

Dental Procedures During Fasting: Perceptions Among Muslims In Malaysia

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Abstract

This study aims to assess the perceptions among Muslims in Malaysia on common dental procedures during fasting.

A structured questionnaire was used to assess the perception about common dental procedures during fasting on 377 Muslim adults in Kuantan, Malaysia. The total cumulative score derived from the perception section was categorized into good and poor perception based on the median score, where a score less than median score was categorized as poor perception and a score equal to or more than median score was categorized as good perception. We further examined association between perception score with sociodemographic data.

Majority respondents perceived that most of the dental procedures will not nullify their fast with 50.9% of them categorized as having good perception based on median score. There was significant association between perception with education level ($p=0.04$) and Islamic education level ($p<0.001$).

Majority of the Muslims perceived that most dental procedures did not nullify their fast. Hence, further research is necessary to explore the reason for reduced dental attendance among Muslim patients during fasting month despite their good perception.

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Introduction

The total population in Malaysia reported in 2017 is 31,381,992. Out of this, 61.3% are Muslim¹. The five pillars which form the basis of Islam are belief, prayer, fasting, charity or almsgiving and pilgrimage². Fasting is one of the pillars and may have relevance to dentistry³. Some individuals may perceive that some dental treatments can nullify their fast. The administration of local anaesthetic may be interpreted as an intake of fluid into the body³. Patient also may refuse treatment while fasting as they are afraid that they may accidentally swallowed the water spray from a hand piece and thus breaking their fast³. Some may even perceive that placement of any foreign object inside their mouth including toothbrush would break their fast³.

Several authors postulated that Muslim patients failed to attend, refuse or postpone the dental treatments during fasting month^{3,4}. As with any religion, the practice of Islam varies according to the individual's interpretation as well as their culture practice. There are many interpretations by Muslim scholars ranging from the belief that Islam does not complicate things to the stricter view as to preserve their practice quality.

It is clearly stated that all dental procedures will not causing invalidation of Muslims' fasting if it is done properly as there will be no issue of water or any fluid swallowed by the Muslims patient⁴. Examples for this are scaling or restorative procedures where it is suggested that rubber dam and suction tubes should be used to prevent the water or fluid from ingestion. Muslim patient who needs to use local anaesthesia during dental treatment will not affect their fasting. However, their fasting will be invalidated if there is usage of general anaesthesia during dental procedure as intubation procedure is done through the throat. General anaesthesia also causes loss of consciousness which shall invalidate fasting. On

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the other hand, procedures like giving local anaesthesia, topical substances application, haemostatic agents, restorations, scaling, impression taking and mouthwashes will not invalidate the fast unless it is swallowed by the patients^{6,7,8}. In addition to this, it is stated that fillings, crowns, bridge works, scaling and polishing, intra oral anesthesia and dental extraction will not invalidate fasting⁴. Most of the Islamic scholars in Malaysia also concluded that common dental treatments are permissible and will not nullify fasting⁷.

Several authors hypothesized that Muslim dental patients may perceive dental procedures during fasting month will nullify their fast which will result in reduced dental attendance during the fasting month^{3,5,8}. Yet, there is little study that examined the reality behind this hypothesis. Therefore, the purpose of this study is to assess the perception among Muslims in Malaysia towards dental procedures during fasting and to find out whether it is similar as what have been postulated. In addition, the result of this study shall help the dentist as well as dental student in providing a better dental treatment plan during the fasting month for them.

Materials and methods

This was a cross-sectional study conducted from January to July 2017 involving Muslim adults attending dental clinic and Family Health Clinic in International Islamic University Malaysia. The sample was chosen by convenience sampling according to their accessibility. The inclusion criteria were Muslims age 18 years old and above. The exclusion criteria were adults who cannot understand Malay or English and clinical dental staff and dental students.

The sample size was calculated using online Raosoft Software. The measurements that were used in the calculation were 95% confidence interval which is the amount of uncertainty the research can tolerate. We took the population number of 20000 since sample size larger than that does not affect sample size so much and 5% margin error which is the margin amount the study can tolerate. From the calculation done, the sample size was determined to be 377.

Questionnaire was then constructed and consist of 2 sections which section A and B.

Questions in section A are consisted of 9 questions about the respondents' perception towards dental treatments during fasting. Section B was about their sociodemographic profile. The questionnaire was bilingual which were in Malay and English.

Face and content validation were performed to improve the adequacy, accuracy and appropriateness of the questionnaire. Data entry and analysis was done using statistical package for social sciences (SPSS) version 24. Categorical data were summarized in actual numbers and percentages. Pearson's chi square test was used to test for association between two categorical data. Test of normality was performed for continuous data. The not normally distributed data were expressed using median and inter-quartiles range.

In order to assess the association between their perception and sociodemographic data, we gave a score to their answers in section A where a score of 0 was given for incorrect answer and a score of 1 for correct answer based on the established guideline regarding dental treatment during fasting⁴. There were 9 questions for this section, therefore the minimum possible score was 0 and the maximum possible score was 9. To test for association between perception score and sociodemographic data, the total cumulative score was categorized into good and poor perception group based on median score as done by several studies^{10,11}.

Results

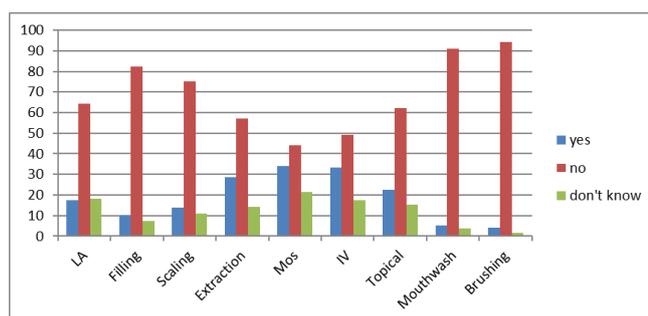
A total of 387 respondents have answered the questionnaires given via structures interview method. However, 10 questionnaires were incomplete and dismissed. Therefore, 377 respondents were included in the data analysis which satisfies the prior sample size calculated.

The sociodemographic data of the respondents are shown in Table 1. It shows that more than half of the respondents were female, and the majority were Malays (97 percent). 32.1 percent work as non-professionals and almost half of them (44.8 percent) only finished secondary school as their highest education level. More than half (57.3 percent) had their highest Islamic education during secondary school.

Participants profile (n= 377)	n (%)
Median age in years (IQR) (range)	31 (22) (18-77)
Gender	
Male	165(43.8)
Female	212(56.2)
Occupation	
Professionals	57(15.1)
Non-professionals	121(32.1)
Student	83(22.0)
Not working	58(15.4)
Not disclosed	58(15.4)
Race	
Malay	366(97)
Chinese	1(0.3)
Others	10(2.7)
Highest education level	
Primary school	21(5.6)
Secondary school	169(44.8)
Certificate or diploma	105(27.8)
Degree, Master or PhD	82(21.8)
Highest Islamic education level	
Primary school	41(10.9)
Secondary school	216(57.3)
Certificate or diploma	93(24.6)
Degree, Master or PhD	27(7.2)

Table 1. Sociodemographic data of respondents.

Based on Figure 1, more than 50 percent of the respondents believed that all dental procedures done during fasting will not invalidate their fast except for minor oral surgery (43 percent) and intravenous medication (48 percent). The questions assessed about common dental procedures which include having local anaesthesia, fillings, scaling, extraction, oral topical medication, gargling mouthwash, minor oral surgery, intravenous medication and brushing teeth during fasting month.

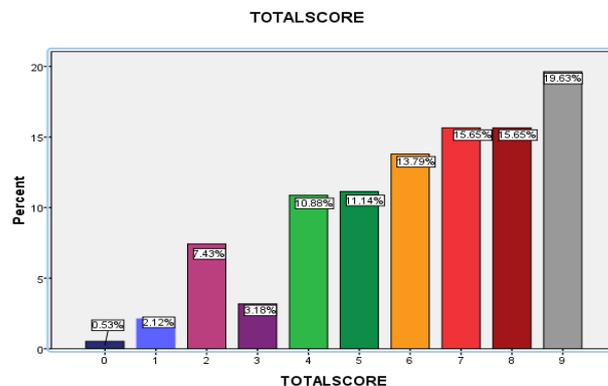


*LA; local anaesthesia injection
 *IV; intravenous medication (except glucose and saline)
 *Mos; minor oral surgery

Figure 1. Perception towards dental procedures during fasting month (Will these dental procedures invalidate your fast?).

Figure 2 shows cumulative score for their perception regarding dental procedures during fasting. The median score is 7. 50.9 percent of the respondents scored equal or more than the

median score which was categorised as good perception group and 49.1 percent score lower than the median score which was categorised as the group with poor perception.



*Median score 7, IQR 3

Figure 2. Distribution of respondents' cumulative score.

Table 2 shows there was significant association between their perception with the highest education level ($p=0.04$), and the highest Islamic education level ($p<0.001$).

Sociodemographic profile (n=377)	Perception n (%)		P-value
	Poor	Good	
Age (years) ±SD	32 ± 14.0	31 ± 14.9	0.96
Gender			
Male	42.2	54.7	0.54
Female	57.8	45.3	
Occupation			0.053
Professionals	12.4	17.7	
Non-professional	37.3	27.1	
Students	17.3	26.6	
Non-working	15.7	15.1	
Not disclosed	17.3	13.5	
Race			0.49
Malay	96.8	97.4	
Chinese	0.0	0.5	
Others	3.2	2.1	
Highest education level			0.04
Primary school	7.6	3.6	
Secondary school	46.5	43.3	
Certificate or diploma	29.7	26.0	
Degree, Master and PhD	16.2	27.1	
Highest Islamic education level			<0.001
Primary school	15.7	6.2	
Secondary school	62.2	52.7	
Certificate or Diploma	17.8	31.2	
Degree, Master and PhD	4.3	9.9	

Table 2. Association between perception and sociodemographic profile.

The Mann-Whitney test was done to further assess the association between each category as shown in Table 3 and 4.

Table 3 shows that most people who have degree including master and doctorate certificate have better perception regarding dental treatment during fasting compared to people with lower education level. However, there is no significant different between those with education level up to diploma or secondary school as compared to those in primary school.

High est educ ation level	Prima ry & seco ndary scho ols	Prima ry & diplo ma	Seco ndary school & diplo ma	Prima ry school & degree	Seco ndary school & degree	Diplo ma & degre e
P- value	0.17	0.23	0.81	0.01	0.03	0.03

Table 3. Association between perception and each category of highest education level.

Table 4 shows that people who have highest Islamic education in degree (including master and PhD), diploma as well as secondary school have better perception compared to people who only have primary Islamic school education.

Highe st Islami c educ ation level	Prim ary & seco ndary scho ols	Prima ry & diplo ma	Seco ndary school & diploma	Prima ry school & degree	Seco ndary school & degre e	Diplo ma & degre e
P- value	0.04	<0.001	<0.001	<0.001	0.02	0.57

Table 4. Association between perception and each category of highest Islamic education level.

Discussion

The results from this study revealed that most of the respondents perceived most of the dental procedures did not invalidate their fast. These findings were contradict with what most authors had been postulated that patients may perceive dental treatment will nullify their fast^{3,4,5,8}. Another smaller scale study in Pakistan also found most of the respondents perceived that procedure such as gargles, miswak and using toothpaste will invalidate their fast and is forbidden during fasting¹². The difference in the results suggest that Muslims from different county have different views regarding this matter. However, our study also found that only less than half of the respondents believed that minor oral

surgery and having intravenous medication will not invalidate their fast. This shows that most of the Muslims were inconclusive about this procedure although the process of the procedure is almost the same as having extractions and local anesthetic agent. Minor oral surgery is safe to be performed during fasting month and will not invalidate fasting^{14,15}. Intravenous medication such as antibiotic for treating infection is considered as nonnutritive injections thus it does not invalidate one's fast. In addition to this, having intravenous midazolam for dental treatments during fasting is still questionable as midazolam can cause anterograde amnesia effect. However, there is no study assessing the perception of having sedation during fasting among Muslims as intravenous sedation for dental procedures is still new in Malaysia. Therefore, further research on this could be done in the future. Review articles concluded that the use of sublingual tablets, drilling of teeth, extraction or polishing of teeth, tooth brushing, gargling and applying topical medications do not invalidate fasting^{4,5,13,15}. However, it is also stated that procedures like oral medication during fasting hours and parenteral nutrition will invalidate fasting. Another article also stated that the administration of local anesthesia (infiltration or inter-dental block) will not invalidate fasting¹⁶. These numerous articles published online may have increased Muslims perceptions towards dental treatments during fasting throughout time.

Until today no study was done to see the association between perception and education level. Thus, in this study, it is found that respondents' perceptions were significantly associated with their highest education level based on Table 3. Those with higher education level have better perception as they may have better exposure on getting additional information. The tertiary education system also requires the students to do some research and is equipped with the knowledge of gathering higher level information.

From Table 4, it shows that those who had Islamic education only during primary school have the poorest perception. Meanwhile, those with diploma, degree, master and doctorate in Islamic education have a better perception compared to secondary school group. The result also showed that there is no significant difference for diploma and higher level of Islamic education (p=0.57). This may be due to the higher level of

Islamic knowledge and understandings are being taught during the tertiary education level which involves diploma, degree, master and doctorate. These findings emphasize the importance of Islamic education among the Muslims which will improve their perception and may affect their practice.

However, this study did not show any significant association between perception and their age, gender, occupation as well as their race.

Conclusions

It can be concluded that most of the respondents knew that most dental procedures do not invalidate fasting. However, majority were still unwilling to seek dental treatments during fasting month despite their good perception. The higher their education level (including Islamic education level), the better perception they will have towards dental procedures during fasting. There is a need for dental practitioners to update their knowledge regarding this to provide information to patients about dental procedures during fasting.

Declaration of Interest

All authors have made substantive contribution to this study and all have reviewed the final manuscript prior to its submission. There is no conflict of interest. This study is funded by Research Initiative Grants Scheme (RIGS16-329-0493). Ethical Approval from our institution was obtained prior to commencement of the study (IREC 699).

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