

## Scientific Research Report

## Career Satisfaction of Malaysian Dentists With Expanded Roles at a Specialist Clinic

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## ABSTRACT

**Objectives:** Public dentists interested in postgraduate studies were required to complete clinical attachments at the Malaysian Ministry of Health (MOH) Dental Specialist Clinic (DSC). This cross-sectional quantitative study aimed to explore career satisfaction (CS) and barriers perceived by Malaysian dentists at Malaysia's MOH DSC.

**Methods:** A total of 208 dentists from DSC nationwide completed an online questionnaire in June 2022. Demographic data and information on dentists' expanded roles were retrieved. Responses on dentists' satisfaction and perceived barriers were collected using a 5-point ordinal scale. Mann–Whitney *U* and Kruskal–Wallis tests were used to compare the mean rank differences for CS. Factors influencing CS were analysed using multiple logistic regression (MLR) ( $P < .05$ ).

**Results:** The mean age of the respondents was  $32.68 \pm 2.48$  years. Almost half (49.0%) of the respondents were attached to a non-hospital-based clinic. The majority (72.0%) of them were permanently attached to the DSC. About half of the dentists (51.0%) strongly agreed that they received no financial incentives for their expanded role at the MOH DSC. Dentists attached at a non-hospital-based clinic ( $P = .046$ ), working with more than 15 years of experience ( $P = .013$ ), and having 12 to 18 months' duration of attachment ( $P = .014$ ) were more satisfied. MLR analysis revealed that non-Malay respondents (odds ratio [OR], 1.54;  $P = .035$ ) and those who applied for scholarships more than 3 times (OR, 1.85;  $P = .050$ ) were more satisfied. In contrast, more than 19 months at the DSC decreased CS (OR, 0.44;  $P = .029$ ).

**Conclusions:** Despite having a similar organisational structure, DSC dentists had different satisfaction levels. Dentists' ethnicity, duration of attachment, and frequency of applying for scholarships influenced their CS. Future career advancement plans in the MOH should consider these important influencing factors to ensure the delivery of quality health care from their personnel.

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## Introduction

The Malaysian oral health care system is divided into public and private sectors.<sup>1</sup> The authority of the Oral Health

Programme (OHP) provides Malaysians with primary and specialist oral health care.<sup>1</sup> The Figure shows the Malaysian Ministry of Health's (MOH) dental specialists, dentists, and auxiliaries.<sup>2</sup> Dental officers, or dentists, serve the entire community, whilst some of the dentists with expanded roles practise at the Dental Specialist Clinic (DSC).<sup>3</sup>

As of 2019, the dentist-to-population ratio in Malaysia was 1:3085<sup>2</sup> and the dental specialist-to-patient ratio was 1:15,120.<sup>4</sup> The government dentists play an important role in providing oral care services to the Malaysian population;

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**Fig – The dental workforce in Malaysia.**

even so, health services were underutilised in 2010 (27.4%),<sup>1</sup> leading to high rates of untreated dental disease.

Government dentists in Malaysia could either be permanently or partially allocated to work in the DSC. Comparatively, in the UK, the concept of an expanded role for the dentist was introduced as a dentist with a special interest. The goal was to provide rapid access to specialised treatment and reduce unnecessary hospital referrals.<sup>5</sup> However, in Malaysia, dentists with such expanded duties have not been officially endorsed and recognised, as in the UK.

Malaysia's DSC aimed to enable dentists to expand their roles as dental officers. However, limited evidence shows how their expanded role will affect career satisfaction (CS). No studies have examined dentists' roles and satisfaction at MOH DSCs in Malaysia. Thus, there is an unclear demarcation between dentists in primary care and those attached to Malaysian MOH DSCs with expanded roles that need policy-makers' recognition. This study examined the CS of dentists with expanded roles and its related barriers at the DSC in the MOH Malaysia.

## Methods

### Study population

This cross-sectional quantitative study involved Malaysian DSC dentists. Dentists doing their second-year attachment at MOH Malaysia DSCs in 2022 were included. The sample size was calculated with Epi Info. The number of dentists in DSCs was based on projected numbers in 2019.<sup>2</sup> Given 464 dentists, an alpha of 0.05, a power of 80%, and 95% confidence interval (CI), the required sample size was 210. The final sample size was 273, with a 30% nonresponse rate.<sup>6</sup> A stratified random sample was used to select respondents by speciality. A formula determined strata size:

$$\frac{\text{No. of dentists in DSC}}{\text{Estimated total no. of dentists}} \times 100$$

Sampling was strata-based.

Ethical clearance was obtained from the Research Ethics Committee, UiTM [600-FPG(PT5/1/1)], and approval was sought from the OHP, MOH [KKM.600–56/7/2]d.9(57), and

The Malaysian National Medical Research Register [22–00598-GUR<sup>1</sup>].

### Data collection

Self-administered online questionnaires in English were used to collect data in June 2022. The State Oral Health Department was requested to distribute the online questionnaire link (URL). The development of the questionnaire was based on previous literature adapted from Che Musa et al<sup>7</sup> and adjusted to include potential barriers faced by dentists in MOH Malaysia DSCs. This section had 12 Likert-type items ranging from “strongly agree” (score 1) to “strongly disagree” (score 5).

The CS domain of the questionnaire had 16 items with 5-point Likert-type rating scales ranging from “very dissatisfied” (score 1) to “very satisfied” (score 5). It was adapted from a modified Warr-Cook-Wall Scale by Chew et al.<sup>8</sup> The respondents' sociodemographic characteristics, workplace, position, state of current practice, work experience, DSC attachment duration, scholarship status, and current grades were also collected.

Six subject-matter experts validated the questionnaire.<sup>9</sup> The questions were modified and adjusted based on the experts' advice.<sup>10</sup> The mean scale-level content validity index, averaging calculation method value for the whole set of the questionnaire was above 0.8, as recommended by Yusoff.<sup>9</sup>

Ten randomly selected DSC dentists participated in a pilot study. The reliability and internal consistency of the questionnaires were analysed using Cronbach's alpha test: 0.83 (Barriers) and 0.96 (Satisfaction).

### Statistical analysis

SPSS 28 was used. The CS data did not pass a normality test. As a result, nonparametric Mann–Whitney *U* and Kruskal–Wallis tests were used to compare mean rank differences in satisfaction scores and determine their association with the tested factors. Multiple logistic regression (MLR) analyses were used to identify factors affecting respondents' satisfaction. We dichotomised the outcome using a mean split.<sup>11</sup> The items were graded on a 5-point Likert scale from 5 (very satisfied) to 1 (very dissatisfied). Before calculating the mean score (58.59), each respondent's total score was calculated. The dependent variable (sum of the Satisfaction domain) was dichotomised as poor: 0 (mean scores lower than and equal to 58.59) and good: 1 (mean scores higher than 58.59).

## Results

In total, 208 of 273 dentists (76%) responded. This study's low response rate is acceptable amongst surveys with dentists.<sup>12</sup> With permission from the principal director of OHP, their chances of participating have increased.

Most respondents (71.2%) were permanently attached dentists (mean age 32.68 ± 2.48 years). Respondents were predominantly female (78.4%), Malay (56.7%), and married (60.1%). They were almost evenly split between hospital-

**Table 1 – Description of barriers faced by the dentists at the Dental Specialist Clinic (DSC) (N = 208).**

Challenges and barriers	Strongly agree		Moderately agree		Not sure		Moderately disagree		Strongly disagree		Mean (SD)
	No.	%	No.	%	No.	%	No.	%	No.	%	
1. In my line of work as a dentist with an expanded role, I am able to achieve financial stability*	7	3.35	21	10.10	51	24.52	95	45.67	34	16.35	3.62 (0.99)
2. I am able to pursue a range variety of works (clinical/nonclinical) in my line of work*	-	-	6	2.88	23	11.06	110	52.88	69	33.17	4.16 (0.73)
3. I have limited opportunity and exposure to other clinical skills as a result of my current attachment to the DSC	20	9.62	71	34.13	30	14.42	69	33.17	18	8.65	2.97 (1.19)
4. I did not receive any financial incentives for my role as a dentist with an expanded role at the DSC in the Ministry of Health	106	50.96	47	22.60	32	15.38	14	6.73	9	4.33	1.90 (1.15)
5. In the future, I wish to pursue other clinical/nonclinical interests*	35	16.83	18	8.65	43	20.67	64	30.77	48	23.08	3.34 (1.37)
6. In my line of work, I have limited opportunities for clinical exposure	3	1.44	29	13.94	32	15.38	82	39.42	62	29.81	3.82 (1.06)
7. In my line of work, I have a limitation in career professional development	16	7.69	38	18.27	42	20.19	70	33.65	42	20.19	3.40 (0.22)
8. I have previous student debt as part of my monthly commitment	28	13.46	12	5.77	9	4.33	21	10.10	138	66.35	4.10 (1.47)
9. In my line of work, family commitments exert a challenge on me	43	20.67	73	35.10	32	15.38	28	13.46	32	15.38	2.68 (1.35)
10. In my line of work, childcare commitments exert a challenge for me	34	16.35	48	23.08	40	19.23	29	13.94	57	27.40	3.13 (1.45)
11. In my line of work, the balance between work and other aspects of life exerts a challenge for me	40	19.23	72	34.62	31	14.90	42	20.19	23	11.06	2.69 (1.29)
12. In my line of work, fulfilling family expectations exert a challenge for me	37	17.79	62	29.81	31	14.90	45	21.63	33	15.87	2.88 (1.36)

Each item scored 1–5; the lower the score, the higher the challenges and barriers perceived.

\* Positively worded items/responses were reverse-scored so that lower scores represented higher challenges and barriers perceived. The mean (SD) score for challenges and barriers was 34.5 (7.1), with a full score of 60.

based (51.0%) and non-hospital-based (49.0%) clinics. Most respondents had served for 6 to 10 years (65.9%), had UG48–52 of current grades (77.9%), and had an attachment for more than 24 months (57.7%). In terms of scholarship applications, 21.6% had applied 3 or more times.

### Barriers faced by respondents

Most dentists strongly agreed (51.0%) that they “did not receive any financial incentives for their expanded role as a dentist at the DSC in the MOH.” They strongly agreed/agreed to facing “struggle in balancing their work with family commitments and other aspects of life” (55.8%), “attending a variety of works” (2.9%), “meeting up family expectations” (47.6%), and “to achieve financial stability” (13.5%) (Table 1).

### CS and influences

Non-hospital-based dentists ( $P = .046$ ), those with more than 15 years of experience ( $P = .013$ ), and those with 12 to 18 months of attachment ( $P = .014$ ) were more satisfied (Table 2).

Simple logistic regression (SLR) provided preliminary results on potential influencers ( $P < .25$ ).<sup>13</sup> This SLR

analysis found 6 potentially significant variables: gender, ethnicity, marital status, workplace, DSC attachment duration, and scholarship application frequency ( $P < .25$ ). Ethnicity, DSC attachment duration, and scholarship application frequency were significant variables in MLR. Non-Malay dentists recorded 1.54 times higher odds of having higher satisfaction than Malay dentists (adjusted odds ratio [AOR], 1.54; 95% CI, 0.30–0.96;  $P = .035$ ). Dentists with more than 19 months of DSC attachment had 56.0% lower odds of being satisfied (AOR, 0.44; 95% CI, 0.21–0.92;  $P = .029$ ). Dentists who have applied for scholarships more than 3 times were more satisfied (AOR, 1.85; 95% CI, 1.00–3.41;  $P = .050$ ) (Table 3).

### Discussion

This study’s response rate of 76.0% supports the generalisability of the results and is representative of the DSC dentists. Recent research on dentists’ response rates confirms the study’s success.<sup>12</sup> The current findings provide valuable data on dentists’ satisfaction and barriers that may be useful for future studies comparing dentists in specialist clinics.

**Table 2 – Mean rank comparison between sociodemographic variables and career satisfaction (CS).**

Variables	No. (%)	CS			
		Mean rank	Z statistics <sup>a</sup>	Chi-square <sup>b</sup> (df)	P value
<b>Gender</b>					
Male	45 (21.6)	94.9	-1.214 <sup>a</sup>		.225
Female	163 (78.4)	107.2			
<b>Ethnicity</b>					
Malay	118 (56.7)	110.0		2.864 <sup>b</sup>	.413
Chinese	59 (28.4)	96.6		(3)	
Indian	26 (12.5)	95.0			
Other	5 (2.4)	116.7			
<b>Marital status</b>					
Single/widowed	83 (39.9)	95.0	-1.856 <sup>a</sup>		.063
Married	125 (60.11)	110.8			
<b>Workplace</b>					
Hospital-based clinic	106 (51.0)	96.3	-1.998 <sup>a</sup>		.046*
Non-hospital-based clinic	102 (49.0)	113.0			
<b>Position</b>					
Permanent attachment dentist	148 (71.1)	106.9		2.962 <sup>b</sup>	.227
Partial attachment dentist	43 (20.7)	105.6		(2)	
Dentist in charge of the clinic	17 (8.2)	80.5			
<b>Work experience, y</b>					
0–5	49 (23.6)	81.1		10.819 <sup>b</sup>	.013*
6–10	137 (65.9)	113.0		(3)	
11–15	19 (9.1)	99.5			
>15	3 (1.4)	130.0			
<b>Duration of DSC attachment, mo</b>					
12–18	47 (22.6)	119.9		8.539 <sup>b</sup>	.014*
19–24	41 (19.7)	117.3		(2)	
>24	120 (57.7)	94.1			
<b>Scholarship application frequency</b>					
Never	81 (38.9)	100.9		1.298	.862
Applied once	58 (27.9)	104.5		(4)	
Applied twice	24 (11.5)	109.4			
Applied 3 times	23 (11.1)	115.5			
Applied >3 times	22 (10.6)	101.1			
<b>Current grade</b>					
UG41–44 (junior dental officer)	39 (18.8)	95.1		1.175	.556
UG48–52 (intermediate level dental officer)	162 (77.9)	106.7		(2)	
UG54 (senior dental officer)	7 (3.4)	105.4			
<b>Total sample</b>	<b>208 (100)</b>				

\* Significant at  $P < .05$ .

<sup>a</sup> Mann–Whitney  $U$  test.

<sup>b</sup> Kruskal–Wallis test. DSC, Dental Specialist Clinic.

An important novelty was introduced in this study, given that no previous research in Malaysia or worldwide has examined dentists' expanded roles, CS, and potential barriers.

This study has limitations. Exposure and outcome have no temporal relationship. Future research should be longitudinal because it is robust.<sup>14</sup> They can be used in stakeholder debates and evidence-based policymaking. Recall bias occurs when a respondent gives false information about past work experience.

### Challenges and barriers

Most dentists strongly agreed that they received no financial incentives for their expanded role at the MOH DSC. A survey

of California doctors in 1996 found similar results, where physician satisfaction was linked to financial incentives.<sup>15</sup> Lower satisfaction with remuneration and administrative duties suggests that these areas need special attention for recruiting and retaining dentists.<sup>16</sup>

### CS

The Malay ethnicity made up 52.1% of the population, and non-Malay dentists consisted of other Bumiputra, 11.5%; Chinese, 21.2%; Indian, 6.2%; and others, 9.0%.<sup>17</sup> This study suggests that minorities have a higher CS threshold. As limited regional evidence is available, comparatively, this is consistent with research on the minority of African Americans,

**Table 3 – Factors associated with career satisfaction (poor, 0; good, 1).**

Variables	Simple logistic regression		Multiple logistic regression	
	Crude OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Gender	Male*	1.617 (0.833–3.140)		.156**
	Female	1		
Ethnicity	Malay*	1	1	.035***
	Non-Malay	0.599 (0.343–1.047)	1.539 (0.303–0.958)	
Marital status	Single/widowed	1.677 (0.954–2.945)		.072*
	Married	1		
Workplace	Hospital-based clinic*	1		.112**
	Non-hospital-based clinic	0.638 (0.366–1.111)		
Position	Permanent attachment dentist	1.002 (0.507–1.978)		.996
	Partial attachment dentist*	1		
Work experience	0–10 years*	1		.926
	>10 years	1.043 (0.425–2.562)		
Duration of DSC attachment	12–18 months*	1	1	.029***
	>19 months	0.579 (0.291–1.152)	0.439 (0.209–0.921)	
Scholarship application frequency	Never*	1	1	.050***
	Applied >3 times	1.407 (0.800–2.473)	1.846 (0.999–3.412)	
Current Grade	UG41–44 (junior)*	1		.804
	UG48–54 (senior)	1.093 (0.541–2.207)		

OR, odds ratio.

Backwards Likelihood Ratio Multiple Logistic Regression Model was applied.

Multicollinearity and interaction terms were checked and not found.

Hosmer-Lemeshow test ( $P = .935$ ), classification table (overall correctly classified percentage = 61.1%), and area under the receiver operating characteristic curve (62.5%) were applied to check the model fitness.

\* Reference group.

\*\* Significant at  $P < .25$ .

\*\*\* Significant at  $P < .05$ .

which was a minority group having a higher satisfaction level as compared White Americans.<sup>18,19</sup>

Long-term attachments may increase dentists' dissatisfaction with their lack of career advancement opportunities, such as scholarship opportunities to pursue graduate studies. In addition, they need to extend their attachment period due to high competition from their colleagues. This scenario is echoed by a study on professional satisfaction amongst Singapore physicians, who were unhappy with their promotion and career development prospects.<sup>20</sup> Conversely, dentists who had applied for scholarships more than 3 times were more satisfied. Read<sup>21</sup> mentioned that repeat interviewees had more confidence and experience.

Dentists at the DSC in MOH reported different satisfaction levels and barriers whilst performing their expanded roles. These findings can be used to identify strategies and methods of implementation for addressing barriers and satisfaction that affect dentist productivity. Most dentists agree that they did not receive financial incentives for their MOH DSC role. Policymakers should consider this.

## Conclusions

This study provides a baseline understanding of how this group of dentists with expanded roles felt and visualised the Malaysia's dental health care systems, and governance particularly with respect to DSC. It emphasises the need for health care managers to develop effective recruitment and retention policies for a healthy oral health care system.

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## Conflict of interest

None disclosed.

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