

SELF-INITIATED REASONS FOR DENTAL SERVICE USE AND RECEIVED DENTAL CARE INTERVENTIONS OF ADULT AND ELDERLY PATIENTS ATTENDING A DISTRICT HOSPITAL IN SOUTHERN THAILAND

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ABSTRACT: A retrospective study in a group of 791 dental patients was undertaken to primarily describe characteristics of self-initiated reasons for dental service use and correspondingly received dental care interventions in this group of adult and elderly patients who attended a rural public hospital in Southern Thailand. Orientation of dental service provided by this rural public hospital was also aimed to be identified. Data were collected from hospital computer database and re-validated with patient general records and joint dental treatment records. Descriptive statistics were used for general description. Very low percentage of preventive reasons expressed in this group of patients was very low (3.7%). The reasons related to oral surgery, a destructive kind of dental treatment, were the most common reasons expressed by 340 patients (43%). The second and third most common reasons were the ones related to dental coronal pathoses (19.2%) and periodontal diseases (18.6%). The three most common dental care interventions received by patients who expressed self-initiated reasons were oral surgical treatments (50.7%), operative treatment (20.4%), and periodontal treatment (16.3%). It should be stressed that about half of the patients ended up receiving oral surgical treatments which were rather destructive and resulted mostly in loss of teeth. It was evident that the existing status of dental service provision in that rural public hospital was curative in orientation.

Keywords: self-initiated reason, received dental care interventions, adult patients, elderly patients, district hospital, southern Thailand

INTRODUCTION: Self-initiated reasons for dental service use are important for dental professionals since they primarily provide patients' messages about: their perception of oral problems, beliefs, dental care needs, and attitudes towards dental service. Self-initiated reasons can also be viewed as self-awareness of oral health (perceived need of dental service) or self-evaluation of oral health which results in decision to request for dental care. Therefore, understanding characteristics of the self-initiated reasons would allow professionals to rationally provide dental service which meets patients' needs and creates users' satisfaction. Additionally, different frequencies of the reasons for oral health seeking would allow corresponding policy makers and service providers to prioritize oral problems among service users and act suitably to control the problems based on order of significance at both individual and community levels. Characteristics of received dental care interventions

corresponding to the self-initiated reasons provide insight into providers' responses to users' needs, which further allows understanding of what patients express in their reasons and what they actually get from the dental service. In addition, such characteristics also indicate orientation of the service, either preventive-oriented dental service or curative-oriented dental service. Preventive-oriented dental service generally emphasizes on prevention of oral diseases and oral health promotion while curative-oriented dental service contrastively stresses in treating oral diseases and oral rehabilitation. Since the preventive-oriented service is the ideal goal of dental service provision, analyzing patients' received dental care interventions would evidently identify current orientation of service and aspects to be improved for reaching such ideal goal.

This study was undertaken to primarily describe characteristics of self-initiated reasons for

utilizing dental services and received dental care interventions in the group of adult and elderly patients who attended a rural district hospital in southern Thailand. Orientation of dental service provided by this rural public hospital was also aimed to be identified.

MATERIALS AND METHODS: This study is a retrospective descriptive study of self-initiated reasons for dental service use and correspondingly received dental services. Site of study was at Hua Sai Hospital, a rural public hospital in Nakhon Si Thammarat Province, Southern Thailand. Study populations were all adult and elderly dental patients, aged 20 years old and over, who reported self-initiated reasons and received dental services at Hua Sai Hospital from Monday to Friday during February 2, 2009 to April 30, 2009. Patients expressing provider-influenced reasons, such as having appointment for further treatment or consequence of previous treatment, were excluded. In case of a patient utilizing dental service more than once during this study period, only self-initiated reason in the first dental visit was included. Ultimately, the study populations included 791 patients. Data were initially collected from hospital computer database and further validated with both patient general records and joint dental treatment records. Self-initiated reasons were categorized as described in Table 1. Two main categories of self-initiated reasons were preventive reasons or curative reasons. Preventive reasons included dental check-up, prophylaxis cleaning (or tooth polishing), request for oral hygiene instruction, and request for fluoride therapy (see Table 1: category 1). Reasons other than these were categorized as curative reasons (see Table 1: all other categories combined). In case of multiple reasons expressed at once, when curative and

preventive reasons were coincidentally expressed, such circumstance was rated in the main categories of reasons as same as a curative reason. Received dental care interventions were categorized as described in Table 2. There were also two main categories of patients' received dental care interventions: preventive care (see Table 2: category 1) and curative care (see Table 2: all other categories combined).

Data were analyzed using SPSS software, version 17. Descriptive statistics was used to describe what was observed in the study populations.

RESULTS: There were only 29 patients (3.7%) who expressed preventive reasons for utilizing dental services. The other 762 patients (96.3%) expressed reasons related to treatment and oral rehabilitation for service use. The reasons related to oral surgery were the most common reasons expressed by 340 patients (43%). The second and third most common reasons were the ones related to dental coronal pathoses (19.2%) and periodontal diseases (18.6%). (see Table 3)

The three most common dental care interventions received by patients who expressed self-initiated reasons were oral surgical treatments (50.7%), operative treatment (20.4%), and periodontal treatment (16.3%). It should be noted that about half of all patients in this group have received oral surgical treatments (dental extractions and surgical removal of impacted teeth) which resulted in tooth loss. Only 20.4% of the patients have their teeth restored and only 2.1% of the patients received preventive dental care. (see Table 4)

Although there were 29 patients who expressed preventive reasons, only 16 patients received the preventive care as intended. One patient received both preventive care and a treatment. The other 12 patients instead received treatments.

Table 1: Categorization of self-initiated reasons for dental service use

Categories	Characteristics of self-initiated reasons
Category 1 - Preventive reasons	Dental check-up, Prophylaxis cleaning, Request for oral hygiene instruction, Request for fluoride therapy
Category 2 - Reasons related to pain in oral cavity	Dental pain, Pain at the gum (Gingival pain), Pain at extraction wound, Pain on tissue side of denture, Pain on chewing (All kinds of pain which drove the patient to seek dental care.)
Category 3 - Reasons related to dental coronal pathoses	Tooth decay (dental caries), Restoration dislodgement or restoration fracture, Cervical abrasion, Attrition, Erosion, Request for operative treatment (filling, pulp therapy, root canal treatment, diastema closure, etc.)

Categories	Characteristics of self-initiated reasons
Category 4 - Reasons related to periodontal diseases	Dental plaque and calculus deposition, Periodontal diseases and related symptoms (swollen gum, mobile or loosened tooth, and others), Request for periodontal treatment (scaling, root planing, periodontal surgery)
Category 5 - Reasons related to oral surgery	Retained root which needs extraction, Maxillofacial abnormalities (e.g. swollen cheek), Request for dental extraction, Request for examination of impacted or embedded tooth, Request for surgical removal of impacted or embedded tooth, Request for treatment of oral and maxillofacial infection, Request for surgery of oral and maxillofacial pathosis
Category 6 - Reasons related to edentulism	Partial or complete edentulism, Request for prosthodontic treatment (denture placement, fixed prosthesis – crown and bridge, removable prosthesis – temporary plate, removable partial denture, and complete denture)
Category 7 - Other reasons	Reasons which cannot be categorized into the mentioned categories, symptoms or conditions which can be found in more than one oral diseases or abnormalities, and conditions which cannot be straightforwardly prescribed a definite treatment: Request for examination of a tooth or a portion in the oral cavity which patient could not decide which treatment was relevant, Fish bone stuck in the throat, Hypersensitivity with undetermined cause, Tooth fracture which needed professional decision to restore or remove, Food impaction, etc.
Category 8 - Multiple reasons	
8.1 For prevention and treatment	For instance, for dental check-up and scaling (one preventive intervention and one treatment)
8.2 For two treatment	For instance, request for dental filling and scaling (two treatments)

For those patients with reported pain in the oral cavity, dental extraction was the most commonly prescribed therapeutic intervention (49%), followed by analgesic medication (20.4%). Two patients received operative treatment (dental fillings) since they were diagnosed having only cavitated caries. A patient had a pinging pain on the tissue side of the denture and the received treatment was denture

correction which was considered a prosthodontic treatment. There were 5 patients who received treatments in the category of 'other single interventions'. These interventions included diagnoses making only (for 3 patients to decide about receiving further treatment), appointment making for root canal treatment, and temporary filling and follow-up pulp symptom.

Table 2: Categorization of received dental care interventions

Categories of dental care interventions	Characteristics of dental care interventions
Category 1 - Preventive care	Dental check-up, Prophylaxis cleaning, Oral hygiene instruction, Diet counseling, Fluoride therapy, Radiographic screening of oral diseases etc
Category 2 - Medication as a main treatment	Prescription of analgesics, antibiotics, etc.
Category 3 - Operative treatment	Intracoronar restorations (filling), Pulpal therapy (direct pulp capping, indirect pulp capping, and root canal treatment), Diastema closure with tooth-colored filling material, etc.
Category 4 - Periodontal treatment	Scaling and polishing, root planing with or without prescription of antibiotic and analgesic drugs, Periodontal surgery and related prescription of medicine
Category 5 - Oral surgery	Dental extraction with related prescription of medication, Surgical removal of impacted or embedded tooth with medication, Incision and drainage of exudates with medication, and minor oral and maxillofacial surgery with medication
Category 6 - Prosthodontic treatment	Fixed prosthesis (crown and bridge), Removable prosthesis (temporary plate, removable partial denture, and complete denture), Denture repair, Denture relines, Denture rebase, Denture correction, Denture recheck
Category 7 - Other single interventions	Patient reassurance, Advice for further treatment, Appointment making, Diagnosis making, Treatment planning, Medical consultation for pre-operative patient optimization, Temporary filling and follow-up, Examination of abnormality, Examination of an individual tooth, Patient referral, Removal of poor prosthesis (without provision of new prosthesis), Hospital admission, etc.
Category 8 Multiple interventions	
8.1 Preventive care and treatment or rehabilitation	For instance, dental check-up and scaling (one preventive intervention and one treatment)
8.2 Treatment or rehabilitation only	For instance, dental filling in one tooth and analgesic medication for the other tooth with irreversible pulpitis

There were 7 cases who received multiple interventions; including, medication and dental restoration, medication and further appointment (2 cases), medication and patient referral, periodontal treatment (scaling) and antibiotic medication, dental radiographic examination and further appointment, extraction wound examination and medication. In the group of patients whose reasons were related to dental coronal pathoses, 86.2% of these patients appropriately received operative treatment. There were 5 patients who received other single treatments; including, diagnosis making only (2 cases), radiographic examination, patient reassurance (There was no dental caries found and the teeth were sound.), and further appointment for root canal treatment. Two patients received multiple treatments; including temporary filling (in two teeth due to uncontrolled gingival bleeding) and filling in other two teeth, and scaling and appointment for denture fabrication.

Table 3: Self-initiated reasons for utilizing dental services at Hua Sai Hospital during February to April 2009 (N = 791)

Self-initiated reasons	Frequency	%
Preventive reasons (29, 3.7%):		
1) Preventive reasons	29	3.7
Curative reasons (762, 96.3%):		
2) Pain in oral cavity	49	6.2
3) Dental coronal pathoses	152	19.2
4) Periodontal diseases	147	18.6
5) Oral surgery	340	43
6) Edentulism	22	2.8
7) Other single reasons	37	4.7
8) Multiple reasons		
8.1) Prevention and treatment*	0	0
8.2) Treatments only	15	1.9

In the group of patients with reasons related to periodontal diseases, 80.3% appropriately received periodontal treatment, 2.7% while 10.9% instead received dental extractions. It should be noted that there was a patient who received both preventive care (full mouth dental check-up) and treatment (scaling).

Table 4: Received dental care interventions and their main categories in this group of patients (N=791)

Received dental care interventions	Frequency	%
Preventive care (17, 2.1%)		
1) Preventive care	17	2.1
Curative care (774, 97.9%)		
2) Medication as main treatment	17	2.1
3) Operative treatment	161	20.4
4) Periodontal treatment	129	16.3
5) Oral surgery	401	50.7
6) Prosthodontic treatment	7	0.9
7) Other single interventions	43	5.4
8) Multiple interventions		
8.1) Prevention and treatment	2	0.3
8.2) Treatment only	14	1.8

In the group of patients with reasons related to oral surgery, 95% of the patients really received oral surgical interventions (mainly dental extractions). There were 9 patients who received other single interventions; including diagnosis making only, appointment for root canal treatment, appointment for surgical removal of impacted tooth (4 cases), medical consultation for uncontrolled diabetic patient optimization, removal of poor prosthesis made by an unauthorized dental technician, and information given about dental extraction. A patient received multiple interventions which were dental restoration and further appointment for surgical removal of impacted tooth.

In the group of patients with reasons related to edentulism, only 22.7% received the prosthodontic treatment right away while the others were either given treatments for mouth preparation prior to denture placement or appointed for further prosthodontic treatment.

In the 'other single reasons' category, there was a patient who received preventive care. This patient's reason was a request for examination of the redness and recessed gum without any symptoms. The professional diagnosis of this case was 'gingival

recession' and the oral hygiene instruction was given as a preventive care.

It should be noted that no one expressed a reason related to both prevention and treatment. In contrast, there were 15 patients with reasons related to multiple treatments. However, all the 15 patients received only single therapeutic interventions.

DISCUSSIONS: The term 'self-initiated reason' was adopted instead of the term 'reason' found in other studies to dominate the key feature of this study which investigated only the patient's initiated reasons for utilizing dental services. Attempt to avoid provider influence on oral health seeking behavior was ensured through excluding provider-initiated reasons such as appointment for further treatment. The term 'self-reported reason', found in several studies which used questionnaires for data collection, was not adopted due to the difference in data collection method of this study from the others. Since self-reported reasons were usually written in words or marked in the already organized reason categories in the questionnaires by the patients, this method might not be applicable for the study in the elderly who were illiterate or inconvenient to write and some details in the expressed reasons might be missed. This study was then designed to study the self-initiated reasons which have been vocally expressed by the patients to the health professionals and details of reasons which have been thoroughly recorded in the dental treatment records. These features dominated initiation of this study in this field of research. Studying self-initiated reasons for dental service use would allow understanding of reasons why dental patients decide to visit dental services by themselves, without influence from providers. Thus, expression of preventive reasons for dental service use in this study would reflect preventive dental behavior. Expression of preventive reasons differs from other means representing preventive dental behavior in other studies which often used reasons for last dental visit and the recentness of last visit².

Nevertheless, a method used for representing the preventive dental behavior from the reason for last dental visit was comparing category "regular check-up and cleaning" with all other categories combined², which was comparable to the method in this study.

The three most common self-initiated reasons in this study were reasons related to oral surgery (43%), dental coronal pathoses (19.2%), and periodontal diseases (18.6%). This finding was relatively consistent with the finding in the study of reasons for attending dental-care services in an urban area of Burkina Faso¹. In that study, the three most common reasons for dental attendance were pulpal involvement caries (52.4%), enamel and dentinal caries (17.5%), and periodontal diseases (14.5%). Although reasons related to oral surgery are not directly comparable to the reason of pulpal involvement caries in the general sense, it is common that pulpal involvement caries potentially mandate the need for tooth extraction which is a major procedure of oral surgery. Moreover, these reasons also share the same feature of severe destruction of tooth structure. Therefore, these two studies represented the same pattern of reported reasons for utilizing dental services which were related to severe destruction of tooth and need of destructive dental procedures and were curative-oriented reasons. Since the reason for dental visit is regarded as a measure of demand determined by the health care service users³, low rate of expressing preventive reasons in this study would reflect the low demand for prevention of oral diseases and being unaware of oral health problems.

The most commonly received dental care intervention was oral surgery, mainly dental extraction. This kind of interventions usually results in tooth loss. However, the preventive care interventions were given in only 17 patients (2.1%). This indicated that the dental serviced provided by this district hospital was obviously curative-oriented.

Generally, health policy and funding can promote preventive orientation of dental services in populations by encouraging dental check-ups, featuring preventive orientation of dental services, and applying third party payment systems⁴. However, treatment-oriented national health insurance systems can aggravate preventive utilization of oral health services⁵. Although Universal Coverage Scheme in Thailand provides preventive dental benefit package for free to most of Thai populations and most patients in this study (563, 71.2%), it does not have the obligatory regular dental check-ups system which may explain the low rate of expressing preventive reasons for utilizing dental services in this study.

For recommendations, firstly, since the number of patients who utilized preventive dental services was very low, recall systems to remind patients to make dental visit for dental check-up and cleaning is needed. This recall system for regular dental check-up should also be regulated in each health insurance scheme. Measures such as co-payment for health expenditure should be used in case of those beneficiaries who do not follow the regulation. Secondly, patient education on prevention of oral diseases is important to make an understanding and awareness of oral diseases and their prevention. Dental check-up must be recommended in all patients. Thirdly, local health care providers should contribute to the implementation of community-based preventive program and promotion of oral health especially in the vulnerable population such as the elderly who might have physical barrier to access to health care services. Next, key performance indicators for quality control of preventive care should be developed and introduced into dental practice in public hospitals. This would assure that dental patients are provided with quality preventive care. Ultimately, dental service system and dental professionals should be more active in offering the preventive dental care. Currently, the provision of preventive dental services is rather passive, offering a

secondary prevention to already emerging diseases. More active offering would allow the provision of primary preventive care when emergence of oral diseases can be prevented.

For further study, other factors which may influence preventive dental behavior should be further studied. Psychological factors such fear of pain may impede the preventive dental service utilization. Moreover, qualitative study should be conducted to find out the underlying reasons why most patients utilize dental services only for treatment. Knowledge and attitude towards preventive dental services utilization should be clarified.

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REFERENCES:

1. Varenne B, Msellati P, Zoungrana C, Fournet F, Salem G. 2005. Reasons for attending dental-care services in Ouagadougou, Burkina Faso. *Bulletin of the World Health Organization* 83(9):650-655.
2. So FHC, Schwarz E. 1996. Demand for and utilization of dental services among Hong Kong employees with and without dental benefit coverage. *Community Dentistry & Oral Epidemiology* 24:201-206.
3. Swank ME, Vernon SW, Lairson DR. 1986. Patterns of Preventive Dental Behavior. *Public Health Reports* 101(2):176-184.
4. Bayat F, Vehkalahti MM, Zafarmand AH, Tala H. 2008. Impact of Insurance Scheme on Adults' Dental Check-Ups in a Developing Oral Health Care System. *European Journal of Dentistry* 2:3-10
5. Chen M, Anderson RM, Barmes DE, Leclercq MH, Lyttle CS. 1997. Comparing oral health care systems; a second international collaborative study. Geneva: World Health Organization.