

Copy Denture: The General Overview Among Dentists and Dental Technologists In Malaysia

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Abstract

Copy denture technique is a classic technique for construction of a new denture, based on the existing denture using a replica. This technique helps elderly population in terms of adaptation to a new denture.

The aim of this study was to determine the knowledge and practice of copy denture technique among dentists and dental technologists in Malaysia.

Two sets of a pre-tested questionnaire was distributed to participants who attended copy denture workshop. The participants were instructed to answer the questionnaires before and after the seminar. A total of 97 responses were collected and only 77 (79.4%) have given a valid feedbacks.

The results showed that eventhough 54.5% (n=42) participants had more than 5 years of clinical experiences, 42.9% (n=33) claimed to have limited knowledge in this technique prior to the seminar and 55.9% (n=43) presented with positive attitude towards copy denture. Majority of the participants (74.1%) were uncertain and did not have the skills to perform the copy denture technique. However, following workshop, their attitude towards copy denture increased (+15.6%) and the mean score value was statistically significance ($p < 0.005$).

In conclusion, awareness and practice on copy denture technique should be encouraged to ensure patient's benefits when replacement denture are required.

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Introduction

The advancement of technology has resulted in changes of the management for complete denture cases especially in geriatric population. This is due to the increased number of geriatric population which indirectly results in increasing demand to replace the denture that is more challenging.¹ Several problems were identified when constructing a complete denture for the geriatric patients especially if they have been wearing the denture for long period of time. The most critical factor in ensuring patient's perception and acceptance is denture adaptations, which in some patients may have difficulty in

adapting to the new dentures either physically and/or psychologically.^{2,3} Replacement of new denture requires patient's willingness to learn new skills and muscular adaptation in order to make the replacement a success. Besides, dentist's communication skills⁴ and patients' perception towards the new denture can also influenced the success of new denture and significantly improve patients' satisfaction.⁵

One of the treatment options to address this problem is by duplicating the patient's existing/old denture through copy denture technique and making a replacement using replica denture.⁵ The Glossary of Prosthodontics Terms defines 'replica denture' as a second denture intended to be a replica of the first.⁶ The replica that has replicated the polished surface of the denture will be used to make a new denture replacement with certain modifications and improvements.⁷ This technique was belief to improve the neuromuscular adaptability to the new dentures.⁷ Additionally, the procedure of copy denture is simple and can effectively save the cost and time.⁷⁻⁹

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With the increased of geriatric population in Malaysia, copy denture technique has become relevant in the management of complete denture. To the best of our knowledge, there are no available information on the knowledge and practice of copy denture among the Malaysian dentists and dental technologists.

Therefore, a study was conducted to determine the knowledge and practice on copy denture technique among dentists and dental technologists who attended the Copy Denture Workshop organized by USIM in 2017.

Materials and methods

This cross-sectional study was carried out at Faculty of Dentistry, Universiti Sains Islam Malaysia (USIM). A set of pre-tested questionnaire was developed using a 5-point Likert scale to assess knowledge and practice towards copy denture technique. Score 1 indicated “strongly disagree”, score 2 “disagree”, score 3 “uncertain”, score 4 “agree” and score 5 “strongly agree”. The instrument was divided into 3 parts: 1) demographic data, 2) knowledge and 3) practice. The questionnaires comprised of 10 close-ended items related to the knowledge and practice towards copy denture technique.

The subjects involved in this study were among the dentists and dental technologists who attended the copy denture workshop organized by the faculty. All respondents must be able to understand English or Malay and attended all the lecture series scheduled for the workshop.

Respondents were requested to answer two sets of questionnaires. The first set of questionnaires was given prior to the workshop to assess their level of knowledge in copy denture technique. During the workshop, all participants were given series of lectures regarding copy denture technique which included video and case presentations. The second set of the same questionnaires was given after the lectures ended. No hands-on or practical demonstration was given during the lecture.

The responses to the questionnaires from all the participants were entered on to a database and descriptive data were analysed using SPSS version 21. A comparison between pre and post-seminar knowledge were then made using paired T-test.

Results

The total number of participants registered for the workshop was 97. However, after incomplete set of questionnaires was removed from the data, the total available respondents were 77 which consists of 46 (60.0%) were female and 31 (40.0%) were male. The mean age of the respondents was 33.23 (± 7.63). Among the respondents, 61.0% (n=47) of them were dental technologists; while the rest were dentists (n=30; 39.0%). A total of 54.5% (n=42) of the respondents had working experience for more than 5 years, while 45.5% (n=35) respondent worked for less than 5 years. From this number of respondents, about 91.0% (n=70) work in the government sector while 9.0% (n=7) work in private practice. The characteristics of respondents were shown in Table 1.

Variable	Frequency (%)
Age in Years [Mean (SD)]	33.23 (± 7.63)
Sex	
Male	31 (40.0)
Female	46 (60.0)
Type of oral health personnel	
Dentist	30 (39.0)
Dental technologist	47 (61.0)
Working experience	
≤ 5 years	35 (45.5)
6 – 10 years	13 (16.9)
11 – 15 years	18 (23.4)
> 15 years	11 (14.2)
Job sector	
Government	70 (91.0)
Private	7 (9.0)

Table 1. Summary socio-demographic of respondents.

Meanwhile, Table 2 shows the distribution of responses from the respondents before and after the copy denture lecture series. Three main criteria were assessed pre and post-workshop, which are knowledge, practice and belief towards copy denture technique. In terms of knowledge, approximately 57.2% (n=47) respondents claimed that they know about this technique before attending the workshop with mean score of 3.60 (± 0.85). However, the knowledge of respondents had significantly improved with 96.1% (n=74) of respondent answered positively after the lecture series, mean score: 4.22 (± 0.05), (p=0.001). Besides, all respondents 77 (100.0 %) agreed that this technique give benefits to the patients, while about 94.9% (n=73) agreed that this technique is suitable to elderly patients after attending the lecture series.

Characteristics	Frequency (%)						Before	After	p-value
	Before			After			Mean	Mean	
	Agree	Uncertain	Not Agree	Agree	Uncertain	Not Agree	(SD)	(SD)	
Knowledge									
a. I know about copy denture	44 (57.2)	25 (32.5)	8 (10.4)	74 (96.1)	3 (3.9)	0 (0.0)	3.60 (0.85)	4.22 (0.50)	<0.001
b. The advantages of the technique	53 (68.8)	21 (27.3)	3 (3.9)	77 (100.0)	0 (0.0)	0 (0.0)	3.81 (0.74)	4.32 (0.47)	<0.001
c. Suitability to elderly patient	60 (77.9)	11 (14.3)	6 (7.8)	73 (94.9)	4 (5.1)	0 (0.0)	3.90 (0.80)	4.44 (0.59)	<0.001
d. The adaptation of new denture is easier	46 (59.7)	27 (35.1)	4 (5.2)	71 (92.2)	6 (7.8)	0 (0.0)	3.69 (0.78)	4.35 (0.62)	<0.001
e. The technique is easier compared to conventional	41 (53.2)	30 (39.0)	6 (7.8)	71 (92.2)	6 (7.8)	0 (0.0)	3.57 (0.80)	4.23 (0.58)	<0.001
f. It can be done at my premise	43 (55.8)	30 (39.0)	4 (5.2)	64 (83.1)	13 (16.9)	0 (0.0)	3.66 (0.85)	4.04 (0.61)	<0.001
Practice									
a. I practice the technique	20 (25.9)	17 (22.1)	40 (52.0)	27 (35.1)	22 (28.6)	28 (36.1)	2.58 (1.15)	3.04 (1.02)	0.001
b. I have the skill required	20 (25.9)	28 (36.4)	29 (37.7)	36 (46.8)	30 (39.0)	11 (14.3)	2.83 (1.00)	3.40 (0.83)	<0.001
c. I practice the technique when there is a case	21 (27.3)	16 (20.7)	40 (52.0)	29 (37.7)	23 (29.9)	25 (32.5)	2.65 (1.14)	3.09 (1.06)	0.003
Belief									
a. I do not believe it helps in the adaptation process of new denture	5 (6.4)	29 (37.7)	43 (55.9)	8 (10.4)	14 (18.2)	55 (75.1)	2.39 (0.83)	2.16 (0.98)	0.049

p-values <0.05

Table 2. The distribution of responses given by the respondents before and after the lecture series.

The assessment on the practice of copy denture indicated low mean score 2.58 (± 1.15). The respondents felt that their skills to practice copy denture was poor before and after the workshop with mean score 2.83 (± 1.00) and 3.40 (± 0.83).

Assessment on belief prior to the seminar was neutral with only 43 (55.9%) of the respondents believed that copy denture helps in the adaptation process of the new denture. However, the number of respondents increased in this matter to 55 (75.1%) after they had received the lecture series. The score for pre and post-workshop was comparatively similar with mean score 2.39 (± 0.83) and 2.16 (± 0.98) respectively.

Further analysis was carried out to compare between group of dentists and dental technologist as shown in Table 3. The mean score between both groups were almost equivalent, however this finding was not significantly comparable ($p > 0.05$).

Variable	Dentist n=30 Mean score (SD)	Technician n=47 Mean score (SD)	p value
Knowledge pre-workshop	3.53 (0.86)	3.64 (0.84)	0.881
Knowledge post-workshop	4.27 (0.45)	4.19 (0.53)	0.754
Practice pre-workshop	2.77 (1.00)	2.87 (1.01)	0.689
Practice post-workshop	3.50 (0.73)	3.34 (0.89)	0.197
Belief pre-workshop	2.13 (0.81)	2.55 (0.80)	0.212
Belief post-workshop	2.00 (0.83)	2.26 (1.07)	0.039

p<0.05

Table 3. The comparison of dentist and dental technologist on knowledge, practice and belief on copy denture technique.

Discussion

In this study, the subjects were dentists and dental technologists from all over Malaysia that have shown interests to gain knowledge on copy denture technique. The sample includes the less experienced to the very experienced dentists and dental technologists from private and government sectors.

The assessment on knowledge of copy denture before the lecture series among respondents was comparably low. However, the respondents showed significant improvement in terms of knowledge after the lecture series. The respondents knew the advantages of this techniques in elderly population is relevant and this was supported by a few case studies regarding this matter.⁹⁻¹² The advantages of this technique was agreed by the respondents, which includes simpler method compared to the conventional method,¹¹ reduces clinical and laboratory time,¹⁰ treatment can be carried out at any dental setting and short adaptation time for the patients who had new dentures produced using this technique.¹²

Surprisingly, even though 54.5% of respondents had more than 5 years of working experience, but they still did not practice copy denture technique. The reason may be due to lack of knowledge and practice by both clinicians and technicians. Moreover, not all dental schools in Malaysia include this technique in their dental curriculums even the geriatric module in the curriculum seem to be adequate.¹³ Current geriatric module did not contribute to the perceive competency in management of the elderly.¹⁴ This is contrary to the European dental schools, where this technique has been taught and included in their geriatric module in dental curriculum.¹⁵ In United Kingdom (UK), the paradigm in treating complete denture had shifted and the copy denture procedure is included as one of the techniques in impression taking in their curriculum.¹⁵ However, there was significant improvement in terms of desire to perform this technique after having the lecture series but it was not encouraging and sufficient for them to practice as they have not been exposed to the hands-on practice. This is consistent with *Yacob et al*, 2014 who found that practitioners did not know how to perform the copy denture technique because they do not have any prior hands-on experience.¹⁶ This

showed that the background of clinicians with undergraduates training may give some impact to this result.

Therefore, an update of knowledge and training including laboratory support on copy denture technique should be emphasized and provided to improve the service towards elderly population. This study has shown that after the respondents had been exposed with the knowledge and given the opportunity to learn this technique during the workshop, their knowledge and skills had improved. However, this does not mean that the respondents are confident enough to perform the procedure. Therefore, hands-on / practical approach is essential to be incorporated in the lecture series. In this workshop, hands-on practical was only carried out after the respondents answered the second set of questionnaires.

The assessment on the belief that the copy denture technique helps in improving denture adaptation shows positive attitude on most respondents before the seminar and it was increased by 16% after the lecture series. This encouraging attitude has positive relation with the knowledge ($p < 0.05$) and showed that they are willing to perform the technique if they have adequate knowledge and skills.

Conclusions

The general overview of copy denture technique in relation to knowledge, practice and belief was low among the participants before the lecture series. However, there is significant improvement in the related components after attending the lecture series. It is recommended to conduct more seminars and workshops on copy denture in the near future to improve the knowledge and skills of the general dental practitioners. Incorporation of this technique in the current dental curriculum would also benefits the dental students and future dentists.

Declaration of Interest

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