieve information regarding their daily-practice situations. However, the comparison of both professionals did not demonstrate any difference in this study. A significant difference was observed with respect to their work setup and duration of practice with majority of both professional working with a chair-assistance.

It is a principal duty for every dental professional to deliver preventive counselling and oral hygiene information when needed.<sup>9</sup> For this, primary strategy is to focus on a patient-centred approach and counselling on OHI based on in-mouth demonstration and tailor-made reflection to establish a good oral health condition.<sup>10</sup> The results of the present study suggested that both the dental

professionals were adapting this technique. But different approaches to oral hygiene instructions were found, suggesting a divergence in instruction techniques.<sup>11</sup> Furthermore, findings suggested that the dental professionals primarily use a combination of instructional methods, as proposed in literature rather than a single-method strategy.<sup>12</sup> This could explain the experience of optimal results by both group of dental professionals which was reflected by their feeling that their efforts did match the outcome.

Interproximal hygiene instructions by both groups of professionals were given when they assumed compliance from patients in most of the cases. The level of difficulty to reprimand their patients on home care was also similar in both groups. Additionally, 1 (1.10%) of GDPs do not recommend fluoridated toothpaste for their patients. General dental clinics are focused to a greater extent on the financially more rewarding restorative treatments than on preventive oriented care.<sup>13</sup> But in this study, a higher proportion of general practitioners as compared to periodontists did not indicate lack of time as a complicating factor for giving oral hygiene instructions. Rather, they indicated lack of patient's interest as one of the complicating factor as compared to periodontists. Periodontists were more likely to advise electric toothbrushes to their patients as compared to GDPs. This may be due to the fact that periodontists are more aware about the indications and implications of electric toothbrushes.

The similarities in attitude about patient motivational actions between general dental practitioners and periodontists might be explained by the fact that both are aware of the need for patient compliance as an essential prerequisite to succeed in the non-surgical and surgical treatments of periodontal disease.<sup>14</sup> Both dental professionals reported that their efforts to motivate patients did correlate with the results obtained. When considering the factors contributing most to the oral hygiene level of the patient, greater number of GDPs found socio-economic status of the patient to play a role among others while most periodontists believe it is the influence of dentist that plays a role in it. Similarly, in responding to what if patients do not comply with your instructions, most GDPs and periodontists

preferred to repeat the instructions over and over again. But few GDPs also tend to refer such cases to an auxiliary such as dental hygienists as compared to periodontists.

With increase in the demand for preventive care, an improved personalised hygiene practice in older populations is helping them to retain their natural dentition for longer period of time. Although, most practitioners have claimed to spend enough time on patient counselling and guidance, but within the restricted time limits reserved for each patient.<sup>15</sup> This maybe is insufficient and ineffective when patients are in need of special care or require a customised approach.<sup>12</sup> Additionally, in Netherlands, preventive care, including oral hygiene instructions, patient counselling and even the follow-up sessions, is reimbursed and charged per unit of time.<sup>16</sup> The results of professionalisation of preventive care, are difficult to estimate but they are most rewarding on a long-term basis.<sup>17</sup>

## CONCLUSION

The present study has identified similarity in providing oral hygiene instructions and patient motivational actions between general practitioners and periodontists. Future research could investigate the preventive therapy actually provided in the clinic and focus on the treatment outcome. These studies should also address the patients' perspective, as the literature suggests the presence of a complex relationship between treatment approaches and patients' perceptions.

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