

การรับรู้และความพึงพอใจของผู้ป่วยต่อการรักษาด้วยรากฟันเทียม
โดยนิสิตหลังปริญญาและทันตแพทย์ผู้มีประสบการณ์



บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
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PATIENT'S PERCEPTION AND SATISFACTION ON DENTAL IMPLANT THERAPY
BY POSTGRADUATE DENTAL STUDENTS AND EXPERIENCED DENTISTS



A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Science Program in Oral and Maxillofacial Surgery
Department of Oral and Maxillofacial Surgery
Faculty of Dentistry
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พัฒนา วิพัชนะพร : การรับรู้และความพึงพอใจของผู้ป่วยต่อการรักษาด้วยรากฟันเทียมโดยนิตหลังปริญญาและทันตแพทย์ผู้มีประสบการณ์ (PATIENT'S PERCEPTION AND SATISFACTION ON DENTAL IMPLANT THERAPY BY POSTGRADUATE DENTAL STUDENTS AND EXPERIENCED DENTISTS) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ผศ. ทญ. ดร.เกศกัญญา สัพพะเลข, อ.ที่ปรึกษาวิทยานิพนธ์ร่วม: ผศ. ทญ. ดร.ผกาภรณ์ พันธุ์วดี พิศาลธุรกิจ, 65 หน้า.

วัตถุประสงค์ของการวิจัย เพื่อประเมินและเปรียบเทียบการรับรู้และความพึงพอใจของผู้ป่วยที่ได้รับการฝังรากฟันเทียมระหว่างนิตหลังปริญญาและทันตแพทย์ผู้มีประสบการณ์

วิธีวิจัย การศึกษานี้เป็นงานวิจัยเชิงพรรณนา ณ จุดเวลาใดเวลาหนึ่งแบบตัดขวางในผู้ป่วยที่ได้รับการใส่ฟันด้วยรากฟันเทียมที่คณะทันตแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย โดยเก็บข้อมูลเกี่ยวกับการรับรู้และความพึงพอใจของผู้ป่วยด้วยแบบสอบถามที่ส่งทางไปรษณีย์ แบบสอบถามมี 23 คำถาม ประกอบไปด้วย 1. ข้อมูลพื้นฐานของผู้ป่วย 7 คำถาม 2. การรับรู้ของผู้ป่วย 7 คำถาม 3. ความพึงพอใจของผู้ป่วย 9 คำถาม ซึ่งวิธีการใช้แบบสอบถามเป็นแบบปรนัยเลือกเพียงคำตอบเดียวและแบบวัดแสดงความรู้สึกบนเส้นตรง

ผลการวิจัย จากการศึกษาพบว่าผู้ตอบแบบสอบถาม 382 คน ได้รับข้อมูลเรื่องรากฟันเทียมจากทันตแพทย์เป็นหลัก ($n=213$, 55.8%) พบผู้ป่วยร้อยละ 90 เห็นด้วยว่าได้รับข้อมูลการรักษาด้วยรากฟันเทียมอย่างละเอียดครบถ้วนรวมถึงพึงพอใจต่อการบดเคี้ยวอาหาร การออกเสียง และความสวยงามที่ได้รับจากรากฟันเทียม แต่อย่างไรก็ตามยังพบการรับรู้ที่ไม่เหมาะสมของผู้ป่วยในบางคำถามได้แก่ ผู้ป่วยร้อยละ 18 เห็นด้วยกับคำถาม “รากฟันเทียมต้องการการดูแลทำความสะอาดน้อยกว่าฟันธรรมชาติ” ผู้ป่วยประมาณร้อยละ 35 เห็นด้วยในคำถาม “รากฟันเทียมใช้งานได้ยาวนานกว่าฟันธรรมชาติ” และผู้ป่วยร้อยละ 75 เห็นด้วยกับคำถาม “การรักษาด้วยรากฟันเทียมไม่มีความเสี่ยงหรือผลข้างเคียงใดๆ” นอกจากนี้ครึ่งหนึ่งของจำนวนผู้ป่วยเห็นด้วยกับ “รากฟันเทียมมีราคาเหมาะสม” และในกลุ่มผู้ป่วยที่ได้รับการรักษาจากทันตแพทย์ผู้มีประสบการณ์ ให้คะแนนสูงกว่าในคำถาม “ได้รับข้อมูลการรักษาด้วยรากฟันเทียมอย่างละเอียดครบถ้วน” และ “รากฟันเทียมให้ผลความสวยงามได้เหมือนฟันธรรมชาติ” ($p=0.029$ และ $p=0.004$, ตามลำดับ)

สรุปผลวิจัย ผู้ป่วยส่วนใหญ่มีการรับรู้ที่เหมาะสมและระดับความพึงพอใจสูงหลังจากได้รับการรักษาด้วยรากฟันเทียม แต่อย่างไรก็ตามข้อมูลเกี่ยวกับภาวะแทรกซ้อนที่อาจเกิดขึ้นได้ของรากฟันเทียมยังไม่เพียงพอ นอกจากนั้นครึ่งหนึ่งของผู้ป่วยรายงานราคาที่ไม่เหมาะสมของรากฟันเทียม ถึงแม้ว่าระดับความเชี่ยวชาญในการรักษาด้วยรากฟันเทียมที่แตกต่างกันจะไม่มีผลต่อระดับความพึงพอใจและการรับรู้ของผู้ป่วยส่วนมาก แต่อย่างไรก็ตามยังพบว่าผู้ป่วยที่ได้รับการรักษารากฟันเทียมจากทันตแพทย์ผู้มีประสบการณ์ มีการรับรู้ว่าได้ข้อมูลที่ละเอียดครบถ้วน และมีการรับรู้ว่ารากฟันเทียมมีความสวยงามเหมือนฟันธรรมชาติมากกว่าผู้ป่วยที่ได้รับการรักษารากฟันเทียมจากนิตหลังปริญญา

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5875825032 : MAJOR ORAL AND MAXILLOFACIAL SURGERY

KEYWORDS: DENTAL IMPLANT / PERCEPTION / SATISFACTION / QUESTIONNAIRES / VISUAL ANALOG SCALE

PAT VIPATTANAPORN: PATIENT'S PERCEPTION AND SATISFACTION ON DENTAL IMPLANT THERAPY BY POSTGRADUATE DENTAL STUDENTS AND EXPERIENCED DENTISTS. ADVISOR: ASST. PROF. DDS. KESKANYA SUBBALEKHA, Ph.D., CO-ADVISOR: ASST. PROF. DDS.PAGAPORN PANTUWADEE PISARNTURAKIT, Ph.D., 65 pp.

Objective: To evaluate and compare patient's perception and satisfaction between patients who received dental treatment from postgraduate dental students and experienced dentists.

Material and methods: This descriptive cross-sectional study was performed in patients who received the dental implant from Faculty of dentistry Chulalongkorn University. A data collection of patient's perception and satisfaction was done by questionnaire which was sent by mail. The questionnaire contained 23 statements including 7 statements of demographic data, 7 statements of perception, and 9 statements of satisfaction. The patient had to answer through the one-best-answer multiple choices and visual analog scale (VAS).

Results: The 382 participants showed that the main implant information source was dentist (n=213, 55.8%). Ninety percent of the participants got well informed about dental implant and satisfied with chewing function, phonetics aspect and esthetic appearance of dental implant. However, an inappropriate perception was illustrated. For example, eighteen percent of the participant agreed with the statement "Dental implants require less care than natural teeth". About thirty-five percent of participants agreed with the statement "Dental implants last longer than natural teeth". Seventy-five percent of participants agreed with the statement "Treatment with dental implants have no risk or complication". Furthermore, half of the participants agreed with "The cost of dental implant therapy is appropriate". Participants who got treatment from the experienced dentist rated higher score in "I am well informed with dental implants treatment" and "Dental implants look as nice as natural teeth" (p=0.029 and p=0.004, respectively).

Conclusion: Most participants had an appropriate perception and a high satisfaction after dental implant treatment. However, the information about the potential complications of dental implant was inadequate. Moreover, half of the participants reported unreasonable cost of dental implant. Despite the expertise levels of dental implant treatment were different, most participants had similar level of satisfaction. They also had similar level of perception in most aspect; however, participants who underwent dental implant treatment from experienced dentist had better information and more natural looking teeth than those who got treatment from postgraduate dental student.

Department: Oral and Maxillofacial Surgery

Field of Study: Oral and Maxillofacial Surgery

Academic Year: 2017

Student's Signature

Advisor's Signature

Co-Advisor's Signature

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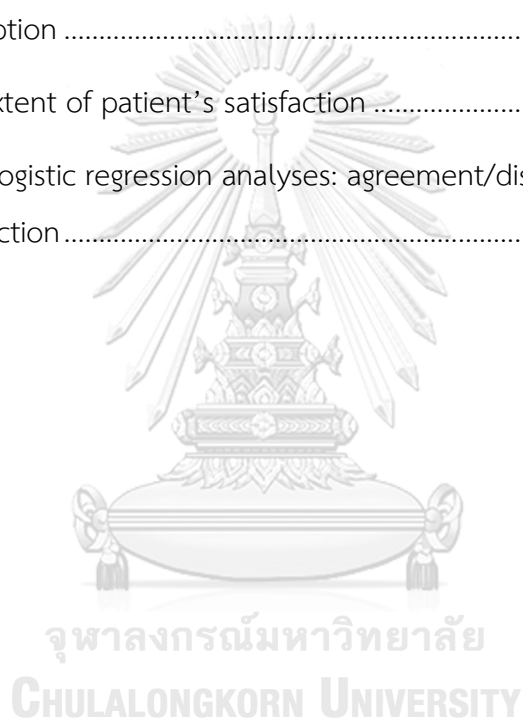
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CHAPTER I

Introduction

1.1 Background and Rationale

Dental Implants have been popular in restoring edentulous area due to the high success and survival rates (1, 2). At present, the success of dental implants mainly bases on clinical aspects such as pain, mobility, radiographic crestal bone loss, probing depth and per-implant disease (3-5). Although they function as natural teeth, they have different biological aspects. The absence of periodontal ligament results in lacking sensory function and proprioception (6) which can lead extremely damage to dental implant. Consequently, some of our patients do not dare to chew on their implants due to the fear of making damage and may bring about implant loss. The profiling dimension of crown on dental implant may let the food and plaque accumulation which requires special care to maintain healthiness of peri-implant tissue. Therefore, some patients might be less satisfied in function and cleaning method of dental implant. Moreover, many patients do not realize the important of routine dental implant check-up, this ignorance may let dental implant failure in the future. Therefore, patient's perception and satisfaction could contribute to long term success.

Recently, many studies showed that patient's perception and attitude toward dental implant can influence their oral hygiene care and adherence to dental implant maintenance program (7, 8). Patient's realistic expectations and perceptions to dental implant therapy may take part in this success. Therefore, evaluating success bases on clinical aspects may not represent success on patient's aspect (9). However, success rate based on patient's point of view was still less reported. A multicenter analysis performed in Hong Kong and other 3 precinct of China demonstrated a highly unrealistic patient's perception in one center (10). Moreover, patient-perceived outcomes of implant-supported restorative therapy were related to the clinician performing the treatment, also the expertise of dentist may influence patient's satisfaction (11). In dental school, dental implant therapy is provided by postgraduate dental students and professors who have more skill and experiences. However, no studies have analyzed patient's perception in implant therapy by postgraduate dental students and professors.

1.2 Research Question

1.2.1 What are the perception and satisfaction of patients who have received dental implant therapy?

1.2.2 Do the dentist's expertise affect patient's perception and satisfaction of dental implant therapy?

1.3 Objectives

1.3.1 To evaluate patient's perception and satisfaction after receiving dental implant therapy

1.3.2 To compare patient's perception and satisfaction of dental implant treated by dental students and experienced dentists

1.4 Hypothesis

1.4.1 The perception of dental implants is different between patients receiving treatment from dental students and experienced dentists.

1.4.2 Patients have different satisfaction, comparing between different expertise levels.

1.5 Research design

Descriptive Cross-sectional study, questionnaire survey

1.6 Expected Benefit

The information from this study may benefit in providing proper knowledge of dental implant treatment to patient. Knowing patient's satisfaction may lead to the improvement of treatment process and academic curriculum adjustment. In addition, the patient's unrealistic perception could be correct earlier and may result in high long-term success rate.

1.7 Conceptual Framework

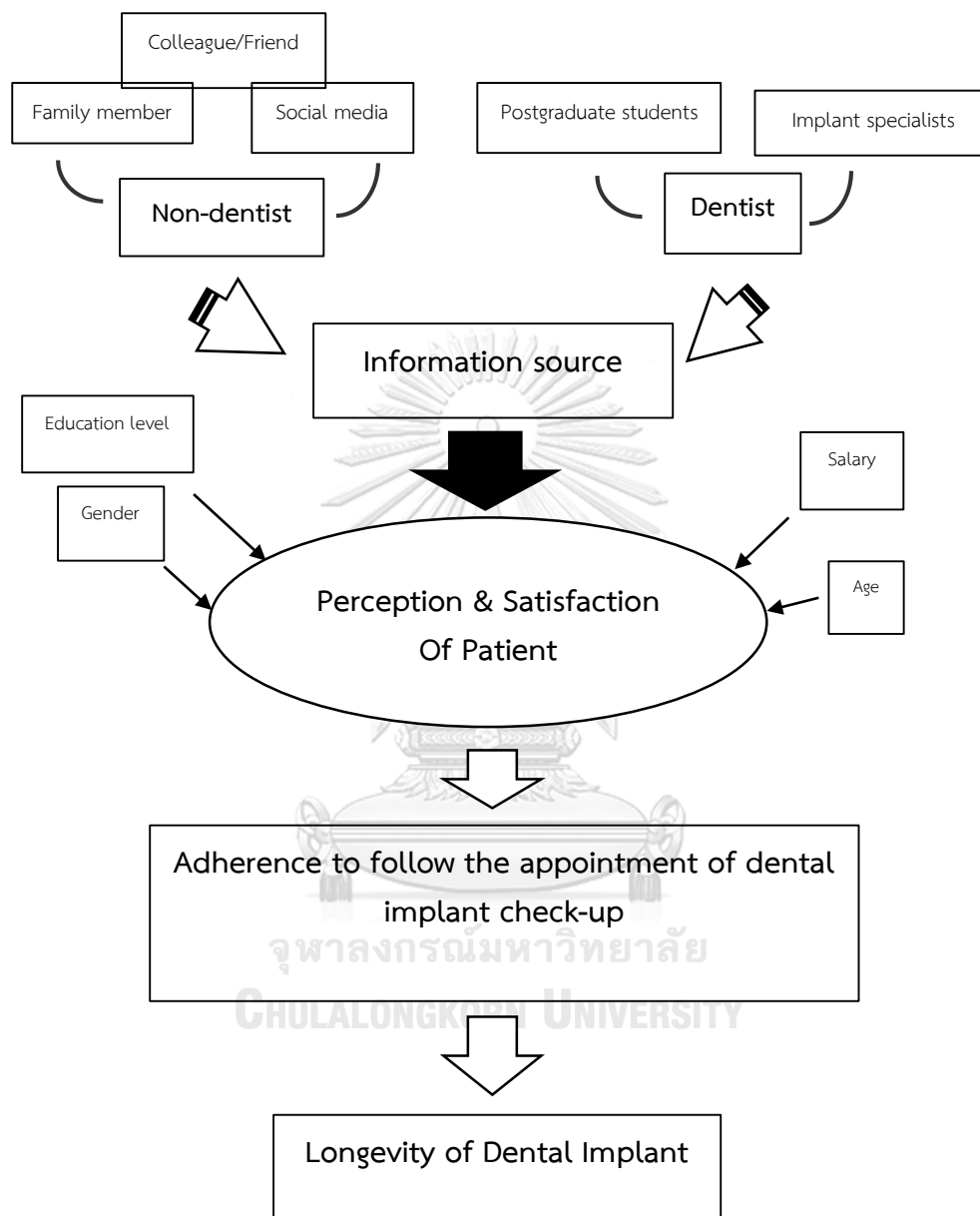


Figure 1 Conceptual framework

CHAPTER II

Reviews and Related Literatures

2.1 The concept of satisfaction

The word 'satisfaction' is found in dictionaries in a 'fulfillment of one's wishes, expectations, or needs, or the pleasure derived from this. Additionally, it has a meaning that something is right, such as 'the payment of a debt or fulfillment of an obligation or claim'. When satisfaction is applied to the patient with health service, it means a consensus of healthcare service and patient need, desire or expectation (12).

In 2016, Batbaatar et al (13) determined patient satisfaction in two dimensions including the health care provider-related determinants and second the patient-related characteristics. Health care provider-related determinants are identified in nine determinants of health care service, which in variation of patient satisfaction: technical care, interpersonal care, physical environment, access (accessibility, availability, and finances), organizational characteristics, continuity of care, and outcome of care. The patient-related characteristic are identified in thirteen demographic and psychological status (age, gender, education, socio-economic status, marital status, race, religion, geographic characteristics, visit regularity, length of stay, health status, personality, and expectations).

It is interesting to evaluate patient's satisfaction in various dimensions. There are many studies showing a high degree of patient's satisfaction to dental implant treatment (14, 15). However, it is hard to compare patient's satisfaction among studies due to lacking of standard outcome measurement (16).

2.2 Health care provider-related determinants

2.2.1 Technical care

The competency, ability, experience, and ethics, including confidence in doctor had satisfaction of patient (17-23). The adherence to standards and norms of clinical diagnoses and treatments. Patients who felt that they are treated incorrectly are significantly less satisfied with health services.

2.2.2 Interpersonal care

The care of patients are first importance (17, 24). Physicians care (25-27) and nurses care (18, 19, 25, 27-32) are importance of patient decision to satisfy.

2.2.3 Physical environment

The physical environment that correlate to satisfaction such as atmosphere of health provider service (32, 33), noise level (34).

2.2.4 Accessibility

Service accessibility is commonly measured across studied and explained by convenience of health services. The patient satisfaction is positively associated with accessibility through aspects such as: convenient location of health services, shorter waiting time (35-39), fast and easy admission (27, 34) and discharge process and shorter time and effort to get an appointment (40-42). Furthermore, a positive association is found between increased satisfaction and longer time spending of physicians during patient visit (26, 30, 43). However, better accessibility may not have guaranteed higher satisfaction level.

2.2.5 Availability

The sufficiency of number of physician, nurses, facilities, and equipment and identified availability is one of the main determinants of patient satisfaction (20, 32, 38, 44-46).

2.2.6 Affordability

The affordability of service, flexibility of payment mechanisms, status of insurance, and insurance coverage comprehensiveness are involved in patient's satisfaction (22, 45). Hospital and treatment costs may have inversely influenced patient satisfaction levels; (22, 38, 47) however, contradictory evidence demonstrated that fee for service provided higher patient satisfaction than prepaid practice group

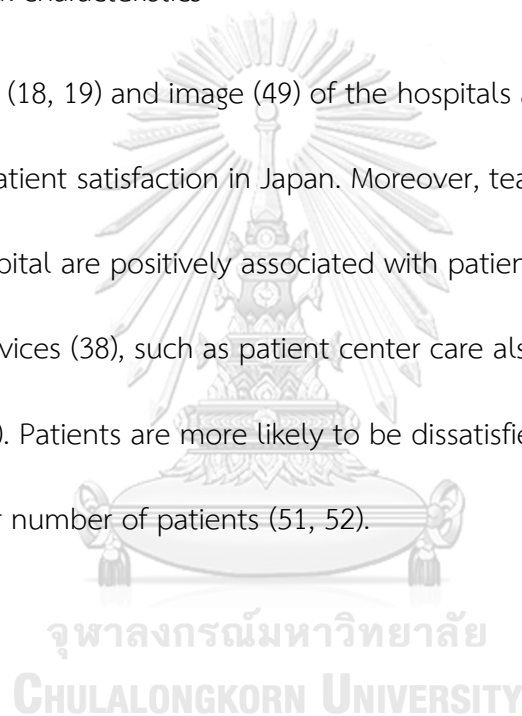
(30). Furthermore, patient satisfaction could have been heavily influenced by health insurance status and its coverage. Patients who had health insurance are satisfied with health services (48). Regarding to no insurances covering dental implant cost, patients may be less satisfied with this treatment.

2.2.7 Organizational characteristics

Reputation (18, 19) and image (49) of the hospitals are significant determinants of patient satisfaction in Japan. Moreover, teaching and foundation trust status of hospital are positively associated with patient experiences (50). The organization of services (38), such as patient center care also influence the pleasant of patients (47, 50). Patients are more likely to be dissatisfied if the service was dealing with bigger number of patients (51, 52).

2.2.8 Continuity

When patients get treatments from the same hospital, location with the cooperate in between them and physicians the goal of treatment can be uninterrupted. This continuity of treatment results in patient's satisfaction (13).



2.2.9 Efficacy/outcome of care

The treatment outcome of patient satisfaction have influence in some studies (53-55). It measures how helpful the care is to improve the health status or health condition.

2.3 Patient-related characteristics

The evidence of relationships between any of 13 demographic and psychological status (age, gender, education, socio-economic status, marital status, race, religion, geographic characteristics, visit regularity, length of stay, health status, personality, and expectations) effected to overall satisfaction with health services. Findings of relationships between patient-related characteristics and patient satisfaction were weak, widely inconsistent, and contradictory across the sample.

2.4 Perception

Perception is closely related to attitudes. Perception is the process by which organisms interpret and organize sensation to produce a meaningful experience of the world (56, 57). In other words, a person is confronted with a situation or stimuli. The person interprets the stimuli into something meaningful to him or she based on prior experiences. However, what an individual interprets or perceives may be substantially different from reality.

The perception process follows four stages: stimulation, registration, organization, and interpretation. A person's awareness and acceptance of the stimuli play an important role in the perception process. Receptiveness to the stimuli is highly selective and may be limited by a person's existing beliefs, attitude, motivation, and personality (58). Individuals will select the stimuli that satisfy their immediate needs (perceptual vigilance) and may disregard stimuli that may cause psychological anxiety (perceptual defense).

However, perceptual defense creates an internal barrier that limits the external stimuli passing through the perception process when it is not congruent with the person's current beliefs, attitudes, motivation, etc. This is referred to as selective perception. Selective perception occurs when an individual limits the processing of external stimuli by selectively interpreting what he or she sees based on beliefs, experience, or attitudes (59).

Broadbent's filter theory has been updated in recent years. A "Selection for-Action View" suggests that filtering is not just a consequence of capacity limitations, but is driven by goal-directed actions. The concept is that any action requires the selection of certain aspects of the environment that are action relevant and, at the same time, filtering other aspects that are action irrelevant. Therefore, when one is working toward a goal, one will skip over information that does not support one's plan.

Recent studies of the brain have also led to new models, suggesting multiple channels of processing and selective perception as a result of activation of cortical maps and neural networks. In any case, people are selective in what they perceive and tend to filter information based on the capacity to absorb new data, combined with preconceived thoughts

Patient's perception could contribute to long term success of dental implant. The ignorance of routine dental implant check-up may violate healthiness of peri-implant tissue. Recent studies showed realistic perceptions of patient after receiving dental implant therapy could influence their oral hygiene care and adherence to dental implant maintenance program (7, 8).

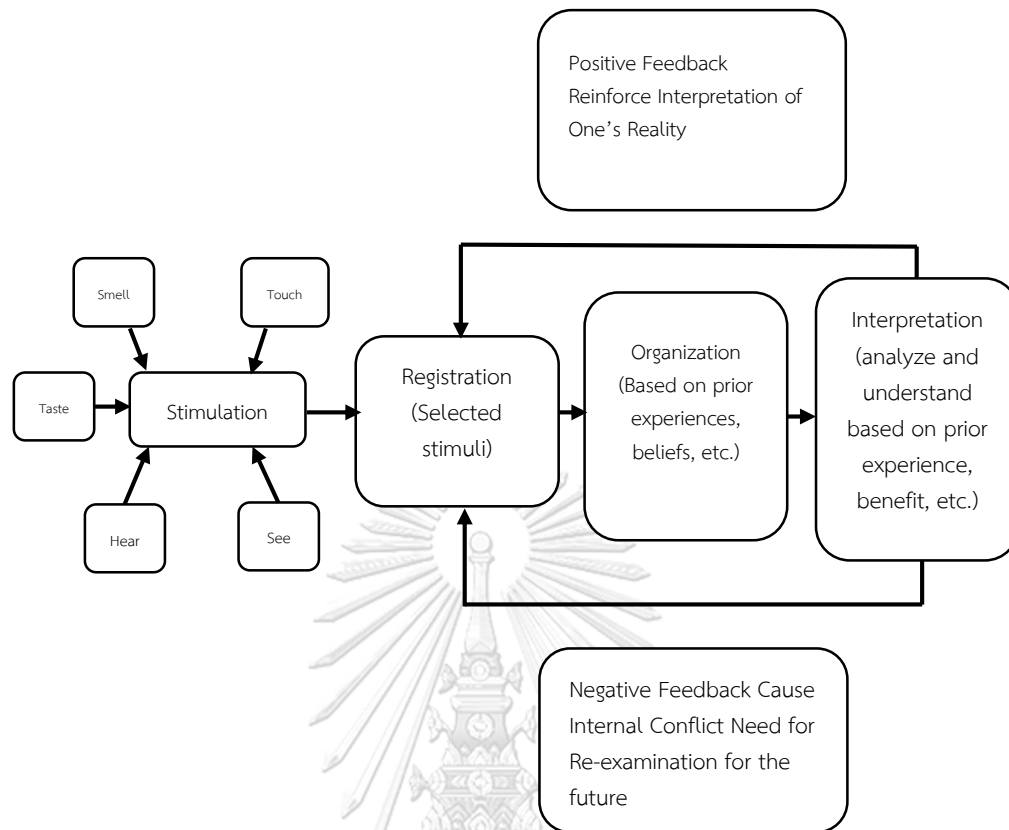


Figure 2 Perception Processing System

2.5 Evaluation of success of dental Implant success

The term of implant success is generally described by using clinical measurement after 12 months of loading, such as pain, mobility, radiographic crestal bone loss, probing depth, and per-implant disease (3-5). The implant success rate should also include the associated prosthetic survival rate in a clinical report (5).

- Pain

Most clinical implant positions in the literature did not invade the vital structures. Therefore, in the success-to-failure criteria, it is assumed that the implant did not damage the major nerves of the jaws. Once the implant has achieved primary healing, absence of pain under vertical or horizontal forces was a criterion. Usually, pain from the implant body did not occur unless the implant was mobile and effected by inflamed peri-implant tissue.

- Mobility

Rigid fixation was a clinical term for dental implants, which described the absence of clinical mobility in vertical or horizontal forces.

- Radiographic Crestal Bone Loss

The marginal bone around the dental implant was usually a significant factor of dental implant. The level of the surrounding bone of dental implant may be measured from the crestal point of the dental implant at the initial dental implant placement. The most common method to evaluate bone loss after healing was by radiographic examination.

Several studies report yearly radiographic marginal bone loss after the first year of function in the range of 0 to 0.2 mm. The marginal bone loss for the quality of health scale should include the first year. Consensus of the reports suggests that

the clinical assessment for each implant monitors marginal bone loss in increments of 1.0 mm. The bone loss measurement should be related to the original marginal bone level at implant insertion, rather than to a previous measurement.

- Probing Depths

Probing depths around teeth were an excellent proven methods to exam the past and present health of natural teeth, but probing depths around implants may be of little diagnostic value, unless accompanied by signs and/or symptoms. The increasing probing depths may indicate bone loss, but not necessarily indicate disease for dental implant.

- Peri-implant Disease

Peri-implantitis was defined as an inflammatory process affecting the tissue around dental implant in function that had resulted in loss of supporting bone.

Bacteria may be the factor for bone loss around dental implant. Anaerobic bacteria have been observed in the sulcus of dental implants. Additionally, stress-induced bone loss (e.g., overloading the bone dental implant) could occur without bacteria.

Obviously, conventional success criteria mainly base on clinical findings, no evaluation in patient's aspects. Patient-reported outcome including satisfaction in cleaning, comfort of chewing and natural looking after having dental implants should

be set as a success criteria. Moreover, the correct perception in maintaining healthiness of peri-implant tissue contributes to long term success (60).

2.6 Maintenance care of dental implant

According to the periodontal maintenance published in 2003 (61), “patients should be evaluated at regular intervals to monitor their peri-implant status, the condition of the dental implant supported prostheses, and plaque control.” The assessment begins with updating the patient’s medical and dental histories, to ensure that all concomitant conditions and therapies are known and to identify patients in high-risk categories (62). Maintenance principles should include regular evaluation of dental implants and their surrounding tissues and prostheses; occlusal examination; review and reinforcement of oral hygiene; removal of plaque and calculus; treatment of disease or repair of prostheses, as required; and institution of customized preventive measures (61).

As a consequence, the concept of supervised maintenance program (SPT) has been transferred to patients receiving dental implants. A lack of adherence to SPT following dental implant insertion has been correlated with a higher incidence of dental implant failure, bone loss at dental implants as well as with an increase incidence of peri-implant disease (63-65). Similar to other studies, realistic perceptions

of patient after receiving dental implant therapy can influence their oral hygiene care and adherence to dental implant maintenance program (7, 8).

2.7 Home care, adherence to follow the appointment of dental implant check-up

Evidence suggests that plaque control is as critically important for the dental implant health as it is for natural teeth (66). Therefore, it is imperative that patients understand their role and responsibility in maintaining their implants. Ideally, a home care assessment should have been performed before placement of the implant fixture, a regimen for thorough oral hygiene, customized according to the condition of the tissue and the extent of plaque and calculus around the implants, should be implemented (67). Home care devices and aids that have been shown to be safe for use around implant surfaces include interdental brushes with nylon-coated core wire, soft toothbrushes (both manual and power), end-tuft brushes, gauze, many types of floss (e.g., plastic, braided nylon, coated, floss with stiffened end to clean under bridges), stannous fluoride gel and chlorhexidine. Home care instructions should be customized according to implant design and accessibility. For example, smaller-diameter toothbrush heads, such as end-tuft brushes, may be helpful for areas that are difficult to access.

The importance of maintenance therapy is demonstrated in a study performed in two implant groups of patients over 5 years (68). Both groups had pre-existing mucositis. Peri-implantitis was evidenced in 44% of patients who had no maintenance compared to 18% in those with maintenance care (68).

Maintenance therapy is essential for monitoring and maintaining the health and stability of a successful implant restoration, that preserve health and integrity of both hard and soft tissue surrounding a dental implant through prevention and detection of peri-implant diseases (peri-implantitis and peri-implant mucositis). This can only be achieved through proper record keeping, good home care, and adherence to regular professional maintenance visits. Moreover, in those situations where problems arise, it is imperative to recognize and render treatment at the earliest stage possible.

CHAPTER III

Materials and Methods

This study was a descriptive cross-sectional study. Patient's perception and satisfaction after dental implant therapy were surveyed by questionnaire distributed by mail. Questionnaire contained 23 items, 7 items were demographic data, 7 items were perception and 9 items were satisfaction. The VAS scale and fixed choice were used.

3.1 Study population

Patients who received fixed restoration on dental implants from Faculty of Dentistry, Chulalongkorn University during 2011-2016.

3.2 Sample size

Power analysis for an independent sample t-test was conducted in G-POWER to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, a medium effect size ($d = 0.2$), and two tail (69). There was an equal allocation of participants into each group. Based on the aforementioned assumptions, the desired sample size was 394 per group. Due to the low responsive rate of questionnaire, we expected 70% return rate from participants. Therefore, the desired sample size in this study was 946 participants.

3.3 Sample selection

Patients receiving fixed restorations (single-crown, bridge or splint-crown) on dental implants from the Faculty of Dentistry, Chulalongkorn University during 2011-2016 were classified into 2 groups. Group one was patients who received dental implant therapy by postgraduate dental students. Group two was patients who received dental implant therapy by supervisors or professors. The confirmation of patient's address was done by given telephone number in patient's record. Only 691 patients could be contacted (428 were in experienced dentist group and 263 were in postgraduate student group). The questionnaires were sent to 691 participants.

3.4 Inclusion criteria

- Patients who had dental implant loading prosthesis (single-crown, bridge or splint-crown) at least 6 months from the Faculty of Dentistry, Chulalongkorn University
- Patients who can read Thai language.

3.5 Exclusion criteria

- Incomplete questionnaire

3.6 Questionnaire development

3.6.1 Item selection

Questions about patient's perception were modified from Yao et al 2017 (10). Questions about patient's satisfaction were modified from Pjetursson et al 2005 (14). All participants were also invited to give written comments related to the implant therapy.

All the selected items were translated into Thai language and checked the validity of content by 3 experts. Then the reliability test of the questionnaire was performed, and tried out. When the questionnaire was already approved, it was mailed to participants.

3.6.2 Questionnaire validation

The items were evaluated in terms of content validity, internal consistency, language, wording and lay out of the questionnaire.

- Content validity

The content validity concerns the extent to which a set of items taps the content of some domain of interest by having the initial pool review by the experts. Three experts in the area of dental implant were requested to evaluate the initial items. Envelopes of evaluation were sent by hand to each expert. Enclosed in the envelope were:

1) Cover letter explaining the objectives of constructions and usage of questionnaire and the evaluation work requested

- 2) The full research proposal
- 3) The first draft questionnaire.

The experts were ask to rate a score for each item. After test of content validity, the items were then edited for clarity according to experts' suggestion.

In this study, we could not do the criterion validity because there was no existing gold standard, construct validity could not be done because limitation of sample.

- Reliability

Cronbach's alpha coefficient was used to explore the consistency of the questionnaire. An alpha coefficient over 0.6 is acceptable. In our questionnaire Cronbach's alpha was 0.68.

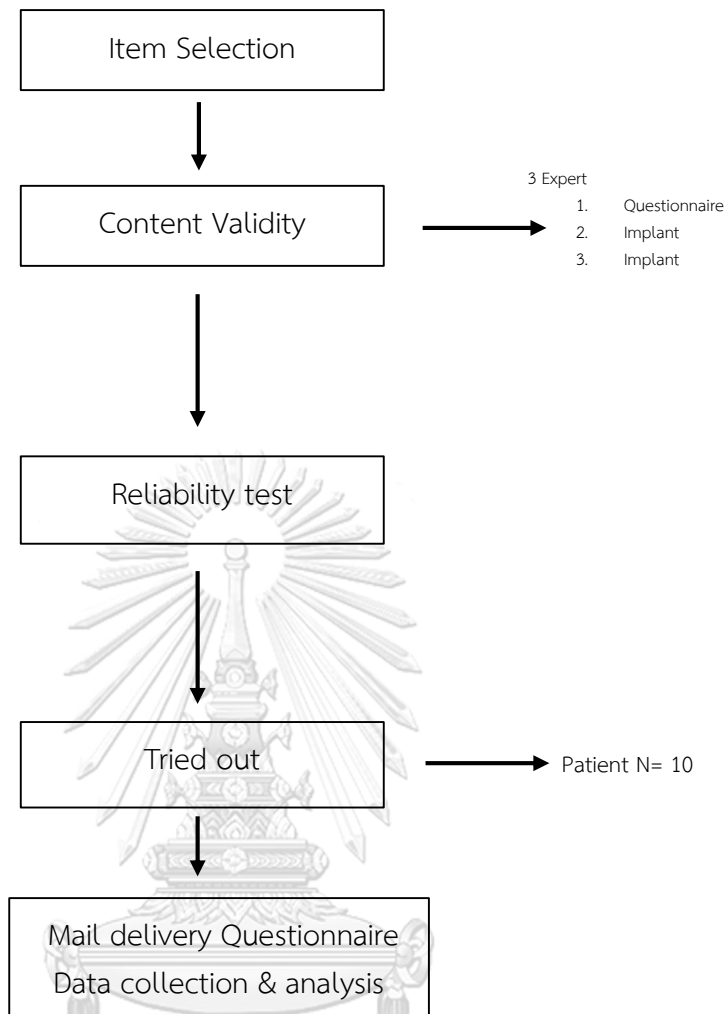


Figure 3 Methodology framework

3.7 Data collection

Questionnaire contained 23 items, 7 items were demographic data, 7 items were perception and 9 items were satisfaction. The VAS scale and one-best-answer multiple choices were used. The Thai version of the questionnaire was in appendix A.

3.7.1 Demographic data

The one-best-answer multiple choice questions were used to collect demographic data of participants which included 7 items:

- Gender: male and female
- Source of dental implant information: Dentist, Advertisement, Colleague/friend/family, Social media, Medical health team (not including dentist), and other
- Age: <25 years, 25-44 years, 45-54 years, 55-64 years, and >65 years
- Education level: Preliminary school, High school, Bachelor, Master degree or higher, and Other
- Salary: <10,000 Baht, 10,001-30,000 Baht, 30,001-50,000 Baht, 50,001-80,000 Baht, and >80,000 Baht
- Number of implant: 1 implant and more than 1 implant
- Position of implant: Anterior, Posterior, and Both

3.7.2 Perception data

The VAS scale were used to measure patient's perception which included 7 items:

- I am well informed with dental implants treatment
- Dental implants look as nice as natural teeth
- Dental implants function as well as natural teeth

- After restoration on dental implant, maintenance schedule should be followed
- Treatments with dental implants have no risks or complications
- Dental implants require less care than natural teeth
- Dental implants last longer than natural teeth

3.7.3 Satisfaction data

The VAS scale were used to measure patient's satisfaction which included 9 items:

- I can chew comfortably with my dental implants
- I am satisfied with phonetics of my dental implants
- I am satisfied with aesthetic appearance of my dental implants
- It is difficult to clean my dental implants
- I will choose dental implant therapy again, if it is indicated
- I will recommend dental implant therapy to friends and relatives
- The cost of dental implant therapy is appropriate
- Overall, I am satisfied with my dental implant therapy
- I am satisfied with my dental implant therapy and the service at Faculty of dentistry Chulalongkorn University

3.8 VAS scale

For determining the exact result in identifying patient's perception and satisfaction, the visual analog scale (VAS) in 10 centimeter length was used. Participants were asked to place a mark in the side of agreement or disagreement. A mark right from the middle indicates agreement and a mark left of the middle indicates disagreement. If patients feel uncertain, they were asked to place the mark in the middle of the line. The mark placed farther away from the midline represented the more extent of agreement or disagreement.



3.9 Flow chart of respond and non-respond of questionnaire

The self-administered questionnaires were mailed to the confirm address of the 691 participants. After 4 weeks, a telephone reminder was contacted to the non-respondents, and questionnaires were re-sent. A flowchart of the participants was presented in Figure 4.

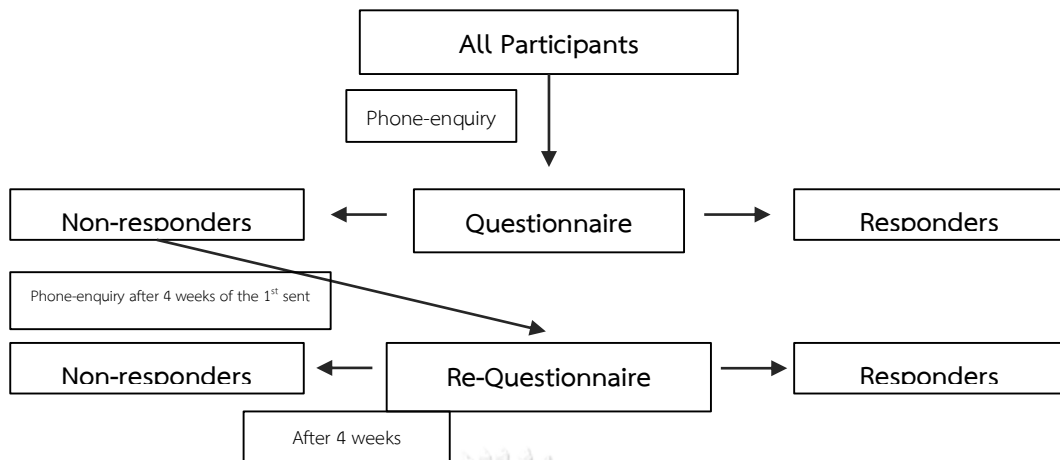


Figure 4 Flow chart respond and non-respond of questionnaire

3.10 Statistical Analysis

Statistical analyses were performed using SPSS version 17.0 (SPSS Inc., Chicago, IL). All p -values less than 0.05 were considered significant. All the variables were tested with Kolmogorov-Smirnov for the distribution. Descriptive statistic were analyzed and reported as mean and standard deviation. For the data showing normal distribution, two-sample t -test and one-way ANOVA were used to compare mean of data. Mean comparison among groups were analyzed using two-sample t -test/Mann-Whitney U test and one-way ANOVA/Kruskal-Wallis test depended on data distribution. Furthermore, multiple logistic regression analyses were used to analyze the relationship between the patient's perceptions and satisfaction with characteristic variables. Chi-square testing was used for initial bivariate variables analyses.

CHAPTER IV

Results

4.1 Characteristic of participants (Table 1)

Among 691 distributed questionnaires, 382 were returned which accounted for 55.28% of the response rate. Although, the participants who receiving dental implant from experienced dentists and postgraduate students were quite similar (194 and 188 participants, respectively), the response rate in the group receiving implant treatment from postgraduate students (71.48%) was higher than the group receiving from experienced dentists (45.33%). The attributes of 382 participants were shown in Table 1. There was no different response rate between male and female (55.64% and 55.07%, respectively).

Table 1. Characteristic of respondents

		Respondents (sent questionnaires)	Response rate%
Gender	Male	143 (257)	55.64%
	Female	239 (434)	55.07%
Expertise level	Experienced dentist	194 (428)	45.33%
	Postgraduate student	188 (263)	71.48%
Total		382(691)	55.28%

4.2 Demographic data of participants (Table 2)

The average time after having prosthesis on dental implant treatment was 17.5 months (range 12-23 months). The highest proportions of participants were female (60%), age between 55-64 years (38.2%), and had bachelor degree (42.9%). Moreover, 29.6% of participants had salary less than 30,000 Baht, 25.1% between 30,000 and 50,000 Baht, 18.1% between 50,001 and 80,000 Baht, while 27.2% got more than 80,001 Baht. The number of participants who got 1 implant and more than 1 implant were quite similar (49% and 51%, respectively). The highest number of implant site was posterior region (73.8%), while 12.8% was anterior, and 13.4% was both anterior and posterior.

Table 2 Demographic data of participants

Characteristics		N (%)
		Total=382
Gender	Male	143 (40)
	Female	239 (60)
Age (years)	<25	2 (0.5)
	25-44	49 (12.8)
	45-54	80 (20.9)
	55-64	146 (38.2)
	>65	105 (27.5)
Education level	Preliminary school	21 (5.5)
	High school	64 (16.8)
	Bachelor	164 (42.9)
	Master degree or higher	131 (34.3)
	Other	2 (0.5)
Salary	<10,000 Baht	24 (6.3)
	10,001-30,000 Baht	89 (23.3)
	30,001-50,000 Baht	96 (25.1)
	50,001-80,000 Baht	69 (18.1)
	>80,000 Baht	104 (27.2)
Number of implant	1 implant	187 (49)
	> 1 implant	195 (51)
Position of implant	Anterior	49 (12.8)
	Posterior	282 (73.8)
	Both	51 (13.4)

4.3 Source of dental implant information

Most participants got information about dental implant from dentists (n=213, 55.8%). The second common source of dental implant information was colleague/friend/family (n=67, 17.5%). Moreover, 11.8%, 9.7%, 5% and 0.3% of participants got information from advertisement, social media, medical health team and other, respectively (figure 5).

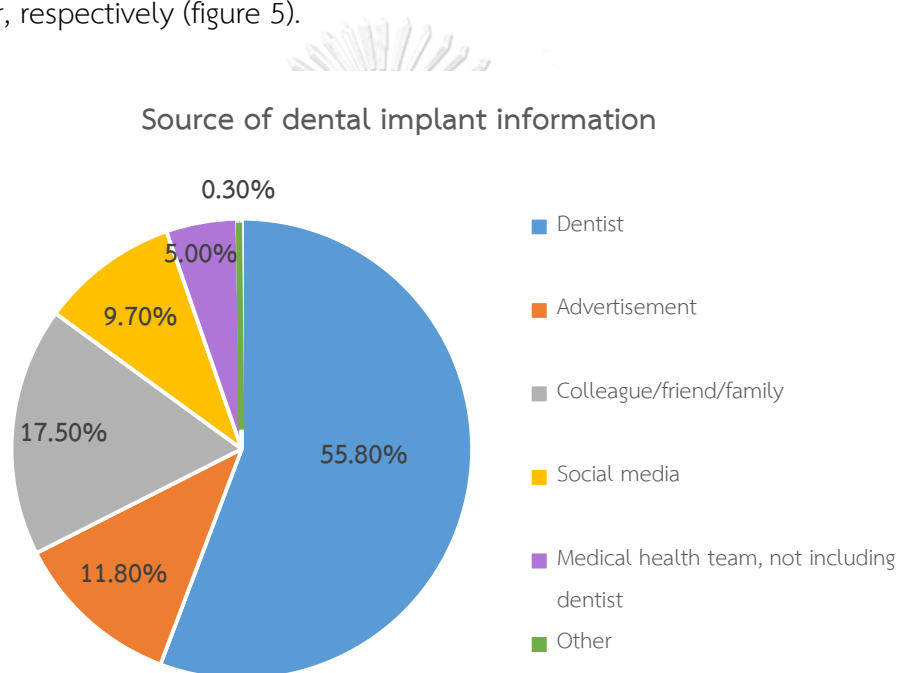


Figure 5 Source of dental implant information

4.4 Frequency analysis patient's perception

The percentages of agreement, disagreement and uncertain were analyzed in figure6. Percentages of agreement with the statements of “I am well informed with dental implants treatment”, “Dental implants look as nice as natural teeth”, and “Dental implants function as well as natural teeth” were 90.3%, 91.6%, and 90.1%,

respectively. While 95.3% of participants agreed with the statement “After restoration on dental implant, maintenance schedule should be followed”. Only 18.1% agreed that “Dental implants require less care than natural teeth”. However, about 78.3% agreed that “Treatments with dental implants have no risks or complications” and 35.6% agreed that “Dental implants last longer than natural teeth” (figure 6).

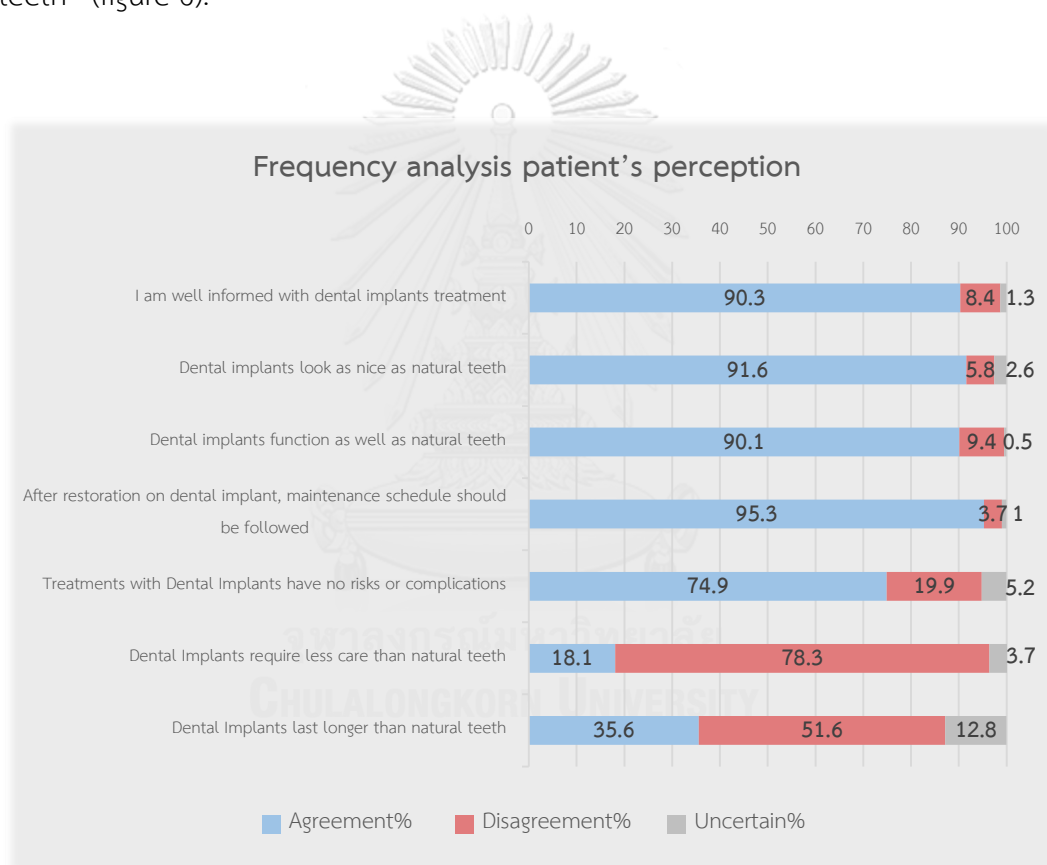


Figure 6 Frequency analysis patient's perception

4.5 Overall extent of patient's perception (Table 3)

Most participants felt that they were well informed with the treatment at mean level of agreement 2.94. The extents of agreement to natural looking and function of dental implants were 3.06 and 2.93, respectively. Participants agreed that they should follow the maintenance schedule at 3.25. The statement "Treatments with dental implants have no risk or complication" was agreed at 1.99. Participants disagreed that dental implants require less care than natural teeth at -1.73. The extents of disagreement of the longer lasting of dental implants was -0.18.

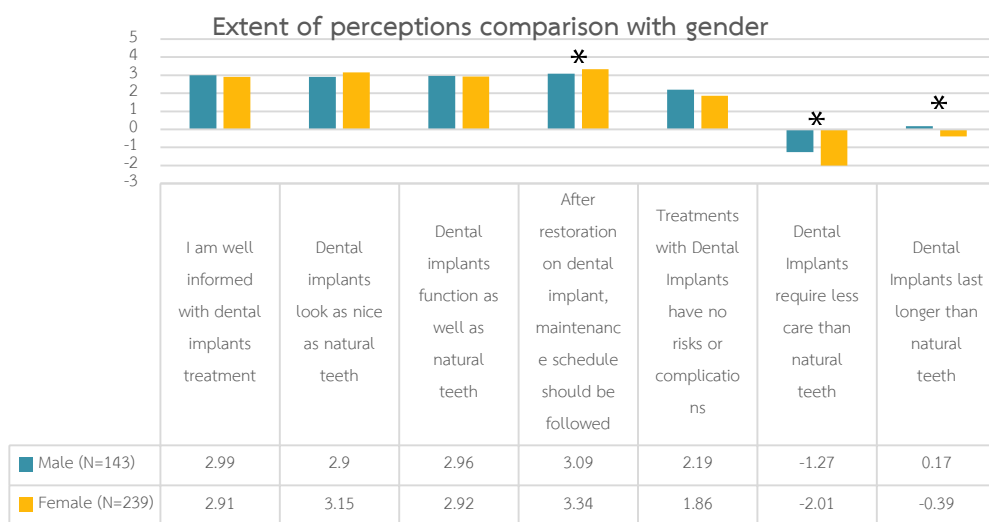
Table 3 Overall extent of patient's perception

Question of patient's perception	Mean
I am well informed with dental implants treatment	2.94
Dental implants would look as nice as natural teeth	3.06
Dental implants would function as well as natural teeth	2.93
After restoration on dental implant, maintenance schedule should be followed	3.25
Treatments with Dental Implants have no risks or complications	1.99
Dental Implants require less care than natural teeth	-1.73
Dental Implants last longer than natural teeth	-0.18

Marking "-" presented disagreement direction and no marking presented agreement direction

4.6 Comparing patient’s perception with gender

There were statistically significant different in degree of agreement between genders of the three statements including “After restoration on dental implant, maintenance schedule should be followed”, “Dental Implants require less care than natural teeth”, and “Dental Implants last longer than natural teeth” (p=0.027, p=0.004 and p=0.038, respectively). Female participants rated higher agreed score to “After restoration on dental implant, maintenance schedule should be followed”, and higher disagreed score to “Dental Implants require less care than natural teeth”. Although male participants rated very small degree of agreement to the statement “Dental Implants last longer than natural teeth”, female had a small disagreement (figure 7).

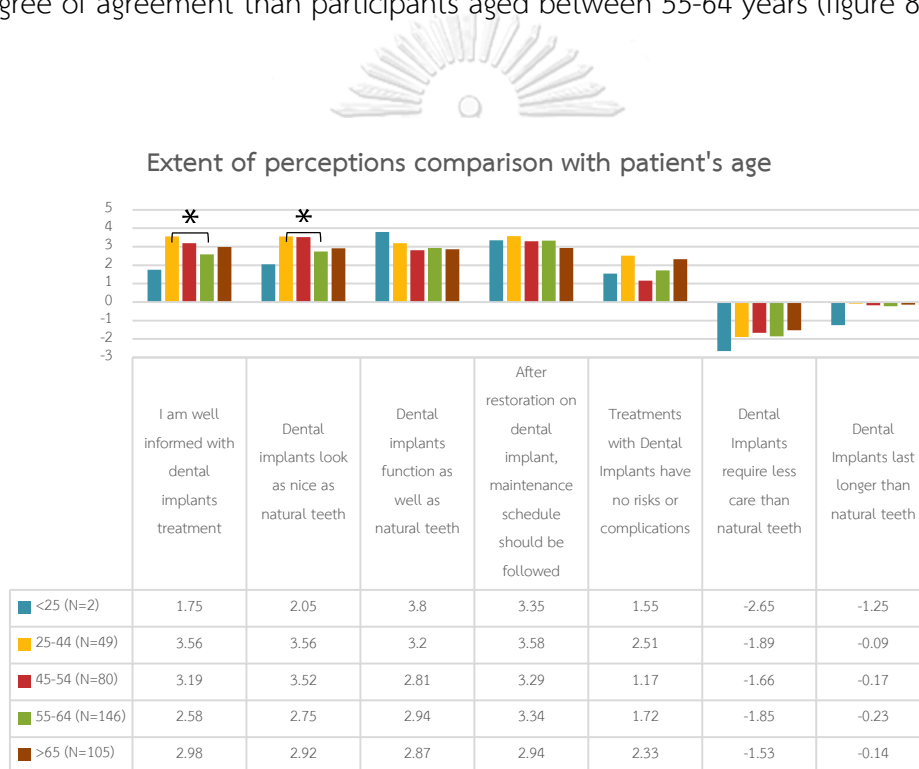


* Significant different at p<0.05; Mann-Whitney U test;
 Marking “-” presented disagreement direction and no marking presented agreement direction

Figure 7 comparing patient’s perception with gender

4.7 Comparing patient's perception with age

When comparing patient's perception with age, two items "I am well informed with dental implants treatment" and "Dental implants look as nice as natural teeth" were significantly different ($p=0.007$ and $p<0.001$, respectively). Multiple comparisons reported participants aged between 25 to 44 years had higher degree of agreement than participants aged between 55-64 years (figure 8).



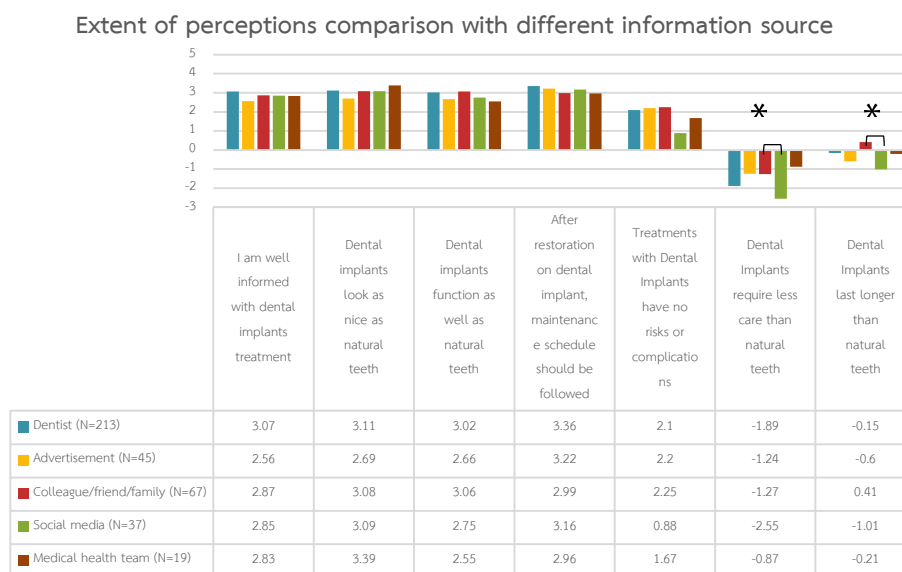
* Significant different at $p<0.05$; One-way ANOVA test;

Marking “-” presented disagreement direction and no marking presented agreement direction

Figure 8 comparing patient's perception with age

4.8 Comparing patient's perception with different main information source

Participants receiving main information from different sources had significantly different in degree of agreement to the two statements including “Dental Implants require less care than natural teeth” and “Dental Implants last longer than natural teeth” at $p=0.026$ and $p=0.032$, respectively. Multiple comparisons reported that participants who got main information from social media had significant higher disagreement score than participants who got main information from colleague/friend/family to both statements (figure 9).



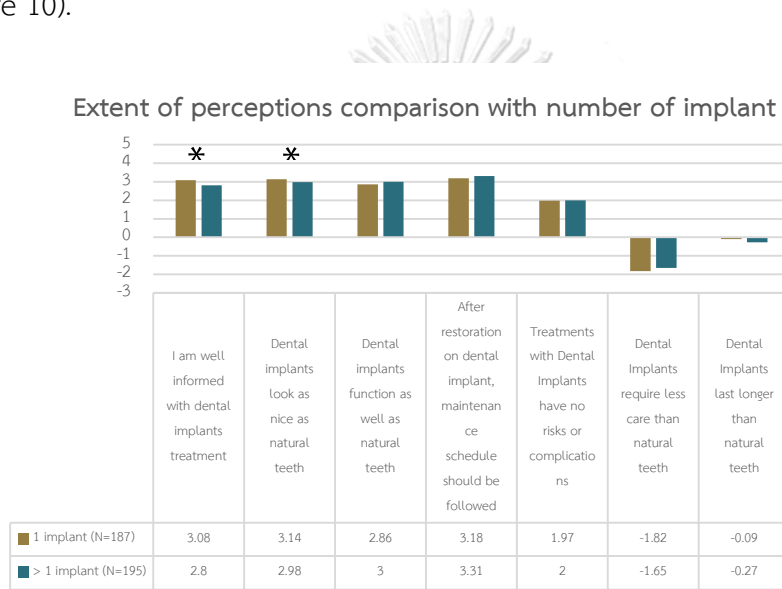
* Significant different at $p<0.05$; One-way ANOVA test;

Marking “-” presented disagreement direction and no marking presented agreement direction

Figure 9 comparing patient's perception with different main information source

4.9 Comparing patient’s perception with number of implant

Participants receiving 1 implant had significantly different higher degree of agreement than participants who received more than 1 implant to the two statements including “I am well informed with dental implants treatment” and “Dental implants look as nice as natural teeth” at $p=0.03$ and $p=0.033$, respectively (figure 10).

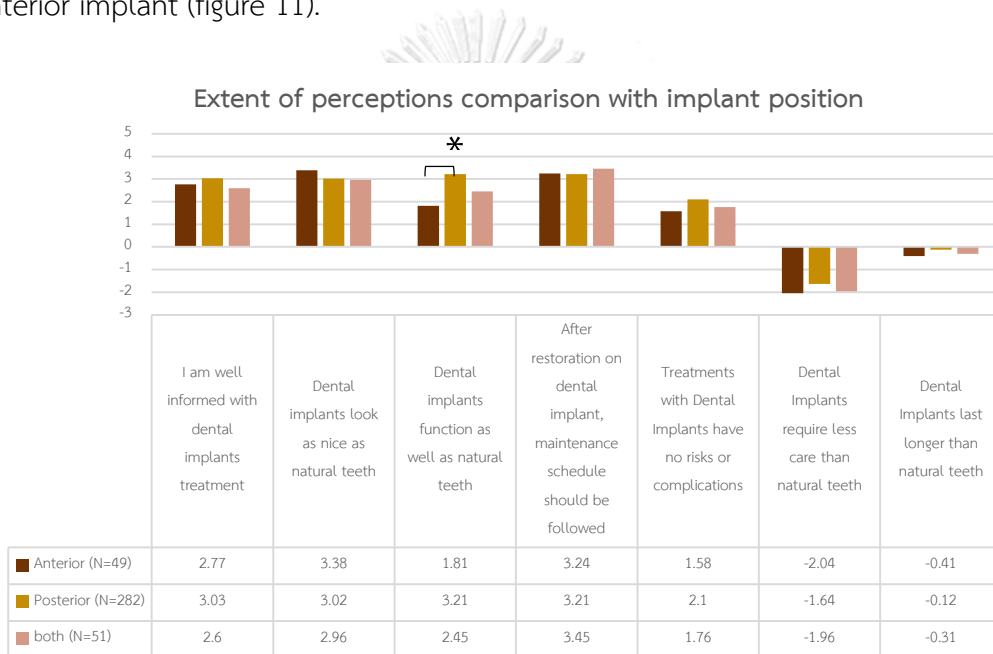


* Significant different at $p<0.05$; Mann-Whitney U test;
 Marking “-” presented disagreement direction and no marking presented agreement direction

Figure 10 comparing patient’s perception with number of implant

4.10 Comparing patient’s perception with implant position

There was statistically significant different in degree of agreement between implant position of the statement “Dental implants function as well as natural teeth” at $p < 0.001$. Multiple comparison reported participants who received posterior implant had significantly higher degree of agreement than participants who received anterior implant (figure 11).



* Significant different at $p < 0.05$; One-way ANOVA test;

Marking “-” presented disagreement direction and no marking presented agreement direction

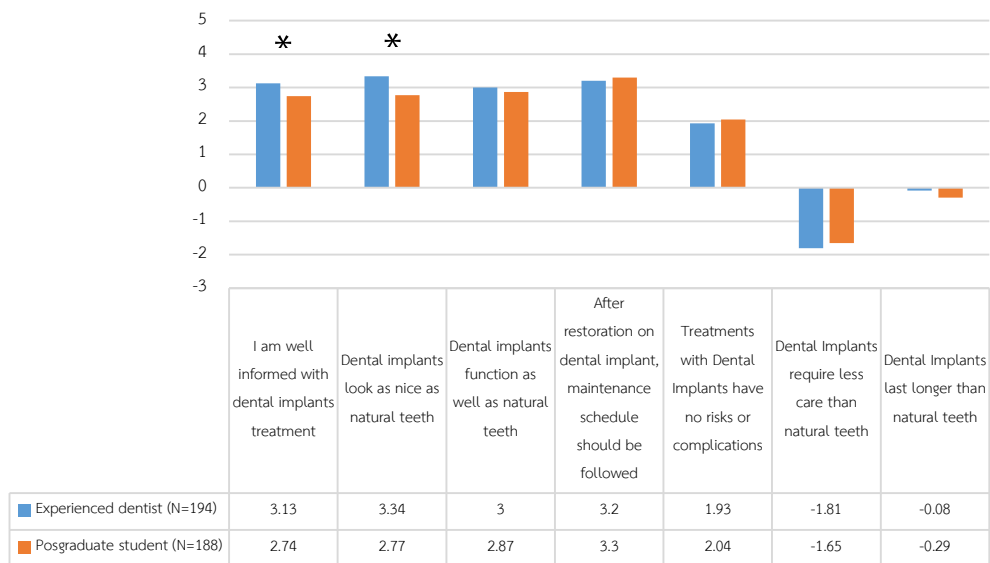
Figure 11 comparing patient’s perception with number of implant

4.11 Comparing patient’s perception with expertise level

The comparisons of patient’s perception with expertise level, two statements “I am well informed with dental implants treatment” and “Dental implants look as nice as natural teeth” were significantly different ($p=0.029$ and $p=0.004$, respectively). Participants who got treatment from experienced dentist rated higher agreed score in “I am well informed with dental implants treatment” and “Dental implants look as nice as natural teeth” (figure 12).



Extent of perceptions comparison with expertise level



* Significant different at $p<0.05$; Mann-Whitney U test;

Marking “-” presented disagreement direction and no marking presented agreement direction

Figure 12 comparing patient’s perception with expertise level

4.12 Multiple logistic regression analyses: agreement/disagreement frequency of patient's perception

For multiple logistic regression analyses, each variable were reclassified into two groups as followed:

- Age variable: <45 year was younger and ≥ 45 was older
- Education variable: preliminary school and high school were lower education, and bachelor degree or more than were higher education
- Income variable: $\leq 50,000$ baht was lower and $> 50,000$ baht was higher

The results from multiple logistic regression analyses were reported in Table 4. The higher education group was 2.27 more likely to be frequently satisfied in the statement of "Well informed with dental implant treatment" comparing to the lower education group. Patient who had received more than 1 implant had 5.02 more likely frequently agreed in the statement of dental implant function as well as natural teeth than patient received 1 implant. The statement of dental implant require less care than natural teeth was more 3.71 more likely to be agreed by patient who got main information from medical health team than patient who got main information from dentist. Female reported dental implant last longer than natural teeth 0.59 more likely to be less satisfied than male.

Multiple logistic regression analyses: agreement/disagreement: frequency of patient's perception (Confidence interval 95%)

	Gender		Age group		Education		Information		Income		Number of implant		Position of implant		Clinician	
	Male vs. female	Younger vs. older	Lower vs. higher	Dentist vs. other	Lower vs. higher	Dentist vs. other	1 implant vs. > 1 implant	Anterior vs. other	Postgraduate vs. specialist							
Well informed with dental implants treatment	-	-	2.27 (0.49-11.5)	-	-	-	-	-	-	-	-	-	-	-	-	-
Dental implants look as nice as natural teeth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dental implants function as well as natural teeth	-	-	-	-	-	-	-	-	-	-	5.02 (2.1-12.03)	-	-	-	-	-
After restoration on dental implant, maintenance schedule should be followed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Treatments with Dental Implants have no risks or complications	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dental Implants require less care than natural teeth	-	-	-	-	-	3.71 (1.34-10.25)	-	-	-	-	-	-	-	-	-	-
Dental Implants last longer than natural teeth	0.59 (0.36-0.95)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Younger: age <45; older: age ≥45; lower education: preliminary school and high school; higher education: bachelor or postgraduate; lower income: ≤50,000 baht; higher income: > 50,000 baht; Bold indicates statistically significant values (p<0.05)

Table 4 Multiple logistic regression analyses: agreement/disagreement frequency of patient's perception

4.13 Frequency analysis patient's satisfaction

In figure13, the percentages of agreement, disagreement and uncertain were presented. Percentages of agreement with the statements of “I can chew comfortably with my dental implants”, “I satisfied with phonetics of my dental implants”, “I satisfied with aesthetic appearance of my dental implants”, “I will choose dental implant therapy again, if indicated”, “I will recommend dental implant therapy to friends and relatives”, “Overall, I am satisfied with my dental implant therapy” and “I am satisfied with my dental implant therapy and the service at Faculty of dentistry Chulalongkorn University” were 88.5%, 90.1%, 89.5%, 91.9%, 92.7%, 94.5% and 95.5%, respectively. Moreover, the percentage of agreement was similar to disagreement in two statements; “It is difficult to clean my dental implants” and “The cost of dental implant therapy is appropriate”.

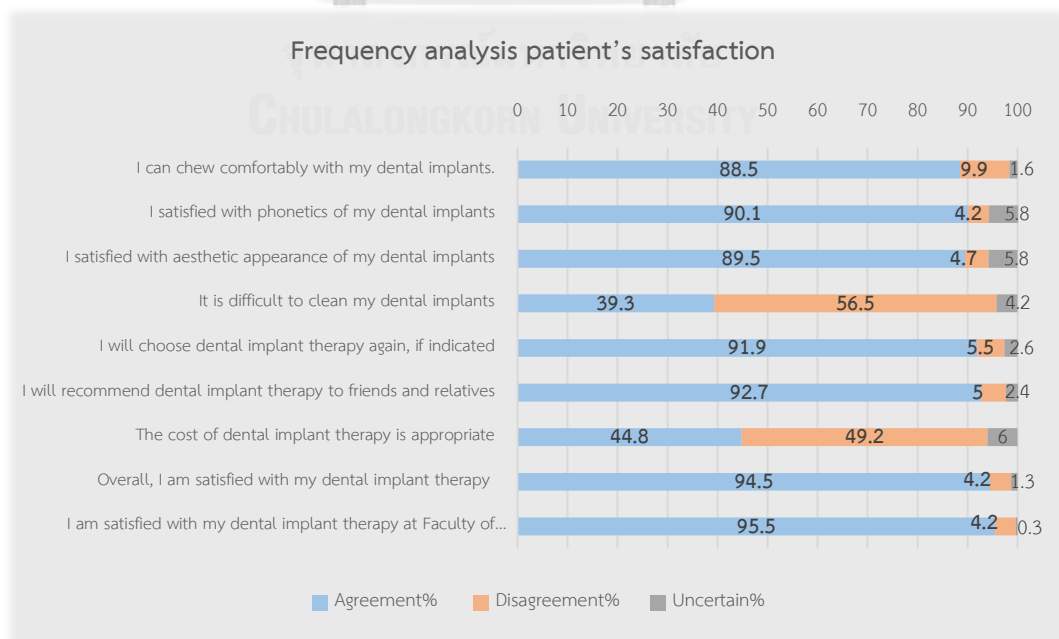


Figure 13 Frequency analysis patient's satisfaction

4.14 Overall extent of patient's satisfaction (Table 5)

Most participants agree that they can chew comfortably with dental implants at the extent of 2.77. The extents of agreement to phonetics and aesthetic of dental implants were 3.09 and 2.89, respectively. Participants disagreed that they had difficulty in clean their dental implants at -0.39. The two statements including “I will choose dental implant therapy again, if indicated” and “I will recommend dental implant therapy to friends and relatives” were agreed at 2.93 and 3.16, respectively. Participants agreed that “The cost of dental implant therapy is appropriate” at 0.02. The extents of disagreement of the longer lasting of dental implants was -0.18. The two statements including “Overall satisfied with dental implant” and “Satisfied with the service at Faculty of dentistry, Chulalongkorn University” were agreed at 3.26 and 3.42, respectively.

Table 5 Overall extent of patient's satisfaction

Question of patient's satisfaction	Mean
I can chew comfortably with my dental implants	2.77
I am satisfied with phonetics of my dental implants	3.09
I am satisfied with aesthetic appearance of my dental implants	2.89
It is difficult to clean my dental implants	-0.39
I will choose dental implant therapy again, if indicated	2.93
I will recommend dental implant therapy to friends and relatives	3.16
The cost of dental implant therapy is appropriate	0.02
Overall, I am satisfied with my dental implant therapy	3.26
I am satisfied with my dental implant therapy and the service at Faculty of dentistry Chulalongkorn University	3.42

Marking “-” presented disagreement direction and no marking presented agreement direction

4.15 Comparing patient's satisfaction with gender

Male rated significantly higher score than female in the statement “It is difficult to clean my dental implants” ($p=0.009$) (figure 14).



* Significant different at $p<0.05$; Mann-Whitney U test;

Marking “-” presented disagreement direction and no marking presented agreement direction

Figure 14 comparing patient's satisfaction with gender

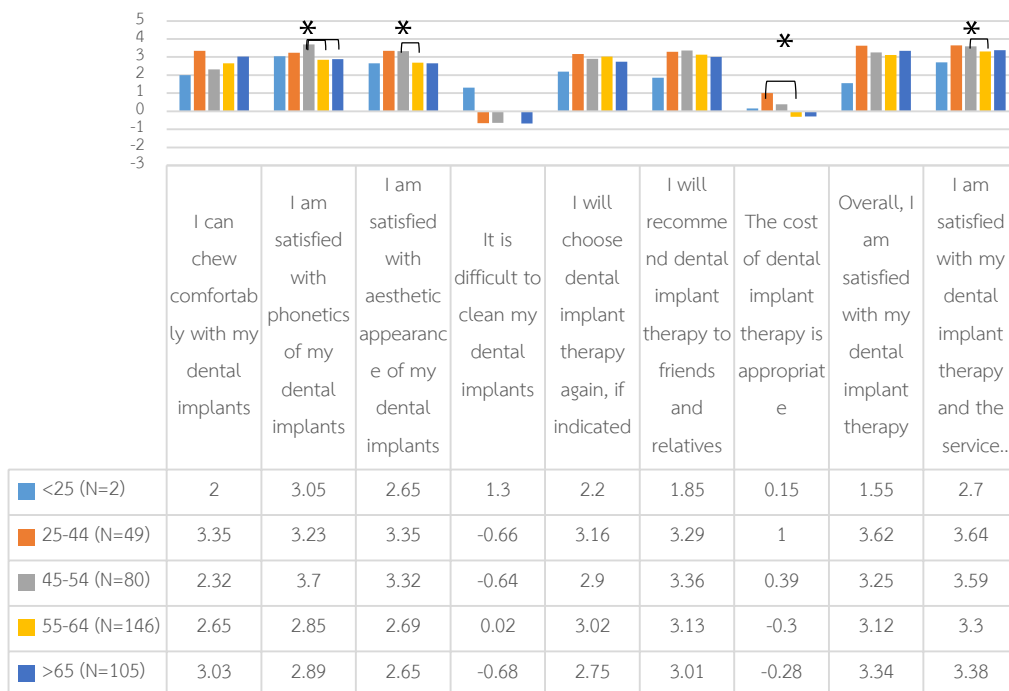
4.16 Comparing patient's satisfaction with age

When comparing patient's satisfaction with age, four statements “I am satisfied with phonetics of my dental implants”, “I am satisfied with aesthetic appearance of my dental implants”, “The cost of dental implant therapy is appropriate” and “I am satisfied with my dental implant therapy and the service at

Faculty of dentistry Chulalongkorn University” were significantly different ($p=0.003$, $p=0.001$, $p=0.009$ and $p=0.041$, respectively). Multiple comparisons reported that participants aged 45-54 years had higher agreement score than participants aged 55-64 years and >65 years with the statement “I satisfied with phonetics of my dental implants”. Moreover, participants aged 25-44 year agreed in higher degree than participants aged 55-64 year with the two statements including “The cost of dental implant therapy is appropriate” and “I am satisfied with aesthetic appearance of my dental implants” (figure 15).



Satisfaction comparison with patient's age



* Significant different at $p<0.05$; One-way ANOVA test;

Marking “-” presented disagreement direction and no marking presented agreement direction

Figure 15 comparing patient’s satisfaction with age

4.17 Comparing patient’s satisfaction with number of implant

Participants who received more than 1 implant had higher disagreed score with the statement “It is difficult to clean my dental implants” than participants who received 1 implant (figure 16).



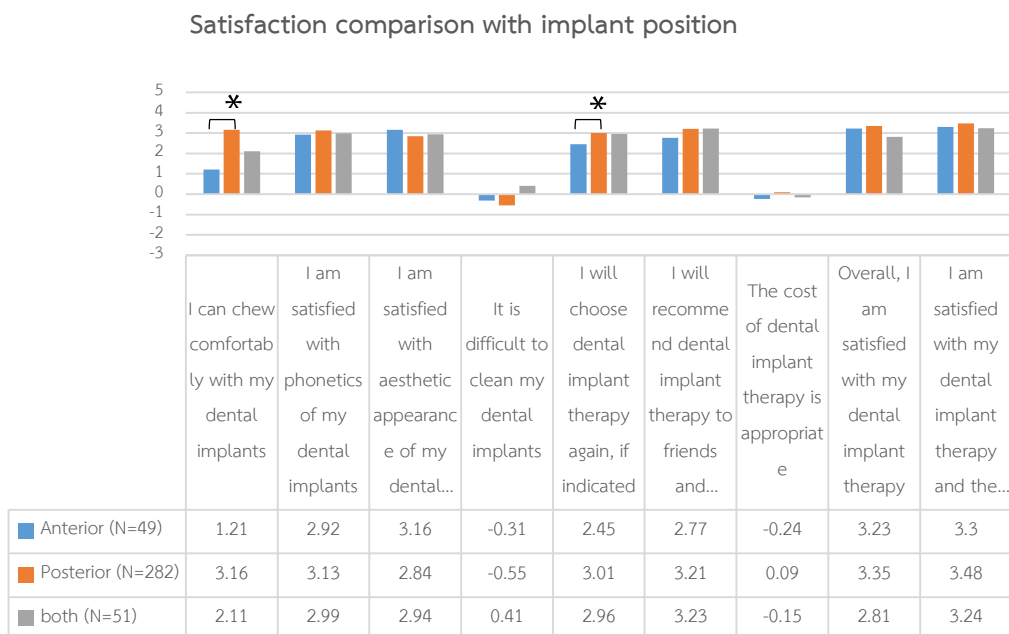
* Significant different at p<0.05; Mann-Whitney U test;

Marking “-” presented disagreement direction and no marking presented agreement direction

Figure 16 comparing patient’s satisfaction with number of implant

4.18 Comparing patient’s satisfaction with implant position

The extents of agreement were significantly different among participants receiving different position of dental implant in two statements “I can chew comfortably with my dental implants” and “I will choose dental implant therapy again, if indicated” ($p < 0.001$ and $p = 0.045$, respectively). Multiple comparisons reported participants who got posterior implant had higher agreement score than anterior implant in statement “I can chew comfortably with my dental implants”. However, participants who had anterior implant agreed with higher score than participants who had posterior implant, with statement “I will choose dental implant therapy again, if indicated” (figure 17).



* Significant different at $p < 0.05$; One-way ANOVA test;
 Marking “-” presented disagreement direction and no marking presented agreement direction

Figure 17 comparing patient’s satisfaction with implant position

4.19 Comparing patient’s satisfaction with expertise levels

The extents of agreement/disagreement were not significantly different among participants receiving treatment from students or supervisors/professors (figure 18).



Marking “-” presented disagreement direction and no marking presented agreement direction

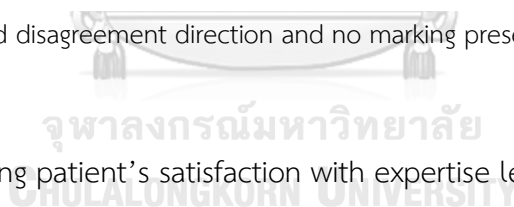


Figure 18 Comparing patient’s satisfaction with expertise levels

4.20 Multiple logistic regression analyses: agreement/disagreement frequency of patient’s satisfaction

For multiple logistic regression analyses, each variable were reclassified into two groups as followed:

- Age variable: <45 year was younger and ≥45 was older

- Education variable: preliminary school and high school were lower education, and bachelor degree or more than were higher education

- Income variable: $\leq 50,000$ baht was lower and $> 50,000$ baht was higher

The results from multiple logistic regression analyses were reported in Table 6. The statement of “I can chew comfortably with my dental implants” was 4.91 more likely to be satisfied in posterior implant group comparing to anterior implant group. Older age was 0.1 more likely to be less satisfied with phonetics of dental implant than younger age. Higher education group was 3.49 more likely to be agreed than lower education group in statement of “I satisfied with aesthetic appearance of my dental implants”. Female and who had received more than 1 implant were more likely to be satisfied to the statements “It difficult to clean my dental implants” than male and who had received 1 implant, respectively. The statement “I will choose dental implant therapy again, if indicated” had 0.18 less likely to be agreed in female than male. Older age satisfied with the cost of dental implant 0.46 less likely to be satisfied than younger age. Overall satisfaction with dental implant was 0.12 less likely to be satisfied in female. Overall satisfaction with service at Faculty of dentistry Chulalongkorn University was 0.24 less likely to be satisfied in female than male.

Multiple logistic regression analyses: agreement/disagreement frequency of patient's satisfaction (Confidence Interval 95%)

	Gender Male vs. female	Age group Younger vs. older	Education Lower vs. higher	Information Dentist vs. other	Income Lower vs. higher	Number of implant 1 implant vs. > 1 implant	Position of implant Anterior vs. other	Clinician Postgraduate vs. specialist
I can chew comfortably with my dental implants	-	-	-	-	-	-	4.91 (2.1-11.5)	-
I satisfied with phonetics of my dental implants	-	0.1 (0.01-0.83)	-	-	-	-	-	-
I satisfied with aesthetic appearance of my dental implants	-	-	3.49 (1.21-10.08)	-	-	-	-	-
It is difficult to clean my dental implants	2.1 (1.3-3.37)	-	-	-	-	1.6 (1.00-2.54)	-	-
I will choose dental implant therapy again, if indicated	0.18 (0.04-0.78)	-	-	-	-	-	-	-
I will recommend dental implant therapy to friends and relatives	-	-	-	-	-	-	-	-
The cost of dental implant therapy is appropriate	-	0.46 (0.29-0.740)	-	-	-	-	-	-
Overall, I am satisfied with my dental implant therapy	0.12 (0.05-0.99)	-	-	-	-	-	-	-
I am satisfied with my dental implant therapy and the service at Faculty of dentistry Chulalongkorn University	0.24 (0.06-0.99)	-	-	-	-	-	-	-

Younger: age <45; older: age ≥45; lower education: preliminary school and high school; higher education: bachelor or postgraduate; lower income: ≤50,000 baht; higher income > 50,000 baht; Bold indicates statistically significant values ($p < 0.05$)

Table 6 Multiple logistic regression analyses: agreement/disagreement frequency of patient's satisfaction

CHAPTER V

Discussion

Patient's perception is a very important factor for long term success of dental implant. The proper perception can influence adherence to implant maintenance program and correct oral hygiene care (70). Therefore, the comprehensible and correct dental implant information should be established to patients who undergoing dental implant treatment to ensure patients adjustment to realistic perception and adequate dental implant knowledge (7, 71). Moreover, after receiving dental implant, patient should remain correct perception.

Similar to other studies, we found that the main source of dental implant information was dentists (10, 11, 72, 73). However, patients also got information from family and friends for the second most common. Family and friends could encourage patients to get implant treatment (71). This finding suggested the awareness of family and friends attitude in dental implants.

Although 90% of participants felt that they were well informed, about 35% still had misperception of the longer lasting of dental implant than natural teeth. This finding was in accordance with the unrealistic expectation and lack of longevity knowledge (60, 71). Interestingly, this dangerous perception existed after treatment in similar percentage as before treatment (10). However, Insua et al reported 70% of participants perceived that implant might be life lasting treatment (74). Moreover,

gender and sources of dental implant information also influence this perception. Our result implied the awareness of dentists in contributing this information.

The most of our participants did not realize the risks or complications of dental implant treatment. We found this misperception in higher percentage than the study of Yao et al (10). Possibly, they did not perceived any complications after completed dental implant treatment during the short period nor had inadequate knowledge. Our findings recommended that dentists should educate their patients about the potential complications together with the need of caring not only before treatment but also re-emphasize periodically after treatment.

Expertise level of treatment provider had some influence in the perception of well informed and natural looking of dental implants. However, it had no effect to patient's satisfaction. Our findings suggested that patients satisfied with the treatment by students and experienced dentists. Moreover, the information provided by students should have been improved. Regarding to esthetic outcome it is undoubtedly that students had less experience than supervisors/professors. Interestingly, the reputation and image of professor may affect the confidence of receiving treatment.

Most of participants in this study satisfied with the results of treatment which were in according to other studies (10, 14, 75). However, about half of our participants did not satisfied with the cost and cleaning ability of their implants. Tey et al also reported that two-third of their participants dissatisfied with the cost of

implant (15). In contrast, Pjetursson et al and Fazard et al reported that their patients agreed to the cost of dental implant treatment (14, 76). The unsatisfied of dental implant cost might be due to the different in a socioeconomic status in each country. Regarding to the replacing missing teeth, dental implant had very higher cost than other types of prosthesis. Moreover, the uncover cost of dental implant treatment from public health hospital and health insurance company may influence to the perception of high cost. Interestingly, we found that older age patients less frequently satisfied with the cost of dental implant than younger age. In contrast to the study of Derks et al which showed older age more frequently satisfied than younger age (11).

VAS seems to capture complexity of patient's perception better than Likert scale due to the freely marking on the VAS line, relatively easy to use, and to understand, particularly by less educated raters. Furthermore, too many response categories of Likert scale may lead to difficulties in choosing, forcing the participants to choose an answer that may not represent the participants true perception.

In conclusion, most participants had appropriate perception and high satisfaction after dental implant treatment. However, information about potential complications of dental implant was inadequate and some participants still retain dangerous perception after treatment. Moreover, majority of participants reported about dental implant cost was unreasonable. Despite the expertise levels of dental implant treatment were different, most participants had similar level of satisfaction.

They also had similar level of perception in most aspect; however, participants who underwent implant treatment from experienced dentists felt that they were well informed and had natural looking on their implants than those who got treatment from postgraduate dental students. Our results suggested that dentists should pay attention to patients' understanding, offer comprehensible information, fill knowledge gaps and help patients shape realistic perceptions with regards to implant treatments.



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APPENDIX A

ตัวอย่างแบบสอบถาม

Part I: ข้อมูลทั่วไป

1.) เพศ

1. ชาย

2. หญิง

2.) ช่วงอายุ

1. ต่ำกว่า 25 ปี

2. 25 ถึง 44 ปี

3. 45 ถึง 54 ปี

4. 55 ถึง 64 ปี

5. มากกว่า 65 ปี

3.) ระดับการศึกษา

1. ประถมศึกษา

2. มัธยมศึกษาตอนต้น/ตอนปลาย/เทียบเท่า

3. ปริญญาตรี

4. ปริญญาโทหรือสูงกว่า

5. อื่นๆ ระบุ.....

4.) แหล่งข้อมูลหลักที่ท่านได้รับเกี่ยวกับรากฟันเทียม

1. ทันตแพทย์

2. บุคลากรทางการแพทย์ที่ไม่ใช่ทันตแพทย์

3. เพื่อนร่วมงาน/เพื่อน/ครอบครัว

4. อินเทอร์เน็ต

5. อื่นๆ ระบุ.....



5.) รายได้เฉลี่ยต่อเดือนของท่าน

1. น้อยกว่า 10,000 บาท 2. 10,000 ถึง 30,000 บาท
3. 30,001 ถึง 50,000 บาท 4. 50,001 ถึง 80,000 บาท
5. มากกว่า 80,001 บาท

6.) จำนวนรากฟันเทียมของท่านที่รักษากับคณะทันตแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

1. 1 รากฟันเทียม 2. มากกว่า 1 รากฟันเทียม

7.) ตำแหน่งรากฟันเทียมของท่านที่รักษากับคณะทันตแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

1. ฟันหน้า 2. ฟันหลัง
3. ฟันหน้าร่วมกับฟันหลัง

Part II: การรับรู้ของผู้ป่วย

1. ฉันได้รับข้อมูลการรักษาด้วยรากฟันเทียมอย่างละเอียดครบถ้วน (เห็นด้วย/ไม่เห็นด้วย)
2. การรักษาด้วยรากฟันเทียมให้ผลด้านความสวยงามได้เหมือนฟันธรรมชาติ (เห็นด้วย/ไม่เห็นด้วย)
3. การรักษาด้วยรากฟันเทียมให้ผลด้านการใช้งานได้เหมือนฟันธรรมชาติ (เห็นด้วย/ไม่เห็นด้วย)
4. การตรวจติดตามผลการรักษาอย่างสม่ำเสมอ ภายหลังจากการรักษาด้วยรากฟันเทียมเป็นสิ่งที่จำเป็น (เห็นด้วย/ไม่เห็นด้วย)
5. การรักษาด้วยรากฟันเทียมไม่มีความเสี่ยงหรือผลข้างเคียงใดๆ (เห็นด้วย/ไม่เห็นด้วย)
6. รากฟันเทียมต้องการการดูแลทำความสะอาดน้อยกว่าฟันธรรมชาติ (เห็นด้วย/ไม่เห็นด้วย)
7. รากฟันเทียมใช้งานได้ยาวนานกว่าฟันธรรมชาติ (เห็นด้วย/ไม่เห็นด้วย)

Part III: ความพึงพอใจของผู้ป่วย

1. ฉันสามารถใช้รากฟันเทียมของฉันเคี้ยวอาหารได้อย่างน่าพึงพอใจ (เห็นด้วย/ไม่เห็นด้วย)
2. รากฟันเทียมของฉันทำให้ฉันออกเสียงได้อย่างน่าพึงพอใจ (เห็นด้วย/ไม่เห็นด้วย)
3. รากฟันเทียมของฉันให้ความสวยงามแก่ฉันได้อย่างน่าพึงพอใจ (เห็นด้วย/ไม่เห็นด้วย)
4. ฉันทำความสะอาดบริเวณรากฟันเทียมของฉันได้ยาก (เห็นด้วย/ไม่เห็นด้วย)
5. ถ้าฉันมีโอกาสที่จะรักษาด้วยรากเทียม ฉันจะเลือกการรักษาด้วยรากเทียมอีกครั้ง (เห็นด้วย/ไม่เห็นด้วย)
6. ฉันจะแนะนำการรักษาด้วยรากฟันเทียมแก่เพื่อนและญาติ (เห็นด้วย/ไม่เห็นด้วย)
7. ราคารากฟันเทียมมีความเหมาะสม (เห็นด้วย/ไม่เห็นด้วย)
8. โดยรวมแล้วฉันรู้สึกพึงพอใจต่อการรักษาด้วยรากฟันเทียมของฉัน (เห็นด้วย/ไม่เห็นด้วย)
9. ฉันพึงพอใจต่อการบริการที่คณะทันตแพทยศาสตร์จุฬาลงกรณ์มหาวิทยาลัย (เห็นด้วย/ไม่เห็นด้วย)

VITA

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