Tooth brushing and utilization of dental services in Fiji (1998)

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Abstract: Utilization of services is considered the presence or absence of care received. The most common measure of utilization is the annual number of dental visits per person. This study aims to determine oral health practices, which were a measure of their oral hygiene status and the use of health care facilities. It also aims to investigate the major problems that exist within the health care system in 1998, which may explain the lack of use of dental services. Fijians and Indo-Fijians were two ethnic groups in the sample, selected by stratified multi-stage cluster sampling. Only two age categories, 15-19 and 35-44 year-olds were selected being the index age for World Health Organization in Oral Health Surveys. A total of 1,000questionaires were distributed and the completed questionnaires (n = 619) were collected immediately. Thirty one percent of the respondents indicated that they learnt to care for their teeth from dental personnel. Of the individuals who brushed their teeth twice a day, 41% visited the dentist within the last 12 months. Majority of the individuals (65%) who brushed their teeth twice or more daily indicated that they needed dental treatment. Individuals who visited the dentist within the last 12 months reported having a tooth extracted (53%), check-up (29%), filling (8.9%), polishing of teeth (3.7%), gum problem (3.2%) and false teeth (1.8%). Individuals who brushed twice daily did not visit the dentist within the last 12 months because nothing was wrong (63.2%), too busy (9%) and afraid of the dentist (7%). More than 80% of the respondents were satisfied with the current services, but indicated improvement on the waiting time (31.2%), availability of more treatment options in dental clinics (27.5%), dental fees (15.4%), improvement on the facilities for dental care (10.1%), a customer-friendly dental personnel (9.4%) and considerations for infection control (6.4%).
(PHD, 2003; 10 (1), Pages 23-27)

Introduction

With Fiji's diverse culture and religion, it is mandated by the ruling government to provide an acceptable level of health care to the people. To facilitate health administration and provision of services, the country is divided into three main administrative divisions being Central/Eastern, Western and Northern divisions. Health facilities are strategically placed in areas, to serve the maximum number of people, thus making them accessible to utilize these services. In the past 20 – 25 years there has been much improvement in general health status, reflected in the higher life expectancy and the conquering of immunisable diseases such as polio and tetanus.[1] Unfortunately, the same cannot be said about oral health, as 1% of adults aged 30-34 and 22% of those aged 55+ had lost all of their teeth.[2]

Utilization of services is considered the presence or absence of care received.[3] Studies of models of health behaviour [4, 5] hypothesizes that a decision to undertake a health action will not be made unless the individual is psychologically ready to take action relative to a particular health threat or condition. The most common measure of utilization is the annual number of dental visits per person. Another frequently used measure is the proportion of persons visiting a dentist within a year.[6] This study aimed to determine oral health practices, which were a measure of their oral hygiene status and the use of the health care facilities. It also aimed to investigate the major problems that exist within the health care system in 1998, which may explain the lack of use of dental services.

Methods

For the purpose of this study, the sample comprised of people who were potential users of oral health services other than primary school children. Primary schools in Fiji receive annual dental care directly by the School Dental Services from each division. The survey was undertaken on 13th to 31st of July 1998, from the 3 main divisions, Central/Eastern, Western and Northern divisions.

Fijians and Indo-Fijians were two ethnic groups in the sample, selected by stratified multi-stage cluster sampling. Only two age categories, 15-19 and 35-44 year-olds were selected being the index age for World Health Organization in Oral Health Surveys. A total of 1,000 questionnaires were distributed and the completed questionnaires (n = 619) were collected immediately. Three dentists conducted the survey and an interpretation of the questions was made for individuals who do not understand the English language to the primary language. Data collected were analyzed using the Epi Info statistical software program.

Table 1: High schools and the sample size selected for the 15-19 years olds at each

Northern division		Western division		Central/Eastern division	
Location	*Sample size*	*Location*	*Sample size*	*Location*	*Sample*
Tabia Sanatan	20	Andhara High School	24	Koro High	23
Labasa College	20	SSKMC	27	Richmond High	20
Naleba College	20	Sabeto Secondary	23	Baulevu High	20
Vaturova/Koroalau	20	Vishnu Deo	23	Nausori High	23
Napuka Secondary	20	Natabua High	27	Sila Central	20
		Rakiraki Public High	23	Bhawani Dayal	23
		Nilsen High	23	Rishikul High	23
		Ra Secondary	23	Gospel High	23
				St Joseph	12
				Marist High	11
				Rampur College	23

Table 2 – Location of areas for the 35-44 year-olds adults

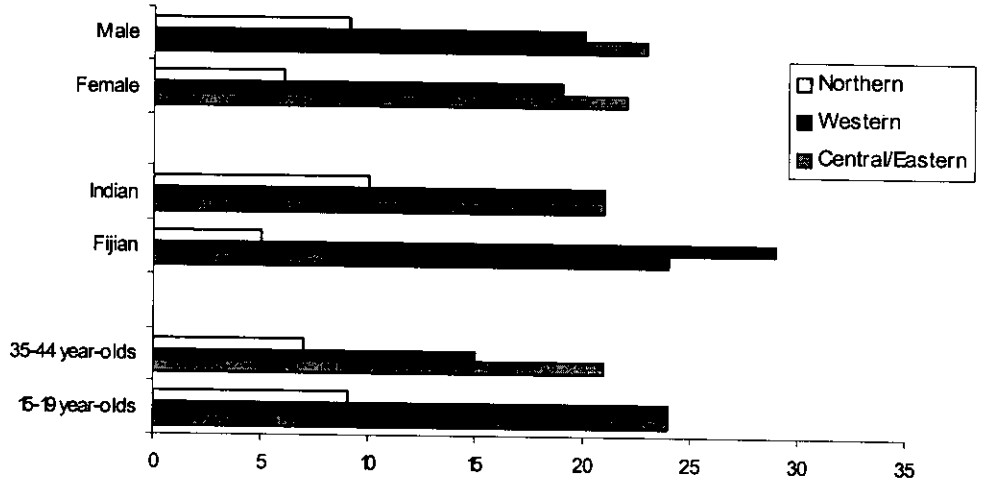
Northern division		Western division		Central/Eastern division	
Location	*Sample size*	*Location*	*Sample size*	*Location*	*Sample size*
Labasa town council/	20	Yako village and settlement	23	Namacu – Koro Is.	23
hospital workers	13	Nadi market vendors	23	Solodamu – Kadavu Is.	23
Nasarawaqa	13	Lautoka hospital workers	26	Baulevu/Koroqaqa settlement	20
Vunivau	13	Balevuto village and	26	Nausori market vendors	23
Naleba settlement	13	settlement	23	Fiji Development Bank workers	23
Naweni village	13	Votua village and settlement	23	Rewa Dairy Workers	23
Nasinu village	13	Toko village and settlement	25	Housing Authority Workers	23
Tukavesi village	13	Narewa village and		Tokotoko settlement	21
Tau village and settlement		settlement		Ministry of Primary Industry workers - Navua	23

Results

As indicated in Figure 1, there were about 22% of both males and females from the central/eastern and western division and 10% from the northern division who completed the questionnaire.

Of the 35-44 age categories, 10% responded from the northern, 18% from the western and 21% from the western divisions. Around 22% of 15-19 year-olds responded from the central/eastern and western divisions and 12% responded from the north.

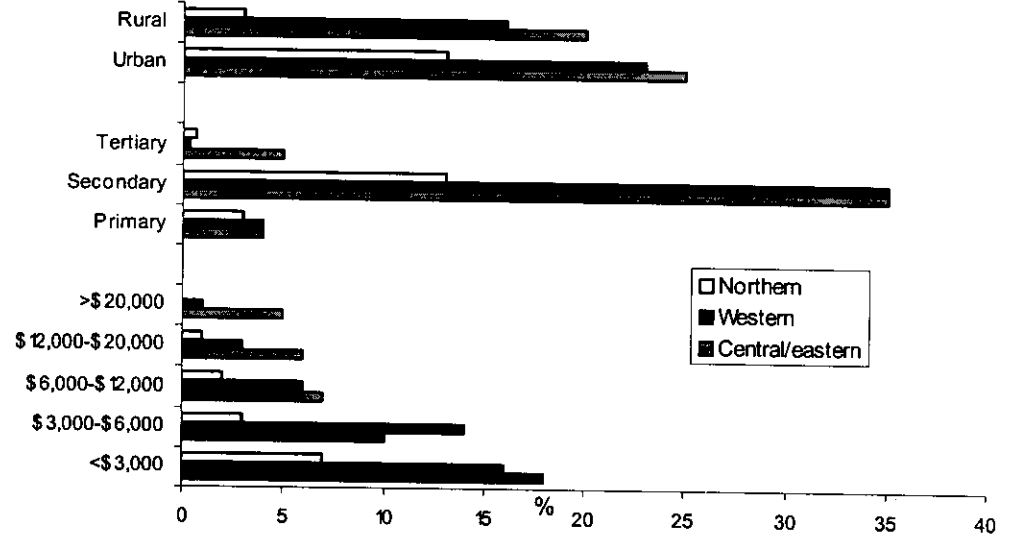
Figure 1 - Distribution of Respondents by Location (%)



Twenty one percent of Indo-Fijians in the central/eastern and western division and 10% from the northern division participated. Also, less than 10% of Fijians from the northern division, 22% from the central/eastern and 25% from the western division participated in the study.

In Figure 2, twenty six percent of the respondents from the central/eastern were urban dwellers, 23% from the western and only 3% from the northern division. Nineteen percent of the respondents were from the rural in the central/eastern, 16% from the western and 13% from the

Figure 2 - Distribution of Respondents by Location type, education and salary



northern division. Altogether 11% of the respondents had received primary school education, 83% secondary school education and 6% had received tertiary school education from the three divisions.

There were about 68% of the respondents from the three divisions who earned less than $6,000 in a year while the remaining 32% earned more than $6,000 in a year.

As indicated in Figure 4, individuals who visited the dentist within the last 12 months reported having a tooth pulled out (53%), check-up (29%), filling (8.9%), polishing of teeth (3.7%), gum problem (3.2%) and false teeth (1.8%). Figure 5 showed that for individuals who brushed twice daily did not visit the dentist within the last 12 months because nothing was wrong (63.2%), too busy (9%) and afraid of the dentist (7%).

Figure 3 - Place where information for care for teth was received

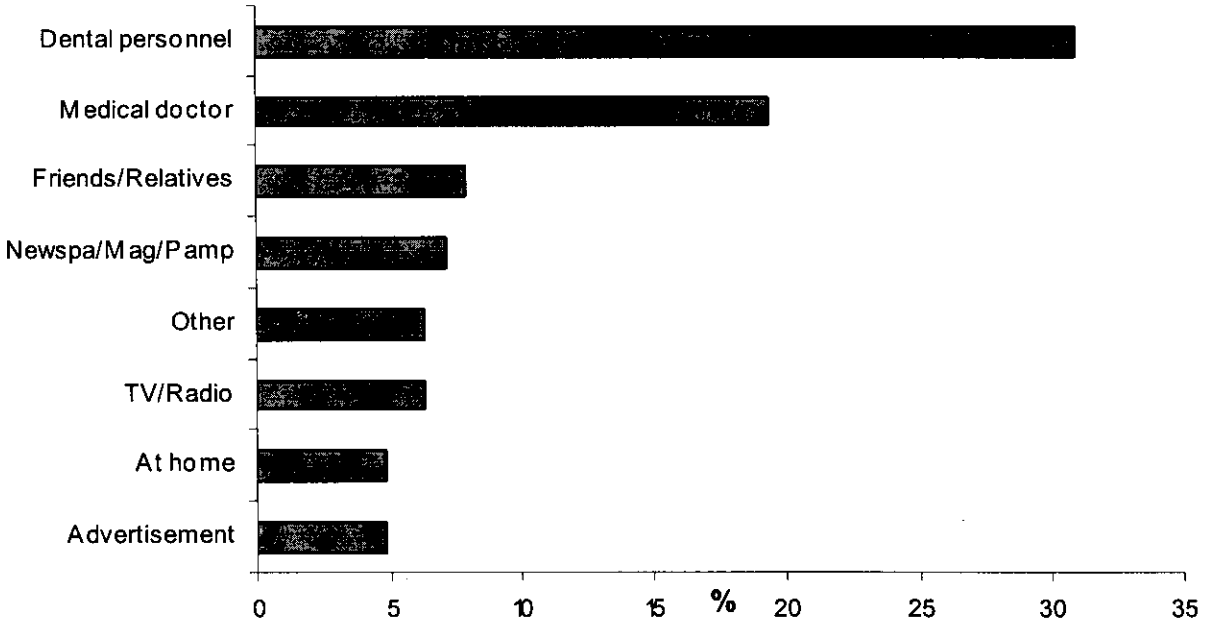


Table 3 - Frequency of brushing, visiting a dentist and need for dental treatment

Frequency of brushing	*Frequency of visiting a Dentist (%) (p < 0.001)*		*Need for dental treatment (%) (p < 0.05)*	
	<12 months	*>12 months*	*Yes*	*No*
Not at all	0	0.1	0.2	0
Once a day	5	7	7	5
Twice a day	41	26	48	19
More than twice a day	15	6	17	4

Oral Health Education

Respondents indicated that they learnt to care for their teeth from dental personnel (31%), from the medical doctor (19%), friends, relatives, and newspapers or pamphlets (7%), television or radio and other places (6%), and 5% from home and advertisements

Oral Health Practice

In Table 3, 41% of the individuals who brushed their teeth twice a day, visited the dentist within the last 12 months, only 26% made the visit more than 12 months ago. Fifteen percent of individuals, who brushed more than twice daily, made the visit to the dentist within the last 12 months, while 6% made a visit more than 12 months ago.

Majority of the individuals (65%) who brushed their teeth twice or more daily indicated that they needed dental treatment, while only 23% did not think they need dental treatment.

Figure 4 - Treatment received at the last visit

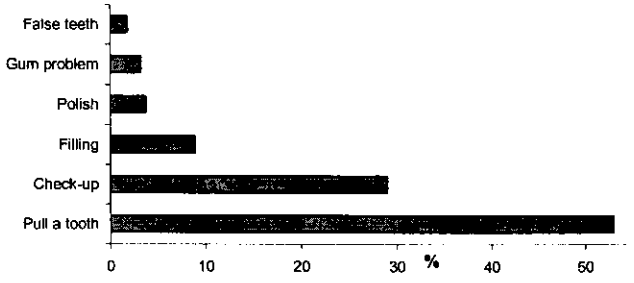


Figure 5 - Reasons for not visiting the dentist within 12 months

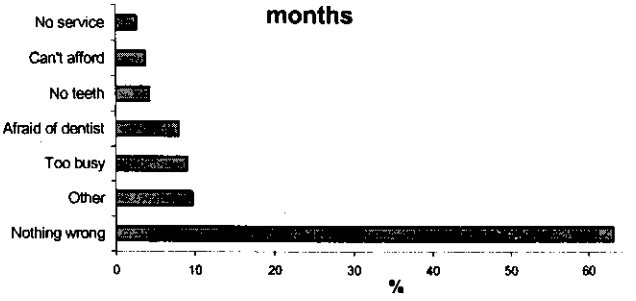
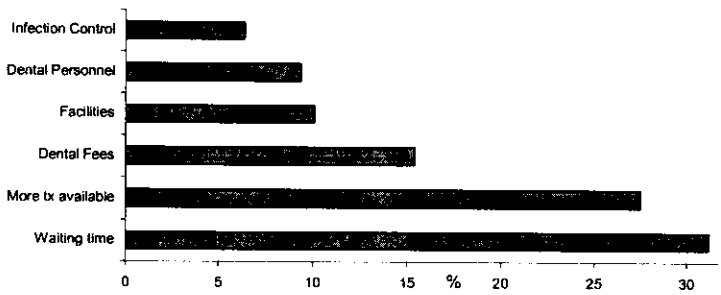


Figure 6 - Areas to improve in dentistry



More than 80% of the respondents were satisfied with the current services, but indicated improvement on the waiting time (31.2%), availability of more treatment options in dental clinics (27.5%), dental fees (15.4%), improvement on the facilities for dental care (10.1%), a customer-friendly dental personnel (9.4%) and considerations for infection control (6.4%).

Discussion

Different models of utilization of dental services have been proposed.[6] Kasl and Cobb suggested a model [7] that if individuals view a symptom as a threat and perceive that a visit to a professional is likely to reduce this threat, they will seek professional help. Social and cultural factors influence both the definition of a symptom as a threat and the value attached to a particular action. Findings in developing countries reported barriers to seeking care in rural areas due to lesser availability of dentists, longer traveling distances, waiting times and cultural factors.[6] These social and cultural variations may explain utilization patterns in Fiji for example, absence of symptoms ('nothing was wrong') reported by 63% of individuals was the main reason of not visiting the dentist. Besides financial limitations to frequent oral health care, this study indicated that the major reason for non-utilization of dental services was low levels of perceived need for care.

Gift [8] in 1979 found that better dental health status is found among individuals who are frequent utilizes and had gone to the dentist for preventive treatment. This was not the case in this study. Although most people brushed their teeth two or more times a day visited the dentist within the last 12 months ($p<0.001$), they also indicated the need for further dental treatment. The exact treatment was not established in this study, but it was interesting however to note that more than 50% of these individuals had a tooth extracted in their last visit.

About a third had a dental check-up, restorative and rehabilitative procedures were of lesser importance. With the high extraction rate and the slow rate of replacement of natural teeth, it implies a high existence of edentulousness in this society. Lesser levels of dentalhealth are found among those who do not have a recent visit.[8]

There is a strong indication for the need of dental treatment ($p < 0.05$) and reasons other than those explained through health behavior contribute to the delay in obtaining dental care. The long waiting time as reported by 31% of the respondents is a deterrent and a common feature in various centers. With a dental manpower to population ratio of 1:15,000[1] there is shortage of personnel to deliver care promptly, however this was not established in this research. Strategies to improve oral health services to the community should include extending operating hours to accommodate people in the workforce. Orientations of dental personnel to be consumer-orientated also facilitate a visit to their friendly dentist as reported by 7% of the respondents who made a recent visit. Another reason given was the restricted availability of treatment and the dental fees stipulated. Affordability of dental care pose a barrier to better oral health and this could be critical as 68% of participants earned less then $6,000 annually. Ironically, with a system where partial contribution were used similar to the National Health Insurance in Japan, for curative oral health services, about 58% of adults age 35-44 years old did not make a dental visit in the last 12 months.[9]

The challenge is to increase oral health education and promotion so the public is educated on the benefits of receiving care. Therefore, it is the commitment and responsibility of dental personnel to disseminate this information to the community, facilitating a visit to the dentist. It was assessed from this study, that dental personnel are indeed educating the community however; it was during their primary school days. This strongly applauds the School Dental Services program but placed further questions on the continuity of oral health education or promotion after school-age period. Areas where there are no dental personnel, medical personnel have resumed these duties. Family and friends were reported to be a significant source in dental education among this society.

An improvement in the delivery system is pertinent to compliment the changes and demand for dental care. Ignorance and dissension among individuals led to a dental visit to pull out their tooth, a check-up or receive a pain relieving treatment for a toothache ($p < 0.01$). Reasons for not visiting the dentist within the last 12 months for individuals who brushed their teeth twice daily, was the perception that nothing was wrong, too busy and being afraid of the dentist ($p < 0.01$). Although dental caries is low in Fiji, periodontal disease is very common.[10] There was no statistical significance in the frequency of brushing and the place where individuals choose to obtain care. While the literature is not always conclusive that regular brushing and flossing improve oral health status, it is claimed that brushing and flossing, as well as regular visits to oral health care professionals – especially those for preventive purposes – are positive behaviors that should be promoted.[9]

Conclusion

Individuals who brushed twice daily received their oral health knowledge from the dentist and medical personnel, had a recent visit within 6 and 12 months period indicated the need for dental treatment. Dental visit in the last 12 months was to pull out a tooth, check-up and complain of a toothache. Perception that nothing was wrong with their teeth was the major reason for not obtaining care during the last 12 months. Improvement on the long waiting time,

availability of more treatment and dental fees would facilitate utilization of dental services.

There was a low level of oral health awareness among the people in 1998. Dental service should provide continuing oral health promotion programs at all divisional levels. A plan to lower the waiting time, provide more service mix at dental clinics around the country and reinforcing to the people the importance of purchasing oral health care are management issues that will improve the use of dental services.

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Perception that nothing was wrong with their teeth was the major reason for not obtaining care during the last 12 months.

Removing teeth will cure something, including the foolish belief that removing teeth will cure everything
(Anonymous)