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EVALUATION OF THE EFFECT OF NON-SURGICAL PERIODONTAL TREATMENT ON ORAL HEALTH IMPACT PROFILE IN PATIENTS WITH PERIODONTAL DISEASES

Dt. MUSTAFA SAYED IESSA

MASTER THESIS

DEPARTMENT OF PERIODONTOLOGY

SUPERVISOR

Dr. Öğr. Üyesi HATİCE SELİN YILDIRIM

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STATEMENT (DECLARATION)

Hereby I declare that this thesis study is my own study, I had no unethical behavior in all stages from planning of the thesis until writing thereof, I obtained all the information in this thesis in academic and ethical rules, I provided reference to all of the information and comments which could not be obtained by this thesis study and took these references into the reference list and had no behavior of breeching patent rights and copyright infringement during the study and writing of this thesis.

Mustafa Sayed Iessa

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II. CONTENTS

III. ABBREVIATIONS and SYMBOLS

B.O.P. : Bleeding on probing

C.A.L. : Clinical attachment level

G.I. : Gingival index

M.D.P. : Microbial dental plaque

N.S.P.T. : Non-surgical periodontal treatments

O.H.I.P. : Oral health impact profile

O.H.R.Q.o.L. : Oral health related quality of life

P.D. : Probing depth

P.I. : Plaque index

Q.o.L. : Quality of life

S.D. : Standard deviation

W.H.O. : World health organization

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Periodontal Hastalığı Olan Hastalarda Cerrahi Olmayan Periodontal Tedavinin Ağız Sağlığı Etki Profili Üzerine Olan Etkisinin Değerlendirilmesi

Dt: Mustafa Sayed Iessa

Mentor: Dr. Öğr. Üyesi Hatice Selin Yıldırım

Bölüm: Periodontoloji

1. Özet

Amaç: Bu çalışmanın amacı, periodontal hastalığı olan hastalarda cerrahi olmayan periodontal tedavinin (C.O.P.T.) ağız sağlığı etki profili (O.H.I.P.-14 TR) üzerindeki etkisini değerlendirmektir.

Gereç ve Yöntem: Periodontal durumlarına göre 3 gruba ayrılmış; periodontitis (n=30), gingivitis ve periodontal olarak sağlıklı (n=30), toplam 90 hasta çalışmaya dahil edildi. Plak indeks (P.İ.), gingival indeks, sondalamada kanama, sondalama derinliği, klinik ataşman seviyesini (K.A.S.) içeren peridodontal ölçümler ve O.H.I.P.-14 TR anketi C.O.P.T. önce ve sonra 1 ve 3 aylarda yapıldı.

Bulgular: Bütün klinik parametreler ve O.H.I.P.-14 TR total skoru başlangıçta sağlıklı grupta anlamlı olarak daha düşük bulundu ($p<0,05$). Gingivitisli ve peridodontitisli grupta tüm klinik parametrelerde, O.H.I.P.-14 TR skorunda ve 7 alt gurubun skorunda C.O.P.T. sonrası anlamlı azalma olduğu, grup içi ve gruplar arası karşılaştırmada anlamlı fark bulunduğu tespit edildi ($p<0,05$). Periodontitis grubunun O.H.I.P.-14 TR skoru ile P.İ. ve K.A.S. arasında 3. ayda düşük bir ilişki olduğu bulundu ($p<0,05$).

Sonuç: Çalışmanın sınırları dahilinde, bu çalışma, C.O.P.T.'nin O.H.I.P.-14 TR skorlarını düşürdüğü, gingivitis ve periodontitisli gurupta ağız sağlığı ile ilişkili yaşam kalitesini pozitif olarak etkilediğini göstermektedir.

Anahtar sözcükler: Ağız sağlığı, sağlık ile ilişkili yaşam kalitesi, cerrahi olmayan periodontal tedavi, gingivivtis, periodontitis, yaşam kalitesi.

Evaluation of the Effect of Non-Surgical Periodontal Treatment on Oral Health Impact Profile in Patients with Periodontal Diseases

Student name: Mustafa Sayed Iessa

Mentor: Dr. Öğr. Üyesi Hatice Selin Yıldırım

Department: Periodontology

2. ENGLISH SUMMARY

Objective: The aim of this study was to evaluate the effect of non-surgical periodontal treatment (N.S.P.T.) on the oral health impact profile-14 TR (O.H.I.P.-14 TR) in patients with periodontal disease.

Materials and Methods: A total of 90 patients, diagnosed with periodontitis (n=30), gingivitis (n=30) and periodontaly healthy (n=30) according to their periodontal status, were included. Plaque index, gingival index, bleeding on probing, probing depth, clinical attachment level periodontal clinical measurements and O.H.I.P.-14 TR questionnaire were performed at baseline, 1 and 3 months after N.S.P.T.

Results: At baseline all clinical parameters and O.H.I.P.-14 TR score were significantly low in healthy group ($p<0,05$). The periodontal clinical parameters, the total O.H.I.P.-14 TR scores and all the 7 domanins scores were significantly decreased after the N.S.P.T. in gingivitis and peridontitis group, and also there was a significant difference between the gingivitis and periodontitis at baseline and follow-up periods ($p<0,05$). There was a low correlation between the O.H.I.P.-14 score of group P for P.I. and C.A.L at 3 month ($p<0,05$).

Conclusion: With in the limit of this study, it showed that N.S.P.T. reduced the O.H.I.P.-14 TR scores and has positive effect on both group G and P patients' oral health quality of life.

Key words: Gingivitis, non-surgical periodontal debridement, health related quality of life, oral health, periodontitis, quality of life.

3. INTRODUCTION AND AIM

Health is defined as the absence of pain or disease, and general well-being. However, it now also encompasses much broader characteristics such as well-being and quality of life (Q.o.L.), which are not, in themselves, an accurate indicator of "health" in its absolutely irreducible sense of absence of pain or disease (Suresh 1995).

Oral diseases, widespread and prevalent in all regions of the world, are one of the principal public health problems that every population is facing. Hence, dental practitioners have also taken over this novel notion of Q.o.L., producing oral health related quality of life (O.H.R.Q.o.L.). This is a construct which allows for subjective evaluation of a dental patient's Q.o.L., functional well-being, expectations and satisfactions with the care provided. In order to reflect such changes in the definition of health, and by extension, oral health, oral health impact profile (O.H.I.P.) questionnaires have been introduced by Slade in 1994 and developed to cater directly to the human experience and allow the quantification of the notion of "Q.o.L." using different criteria than simply absence of pain and disease. This questionnaire comes in two types: O.H.I.P. 49 and O.H.I.P. 14.

O.H.I.P. 49 presents 49 questions to the patient in order to precisely determine their Q.o.L. on a scale, and, importantly, according to their own experience. O.H.I.P. 14 equally allows said determination on a less detailed scale but its results are accurate nonetheless. An array of measures were developed and validated to appraise O.H.Q.R.o.L. All these methods are comparable in their ability to detect changes in functional, physical and psychosocial impacts of oral diseases, and hence convenient for use in clinical studies. The O.H.I.P. questionnaires were devised into seven dimensions, or factors: pain, psychological discomfort, functional limitation, social disability, physical disability and handicap. Responses are documented using the following 5-point Likert scale: 0 = never; 1 = seldom; 2 = sometimes; 3 = fairly often; 4 = very often. A higher score shows that Q.o.L associated with oral health is low. (Slade and Spencer, 1994).

The periodontium is the specialized tissue that surrounds and supports the tooth in functional and occlusal activities, and maintains them lodged in the mandibular and maxillary bones. Periodontal diseases are complex, microbial and immunoinflammatory diseases that affect aesthetic, masticatory and speech functions of individuals (Albandar,

2011; Ship and Beck, 1996). They cause loss of periodontal tissues and teeth due to periodontal pocket formation, connective tissue attachment loss, periodontal ligament and alveolar bone destruction.

Periodontal disease, such as gingivitis and periodontitis, is one of humanity's most common diseases and affects perhaps more than 50% of the global adult population. It causes tooth loss, which still remains a non-negligible public health problem around the world and has been described as the "final marker of disease burden for oral health (Cunha-Cruz et al., 2007). Despite leaps and bounds in preventative dentistry, wherein periodontal treatment is used to stop the progression of periodontal disease, regenerate the lost periodontal tissues, prevent recurrence of the disease and provide optimal health, it still remains a concerning oral health problem.

The first stage of periodontal treatment includes treatment for primary etiologic factors. It is aimed to eliminate all soft and hard deposits as well as the factors causing the retention of these deposits, and to obtain an environment free of microorganisms and infection. With this objective, non-surgical periodontal treatment (N.S.P.T.) includes oral hygiene instruction, scaling and root planing, tooth extraction, occlusal adjustment and correction of restaurations (Sculean et al., 2003). Both periodontitis and gingivitis are effectively treated with N.S.P.T.

Oral health can affect Q.o.L. with symptoms and physical effects (Ng and Leung, 2006; Needleman et al., 2004). It affects Q.o.L. because it creates another set of physical interferences, such as affecting the sensation of taste, or causing pain while eating and thus preventing easy chewing.

The aim of this study is to evaluate effect of N.S.P.T. on O.H.R.Q.o.L. in patients with periodontal disease such as periodontitis and gingivitis by using O.H.I.P.-14 TR.

GENERAL INFORMATION

4.1 Quality of Life

The World health organization (W.H.O.) has attributed a definition to health as being "the absence of pain and disease, and a state of complete mental, physical and social well-being" (WHO, 1948). Oral health is "a state of being free from chronic mouth and facial pain, oral cancer and/or infection, periodontal disease, tooth decay, tooth loss, and other diseases that restrict a person's biting, chewing, smiling, speaking capacity". As such, oral health is a good indicator of general health, Q.o.L. and well-being, and is a presumed standard for oral tissues that contribute to physical, psychological and social health, enabling individuals to take part in social roles, enabling socialization without eating, communicating or disturbing (Slade and Spencer, 1994).

Until fairly recently, the psychosocial repercussions of poor oral health, being not life-threatening, have received little attention. Moreover, in the past, when talking about the general health status of the patients, the oral cavity was thought to be separate from the whole body. And the evaluation of the treatments by the physicians was based on quantitative concepts such as morbidity, mortality and life expectancy. However, in recent years, this approach is not enough.

Q.o.L. has been accepted as a concept that defines full well-being in society. It has gained importance in social research since 1970, and reveals an person's perception of their status in their own cultural context and value system and in relation to expectations, standards, goals and concerns (Group, 1995). The aim of this concept is to enable people to reach their goals as much as possible and to choose the ideal lifestyles.

With the focus on issues related to health and Q.o.L., the concept of H.R.Q.o.L. has gained importance in health care applications and researches and has a wide usage area.

4.1.1. Oral health related quality of life

O.H.R.Q.o.L. is a sub-component of overall Q.o.L.. General and oral health are important in the Q.o.L. of the individual (Johin et al, 2004). Oral health and the associated functional, physical and psychological state affect the well-being and Q.o.L. of the individual. O.H.R.Q.o.L. is related to how the individual perceives the disease and the

results of the treatments. Diseases are not only the symptoms and monitoring of bodily processes; it is the lived experience of such processes, together with the forms of distress it might cause. Symptoms caused by illness create difficulty in individual's life, and these difficulties are equally important. Generally, symptoms and/or disabilities can lead to the inability to focus or go on normally with individual's life, which may have the result of leading to failure and frustration, depression, demoralization, hopelessness, shame, fear (Kleinman, 1988). And also O.H.R.Q.o.L. is related to how patients are perceived by their health and assessment of the presence or absence of the disease (Sischo and Broder, 2011).

In 2003, the world workshop on Emerging Science in Periodontology identified patient-based assessment as a research priority (Tonetti et al., 2004). Patient-based assessment takes on an important role in periodontal treatment, as patients' perceptions may be different from clinical outcomes and that are subjective data which based patient preferences, needs, values as from patients' perspective (Ng and Leung, 2006).

The improvement to complete mental, physical, and social well-being from the mere lack of disease and pain was key in the origination of O.H.R.Q.o.L. as a notion, created by the WHO and developed in the 1960s (Peterson 2003). The notion of O.H.R.Q.o.L. soon followed, but only in the late 1980s. This delay can be explained by the poor awareness, even by professionals, of the impact of oral diseases on general Q.o.L. Indeed, as little as 50 years ago, the idea that oral diseases could, to any extent, be related to health, in general, was still being rejected. Davis (Davis, 1976) was published "Compliance Structures and the Delivery of Health Care: The Case of Dentistry" in 1976, he asserted that, far from being debilitating, most dental problems were fairly minor, posed little threat to an individual's general health and were more akin to an "indisposition". It was only later when more evidence of the impact of oral disease on social roles started to surface, that the concept of O.H.R.Q.o.L. began to evolve into what it is today.

Nowadays, O.H.R.Q.o.L. is a multidimensional build that reflects individual's comfort when eating, sleeping, social dealings, self-confidence, and contentment for oral health.

In clinical practice, Q.o.L. measures have multiple uses which include the identification and prioritization of problems, the facilitation of communication, screening

for problems which may be hidden, the facilitation of clinical decision-making, and following both the responses to treatment and change (Inglehart and Bagramian, 2002).

Teeth and chewing are associated with the perception of oral function such as swallowing and speech. Beyond function, oral health, which has an impact on individual appearance, also has a psychosocial effect. As a result, oral health is important for social and psychological well-being. Therefore, it is important to gauge the impact of oral conditions on Q.o.L. in the assessment of individual health needs (Saito et al., 2011).

Oral diseases are generally not fatal, but have negative effects on general Q.o.L. and well-being as they affect daily activities such as eating, speaking, and socializing (Acharya and Shashidhar, 2008). Any disease that has a negative effect on daily activities also has a negative effect on the general Q.o.L. (Ingle et al., 2010). Therefore, Q.o.L. related to oral health is a concept that has been put forward as a result of various observations and research on the effects of oral diseases in different areas of life (Al Shamrany, 2006).

Subjective assessment of O.H.R.Q.o.L. reflects individuals' self-confidence and satisfaction with oral health during eating, sleeping, and social interactions. In the 1980s, Reisine emphasized that a comprehensive approach was necessary to evaluate social and psychological effects of oral diseases (Reisine, 1981; Reisine, 1988).

4.1.2. Assessment of oral health-related quality of life

Twenty years ago, although there were no indications gauging the relationship between oral health and Q.o.L., there are now a series of questionnaires (scales) that measure the impact of oral problems on health and quality of life (Bajwa et al., 2007; Jowett et al., 2009, Saito et al., 2010)

Since clinical parameters such as gingival index (G.I.), plaque index (P.I.), bleeding on probing (B.O.P.), probing depth (P.D.) assessing oral hygiene and periodontal status give insufficient information about the effect of the disease on Q.o.L., the development of such scales has gained importance.

Cohen and Jago (Cohen and Jago, 1976) first reported the need for patient-focused measurement of oral health status. Social indicators such as cultural factors and lifestyle

should be estimated when evaluating oral health, such that health policies can be developed. Reisine, (Reisine, 1984) in 1984, mentioned social indicators such as unemployment caused by dental problems in order to define the social impact of oral diseases in his study.

Locker stated that health outcomes on an individual scale should be used and in 1988, he created a conceptual outline for the measurement of oral health (Fig 4.1.) (Locker, 1988).

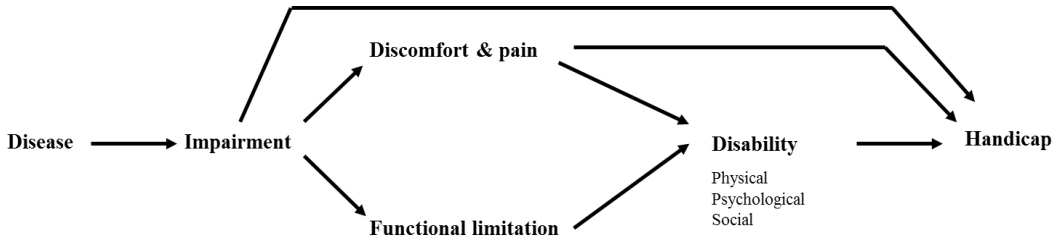

Figure 4.1. Locker oral health measurement model (Locker, 1988)

The concepts in this model are defined as follows:

1. Functional limitation: functional limitation is mostly components or organs that do not work as expected.

2. Discomfort: the response to the disease. Patients expressed pain, discomfort, physical or psychological symptoms.

3. Impairment: physical, psychological or incidental the absence or abnormality of the anatomical structure. Examples include toothlessness, periodontal disease and malocclusion.

4. Disability: lack of normal skills.

5. Handicap: individuals cannot fullfil social expectations within the group (Locker, 1988).

This conceptual framework, described by Locker, has been defined for oral health status scales and many scales have been developed by different researchers to meet this definition. In addition, these scales have an important role in defining needs, selecting treatment and showing the status of patients, and many scales have been developed by different researchers for these purposes (Allen, 2003) (Table 4.1.).

One of the most common and widely used measures in the domain of O.H.R.Q.o.L research, also the common employed in studies on periodontal patients are the O.H.I.P.-14 (Aslund et al., Jönsson and Öhrn 2014., Ozcelik et al., 2007).

Table 4.1. List of different questionnaires used to measure O.H.R.Q.o.L.

Authors	Type of scale	Number of questions	Domains	Type of answer
Wolinsky 1980	The Social Impacts of Dental Disease	14		Yes / No
Atchinson and Dolan, 1990	Geriatric Oral Health Assessment Index	12		6 categories, from "always" to "never"
Strauss and Hunt, 1993	Dental Impact Profile	25		3 categories: good, bad and no effect
Slade and Spencer, 1994	Oral health impact profile	49	physical pain, functional disability, physical disability, psychological disability, social disability psychological disability, and handicap	5 categories from "never" to very often
Locker and Miller, 1994	Subjective Oral Health Status Indicators	42		Different answers according to the question
Leao and Sheiham, 1996	Dental Impact on Daily Living	36		Different answers according to the question
Adulyanon and Sheiham, 1997	Oral Impacts on Daily Living		eating, enjoying food, speaking, cleaning teeth, sleeping, embarrassed by teeth appearance, maintaining emotional stability, working and contact with people	
McGrath and Bedi, 2000	Oral Health Related Quality of Life-U K	16		Good effect, bad effect, no effect

4.1.2.1. Oral health impact profile

O.H.I.P. is a scale that is used by individuals all over the world and measures the social effect of oral diseases on general health. The 49 questions in O.H.I.P. consist of 7 dimensions, formulated and derived from the theoretical model of oral health of Locker

(Locker, 1988; Locker, 1997):, physical pain (i.e. sensitivity of teeth), functional limitation (i.e. difficulty chewing), physical disability (i.e. changes to diet), psychological discomfort (i.e. self-consciousness), social disability (i.e. avoiding social interaction), psychological disability (i.e. reduced ability to concentrate), and handicap (i.e. being unable to work productively) (Locker, 1988) (Figure 4.1.).

O.H.I.P. is scored on the Likert scale. The questions in the questionnaire are answered with one of 5 answer options (0 = never or not applicable, 1 = hardly rarely, 2 = sometimes, 3 = fairly often, 4 = very often) with a score of 0-4 (Slade, 1994; Slade, 1997).

The most important advantage of this scale is that the questions in the scale are prepared as a result of sample patient group evaluation. O.H.I.P. measures the perception of the social effect of oral diseases on people's well-being. And main advantage of this scale is that the questions originate from patients, not from researchers.

4.1.2.1.1. Oral health impact profile-49

In 1999, O.H.I.P.-49 had become one of the most popularly used, comprehensive scale (Allen et al., 1999). It was designed with the goal of assessing the socio-psychological impact of oral disease, and constructed with the purpose of giving real value to this impact of oral disease (Slade and Spencer, 1994). In clinical studies, O.H.I.P.-49 has been successfully used and has confirmed good psychometric properties (Locker and Slade, 1994; Szentpétery et al., 2006). The O.H.I.P.-49 questionnaire has also been adopted, translated and applied in different countries and cultures such as Hungary, Germany (John et al., 2002) and China (Wong et al., 2002).

The O.H.I.P.-49 assessment is the total score of the participants' responses to each item. That is, the frequency of the effects is calculated by summing the answers to each question. Total score is minimum 0 and maximum 196. It is concluded that as the total score increases, the severity of the problem increases and Q.o.L. decreases (Slade and Spencer, 1994).

4.1.2.1.2. Oral health impact profile-14

This long scale, O.H.I.P.-49, may be appropriate for a researcher or physician who wants an objective line for oral care trainings. However, some researchers did not find it necessary to use all 49 questions. Because, although it is known that the reliability of the scale decreases as the number of questions decreases statistically, the questionnaire should be easy and simple to implement. For these reasons, the scale was shortened to 2 questions out of every 7 topics in O.H.I.P.-49 and O.H.I.P.-14, had 14 questions, was created and validated by Slade (Slade, 1994; Slade, 1997). Although these questions are few, they provide criteria for evaluation and are sufficient to measure the impact of O.H.R.Q.o.L. This shortened scale is more practical for dental health care programs.

O.H.I.P.-14, which is useful in terms of application and scoring, can be used to investigate the Q.o.L., cultural dimensions and intercultural comparisons related to oral health as it is adapted to many languages. These questionnaires are used with modifications to include language and regional concerns. The Turkish version of O.H.I.P.-14 was translated, adapted and validated by Mumcu et al. (Mumcu et al., 2006).

In the evaluation of the O.H.I.P.-14 scale, the answer scale for each question was the same as the O.H.I.P.-49, with a total score of at least 0 and a maximum of 56. As the total score increases, the severity of the problem increases and Q.o.L. decreases (Slade, 1994; Slade, 1997).

4.2 Periodontal Disease

Periodontitis causes loss of periodontal tissues and tooth due to periodontal ligament, connective tissue attachment and alveolar bone destruction, periodontal pocket formation by inflammation caused by microbial dental plaque (M.D.P.) (Highfield, 2009). Periodontitis is a chronic inflammatory disease that may be associated with many systemic diseases (Cullinan and Seymour, 2013). Recent epidemiological studies have exhibited that more than 50% of the adult population is diagnosed with periodontitis. Therefore periodontitis is a major oral health problem (Zhang, Li et al., 2014).

Problems related to oral and dental health is among the public health problems that can be seen at variable frequency in individuals with different socioeconomic and educational levels throughout the society (Santucci and Attard, 2015). Many people have complaints about oral and dental health at least once in their lifetime. Tooth decay, which

is the main cause of tooth loss, has been replaced by periodontal diseases with the development of restorative treatment methods over the years (Kandelman et al., 2012).

The periodontium consists of gingival, periodontal ligaments, cementum and alveolar bone, and provides the support to maintain tooth in function. Periodontal diseases are complex and multifactorial chronic inflammatory diseases that affect aesthetic, masticatory and speech functions of individuals (Albandar, 2011), and have been seen in all age and gender of the population. Preventing or treating these diseases; function of the teeth to remain in the mouth of the individual helps to improve the Q.o.L. (Wehmey et al., 2014).

Periodontal diseases are inflammatory diseases caused by the host response to M.D.P. which is the main etiologic factor causing periodontal disease (Ishikawa, 2007). Although some microorganisms in M.D.P. have various virulence factors that cause destruction in periodontal tissues, they can be controlled by host defense mechanisms depending on the amount of M.D.P. (Chambrone et al., 2013). Local and systemic factors, together with host immunity, also are a major factor in the process of destruction or maintenance of the periodontium (Wehmeyer et al., 2014).

4.2.1 Gingivitis

Gingivitis is gingival inflammation that is localized to the gingival tissues and caused by M.D.P. on gingival sulcus (Murakami et al., 2018). In experimental gingivitis study, microorganisms in M.D.P. were found to cause inflammation, and the relationship between M.D.P. and gingival inflammation has been accepted (Löe et al., 1965). Despite the subgingival and supragingival plaque accumulation, there is no periodontal attachment and alveolar bone loss. Clinical signs of gingivitis include redness of gingiva, bleeding, tenderness, edema and enlargement (Tonetti et al., 2015). Generally, gingivitis does not cause spontaneous bleeding, is painless and is often characterized by inconspicuous clinical changes which result in most patients being unconscious of having gingivitis (Blicher, et al. 2005). According to epidemiological studies, gingivitis is the most widespread periodontal disease in the world, and it is seen in all age groups (Stamm, 1986; Ainamo, 1992; Bhat, 1991; Dye, 2000; Burt, 2005).

In gingivitis, the tissue alterations are reversible after M.D.P. has been removed from the surfaces of the tooth. However, periodontitis is irreversible. Regardless of this reversibility of the tissue changes, gingivitis holds more clinical significance because it is the forerunner of periodontitis, whose characteristics are a combination of both gingival inflammation, and loss of attachment of the connective tissue/bone/(Trombelli et al., 2018).

4.2.2 Periodontitis

Peridontitis is a chronic, destructive, inflammatory disease that infects tooth supporting tissues. In the case of periodontitis and related tooth loss, Q.o.L. and self-confidences of individuals are affected as a result of disruption of chewing and speech function of the patients.

Periodontitis is a chronic infectious disease that causes inflammation in the supporting tissues of the tooth due to the interaction between the microorganisms in the M.D.P. and the host defense mechanism (Berezow and Darveau, 2011), and this disease is usually seen in adults but may also be seen in children and adolescents due to the accumulation of M.D.P. (Flemmig, 1999). It is shown as the main cause of tooth loss by affecting 10-15% of the adult population in the world (Albandar and Rams, 2002). The rate of progression of the disease may vary from individual to individual, and may also be different between the teeth of the same individual (Umeda et al., 2004). The affected areas are called localized if less than 30% of the entire mouth, and generalized if more than 30% (The American Academy of Periodontology, 1999).

Clinically, M.D.P. deposition, changes in gingival color, consistency and volume, gingival inflammation, B.O.P., pocket formation, attachment loss, stippling loss are observed (The American Academy of Periodontology, 2000). In advanced cases, gingival enlargement or recession, suppuration, furcation involvement, tooth mobility and / or migration may also be seen. The alveolar bone is positioned more apically from the cemento-enamel junction due to horizontal and / or vertical bone loss in periodontitis (Kinane, 2006). Periodontitis may cause rapid attachment and bone loss in some areas of the mouth, while no loss may be observed in other areas. For this reason, it is accepted as a region-specific disease. The disease has active and passive periods with soft and hard tissue destruction (Nagy, 2003).

4.2.3 Effect of peridontal diseases on quality of life

Oral health affects Q.o.L. through symptoms and physical effects of diseases (Needleman et al., 2004). Factors such as dental caries, occlusal discrepancies, periodontal diseases, palate-lip clefts are reported to affect O.H.Q.o.L. (Tomazoni et al., 2014). Oral diseases such as caries and periodontal diseases are common health problems in our population, and have physical, economic, social and psychological effects on the patient. It affects the Q.o.L., oral functions, aesthetics and social relations of individuals. It has been reported that symptoms such as gingival redness, bleeding after tooth brushing, tooth mobility, mouth odor, which have been seen as a result of inflammation and supporting tissues destruction in periodontal disease, have negative effects on the Q.o.L of the patients (Locker et al., 2000). Q.o.L. associated with oral health both determines how a patient's social, functional and psychological factors, as well as pain or discomfort, affect their well-being (Corson et al., 1999). To understand the effects of periodontal disease on Q.o.L., appropriate distribution of community health expenditures and existing resources are important to ensure that access to oral health services is easier (Rozier and Pahel, 2008). Periodontal disease and treatment; knowing how patients perceive the effects on daily life will enable periodontal treatment to be planned and performed according to the expectations and needs of the patients (McGrath and Bedi, 1999).

Needleman et al. (Needleman et al., 2004) applied the O.H.Q.o.L. scale to 205 patients and recorded their periodontal health status in the last 1 year. There was a negative correlation between Q.o.L. scores and the periodontal status reported by the patients and also negative correlation between Q.o.L. scores and the number of tooth with 5 mm or more pocket depth. Compared with the patients who have received periodontal treatment before and who continue to supportive periodontal treatment; new patients were found to have lower Q.o.L. score, and it was concluded that periodontal status affects Q.o.L.

In the study by Ng and Leung, (Ng and Leung, 2006), 727 subjects underwent the Chinese form of O.H.I.P.-14 and examined the relationship between periodontal symptoms reported by patients and Q.o.L. As a result, there was a significant relationship between O.H.Q.o.L. and periodontal symptoms.

4.3. Periodontal Treatment

Periodontal treatment aims to eliminate inflammation, to make the periodontal flora healthy, to regenerate the destruction of the periodontium and to prevent recurrence of the disease. For this purpose, periodontal treatment includes patient awareness by giving information about the patient's current periodontal disease, giving the necessary information to provide the patient's own oral hygiene at the highest level, scaling and root planing, occlusal adjustment, eliminating iatrogenic factors, providing a healthy oral environment with necessary periodontal surgery and performing periodically controls for the maintenance of the obtained health (Heitz et al., 2002; Claffey et al., 2004).

Periodontal treatment is generally divided into three main parts (Claffey et al., 2004):

1. N.S.P.T.
2. Surgical periodontal treatment
3. Supportive periodontal treatment

4.3.1. Non-surgical periodontal treatment

N.S.P.T. is designed to create a biocompatible root surface, reduce gingival inflammation and pocket depth, attachment gain, provide an environment where oral hygiene procedures can be applied effectively, and make periodontal tissues suitable for surgical procedures. For these purposes, oral hygiene instruction, scaling and root planning, antimicrobial agents as supportive, extraction of hopeless tooth, occlusal adjustment and correction of restorations are performed (Caffesse et al, 1995; Haffajee et al, 1997; Cobb, 2002; Heitz et al., 2002; Delatola et al., 2014). Both Periodontitis and gingivitis are effectively treated with N.S.P.T. (Badersten et al., 1981).

After scaling and root planing, reduction in pocket depth may be observed due to clinical attachment gain and gingival recession. The amount of reduction in pocket depth following these procedures is associated with initial P.D. and inflammation of tissues (Greenstein, 1992; Saito et al., 2010). Change of gingival margin, more visible in interproximal areas with deeper pockets and greater inflammation (Badersten et al., 1984). Scaling has been observed to reduce or completely improve gingival inflammation within 3 weeks by removing necrotic cement on the root surface, providing root planing

and M.D.P. control (Rabbani et al., 1981). Long-term studies have shown that S.R.P. is as successful as surgical procedures to stop the progression of periodontitis with shallow periodontal pockets (<6 mm) (Lindhe et al., 1982; Lindhe et al., 1984; Delatola et al., 2014).

4.3.2 Effects of non-surgical periodontal treatment on quality of life

There are many clinical studies showing that N.S.P.T. positively affects clinical outcomes related to Q.o.L.. N.S.P.T. causes multiple changes within the periodontium such as in gingival inflammation, C.A.L. and P.D. Various studies concluded that N.S.P.T. may improves the O.H.R.Q.o.L. after 3 months of the treatment and is beneficial from patients' perspective (Jowett et al., 2009, Saito et al., 2010, Öhrn and Jönsson, 2012, Wong et al., 2012, Miao et al., 2016, Goel and Baral, 2017, Mendez et al., 2017, Wang et al., 2018, Peikert et al., 2019).

Cercek et al. (Cercek et al., 1983) reported that patients who were the recipients of N.S.P.T. and who were maintaining oral hygiene showed approximately a 25% decrease in B.O.P., 0,5 mm P.D. reduction, 0,7 mm gingival recession and no gain of clinical attachment. Hence, supragingival plaque control can help eliminate signs of inflammation related to gingivitis but does not necessarily alter the bacterial composition in pockets <5 mm. Additionally, the size of the recession is equally concluded to be related to the inflammatory status of the tissues (Tanwar et al., 2016).

Özçelik et al. (Özçelik et al., 2007) performed N.S.P.T. in 20 patients, surgical periodontal treatment in 20 patients, and surgical periodontal treatment combined with endodontic treatment in 20 patients. The O.H.I.P.-14 scale was administered before and 7 days after treatment. Functional limitation and pain were observed in the groups receiving surgical periodontal treatment. The decrease in the O.H.I.P.-14 score in N.S.P.T. and the surgical periodontal treatment groups combined with endodontic treatment was statistically significant. N.S.P.T. was reported to be more advantageous than surgical periodontal treatment in terms of patient complaints after treatment.

Jowett et al. (Jowett et. al., 2009) treated 20 periodontitis and 16 healthy patients with N.S.P.T. Before and after the treatment O.H.RQ.o.L. was assessed using O.H.I.P.-14 scale. Periodontal disease had significantly greater impacts on Q.o.L. than healthy

patients, and N.S.P.T. was reduced O.H.I.P.-14 score, thus it was effective from patients' perspective in Q.o.L.

Saito et al. (Saito et al., 2010) treated 58 patients with N.S.P.T. and found significant reductions in all periodontal parameters and total O.H.R.Q.o.L. score 4 weeks after treatment, and periodontitis affected Q.o.L. negatively.

Öhrn and Jönsson (Öhrn and Jönsson, 2012) compared O.H.I.P.-14 and general oral health assessment index before and after the N.S.P.T in 42 patients. Periodontal clinical parameters and both questoinnaries scores were reduced after N.S.P.T.

Wong et al. (Wong et al., 2012) examined the effect of N.S.P.T. on O.H.R.Q.o.L. in 65 adult Chinese patients with periodontitis. They evaluated periodontal clinical parameters and O.H.I.P.-14 score before and after treatment at 1, 3, 6, 9 and 12 months. Significant reductions in all clinical parameters and O.H.I.P.-14 scores were observed at 12 months.

Miao et al. (Miao et al., 2016) explored association of O.H.R.Q.o.L. and N.S.P.T. in 120 periodontitis patients with O.H.I.P.-14 and periodontal clinical parameters at baseline and 4 to 5 weeks after N.S.P.T. After treatment, the mean total score of O.H.I.P. 14 and all periodontal parameters improved significantly.

Goel and Baral (Goel and Baral, 2017) evaluated effect of N.S.P.T., periodontitis and gingivitis on O.H.R.Q.o.L. with O.H.I.P.-14 at baseline and 9-12 weeks after the treatment. Both groups showed significant reduction on total O.H.I.P.-14 score and periodontal diseases treatment enhanced Q.o.L. from patient's perspective.

Mendes et al. (Mendez et al., 2017) assessed the impact of N.S.P.T. on O.H.Q.o.L. with O.H.I.P-14 in 55 gingivitis and periodontitis patients at baseline, 1 and 3 months. The total score of O.H.I.P.-14 and all domains were decreased and periodontal clinical parameters were not associated with O.H.I.P-14 scores change.

Wang et al. (Wang et al., 2018) evaluated comprehensive N.S.P.T. and supportive periodontal treatment could improve the O.H.R.Q.o.L. of periodontitis patients. 32 periodontitis patients in each group were measured their O.H.R.Q.o.L. with O.H.I.P.-14 at baseline, 14, 28 and 90 days after treatment. N.S.P.T. improved the total O.H.I.P.-14 score and reduced the P.I., P.D. parameters.

Peikert et al. (Peikert et al., 2019) investigated the association of N.S.P.T. on O.H.R.Q.o.L. according to periodontal disease severity and treatment methods. 172 patients with periodontal disease were performed O.H.I.P.-14 German before and after N.S.P.T. They found that O.H.I.P. improved significantly after treatment modalities, and N.S.P.T. was positively effect patients' O.H.R.Q.o.L.

Oral health can affect Q.o.L. through symptoms and physical effects. This suggests that the possible effects of periodontal disease and its treatment on daily life may likewise change the Q.o.L. Oral health may affect the sensation of taste, cause pain while eating thus prevent easy chewing, and affect the Q.o.L. because it creates another set of physical interferences.

In this context, the assessment of the psycho-sociological dimension and health-related behaviors is essential to assess the Q.o.L. that is lacking in routine clinical assessments. Considering the individual as a whole; not only the periodontal disease status but also the health and treatment needs should be determined. Various studies have shown improvement in function after N.S.P.T. (Saito et al, 2010 , Pereira et al, 2011, Wong et al., 2012), psychological improvement (Aslund et al., 2008, Wong et al., 2012) and decrease in physical pain (Saito et al., 2010, Wong et al., 2012).

The aim of this study is to evaluate the effect of N.S.P.T. on O.H.R.Q.o.L. in patients with periodontal disease such as periodontitis and gingivitis by using O.H.I.P.-14 TR.

5. MATERIAL and METHOD

5.1. Study Approval

This study was approved by the Marmara University, Faculty of Medicine Clinical Research Ethic Committee with the decision date 04.01.2019 and numbered 09.2019.055 (Appendix 1.).

Sample size estimation of this study was based on a previous study (Peikert et. al, 2019). When α=0,05 and β=0,10 with 90% power each group needed minimum 20 patients to detect 7 difference in total O.H.I.P. 14 score. For any possible dropout, 30 patients per treatment group were included.

5.2. Patient Selection

The subjects included in this study were selected among the patients who applied to Marmara University, Faculty of Dentistry, Department of Periodontology with various periodontal complaints, who were diagnosed with periodontitis and gingivitis as a result of clinical and radiographic examinations, and periodontally healthy volunteers.

Selection of these individuals sought compliance with the following criteria;

- Being a volunteer,
- More than 18 years old,
- Systemically healthy,
- Non smoking,
- There is no situation to prevent communication with the patient,
- To be literate,
- Not during pregnancy and lactation,
- Not using anti-inflammatory, antibiotic or antimicrobial agent in the last 3 months,
- No periodontal treatment for the last 6 months,
- 20 teeth of at least two quadrants in the mouth of patients,
- The selection of periodontitis patients; At least 4 interproximal sites of $\geq$ 4 mm P.D. with B.O.P. (+) and radiographic bone loss,
- The selection of gingivitis patients; B.O.P. $\geq$ 10%, no clinical attachment loss and no radiographic bone loss.

- The selection of healthy individuals; B.O.P. < 10%, no clinical attachment loss and no radiographic bone loss.

The study plan was explained by giving detailed information about periodontal diseases, M.D.P., oral hygiene and periodontal treatments before performing any procedure to patients who meet the selection criteria, and informed consent forms were signed (Appendix 2 and 3).

5.3. Study Groups

Group H; 30 periodontally healthy individuals.

Group G: 30 patients diagnosed with gingivitis.

Group P: 30 patients diagnosed with periodontitis.

5.4. Study Plan

The study plan of the research is shown in Figure 5.1. On the 0th day of the study, intra-oral photographs of the patients were taken, P.I., G.I., B.O.P., P.D., C.A.L. measurements were recorded and O.H.I.P.-14 TR questionary were performed. Group G and P received oral hygiene instruction including the use of toothbrush and floss and / or interdental brush. Two sessions of scaling and root planing were performed using ultrasonic scalers[1] and Gracey[2] curettes, and polishing was applied. In the 1th and 3rd months of the study, oral hygiene levels of group G and P patients were controlled, intra-oral photographs were taken, clinical measurements and O.H.I.P.-14 TR questionary were repeated.

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[1] *Cavitron, Dentsply, USA.*
[2] *Gracey Currette, Helmut Zepf Medizintechnik GmbH, Germany.*

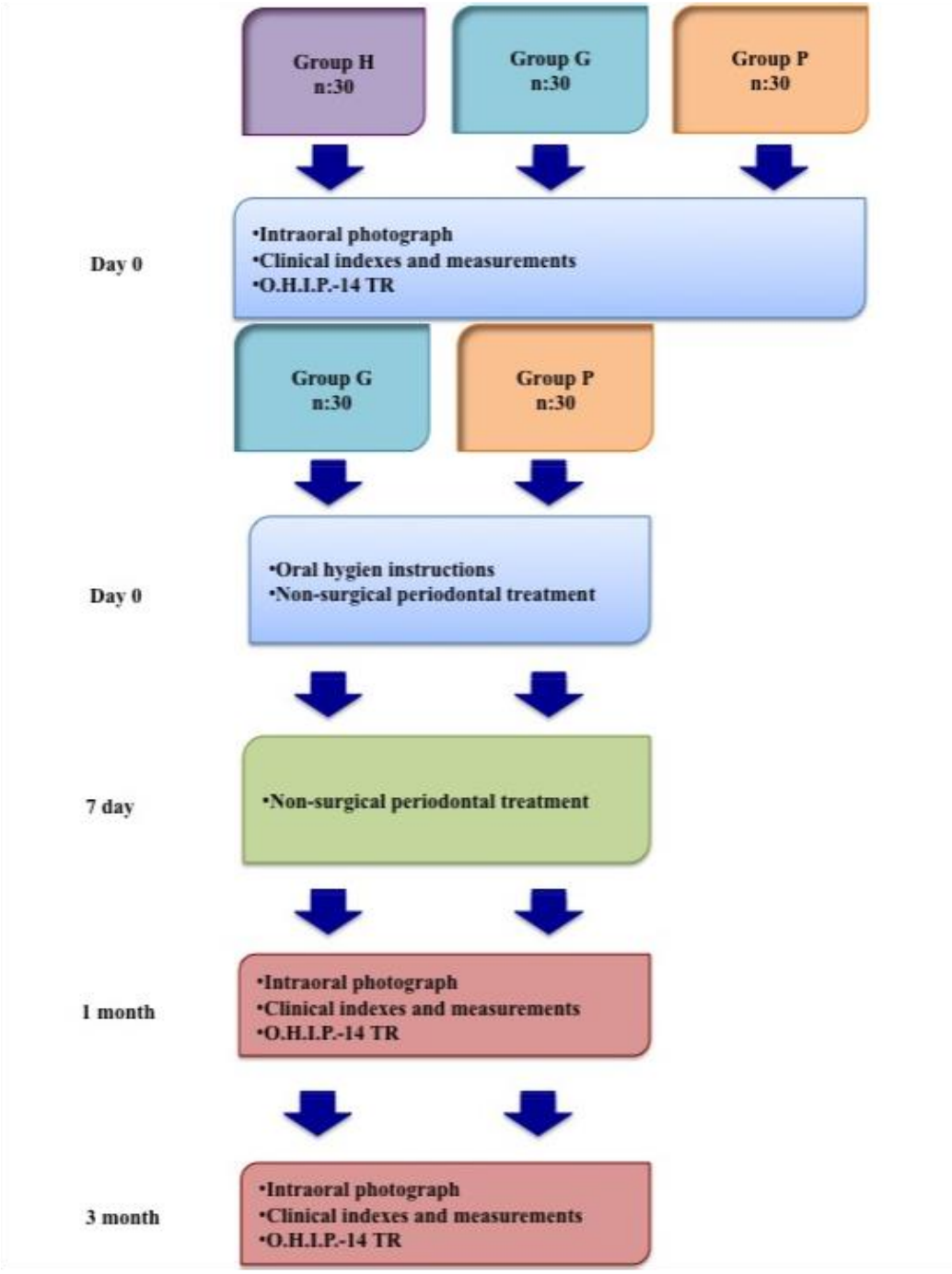

Figure 5.1. Study plan.

After the clinical and radiographic examination of the healthy individuals in the group H, clinical measurements and O.H.I.P.-14 TR questionary were performed.

5.5. Clinical Indexes and Measurements

In order to ensure that the measurements within the scope of the study were not affected negatively from each other, clinical measurements were performed in a regular order and by a single researcher. Clinical indexs and measurements were recorded on specially prepared data recording forms (Appendix 4) at day 0, 1 and 3 months. During these procedures, 0,5 mm diameter peridontal probe* was used.

5.5.1. Plaque index

To evaluate the amount of dental plaque on the teeth P.I. (Silness and Loe, 1964) was recorded from the 4 surface of the tooth (mesial, distal, oral and vestibule). Scores of this index system are as follows;

0: No plaque.

1: There is no visible plaque, but when a periodontal probe is moved along the gingival margin, the dental plaque is seen at the tip of the periodontal probe.

2: There is a thin or medium layer of dental plaque visible on the tooth surface. The interdental region is not completely filled.

3: There is a thick dental plaque layer on the gingival margin, gingival pocket and tooth surface, the interdental region is completely filled with dental plaque.

5.5.2. Gingival index

To evaluate gingival inflammation, G.I. (Loe and Silness, 1963) was recorded. Buccal, oral, mesial and distal measurements were made at 4 points.

Univercity of North Carolina PCPUNC15, Hu-Friedy Ins. Co., USA.

Scores of this index system are as follows;

0: Healthy gums; absence of inflammation,

1: Mild inflammation; slight change in color, mild edema, no bleeding on probing.

2: Moderate inflammation; Redness and edema, bleeding on probing,

3: Severe inflammation; There is significant redness, edema and hypertrophy, bleeding on probing or spontaneous bleeding.

5.5.3. Bleeding on probing

B.O.P. is usually measured as bleeding provoked by a periodontal probe with 0,25 N pressure applied to the bottom of a gingival sulcus or periodontal pocket. After 25-30 sec, if bleeding was seen (+) and was not seen (-) value, has been recorded from the 6 sites per tooth (mesiobuccal, midbuccal, distobuccal, mesiolingual, midlingual, distolingual). The percentage value of B.O.P. was obtained with taking the ratio of bleeding areas to all regions.

5.5.4. Probing depth

The periodontal probe was placed to the bottom of the periodontal pocket, and the distance between the periodontal pocket and the gingival margin was measured at 6 sites per tooth (mesiobuccal, midbuccal, distobuccal, mesiolingual, midlingual, distolingual).

5.5.5. Clinical attachment level

The distance between cemento-enamel junction and bottom of the periodontal pocket was measured at 6 sites per tooth (mesiobuccal, midbuccal, distobuccal, mesiolingual, midlingual, distolingual).

5.6. Evaluation of Oral Health Impact Profile

The O.H.I.P.-14 questionary was prepared by Slade et al. in 1994 to assess the Q.o.L. associated with oral health, which was adapted to Turkish by Mumcu et al. (Mumcu et al. 2006) (Appendix 5.). The participants were interviewed for O.H.I.P.-14 TR to rate the questions by using Likert scale ranging from 0=never, 1=seldom, 2=sometimes, 3=fairly often, 4=very often (Atchison 1997, Slade 1997). The scores obtained from all questions were collected and Q.o.L. related to oral health was obtained. A high total score is show that the Q.o.L. associated with oral health is low. The scores obtained from all the questions were summed to obtain the Q,O.H.R.Q.o.L. score.

5.7. Clinical Procedures

5.7.1. Non-surgical periodontal treatment

N.S.P.T. was applied to groups G and P. In the first stage of N.S.P.T., tooth brushing method according to the modified Bass technique, flossing and / or interdental brushing were recommended. Scaling and root planing was performed with ultrasonic devices[1] and Gracey[2] curettes for 2 sessions on the day 0 and 7th day. Then, polising procedure was applied.

The oral hygiene of the patients was checked 1 week, 1 and 3 months after initial periodontal treatment. Measurements of clinical parameters and O.H.I.P.-14 TR questionnaire were repeated at 1 and 3 months. After the end of the study period, peridodontal surgical treatments were performed if deemed necessary.

[1] *Cavitron, Dentsply, USA.*
[2] *Gracey Currette, Helmut Zepf Medizintechnik GmbH, Germany.*

5.8. Statistical Analysis

Statistical analyses were performed using SPSS software version 25*. Descriptive analyses were presented using means, standard deviations, median, minimum and maximum values for contionus data. Frequecies and percentages were used for categorical data. The variables investigated using Kolmogorov Smirnov test to determine whether or not they are normally distributed. Since the variables were normally distributed, two independent samples t test was used to compare the groups. Since the variables were not normally distributed, Mann-Whitney U test was used to compare the groups. The Chi-Square and Fisher's exact test, where appopriate, was used to compare the proportions of the groups. Kruskal-Wallis test were conducted to compare age among groups. Mann-whitney U test was performed to test the significance of pairwise differences using Bonferroni correction adjust for multiple comparasions. For normally distributed data, change in the measurements by time was investigated using repeated measures ANOVA. Paired samples t test was performed to test the significance of pairwise differences using Bonferroni correction to adjust for multiple comparisons. For not normally distributed data, change in the measurements by time was investigated using Friedman test. The Wicoxon test was performed to test the significance of pairwise differences using Bonferroni correction to adjust for multiple comparisons. A 5% type-I error level was used to infer a statistical significance.

IBM SPSS Statistics, IBM Corp., USA.

6. RESULTS

Ninety patients who applied to the Marmara University, Faculty of Dentistry, Department of Periodontology between January 2019 and August 2019 were diagnosed periodontitis, gingivitis and periodontally healthy for examination the effect of N.S.P.T. on O.H.R.Q.o.L. by using O.H.I.P.-14 TR questionnaires.

Clinical appearences and baseline radiograph of patients in the study groups before and after N.S.P.T. were shown in Figure 6.1 a-b, 6.2 a-d and 6.3 a-d.

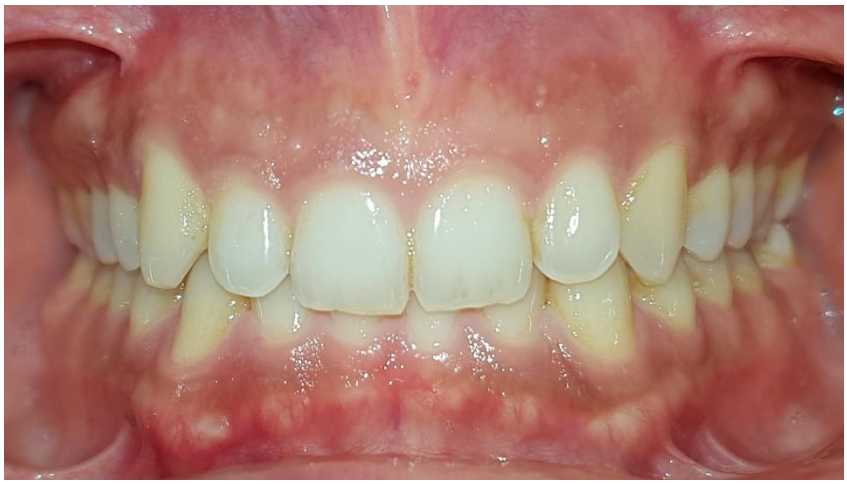

Figure 6.1.a. Baseline clinical appearance of a patient from the group H.

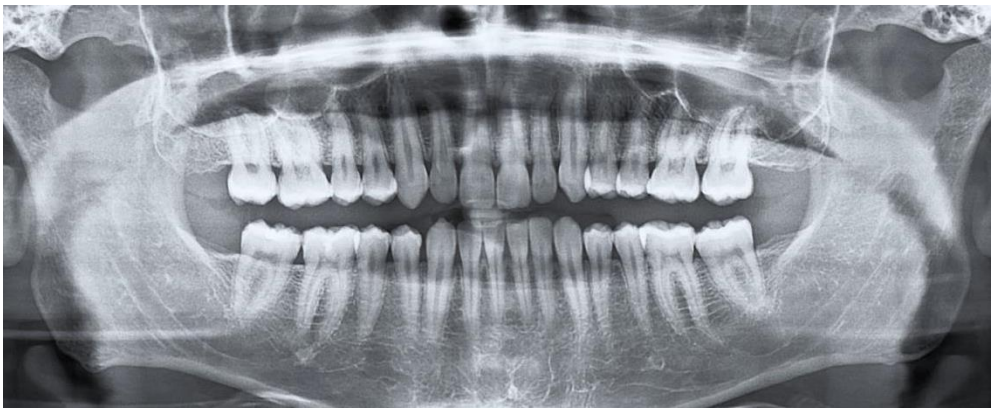

Figure 6.1.b. Radiographic image of a patient from the group H.

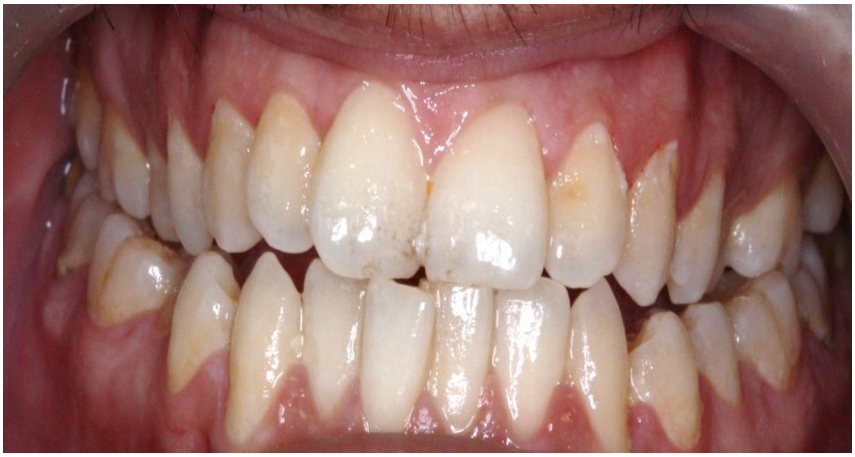

Figure 6.2.a. Baseline clinical appearance of a patient from the group G.

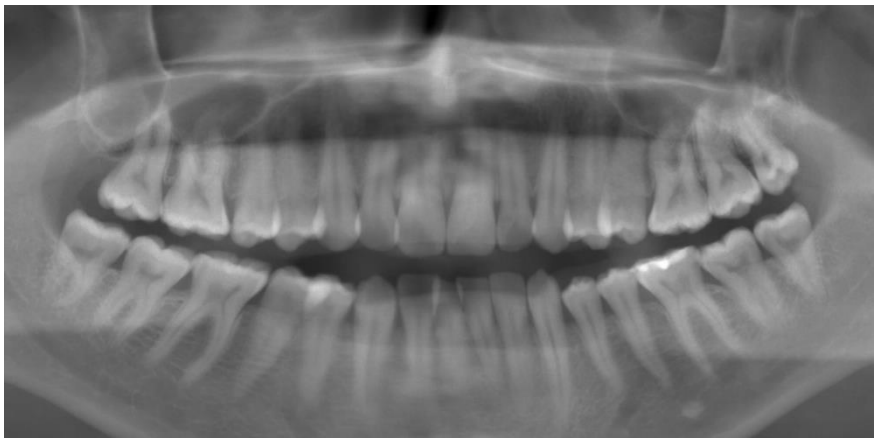

Figure 6.2.b. Radiographic image of a patient from the group G.

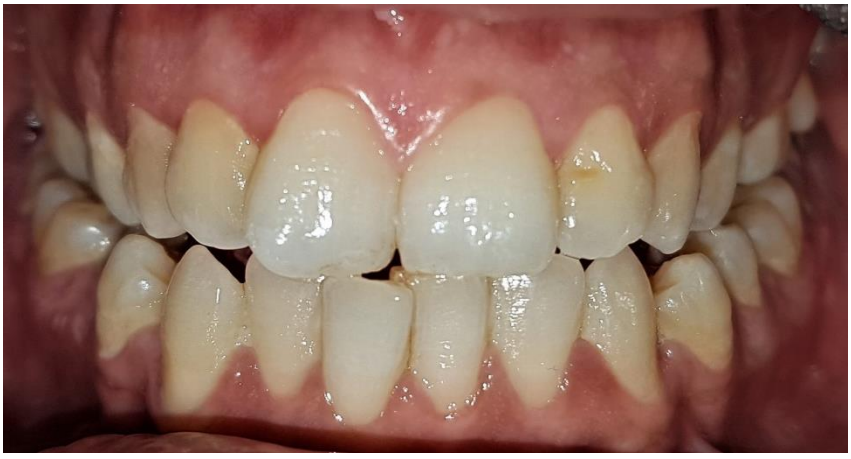

Figure 6.2.c. Clinical appearance of the patient from the group G 1 month after treatment.

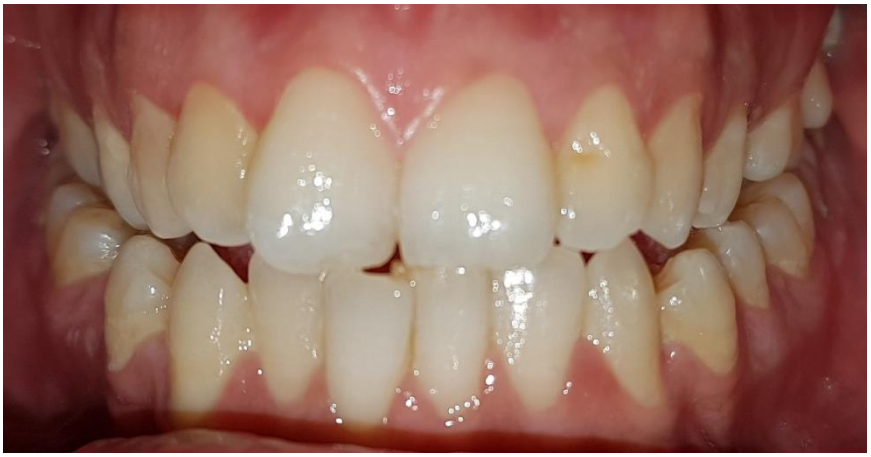

Figure 6.2.d. Clinical appearance of the patient from the group G 3 month after treatment.

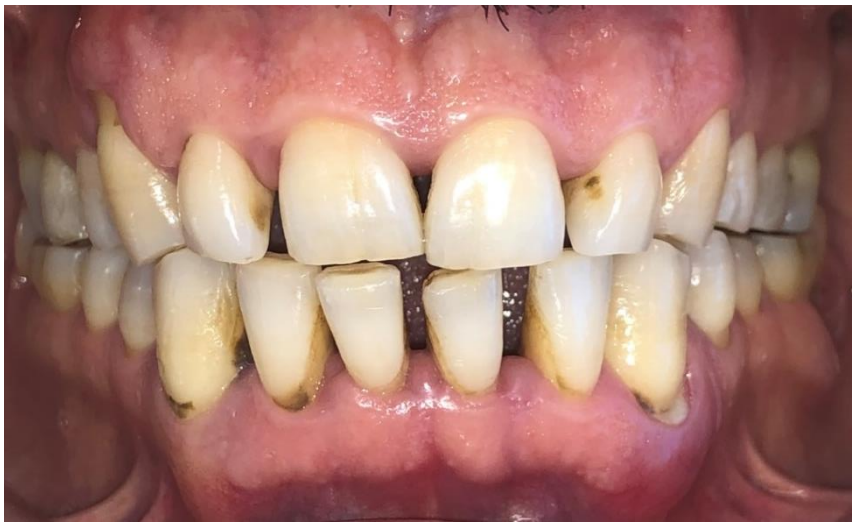

Figure 6.3.a. Baseline clinical appearance of a patient from the group P.

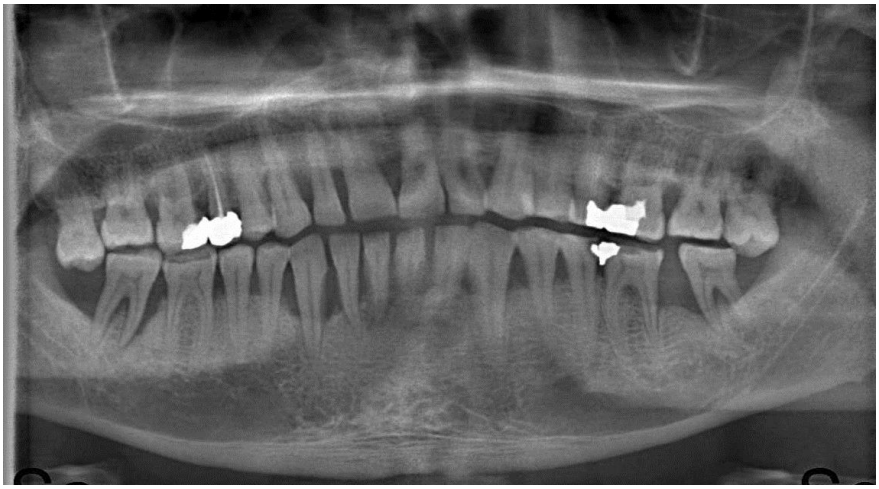

Figure 6.3.b. Radiographic image of a patient from the group P.

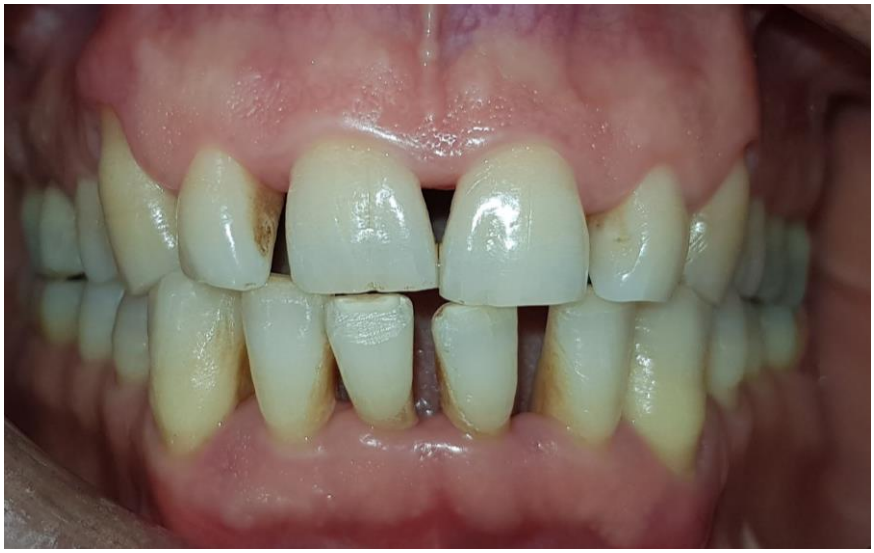

Figure 6.3.c. Clinical appearance of the patient from the group P 1 month after treatment.

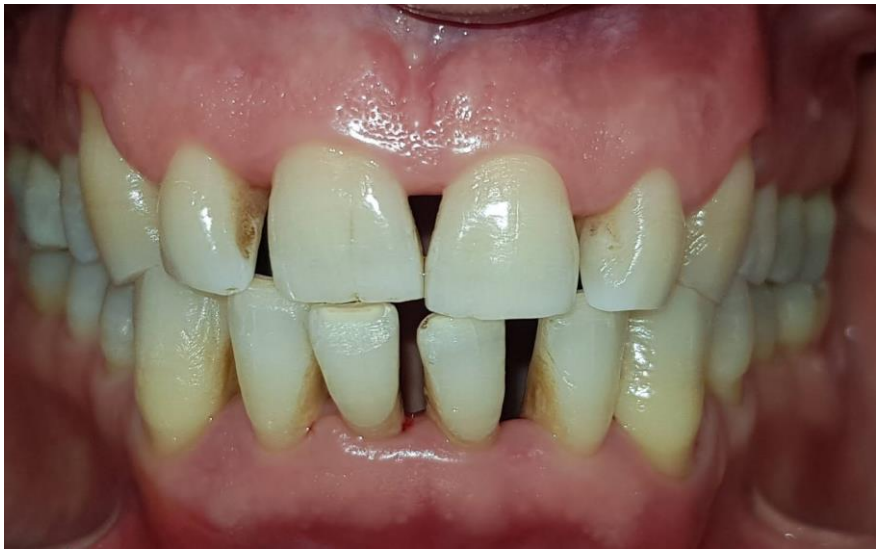

Figure 6.3.d. Clinical appearance of the patient from the group P 3 month after treatment.

6.1. Demographic Data

Demographic data and oral health habits of all participants are showed in Table 6.1. The mean age of patients was higher in group P (40,80±9,6) than in group G (25,06±4,39) and H (28,83±2,01) ($p<0,05$). According to the gender, there were similar male/female distribution in group H (17/13), group G (12/18), group P (54/16) ($p>0,05$).

According to the educational status, 100% (n=30) of patients from university in group H; 10% (n=3) from high school and 90% (n=27) from university in group G; and 36,7% (n=11) from primary school, 23,3% (n=7) from high school and 40% (n=12) from university in group P. All patients who had only finished primary school had periodontitis (n=11). High school graduated patients had more periodontitis (n=7) than expected

comparing with gingivitis (n=3). University graduated patients had more gingivitis (n=27) and healthy (n=30) than expected comparing with the periodontitis (n=12) ($p<0,05$).

There was significant difference among the group H ,G and P with regards to the finansial situation ($p<0,05$). 13,3% (n=12) of the patients' salary is under a 1000TL/per month in group G (n=7) and P (n=5), 13,3% (n=12) between 1001-1999TL/per month in group G (n=6) and P (n=6), 11,1% (n=10) between 2000-2999TL/per month in group H (=5) and G (n=5), 10,0% between 3000-3999TL/per month in group H (n=9), 8,9% between 4000-4999TL/per month in group H (n=8), and 13,3% their salary is more than 5000TL/per month in group H (n=5) and G (n=7).

The majority of the patients were coming to the hospital for dental and gingival examination in group H (n=30, 100%), and in group G; n=21 (70%) for dental and gingival examination, n=3 (10%) for gingival problems, n=6 (20%) for tooth problems, in group P;

The last dental visit of most of the patients was 6 months ago (n=26, 86,7%; n=14, 46,7%) and 1 year ago (n=4, 13,3%, n=16, 53,3%) in group H and G, respectively, and in group P, never n=1 (3,3%), 6 month ago n=11 (36,7%), 1 year ago n=11 (36,7%), 2 years ago n=5 (16,7%) and 5 years ago or more n=2 (6,7%). There was a significant difference in last dental visit among groups ($p<0,05$).

At the baseline examination, 42 patients that were in group H and G, brushed their teeth twice a day, 32 group G and P patients once a day, 15 group G and P patients rarely and 1 group P patient never ($p<0,05$). Most of the patients in group G and P using flossing in interdental cleaning was never (40% and 76,7%, respectively) and rarely (46,7% and 20,0%, respectively). In group H, patients said that cleaned interdental area with flossing mostly once a day (96,7%). A total of 69 patients (60% in H group, 73,3% in group G and 96,7% in group P) did not used mouth wash in oral health habits.

Table 6.1. Demographic characteristics and habits of patients.

Variables		Groups			
		Group H (n=30)	**Group G (n=30)**	**Group P (n= 30)**	***p***
Age (Year, Mean±SD)		28,83±2,01	25,06±4,39	40,80± 9,68	**0,000***
Gender n (%)	Male	17 (43,3)	12 (40,0)	14 (46,7)	0,873♯
	Female	13 (56,7)	18 (60,0)	16 (53,3)	
Education status n (%)	No literacy	0	0	0	**0,000♯**
	Primary school	0	0	11 (36,7)	
	High school	0	3 (10,0)	7 (23,3)	
	University	30 (100,0)	27 (90,0)	12 (40,0)	
Financial situation n (%)	≤1000	1 (3,3)	7 (23,3)	5 (16,7)	**0,029♯**
	1000-1999	2 (6,7)	6 (20,0)	6 (20,0)	
	2000-2999	5 (16,7)	5 (16,7)	8 (26,7)	
	3000-3999	9 (30,0)	4 (13,3)	4 (13,3)	
	4000-4999	8 (26,7)	1 (3,3)	6 (20,0)	
	≥5000	5 (16,7)	7 (23,3)	1 (3,3)	
Reason for coming to the hospital n (%)	Examination	30 (100,0)	21 (70,0)	0	**0,000♯**
	Gum problems	0	3 (10,0)	11 (36,7)	
	Tooth problems	0	6 (20,0)	19 (63,3)	
	Prosthesis problems	0	0	0	
Last visit n (%)	Never	0	0	1 (3,3)	**0,000♯**
	Six month ago	26 (86,7)	14 (46,7)	11 (36,7)	
	A year ago	4 (13,3)	16 (53,3)	11 (36,7)	
	Two year ago	0	0	5 (16,7)	
	Five years or more ago	0	0	2 (6,7)	
Brushing n (%)	Never	0	0	1 (3,3)	**0,000♯**
	Rarely	0	2 (6,7)	13 (43,3)	
	Once a day	0	18 (60,0)	14 (46,7)	
	Twice a day	30 (100,0)	10 (33,3)	2 (6,7)	
Flossing n (%)	Never	0	12 (40,0)	23 (76,7)	**0,000♯**
	Rarely	0	14 (46,7)	6 (20,0)	
	Once a day	29 (96,7)	3 (10,0)	1 (3,3)	
	Twice a day	1 (3,3)	1 (3,3)	0	
Mouth wash n (%)	Yes	12 (40,0)	8 (26,7)	1 (3,3)	**0,003♯**
	No	18 (60,0)	22 (73,3)	29 (96,7)	

S.D.: Standard deviation, *Kruskal Wallis test, ♯Chi-Square test, p<0,05.

6.2. Clinical Findings

6.2.1. Plaque index

Intragroup and intergroup comparisons of P.I. values of three groups at baseline and follow-up periods are shown in Table 6.2.1.1. The mean P.I. values in group G were 1,51±0,18 at baseline, 0,50±0,18 1 month and 0,50±0,14 3 months after N.S.P.T. This decrease in P.I. values was found statistically significant (p<0,05). Meanwhile, in group P, the mean P.I. values were 1,91±0,17 at baseline, 0,26±0,13 1 month and 0,17±0,09 3 months after N.S.P.T. The P.I. value in group P was also decrease baseline to 3 months follow-up period and this decrease was found also statistically significant (p<0,05).

In intergroup comparison, the mean of P.I. values at baseline of group H, group G and group P were 0,62±0,18, 1,51±0,18, and 1,91±0,17 respectively. There was a statistical difference among the groups at baseline (p<0,05). 1 month after N.S.P.T., the mean P.I. value of group G and P were 0,50±0,18 and 0,26±0,13 respectively, and statistically significant difference was found between the groups (p<0,05). At 3 months, the mean P.I. value of group G and P were 0,50±0,14 and 0,17±0,09, and also there was significant difference between the group G and P (p<0,05) (Table 6.2.1.1.)

Table 6.2.1.1. Intragroup and intergroup comparison of baseline, 1 and 3 months P.I. values.

		Groups			
Parameter	**Time points**	**Group H n=30 Median Mean±SD (Min-Max)**	**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
P.I.	**Baseline**	0,61 0,62±0,18 (0,26-1,01)	1,55 1,51±0,18 (1,15±1,82)	1,92 1,91±0,17 (1,57-2,40)	**0,000***
	1 month		0,50 0,50±0,18 (0,13-0,95)	0,25 0,26±0,13 (0,01-0,60)	**0,000**$^{\sharp}$
	3 month		0,49 0,50±0,14 (0,28-0,79)	0,17 0,17±0,09 (0,02-0,47)	**0,000**$^{\sharp}$
p			**0,000****	**0,000****	
p (0-1)			**0,000**‡	**0,000**‡	
p (0-3)			**0,000**‡	**0,000**‡	
p (1-3)			0,869‡	**0,000**‡	

S.D.: Standard deviation, P.I.: Plaque index,* Kruskal-Wallis test, $^{\sharp}$Mann Whitney U test, **ANOVA test, ‡Paired sample t test, p<0,05.

Statistically significant was found between the group G and P in 0 day to 1 month (1,01±0,23 and 1,66±0,23, respectively), 0 day to 3 month (1,00±0,22 and 1,74±0,20, respectively) and 1 to 3 month (-0,01±0,15 and 0,08±0,07, respectively) P.I. values change (p<0,05) (Table 6.2.1.2.).

Table 6.2.1.2. P.I. values change at follow up periods between group G and P.

		Groups		
Parameter		**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
P.I.	**Δ 0-1**	1,06 1,01±0,23 (0,58-1,54)	1,68 1,66±0,23 (0,97-2,23)	**0,000**[*]
	Δ 0-3	1,03 1,00±0,22 (0,52-1,38)	1,73 1,74±0,20 (1,10-2,18)	**0,000**[#]
	Δ 1-3	-0,03 -0,01±0,15 (-0,29-0,37)	0,08 0,08±0,07 (-0,05-0,24)	**0,006**[#]

S.D.: Standard deviation, P.I.: Plaque index, [*]Mann-Whitney U test, [#]Two independent samples t test p<0,05.

6.2.2. Gingival index

Table 6.2.2.1. shows intra and inter group comparison of 3 groups G.I. values at baseline and follow-up periods. In group G, the mean G.I. value was 1,27±0,099 at baseline, which then decreased to 1,00±0,11 1 month after N.S.P.T. and to 0,72±0,14 at 3 months. This decrease in G.I. value was found statistically significant (p<0,05). In group P, the mean G.I. value was 1,45±0,38 at baseline, which then decreased to 0,41±0,18 at 1 month after N.S.P.T. and to 0,31±0,14 at 3 months. This decrease in G.I. value was found statistically significant (p<0,05).

In intergroup comparison at baseline, the mean G.I. value of group H, group G and group P were 0,64±0,14, 1,27±0,099, and 1,45±0,38 respectively. A statistical difference was found among the groups (p<0,05). At 1 month, the mean G.I. value of group G and P were 1,00±0,11 and 0,41±0,18, and statistical difference was found between the groups (p<0,05). And at 3 month, the mean G.I. value of group G and P were 0,72±0,14 and 0,31±0,14, and there was statistical difference between the groups (p<0,05) (Table 6.2.2.1.).

Table 6.2.2.1. Intragroup and intergroup comparison of baseline, 1 and 3 months G.I. values.

		Groups			
Parameter	**Time points**	**Group H n=30 Median Mean±SD (Min-Max)**	**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
G.I.	**Baseline**	0,65 0,64±0,14 (0,38-0,96)	1,29 1,27±0,099 (1,02-1,52)	1,55 1,45±0,38 (0,41-1,97)	**0,000**[*]
	1 month		1,03 1,00±0,11 (0,76-1,27)	0,44 0,41±0,18 (0,07-0,74)	**0,000**[♯]
	3 month		0,70 0,72±0,14 (0,32-1,05)	0,31 0,31±0,14 (0,05-0,69)	**0,000**[♯]
p			**0,000**[**]	**0,000**[**]	
p (0-1)			**0,000**[‡]	**0,000**[♯♯]	
p (0-3)			**0,000**[‡]	**0,000**[♯♯]	
p (1-3)			**0,000**[‡]	**0,029**[♯♯]	

S.D.: Standard deviation, G.I.: Gingival index, [*]Kruskal-Wallis test, [♯]Mann-Whitney U test, [**]ANOVA test, [‡]Paired sample t test, [♯♯]Wilcoxon's test, p<0,05.

Statistically significant differences were found between the group G and P in comparison of the mean of G.I. changes between the follow up periods (p<0,05) (Table 6.2.2.2.).

Table 6.2.2.2. G.I. values change at follow up periods between group G and P.

		Groups		
Parameter		**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
G.I.	**Δ 0-1**	0,26 0,26±0,08 (0,06-0,43)	1,06 1,03±0,30 (0,13-1,42)	**0,000**[*]
	Δ 0-3	0,56 0,55±0,14 (0,16-0,93)	1,20 1,14±0,33 (0,17-1,57)	**0,000**[♯]
	Δ 1-3	0,25 0,28±0,16 (-0,01-0,87)	0,11 0,10±0,09 (-0,09-0,27)	**0,000**[*]

S.D.: Standard deviation, G.I.: Gingival index, [*]Two independent samples t test, [♯]Mann-Whitney U test, p<0,05.

6.2.3. Bleeding on probing

Table 6.2.3.1. shows intra and intergroup comparison of the mean B.O.P. values of 3 groups at baseline, 1and 3 month after N.S.P.T. In the intragroup comparison of group

G, the mean B.O.P. value was 40,72±9,08 at baseline, which then decreased to 13,75±4,52 after 1 month and to 10,44±3,82 after 3 month. This decrease in B.O.P.value was found statistically significant (p<0,05). In group P, the mean B.O.P. value was 74,40±19,21 at baseline, which then decreased to 25,39±12,25 at 1 month and to 18,92±7,66 at 3 month. This decrease in B.O.P. value was found statistically significant (p<0,05) in all time periods except the period from 1 month to 3 months, where no statistically significant difference was noted (p>0,05).

In intergroup comparison, the mean of B.O.P. value at baseline of group H, group G and group P were 9,13±0,53, 40,72±9,08, and 74,40±19,21 respectively. Statistical difference was found among the groups (p<0,05). At 1 month, the mean B.O.P. value of group G and P were 13,75±4,52 and 25,39±12,2 and statistical difference was noted between the groups (p<0,05). At 3 months, the mean B.O.P. value of group G and P were 10,44±3,82 and 18,92±7,66 and statistical differences was found between the groups (p<0,05) (Table 6.2.3.1.).

Table 6.2.3.1. Intra and inter groups comparison of baseline, 1 and 3 months B.O.P. values.

		Groups			
Parameter	**Time points**	**Group H n=30 Median Mean±SD (Min-Max)**	**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
B.O.P. (%)	**Baseline**	9,52 9,13±0,53 (7,75-9,72)	41,37 40,72±9,08 (20,83-54,86)	77,32 74,40±19,21 (17,13-97,17)	**0,000***
	1 month		13,10 13,75±4,52 (5,36-25,00)	29,75 25,39±12,25 (2,62-43,60)	**0,000**$^{\#}$
	3 month		9,82 10,44±3,82 (4,17-19,05)	19,01 18,92±7,66 (1,40-29,29)	**0,000**$^{\#}$
p			**0,000****	**0,000**‡	
p (0-1)			**0,000**$^{\#\#}$	**0,000**‡‡	
p (0-3)			**0,000**$^{\#\#}$	**0,000**‡‡	
p (1-3)			**0,003**$^{\#\#}$	0,158‡‡	

SD: Standard deviation, B.O.P.: Bleeding on probing, *Kruskal-Wallis test, $^{\#}$Mann-Whitney U test, **ANOVA test, ‡Friedman test, $^{\#\#}$Paired sample t test, ‡‡Wilcoxon's test, p<0,05.

Statistically significant differences were found between group G and P in intergroup comparison of the mean of B.O.P. changes between the baseline to 1 month and baseline

to 3 months (p<0,05) except for the follow up period from 1 month to 3 month change (p>0,05) (Table 6.2.3.2.).

Table 6.2.3.2. B.O.P. values change at follow up periods between group G and P.

		Groups		
Parameter		**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
B.O.P. (%)	**Δ 0-1**	49,10 49,00±16,26 (7,46-81,55)	28,27 26,96±7,96 (10,72-42,36)	**0,000***
	Δ 0-3	58,03 55,47±16,50 (9,25-83,34)	31,84 30,27±8,92 (11,91-48,22)	**0,000***
	Δ 1-3	9,16 6,47±7,56 (-9,72-18)	2,98 3,30±5,54 (-7,2-12,5)	0,074*

S.D.: Standard deviation, B.O.P.: Bleeding on probing, *Mann-Whitney U test, p<0,05.

6.2.4. Probing depth

The table 6.2.4.1. shows intra and intergroup comparison of P.D. value of 3 group at baseline, 1 and 3 month after N.S.P.T. In group G, the mean P.D. value was 2,43±0,17 at baseline, which then decreased to 2,19±0,18 1 month and to 2,13±0,18 3 month after N.S.P.T. This decrease in P.D. value was found to be statistically significant (p<0,05). Meanwhile in group P, the mean P.D. value was 3,92±0,54 at baseline, which then decreased to 2,98±0,38 After 1 month of N.S.P.T. and to 2,81±0,39 after 3 months. This decrease in P.D. value was found to be statistically significant (p<0,05).

In intergroup comparison of the baseline the mean of P.D. values of group H, group G and group P were 2,18±1,12, 2,43±0,17, and 3,92±0,54 respectively and A statistically significant difference was noted among the groups (p<0,05). The mean P.D. values of group G and P were 2,19±0,18 and 2,98±0,38 at 1 month, 2,13±0,18 and 2,81±0,39 at 3 month. There were statistically significant difference in the intergroup comparison of group G and P at 1 and 3 months (p<0,05) (Table 6.2.4.1.).

Table 6.2.4.1. Intragroup and intergroup comparison of baseline, 1 and 3 months P.D. values.

		Groups			
Parameter	**Time points**	**Group H n=30 Median Mean±SD (Min-Max)**	**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
P.D. (mm)	**Baseline**	2,00 2,18±1,12 (1,31-7,96)	2,49 2,43±0,17 (1,88-2,70)	3,91 3,92±0,54 (2,80-4,93)	**0,000***
	1 month		2,21 2,19±0,18 (1,79-2,49)	2,92 2,98±0,38 (2,28-3,90)	**0,000**$^{\sharp}$
	3 month		2,15 2,13±0,18 (1,77-2,45)	2,81 2,81±0,39 (1,96-3,71)	**0,000**$^{\sharp}$
p			**0,000****	**0,000**‡	
p (0-1)			**0,000**$^{\sharp\sharp}$	**0,000**‡‡	
p (0-3)			**0,000**$^{\sharp\sharp}$	**0,000**‡‡	
p (1-3)			**0,001**$^{\sharp\sharp}$	**0,000**‡‡	

SD: Standard deviation, P.D.: Probing depth, *Kruskal-Wallis test, $^{\sharp}$Mann-Whitney U test, **ANOVA test, ‡Friedman test, $^{\sharp\sharp}$Wilcoxon's test, ‡‡Paired samples t test, p<0,05.

Statistically significant differences were found between group G and P in intergroup comparison of the mean of P.D. changes between baseline to 1 month (0,23±0,11 and 0,94±0,45, respectively), baseline to 3 month (0,30±0,12 and 1,11±0,52, respectively) and 1 to 3 months (0,06±0,09 and 0,16±0,14, respectively)(p<0,05) (Table 6.2.4.2.).

Table 6.2.4.2. P.D. values change at follow up periods between group G and P.

		Groups		
Parameter		**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
P.D. (mm)	**Δ 0-1**	0,24 0,23±0,11 (0,02-0,47)	0,90 0,94±0,45 (0,17-2,28)	**0,000***
	Δ 0-3	0,28 0,30±0,12 (0,09-0,58)	1,03 1,11±0,52 (0,35-2,56)	**0,000**$^{\sharp}$
	Δ 1-3	0,04 0,06±0,09 (0,00-0,51)	0,11 0,16±0,14 (0,01-0,68)	**0,000***

S.D.: Standard deviation, P.D.: Probing depth, *Two independent samples t test, $^{\sharp}$Mann-Whitney U test, p<0,05.

6.2.5. Clinical attachment level

The table 6.2.5.1. shows intra and intergroup comparison of the mean C.A.L. of 3 groups at baseline, 1 and 3 months. Intragroup comparison of group G, the mean C.A.L. value was 2,42±0,18 at baseline, which then decreased to 2,20±0,18 after 1 month of N.S.P.T. and to 2,15±0,19 after 3 months. This decrease in C.A.L. value was found statistically significant (p<0,05). Meawhile in group P, the mean C.A.L. value was 4,27±0,73 at baseline, which then decreased to 3,41±0,63 after 1 month of N.S.P.T. and to 3,25±0,64 after 3 months. This decrease in C.A.L. value was found statistically significant (p<0,05).

In intergroups comparison, at the baseline the mean of C.A.L. values of group H, group G and group P were 2,18±1,12, 2,42±0,18 and 4,27±0,73 respectively. There was a statistically significant difference among the groups (p<0,05). At 1 and 3 months, the mean C.A.L. values were 2,20±0,18 and 2,15±0,19 in group G, 3,41±0,63 and 3,25±0,64 in group P, respectively, and There were statistically significant difference between the groups (p<0,05) (Table 6.2.5.1.).

Table 6.2.5.1. Intragroup and intergroup comparison of baseline, 1 and 3 months C.A.L. values.

		Groups			
Parameter	**Time points**	**Group H n=30 Median Mean±SD (Min-Max)**	**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
C.A.L. (mm)	**Baseline**	2,00 2,18±1,12 (1,31-7,96)	2,49 2,42±0,18 (1,88-2,70)	4,19 4,27±0,73 (3,22-5,88)	**0,000***
	1 month		2,23 2,20±0,18 (1,79-2,49)	3,27 3,41±0,63 (2,67-5,26)	**0,000♯**
	3 month		2,17 2,15±0,19 (1,77-2,45)	3,13 3,25±0,64 (2,41-5,06)	**0,000♯**
p			**0,000****	**0,000****	
p (0-1)			**0,000‡**	**0,000‡**	
p (0-3)			**0,000‡**	**0,000‡**	
p (1-3)			**0,004‡**	**0,001‡**	

S.D.: Standard deviation, C.A.L.: Clinical attachment level, *Kruskal-Wallis test, ♯Mann-Whitney U test, **Friedman test, ‡Wilcoxon's test, p<0,05.

Statistically significant differences were found between group G and P in comparison with the mean of C.A.L. changes between the baseline to 1 month (0,21±0,12 and

0,85±0,50), baseline to 3month (0,27±0,13 and 1,02±0,64), and 1 month to 3 month (0,57±0,10 and 0,16±0,20) (p<0,05) (Table 6.2.5.2.).

Table 6.2.5.2. C.A.L. values change at follow up periods between group G and P.

		Groups		
Parametr		**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
C.A.L. (mm)	**Δ 0-1**	0,22 0,21±0,12 (0,01-0,45)	0,84 0,85±0,50 (0,05-2,35)	**0,000***
	Δ 0-3	0,26 0,27±0,13 (0,03-0,58)	0,90 1,02±0,64 (0,15-2,77)	**0,000***
	Δ 1-3	0,03 0,57±0,10 (-0,01-0,51)	0,10 0,16±0,20 (0,00-1,04)	**0,000♯**

S.D.: Standard deviation, C.A.L.: Clinical attachment level, *Mann-Whitney U test, ♯Two independent samples t test, p<0,05.

6.3. Oral Health Impact Profile-14 TR Questionnaire Findings

Table 6.3.1. shows the total scores on the O.H.I.P.-14 TR in group H, G and P before and in Group G and P after the N.S.P.T.. In both Group G and group P, after N.S.P.T. the mean total score O.H.I.P.-14 TR (at 1 month 7,50±7,52 and 3 month 6,66±6,21 in group G, at 1 month 9,23±8,69 and 3 month 7,63±7,35 in group P) showed significant decrease compared with those baseline scores (11,06±11,51 in group G and 7,66±7,38 in group P) (p<0,05). In group G, there was a significant difference in baseline to 1 month (p<0,05) and baseline to 3 month (p<0,05) pairwise comparsion whereas in group P there was no (p>0,05). Before the N.S.P.T., the baseline total score showed a significant difference among 3 groups (2,83±3,15, 11,06±11,51 and 7,66±7,38, respectively, p<0,05). One and 3 month after N.S.P.T., the mean total score of O.H.I.P.-14 TR showed significant difference between group G (7,50±7,52 at 1 month and 6,66±6,21 at 3 month) and P (9,23±8,69 at 1 month and 7,63±7,35 at 3 month) (p<0,05) (Table 6.3.1.).

Table 6.3.1. Intragroup and intergroup comparison with O.H.I.P.-14 TR total score at baseline, 1 and 3 months.

		Groups			
Parameter	**Time points**	**Group H n=30 Median Mean±SD (Min-Max)**	**Group G n=30 Median Mean±SD (Min-max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
O.H.I.P.-14 TR Total score	**Baseline**	3,00 2,83±3,15 (0,00-14,00)	6,50 11,06±11,51 (0,00- 44,00)	6,00 7,66±7,38 (0,00-22,00)	**0,002**[*]
	1 month		4,00 7,50±7,52 (0,00- 23,00)	10,00 9,23±8,69 (0,00-33,00)	**0,000**[♯]
	3 month		4,00 6,66±6,21 (0,00-22,00)	7,50 7,63±7,35 (0,00-27,00)	**0,000**[♯]
p			**0,000**[**]	**0,039**[**]	
p (0-1)			**0,000**[‡]	1,000[‡]	
p (0-3)			**0,002**[‡]	0,526[‡]	
p (1-3)			1,000[‡]	0,099[‡]	

S.D.: Standard deviation, O.H.I.P.: Oral health impact profile, [*]Kruskal-Wallis test, [♯]Mann-Whitney U test, [**]Friedman test, [‡]Wilcoxon's test, p<0,05.

There were statistically significant differences in baseline to 1 month and baseline to 3 months of the mean O.H.I.P-14 TR scores between the groups G and P (p<0,05), except in 1 to 3 months score change (p>0,05) (Table 6.3.2.).

Table 6.3.2. O.H.I.P.-14 TR total scores change at follow up periods between group G and P.

SD: Standard deviation, O.H.I.P.: Oral health impact profile, [*]Mann-Whitney U test, p<0,05.

		Groups		
Parameter		**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***
O.H.I.P.-14 TR Total score	**Δ 0-1**	1,50 3,56±5,75 (-5,00-22,00)	0,00 -1,56±4,85 (-16,00-6,00)	**0,001**[*]
	Δ 0-3	2,00 4,40±7,08 (-4,00-28,00)	0,50 0,03±4,60 (-14,00-9,00)	**0,036**[*]
	Δ 1-3	0,00 0,84±2,20 (-5,00-6,00)	0,00 1,60±2,70 (0,00-12,00)	0,252[*]

The mean O.H.I.P.-14 Tr 7 domains scores intergroup comparisons are showed in table 6.3.3.

The mean score of functional limitation at baseline for group H, group G and group P were 0,03±0,18, 0,33±0,51, and 0,46±0,89 respectively. A statistically significant difference was revealed among the groups (p<0,05). After pairewise comparison,

statistically significant differences were found between group H and G, and between group H and P ($p<0,05$) except for groups G and P ($p>0,05$). There were not statistical significant among baseline, 1 and 3 month intra group comparisons of group G and P ($p>0,05$).

The mean score for pain at baseline of group H, group G and group P were 0,03±0,12, 1,18±1,32, and 0,95±0,88 respectively. A statistically significant difference was found among the groups ($p<0,05$). After pairewise comparison, statistically significant differences were determined between group H and G, and between group H and P ($p<0,05$) except for group G and P ($p>0,05$). There were a statistical significant among baseline, 1 and 3 months intragroup comparison of group G and P ($p<0,05$).

The mean score of psychological discomfort domains at baseline of group H, group G and group P were 1,13±0,95, 1,00±1,05, and 1,55±1,19 respectively. A significant statistical difference was found among the groups ($p<0,05$). After pairewise comparison, statistically significant differences were revealed between group H and G, and between groups H and P ($p<0,05$) except for group G and P ($p>0,05$).

The mean score for physical disability at baseline for group H, group G and group P were 0,08±0,37, 0,36±0,66, and 0,63±0, 95 respectively. Significant statistical differences were found among the groups ($p<0,05$). After pairewise comparison, statistically significent differnces were determined between group H and G ($p<0,05$) except for group H and P, as well as group G and P ($p>0,05$).

The mean score for psychological disability at baseline for group H, group G and group P were 0,06±0,21, 0,70±1,02, and 0,76±0,89 respectively. Statistically significant differences were determined among the groups ($p<0,05$). After pairewise comparison, statistically significant differences between group H and G and group H and P ($p<0,05$) except group G and P were revealed ($p>0,05$).

The mean score for social disability at baseline of group H, group G and group P were 0,05±0,20, 0,18±0,51, and 0,68±1,00 respectively. Statistically significant differences were revealed among the groups ($p<0,05$). After pairewise comparison, statistically significant differences were determined between group H and G, and between group G and P ($p<0,05$) except for group H and P ($p>0,05$).

The mean score for handicap at baseline of group H, group G and group P were 0,01±0,09, 0,26±0,44, and 0,35±0,69 respectively. Statistically significant differences were found among the groups ($p<0,05$). After pairewise comparison, statistically significant differences were noted between group H and G, and between group H and P ($p<0,05$) except for group G and P ($p>0,05$).

At 1 and 3 months intergroup comparison of group G and P for functional limitation, pain, psychological discomfort, physical disability, psychological disability, social disability and handicap, no significant differences were found ($p>0,05$) (Table 6.3.3.).

Table 6.3.3. Intragroup and Intergroup comparison of O.H.I.P.-14 TR 7 domains score at baseline, 1 and 3 months.

		Groups						
Domains	**Time points**	**Group H n=30 Median Mean±SD (Min-Max)**	**Group G n=30 Median Mean±SD (Min-Max)**	**Group P n=30 Median Mean±SD (Min-Max)**	***p***	***p*$^{(H-G)}$**	***p*$^{(H-P)}$**	***p*$^{(G-P)}$**
Functional limitation	**Baseline**	0,00 0,03±0,18 (0,00-1,00)	0,00 0,33±0,51 (0,00-1,50)	0,00 0,46±0,89 (0,00-3,50)	**0,004***	**0,011**$^{\#}$	**0,013**$^{\#}$	1,000$^{\#}$
	1 month		0,00 0,28±0,50 (0,00-1,50)	0,00 0,33±0,71 (0,00-3,50)	0,879$^{\sharp}$	-	-	-
	3 month		0,00 0,33±0,71 (0,00-3,50)	0,00 0,28±0,50 (0,00-1,50)	0,879$^{\sharp}$	-	-	-
p			0,867‡	0,050‡				
Pain	**Baseline**	0,00 0,03±0,12 (0,00-0,50)	0,50 1,18±1,32 (0,00-4,00)	0,75 0,95±0,88 (0,00-3,00)	**0,000***	**0,000**$^{\#}$	**0,000**$^{\#}$	1,000$^{\#}$
	1 month		0,50 0,81±0,99 (0,00-3,50)	1,25 1,23±1,10 (0,00-3,00)	0,134$^{\sharp}$	-	-	-
	3 month		0,00 0,75±0,98 (0,00-3,50)	1,50 1,20±1,05 (0,00-3,00)	0,071$^{\sharp}$	-	-	-
p			**0,000**‡	**0,020**‡				
Psychological discomfort	**Baseline**	1,50 1,13±0,95 (0,00-3,00)	0,75 1,00±1,05 (0,00-3,00)	1,50 1,55±1,19 (0,00-4,00)	0,168*	-	-	-
	1 month		1,00 1,01±0,91 (0,00-3,00)	1,00 1,25±1,23 (0,00-4,00)	0,657$^{\sharp}$	-	-	-
	3 month		0,75 0,80±0,74 (0,00-3,00)	0,50 0,80±0,73 (0,00-2,00)	0,994$^{\sharp}$	-	-	-
p			**0,000**‡	0,068‡				
Physical disability	**Baseline**	0,00 0,08±0,37 (0,00-2,00)	0,00 0,36±0,66 (0,00-2,50)	0,00 0,63±0, 95 (0,00-4,00)	**0,005***	**0,004**$^{\#}$	0,093$^{\#}$	0,911$^{\#}$
	1 month		0,00 0,38±0,58 (0,00-1,50)	0,00 0,43±0,69 (0,00-2,50)	0,839$^{\sharp}$	-	-	-
	3 month		0,00 0,31±0,48 (0,00-1,50)	0,00 0,38±0,62 (0,00-2,50)	0,994$^{\sharp}$	-	-	-
p			**0,002**‡	0,409‡				
Psychological disability	**Baseline**	0,00 0,06±0,21 (0,00-1,00)	0,00 0,70±1,02 (0,00-4,00)	0,50 0,76±0,89 (0,00-3,00)	**0,000***	**0,009**$^{\#}$	**0,001**$^{\#}$	1,000$^{\#}$
	1 month		0,00 0,48±0,66 (0,00-2,00)	0,50 0,65±0,76 (0,00-2,50)	0,312$^{\sharp}$	-	-	-
	3 month		0,00 0,43±0,59 (0,00-2,00)	0,25 0,50±0,69 (0,00-2,50)	0,702^{b}	-	-	-
p			**0,044**‡	0,212‡				
Social disability	**Baseline**	0,00 0,05±0,20 (0,00-1,00)	0,00 0,18±0,51 (0,00-2,00)	0,00 0,68±1,00 (0,00-3,50)	**0,001***	**0,001**$^{\#}$	1,000$^{\#}$	**0,027**$^{\#}$
	1 month		0,00 0,46±0,80 (0,00-3,00)	0,00 0,33±0,69 (0,00-2,00)	0,315$^{\sharp}$	-	-	-
	3 month		0,00 0,45±0,67 (0,00-2,00)	0,00 0,26±0,62 (0,00-2,00)	0,123$^{\sharp}$	-	-	-
p			**0,005**‡	0,867‡				
Handicap	**Baseline**	0,00 0,01±0,09 (0,00-0,50)	0,00 0,26±0,44 (0,00-1,50)	0,00 0,35±0,69 (0,00-3,50)	**0,000***	**0,004**$^{\#}$	**0,021**$^{\#}$	1,000$^{\#}$
	1 month		0,00 0,28±0,48 (0,00-2,00)	0,00 0,40±0,56 (0,00-1,50)	0,529$^{\sharp}$	-	-	-
	3 month		0,00 0,25±0,43 (0,00-2,00)	0,00 0,33±0,53 (0,00-1,50)	0,841$^{\sharp}$	-	-	-
p			0,549‡	0,121‡				

S.D.: Standard deviation, *Kruskal-Wallis test, $^{\sharp}$Mann-Whitney U test, ‡Friedman Test p<0,05.

6.4. Correlations

Table 6.4.1. shows correlations between O.H.I.P-14 TR scores and clinical parameters of 3 groups at baseline, 1 and 3 months after N.S.P.T.. There was no correlations between O.H.I.P.-14 TR scores and clinical parameters whereas There was a low correlation between the O.H.I.P.-14 score of group P for P.I. and C.A.L at the 3 month time period.

Table 6.4.1. Correlation between baseline, 1 and 3 months O.H.I.P.-14 scores and clinical parameters

	Group H O.H.I.P-14		**Group G O.H.I.P-14**						**Group P O.H.I.P-14**					
	Baseline		**Baseline**		**1 month**		**3 month**		**Baseline**		**1 month**		**3 month**	
Parameters	***r****	***p***	***r****	***p***	***r****	***p***	***r****	***p***	***r****	***p***	***r****	***p***	***r****	***p***
P.I.	-0,001	0,995	0,279	0,136	0,003	0,989	-0,051	0,791	-0,183	0,334	-0,48	0,800	0,025	0,895
G.I	-0,044	0,818	0,263	0,160	0,137	0,469	0,077	0,684	-0,037	0,846	0,098	0,606	0,068	0,722
B.O.P.	-	-	0,093	0,624	-0,097	0,611	-0,96	0,615	0,004	0,984	0,239	0,203	0,110	0,563
P.D.	0,256	0,173	0,095	0,619	0,142	0,454	0,285	0,127	-0,173	0,360	0,323	0,082	0,428	**0,018**
C.A.L.	-	-	0,105	0,580	0,156	0,410	0,271	0,147	-0,241	0,200	0,182	0,335	0,383	**0,037**

P.I.:Plaque index, G.I.: Gingival İndex, B.O.P.: Bleeding on probing, P.D.: Probing depth, C.A.L.: Clinical attachment level, O.H.I.P.: Oral health impact profile, **r:* Spearman rank correlation coefficient, p<0,05.

7. DISCUSSION and CONCLUSION

Previous studies all agree that periodontal disease negatively affects patients' O.H.R.Q.o.L. (Reisine et al., 1989; Needleman et al., 2004; Saletu et al., 2005; Patel et al., 2008; Ng & Leung 2008; Aslund et al., 2008) and it has been determined that O.H.R.Q.o.L. measures can detect changes in Q.o.L., both before and after periodontal therapy.

N.S.P.T. is the primary treatment which improves the state of the periodontal tissues. It is known that plaque is the main etiological factor which causes periodontal disease. N.S.P.T. removes or controls the amount of this plaque. By removing plaque and calculus, overall periodontal tissue will be improved (Joe et al., 2011): P.I. and gingival inflammation are reduced, color and texture return to normal, pocket depth is reduced by elimination of periodontal pockets and granulation tissue, B.O.P. is diminished because of the subsequent reduction of inflammation, and C.A.L. is improved.

The patient's O.H.R.Q.o.L. depends directly on their mucosal/periodontal condition: the gingival inflammation which leads to periodontitis, and ultimately bone and tooth loss, creates pain and dysfunctions for patients who must nevertheless use their mouth and teeth every day. Therefore, reducing the inflammation also simultaneously augments the patient's Q.o.L. Therefore, the patient's Q.o.L. is improved by non-surgical treatment.

The FDI's new definition of "health" opens the door to a universal definition of oral health. Oral health is multifaceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow, and convey a range of emotions through facial expressions with confidence and without pain, discomfort, and disease of the craniofacial complex.

This is why it is important to examine the effects of N.S.P.T. on O.H.R.Q.o.L. by using O.H.I.P. questionnaires. One of the most common and widely used measures in the domain of O.H.R.Q.o.L. research, also commonly employed in studies on periodontal patients, is the O.H.I.P-14. (Aslund et al., 2008, Jönsson and Öhrn, 2014, Ozcelik et al., 2007). The effectiveness and the results of N.S.P.T. in treating and monitoring the periodontal disease, which improvement can be detected by using clinical indicators, is well established (Graziani et al., 2000).

The aims contained in (Jowett et al., 2009; Saito et al., 2010; Ruby et al., 2011; Jönsson and Öhrn 2014; Santuchi et al., 2016; Mendez et al., 2017; Peikert et al., 2019) were to evaluate N.S.P.T. on O.H.R.Q.o.L

This study has adopted the shorter, 14 question version, O.H.I.P.-14, equally as relevant as the long form version according to Slade (Allen 2003) in which respondents have been asked to indicate how frequently they experienced each problem on a five-point Likert scale (Edwards and Kenney, 1946). For data entry, responses are coded 1 to 4.

The scale above equally applies to O.H.I.P.-49. The 14 question questionnaire is sufficient in maintaining a healthy relationship between subjective and objective oral health; half the questions are of subjective nature and the other half solicit the patient based on objective, functional issues related to their individual use of their oral cavity. This type of line of questioning has proven itself particularly useful in determining populations' real, actual needs, and tends to emphasize the subject's perception of their functional capacity as well as their physical and psychological health.

Patient-based outcomes (P.B.O.) or "true endpoints" are subjective measures which capture patients' perspectives of disease or therapy and complement conventional clinical measures (Hujoel, 2004, Tsakos et al., 2012).

The following studies used the O.H.I.P.-14 (Ruby et al., 2011; Mendez et al., 2013; Sundaram Lin et al., 2013; and Peikert et al., 2019).

Öhrn and Jönsson (Öhrn and Jönsson, 2014) in 2014 share the same aim but they use O.H.Q.o.L.-UK and a general oral health assessment index (G.O.H.A.I.) questionnaire. O.H.Q.O.L.-UK is a 16-item questionnaire. The G.O.H.A.I. is a 12-item questionnaire with the main question "how often did you…" No statistically significant difference could be found after N.S.P.T. compared to before in regard to O.H.R.Q.o.L. assessed with O.H.I.P.- 14 and G.O.H.A.I. However, there was a greater variety in the responses with the G.O.H.A.I. questionnaire; it may hereby be more useful for patients with periodontal disease.

In our study we reported responses of 90 patients divided into 3 groups of 30 patients, one group being healthy and the two remaining groups representing periodontitis and gingivitis patients. The post-treatment observation period for the periodontitis group and

the gingivitis group was 1 and 3 months. The healthy group was only examined once at baseline.

Taken together, the available histological evidence indicates that the healing following N.S.P.T. is characterized by epithelial proliferation, which appears to be completed after a period of 7–14 days after treatment. Complete removal of calculus and plaque was associated with a limited or complete lack of inflammation (Wilson et al., 2008).

In this study, we use peridodontal clinical parameters: P.I., G.I., B.O.P., P.D. and C.A.L. on all teeth before and after N.S.P.T. in all 3 appointments, not just to evaluate the effectiveness of N.S.P.T. on O.H.R.Q.O.L but also to detect the healing in the periodontium. Some other studies used the same clinical periodontal measurements in their study (Saito et al., 2010; Rathna et al., 2011; Sundaram, 2013).

In addition to that, we collect the following data from the patients: age; gender; educational status; financial situation; last dental visit; chief complaint; how many times they brush their teeth; if they use dental floss or not, and if they use mouth wash or not. This way, we have tried to find the relationship between the patients' social life and their oral health situation which will eventually lead to affect their Q.o.L.

Most studies usually focused on the statistical differences of O.H.R.Q.o.L. without getting attention to the clinical goals of the clinicians or patients and thus, interfering with the P.B.O. which is based on the minimal important difference (M.I.D.) (Revicki et al., 2008).

As seen by patients, M.I.D. is the smallest variation in a P.B.O. measure score perceived either as favourable or harmful by the patient. For a clinician, M.I.D. may correlate to the effects of a change of treatment. Patients undergoing supportive periodontal therapy for dentine hypersensitivity (D.H.) and patients with periodontitis have had their M.I.D. for O.H.R.Q.o.L. measures analyzed and recorded in certain studies (Goh et al., 2016).

N.S.P.T. takes time and necessitates procedures that may cause a certain amount of discomfort; concern has thus been expressed about the possible lack of effectiveness of periodontal treatment in terms of patient perceptions (Åslund et al., 2008).

N.S.P.T. often lasts a long time, and it includes treatments that are likely to cause a certain amount of discomfort. In fact, evaluation of outcomes in terms of patient based outcomes generally show that periodontal treatment may not be so effective, which is concerning. Despite this, P.B.O. in periodontology have been the subject of increased interest in recent years (Åslund et al., 2008).

In our study, the control group, the total O.H.I.P.-14 score (2,83±3,15) was low, which means that general O.H.R.Q.o.L. is good. In the gingivitis group, the total score of OHIP-14 (11,06±11,51) reduced significantly after every session of N.S.P.T., which indicates improvements in O.H.R.Q.o.L. Indeed, Shanbhag et al. (Shanbhag et al. 2012) has performed a systematic review which confirmed that O.H.R.Q.o.L improves afer N.S.P.T. In the periodontitis group, the total O.H.I.P.-14 score (7,66±7,38) increased after N.S.P.T. (9,23± 8,69 at 1 month). This increase of the total score can be explained by correlated increase of pain in most periodontitis patients. According to the results obtained from clinical parameters, most periodontitis patients also present gingival recession. Most of these patients experience dentin hypersensitivity (D.H.), which appears to be higher than those individuals with D.H. (Chabanski et al., 1996; Gillam and Orchardson, 2006; Lin and Gillam, 2012). Post-operative sensitivity following N.S.P.T. has been reported to affect both the hard and soft tissues of the oral cavity and psychological effect pain and sometimes fear and can have a major effect on the Q.o.L. of the individual (Ozcelik et al., 2007;), the gingival recession also increase after N.S.P.T. (Suleyman et al., 2017).

The improvements which N.S.P.T. entails seem to stabilize after 1 year following N.S.P.T. as mentioned in *(*Wong et al., 2012). Therefore, as these improvements tend to take a year to stabilize, it might have been more exhaustive to measure clinical parameters from patients throughout a whole year at different time periods, rather than 3 months. Significant improvement might have been seen in the patients' O.H.I.P.-14 total scores over a longer period of time rather than 3 month.

As for the demographic data collected from patients throughout this study, some inferences can be made such as the link between general O.H.R.Q.o.L. and education, financial situation, age. It might prove more difficult than what would be acceptable to analyze in depth the reasons behind these results, as it would entail the analysis of demographics and development in Turkey. However, it remains that there is a tried and true correlation between oral health and the first two above-mentioned parameters. As for

age, several studies have already shown that the risk of periodontitis increases as patients get older (Axelsson et al., 1978; Genco, 1996).

More than half of the patients in the periodontitis group have not pursued education beyond high school, with a significant portion of them not having gone beyond primary school. The Department of Health Education and Welfare, in 1966, has already determined a narrow relationship between periodontal disease and educational level, and this result was once again proven here. This also correlates with patients' financial situation, or socioeconomic status, gingival conditions and periodontal disease are evidently related to a lower socio-economic status. Very few patients declared to be earning more or equal to the highest range on the scale, and two thirds of the periodontitis patients declared to be earning below the local minimum wage.

With in the limits of this study, the demographic data obtained from patients shows that more than half of the patients from the periodontitis group did not benefit from education beyond high school, with a large portion of them not having finished primary school. This marks a clear correlation between overall education and periodontitis disease.

All clinical periodontal parameters were decreased after the N.S.P.T. in group G and P. The mean total O.H.I.P.-14 score was found to be low in group H patients. After N.S.P.T. in group G and P patients, scores of O.H.I.P.-14 were reduced. It can be concluded that N.S.P.T. positively improves O.H.R.Q.o.L. in patients with periodontal disease, despite the dip in the O.H.I.P.-14 result that is likely to occur because of the pain and/or hypersensitivity felt by periodontitis patients after treatment.

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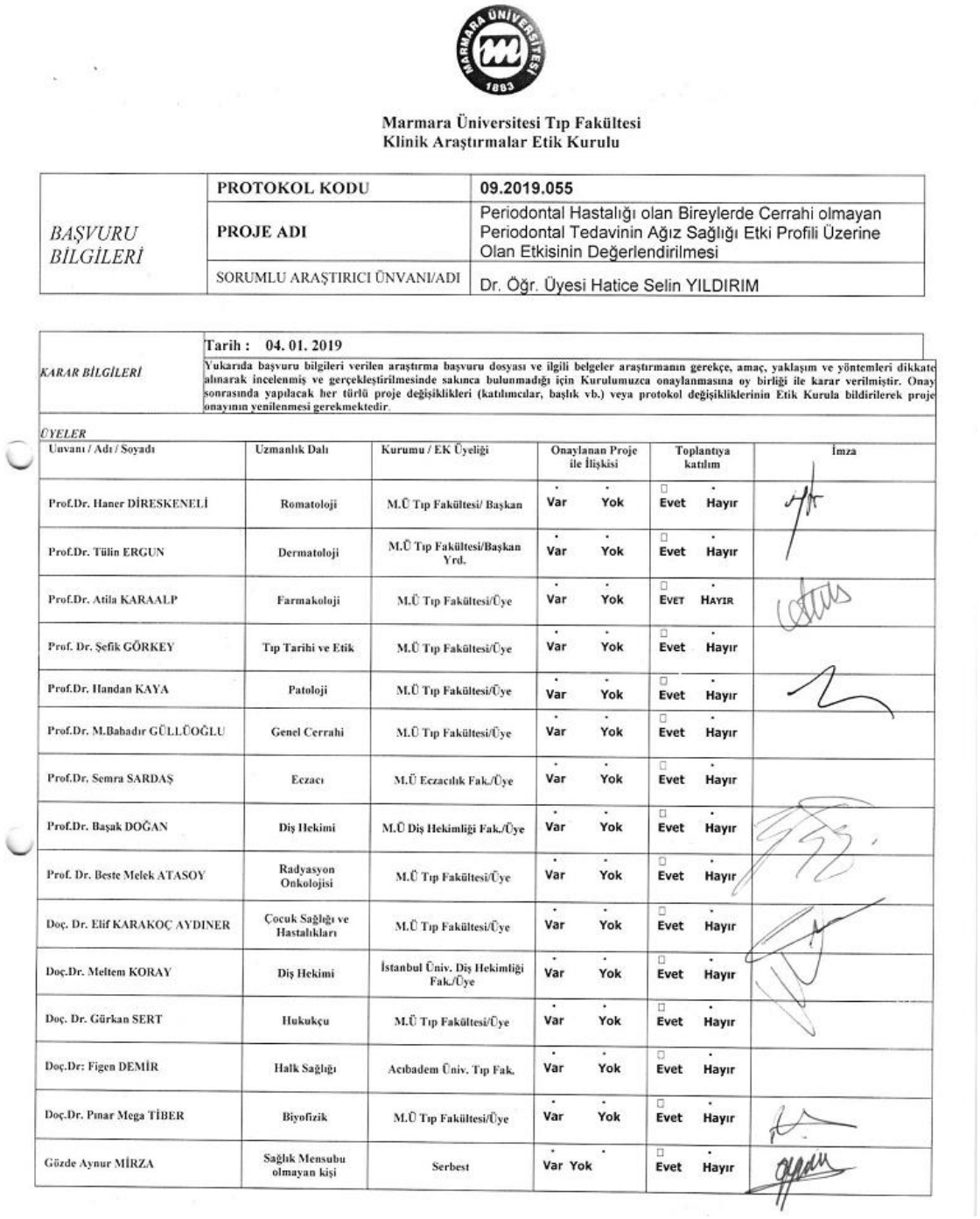
9. ENCLOSURES

En 1. Etich Approval



Marmara Üniversitesi Tıp Fakültesi
Klinik Araştırmalar Etik Kurulu

BAŞVURU BİLGİLERİ	**PROTOKOL KODU**	**09.2019.055**
	PROJE ADI	Periodontal Hastalığı olan Bireylerde Cerrahi olmayan Periodontal Tedavinin Ağız Sağlığı Etki Profili Üzerine Olan Etkisinin Değerlendirilmesi
	SORUMLU ARAŞTIRICI ÜNVANI/ADI	Dr. Öğr. Üyesi Hatice Selin YILDIRIM

KARAR BİLGİLERİ	**Tarih : 04. 01. 2019** Yukarıda başvuru bilgileri verilen araştırma başvuru dosyası ve ilgili belgeler araştırmanın gerekçe, amaç, yaklaşım ve yöntemleri dikkate alınarak incelenmiş ve gerçekleştirilmesinde sakınca bulunmadığı için Kurulumuzca onaylanmasına oy birliği ile karar verilmiştir. Onay sonrasında yapılacak her türlü proje değişiklikleri (katılımcılar, başlık vb.) veya protokol değişikliklerinin Etik Kurula bildirilerek proje onayının yenilenmesi gerekmektedir.

ÜYELER

Unvanı / Adı / Soyadı	Uzmanlık Dalı	Kurumu / EK Üyeliği	Onaylanan Proje ile İlişkisi	Toplantıya katılım	İmza
Prof.Dr. Haner DİRESKENELİ	Romatoloji	M.Ü Tıp Fakültesi/ Başkan	Var Yok	Evet Hayır	
Prof.Dr. Tülin ERGUN	Dermatoloji	M.Ü Tıp Fakültesi/Başkan Yrd.	Var Yok	Evet Hayır	
Prof.Dr. Atila KARAALP	Farmakoloji	M.Ü Tıp Fakültesi/Üye	Var Yok	Evet Hayır	
Prof. Dr. Şefik GÖRKEY	Tıp Tarihi ve Etik	M.Ü Tıp Fakültesi/Üye	Var Yok	Evet Hayır	
Prof.Dr. Handan KAYA	Patoloji	M.Ü Tıp Fakültesi/Üye	Var Yok	Evet Hayır	
Prof.Dr. M.Bahadır GÜLLÜOĞLU	Genel Cerrahi	M.Ü Tıp Fakültesi/Üye	Var Yok	Evet Hayır	
Prof.Dr. Semra SARDAŞ	Eczacı	M.Ü Eczacılık Fak./Üye	Var Yok	Evet Hayır	
Prof.Dr. Başak DOĞAN	Diş Hekimi	M.Ü Diş Hekimliği Fak./Üye	Var Yok	Evet Hayır	
Prof. Dr. Beste Melek ATASOY	Radyasyon Onkolojisi	M.Ü Tıp Fakültesi/Üye	Var Yok	Evet Hayır	
Doç. Dr. Elif KARAKOÇ AYDINER	Çocuk Sağlığı ve Hastalıkları	M.Ü Tıp Fakültesi/Üye	Var Yok	Evet Hayır	
Doç.Dr. Meltem KORAY	Diş Hekimi	İstanbul Üniv. Diş Hekimliği Fak./Üye	Var Yok	Evet Hayır	
Doç. Dr. Gürkan SERT	Hukukçu	M.Ü Tıp Fakültesi/Üye	Var Yok	Evet Hayır	
Doç.Dr: Figen DEMİR	Halk Sağlığı	Acıbadem Üniv. Tıp Fak.	Var Yok	Evet Hayır	
Doç.Dr. Pınar Mega TİBER	Biyofizik	M.Ü Tıp Fakültesi/Üye	Var Yok	Evet Hayır	
Gözde Aynur MİRZA	Sağlık Mensubu olmayan kişi	Serbest	Var Yok	Evet Hayır	

En 2. Consent Form

GÖNÜLLÜ BiLGİLENDİRME FORMU

(Kontrol Grubu)

Araştırmanın İsmi: "Periodontal Hastalığı Olan Hastalarda Cerrahi Olmayan Periodontal Tedavinin Ağız Sağlığı ile İlgili Yaşam Kalitesi Üzerine Olan Etkisinin Değerlendirilmesi" isimli klinik bir araştırmadır.

Bu araştırmanın amacı, periodontitis ve gingivitis gibi periodontal hastalığa sahip bireylerde cerrahi olmayan periodontal tedavinin ağız sağlığı ile ilişkili yaşam kalitesi üzerine etkisinin ağız sağlığı etki profili anketi kullanılarak değerlendirilmesidir.

Diş çevresi dokular periodontal dokular olarak adlandırılır. Bunlar dişeti, dişin içinde bulunduğu kemik, kemik ile diş arasında bulunan ince yumuşak doku (periodontal membran) ve son olarak da kök yüzeyini örten sementtir. İşte bu dokuların sağlığının kaybedildiği durumlara diş eti hastalıkları ve uygulanan tedavilere periodontal tedaviler denir.

Diş etlerinde kanama, şişme gibi belirtiler ortaya çıkmışsa buna diş eti iltihabı ya da **gingivitis** denir. Hastalık ilerler, dişi çevreleyen ve destekleyen diğer dokulara yayılır ve dişin çevresindeki kemikte erimesi olursa **periodontitis** meydana gelir.

Diş eti hastalığının en önemli sebebi, ağzın etkili temizlenmemesi sonucu dişlerin bütün yüzeylerinde ve diş-diş eti birleşiminde biriken mikroplardan meydana gelen plak adı verilen birikintilerdir. Bu plak temizlenmezse mikropların ürettiği zararlı maddeler diş çürüklerine ve diş eti hastalıklarına neden olur.

Diş eti tedavisi, hekim tarafından hastaya model üzerinde anlatılan ve ayna önünde hastaya tatbik ettirilen ağız hijyen eğitimi ile başlar. Bütün diş eti hastalıklarının tedavisindeki ilk tedavi şekli cerrahi olmayan periodontal tedavi diye tanımladığımız diş ve diş kökü yüzeyindeki diştaşı ve birikintilerin uzaklaştırılması ve diş kökü yüzeyinin düzleştirilmesi ile devam eder.

Hastalığın ilerlemiş olduğu vakalarda ise, cerrahi olmayan periodontal tedavinden sonra, diş etrafındaki iltihaplı diş etini, diş eti cebini ve erimiş kemiğin düzeltilmesini ve yeniden yapılandırılmasını içeren diş eti operasyonu ile tedavi tamamlanır. Daha sonra hasta, periyodik olarak 6 aylık kontrollere alınır.

Bu hastalıktan zarar gördüğü için kaybedilmiş olan diş ve dişin destek dokularının tümüyle eski haline dönmesi mümkün değildir. Yapılan tedavi ile diş eti iltihabının ortadan kalkması ve hastalığın ilerlemesinin durması beklenir, hastanın daha kolay

bakabileceği bir ağız ortamı oluşturulur. Eğer bu tedavi yapılmazsa bu hastalık ilerler, diş etlerinden iltihap çıkışı başlar ve zaman içerisinde dişler sallanarak dökülürler.

Bu çalışmaya kontrol gurubu olarak katılıyorsunuz. Bu çalışma sürecinde size;

Ağız içi muayene, radyografik değerlendirme ve ağız hijyen eğitimi verilecektir.

Ağız içi fotoğraflar çekilecektir.

Klinik ölçümler yapılacak ve ağız sağlığı etki profili anketi uygulanacaktır.

Bu araştırmada ağız içi plak miktarı, dişetinizde mevcut kanamanın şiddeti, diş ile dişeti arasındaki cebin derinliğinin ölçümleri yapılacak. Bu işlemler sırasında ucunda mm cinsinden ölçüm yapabilen periodontal sond kullanılacak. Ölçümler sırasında sondun hafif basıncını hissedebilirsiniz. Araştırmaya katılmayı kabul ettikten sonra toplam geliceğiniz seans sayısı 1 gündür. Araştırmaya katılması beklenen tahmini gönüllü sayısı 150'dir.

Gönüllü Hakları, Sorumlulukları ve Gizlilik:

Araştırmada hedeflenen yararla ilgili olarak herhangi bir klinik yarar olmadığında veya yeni bilgiler elde edildiğinde sorumlu araştırmacı hekim tarafından bu durum hakkında zamanında bilgilendirileceksiniz.

Araştırmada tamamiyle kendi isteğiniz doğrultusunda yer almaktasınız. Eğer isterseniz bu araştırmada yer almayabilirsiniz veya herhangi bir aşamada sebep göstermeksizin araştırmadan isteğiniz doğrultusunda araştırmacıya haber vermek kaydıyla ayrılabilirsiniz; ya da bazı sistemik durumlarda araştırmacı tarafından araştırmaya katılımınız sona erdirilebilir, dişeti hastalığınızla ilgili tedavinizde herhangi bir aksama olmayacak ve tedavinize devam edilecektir. Ağzınız için gerekli tüm periodontal tedaviler tamamlanacaktır.

Aşağıdaki durumlarda araştırmacı tarafından araştırmaya katılımınız sona erdirilecektir;

- Sistemik hastalığın gelişmesi,
- Sigara içmeye başlanması,
- Çalışma süresince herhangi bir sebeple periodontal dokuları etkileyebilecek antibiyotik /antimikrobiyal ajan, ilaç kullanmak zorunda kalınması,
- Hamile kalınması,

Araştımaya gönüllü olarak katıldığınızdan dolayı tedaviniz için sizden herhangi bir ücret talep edilmeyecek ve size bir ödeme yapılmayacaktır.

Bu araştırmda yer aldığınız süre içinde adınız ve tıbbi kayıtlarınız gizli tutulacaktır. Bununla birlikte kayıtlarınız etik kurula, yoklama yapanlara, araştırmacılara ve Sağlık Bakanlığı'na istek olduğu takdirde verilecektir. Bu olur formunu imzalayarak yukarıda adı geçen kurum ve kişilerin söz konusu araştırma verilerine erişebilmelerini ve bu araştırmayla ilgili daha ileri araştırmalar yapılabileceğini (araştırmadan ayrılsanız dahi) kabul ediyorsunuz. Bu süreçte açığa çıkan bilgiler gizli kalacaktır. Araştırma verileri yurt içinde ve yurt dışında rapor, yayın veya tebliğ olarak yayınlanabilir, ancak adınız ve kişisel bilgileriniz hiçbir şekilde açıklanmayacak ve araştırmayla ilgili veriler izlenerek size ulaşılamayacaktır.

Bu araştırmaya katılarak, araştırmadan ayrılsanız dahi herhangi bir verinin kullanımını sınırlamamayı kabul ediyorsunuz. Kişisel verilerinizin dünyadaki tüm Sağlık Bakanlıklarına aktarılabileceğini biliyor ve kabul ediyorsunuz. İlgili ve koruma yasalarınca tanınan haklarınız etkilenmeyecektir.

Kendi haklarınız veya araştırma ile ilgili herhangi bir yan etki hakkında herhangi bir sorunuz olduğunda 24 saat ulaşabileceğiniz telefon numaraları: Dr. Öğr. Üyesi Hatice Selin Yıldırım Tel: 0 533 542 68 12, Dt. Mustafa Sayed İessa Tel: 0 536 058 83 17.

GÖNÜLLÜ OLURU

Sayın Dr. H. Selin Yıldırım/Mustafa Sayed Iessa tarafından Marmara Üniversitesi Diş Hekimliği Fakültesi Periodontoloji Anabilim Dalı'nda tıbbi bir araştırma yapılacağı belirtilerek bu araştırma ile ilgili yukarıdaki bilgiler bana aktarıldı. Bu bilgilerden sonra böyle bir araştırmaya "katılımcı" olarak davet edildim.

Eğer bu araştırmaya katılırsam hekim ile aramda kalması gereken bana ait bilgilerin gizliliğine bu araştırma sırasında da büyük özen ve saygı ile yaklaşılacağına inanıyorum. Araştırma sonuçlarının eğitim ve bilimsel amaçlarla kullanımı sırasında kişisel bilgilerimin ihtimamla korunacağı konusunda bana yeterli güven verildi.

Projenin yürütülmesi sırasında herhangi bir sebep göstermeden araştırmadan çekilebilirim. Ancak araştırmacıları zor durumda bırakmamak için araştırmadan çekileceğimi önceden bildirmemim uygun olacağının bilincindeyim. Ayrıca tıbbi durumuma herhangi bir zarar verilmemesi amacıyla araştırmacı tarafından araştırmadan çıkartılabileceğimi de biliyorum. Araştırma için yapılacak harcamalarla ilgili herhangi bir parasal sorumluluk altına girmiyorum. Bana da bir ödeme yapılmayacaktır. İster doğrudan, ister dolaylı olsun araştırma uygulamasından kaynaklanan nedenlerle meydana gelebilecek herhangi bir sağlık sorunumun ortaya çıkması halinde, her türlü tıbbi müdahalenin sağlanacağı konusunda gerekli güvence verildi. Bu tıbbi müdahalelerle ilgili olarak da parasal bir yük altına girmeyeceğimi biliyorum.

Araştırma sırasında bir sağlık sorunu ile karşılaştığımda; herhangi bir saatte, Dr. H. Selin Yıldırım/Mustafa Sayed Iessa, 0 533 542 68 12/ (0 536) 058 83 17 nolu telefondan, Marmara Üniversitesi Diş Hekimliği Fakültesi Periodontoloji Anabilim Dalı, Başıbüyük Mahallesi, Başıbüyük Yolu 9/3, 34854 Başıbüyük /Maltepe/İstanbul adresinden arayabileceğimi biliyorum. Bu araştırmaya katılmak zorunda değilim ve katılmayabilirim. Araştırmaya katılmam konusunda zorlayıcı bir davranışla karşılaşmış değilim. Eğer katılmayı reddedersem, bu durumun tıbbi bakımıma ve hekim ile olan ilişkime herhangi bir zarar getirmeyeceğini de biliyorum.

Bana yapılan tüm açıklamaları ayrıntılarıyla anlamış bulunmaktayım. Kendi başıma belli bir düşünme süresi sonunda adı geçen bu araştırma projesinde "katılımcı" olarak yer alma kararını aldım. Bu konuda yapılan daveti büyük bir

memnuniyet ve gönüllülük içerisinde kabul ediyorum. İmzalamış bulunduğum bu form kâğıdının bir kopyası bana verilecektir.

GÖNÜLLÜ ONAY FORMU

Yukarıda gönüllüye araştırmadan önce verilmesi gereken bilgileri gösteren metni okudum. Bunlar hakkında bana yazılı ve sözlü açıklamalar yapıldı. Bu koşullarla söz konusu klinik araştırmaya kendi rızamla hiçbir baskı ve zorlama olmaksızın katılmayı kabul ediyorum.

Gönüllünün Adı-Soyadı:

Tarih:

İmza:

Adres:

Telefon no:

Açıklamaları yapan araştırmacının Adı-Soyadı:

Tarih:

İmza:

Rıza alma işlemine başından sonuna kadar tanıklık eden kuruluş görevlisinin Adı-Soyadı:

Tarih:

İmza:

Görevi:

En 3. Consent Form

GÖNÜLLÜ BİLGİLENDİRME FORMU
(Çalışma Grubu)

Araştırmanın İsmi: "Periodontal Hastalığı Olan Hastalarda Cerrahi Olmayan Periodontal Tedavinin Ağız Sağlığı ile İlgili Yaşam Kalitesi Üzerine Olan Etkisinin Değerlendirilmesi" isimli klinik bir araştırmadır.

Bu araştırmanın amacı, periodontitis ve gingivitis gibi periodontal hastalığa sahip bireylerde cerrahi olmayan periodontal tedavinin ağız sağlığı ile ilişkili yaşam kalitesi üzerine etkisinin ağız sağlığı etki profili anketi kullanılarak değerlendirilmesidir.

Diş çevresi dokular periodontal dokular olarak adlandırılır. Bunlar dişeti, dişin içinde bulunduğu kemik, kemik ile diş arasında bulunan ince yumuşak doku (periodontal membran) ve son olarak da kök yüzeyini örten sementtir. İşte bu dokuların sağlığının kaybedildiği durumlara diş eti hastalıkları ve uygulanan tedavilere periodontal tedaviler denir.

Diş etlerinde kanama, şişme gibi belirtiler ortaya çıkmışsa buna diş eti iltihabı ya da **gingivitis** denir. Hastalık ilerler, dişi çevreleyen ve destekleyen diğer dokulara yayılır ve dişin çevresindeki kemikte erimesi olursa **periodontitis** meydana gelir.

Diş eti hastalığının en önemli sebebi, ağzın etkili temizlenmemesi sonucu dişlerin bütün yüzeylerinde ve diş-diş eti birleşiminde biriken mikroplardan meydana gelen plak adı verilen birikintilerdir. Bu plak temizlenmezse mikropların ürettiği zararlı maddeler diş çürüklerine ve diş eti hastalıklarına neden olur.

Diş eti tedavisi, hekim tarafından hastaya model üzerinde anlatılan ve ayna önünde hastaya tatbik ettirilen ağız hijyen eğitimi ile başlar. Bütün diş eti hastalıklarının tedavisindeki ilk tedavi şekli cerrahi olmayan periodontal tedavi diye tanımladığımız diş ve diş kökü yüzeyindeki diştaşı ve birikintilerin uzaklaştırılması ve diş kökü yüzeyinin düzleştirilmesi ile devam eder. Cerrahi olmayan periodontal tedavi sonrasında ağrı, hassasiyet, kanama gibi bazı problemler oluşabilmektedir. Eğer bu problemler ile karşılaşılırsa ağrının giderilmesi, hassasiyetin geçirilmesi ve kanamanın durdurulmasına yönelik işlemler uygulanacaktır.

Hastalığın ilerlemiş olduğu vakalarda ise, cerrahi olmayan periodontal tedavinden sonra, diş etrafındaki iltihaplı diş etini, diş eti cebini ve erimiş kemiğin düzeltilmesini ve yeniden yapılandırılmasını içeren diş eti operasyonu ile tedavi tamamlanır. Daha sonra hasta, periyodik olarak 6 aylık kontrollere alınır.

Bu hastalıktan zarar gördüğü için kaybedilmiş olan diş ve dişin destek dokularının tümüyle eski haline dönmesi mümkün değildir. Yapılan tedavi ile diş eti iltihabının ortadan kalkması ve hastalığın ilerlemesinin durması beklenir, hastanın daha kolay bakabileceği bir ağız ortamı oluşturulur. Eğer bu tedavi yapılmazsa bu hastalık ilerler, diş etlerinden iltihap çıkışı başlar ve zaman içerisinde dişler sallanarak dökülürler.

Bu çalışma sürecinde size;

Ağız içi muayene, radyografik değerlendirme ve ağız hijyen eğitimi verilecektir.

Ağız içi fotoğraflar çekilecektir.

Klinik ölçümler yapılacak ve ağız sağlığı etki profili anketi uygulanacaktır.

2 hafta içinde 2 seansta cerrahi olmayan periodontal tedavinin tamamlanması

Tedavi sonrası tekrar ağız içi fotoğraflar çekilecek, klinik ölçümler yapılacak, ve ağız sağlığı etki profili anketi tekrar uygulanacaktır.

Tedavi bittikten 1 ve 3 ay sonra tekrar ağız içi fotoğraflar çekilecek, klinik ölçümler yapılacak ve ağız sağlığı etki profili anketi tekrar uygulanacaktır.

Bu araştırmada ağız içi plak miktarı, dişetinizde mevcut kanamanın şiddeti, diş ile dişeti arasındaki cebin derinliğinin ölçümleri yapılacak. Bu işlemler sırasında ucunda mm cinsinden ölçüm yapabilen periodontal sond kullanılacak. Ölçümler sırasında sondun hafif basıncını hissedebilirsiniz. Dişeti tedaviniz el aletleri ve ultrasonik cihazlar kullanılarak 2 seansta tamamlanacak. Bu işlem dişeti altında ve üstünde konumlanan tüm diştaşlarının temizlenmesini kapsamaktadır. İşlem sırasında kısa süreli kanama oluşabilir ve hafif bir hassasiyet hissedebilirsiniz.

Araştırmaya katılmayı kabul ettikten sonra toplam araştırma süresi 3 aydır. Araştırmaya katılması beklenen tahmini gönüllü sayısı 150'dir.

Araştırma süresi bittikten sonra dişlerin etrafında ileri derecede doku kaybı olduğu durumlarda, gerek duyulduğunda cerrahi periodontal tedaviye geçilecek ve gerekli dişeti ameliyatları yapılacaktır. Cerrahi olamayan ve olan periodontal tedaviler bittikten sonra, 6 aylık kontrol tedavileri ile ağız ve diş sağlığı koruma altında tutulacaktır.

Gönüllü Hakları, Sorumlulukları ve Gizlilik:

Araştırmada hedeflenen yararla ilgili olarak herhangi bir klinik yarar olmadığında veya yeni bilgiler elde edildiğinde sorumlu araştırmacı hekim tarafından bu durum hakkında zamanında bilgilendirileceksiniz.

Araştırmada tamamiyle kendi isteğiniz doğrultusunda yer almaktasınız. Eğer isterseniz bu araştırmada yer almayabilirsiniz veya herhangi bir aşamada sebep göstermeksizin araştırmadan isteğiniz doğrultusunda araştırmacıya haber vermek kaydıyla ayrılabilirsiniz; ya da bazı sistemik durumlarda araştırmacı tarafından araştırmaya katılımınız sona erdirilebilir, dişeti hastalığınızla ilgili tedavinizde herhangi bir aksama olmayacak ve tedavinize devam edilecektir. Ağzınız için gerekli tüm periodontal tedaviler tamamlanacaktır.

Aşağıdaki durumlarda araştırmacı tarafından araştırmaya katılımınız sona erdirilecektir;

- Sistemik hastalığın gelişmesi,
- Sigara içmeye başlanması,
- Çalışma süresince herhangi bir sebeple periodontal dokuları etkileyebilecek antibiyotik /antimikrobiyal ajan, ilaç kullanmak zorunda kalınması,
- Hamile kalınması,

Araştımaya gönüllü olarak katıldığınızdan dolayı tedaviniz için sizden herhangi bir ücret talep edilmeyecek ve size bir ödeme yapılmayacaktır.

Bu araştırmda yer aldığınız süre içinde adınız ve tıbbi kayıtlarınız gizli tutulacaktır. Bununla birlikte kayıtlarınız etik kurula, yoklama yapanlara, araştırmacılara ve Sağlık Bakanlığı'na istek olduğu takdirde verilecektir. Bu olur

formunu imzalayarak yukarıda adı geçen kurum ve kişilerin söz konusu araştırma verilerine erişebilmelerini ve bu araştırmayla ilgili daha ileri araştırmalar yapılabileceğini (araştırmadan ayrılsanız dahi) kabul ediyorsunuz. Bu süreçte açığa çıkan bilgiler gizli kalacaktır. Araştırma verileri yurt içinde ve yurt dışında rapor, yayın veya tebliğ olarak yayınlanabilir, ancak adınız ve kişisel bilgileriniz hiçbir şekilde açıklanmayacak ve araştırmayla ilgili veriler izlenerek size ulaşılamayacaktır.

Bu araştırmaya katılarak, araştırmadan ayrılsanız dahi herhangi bir verinin kullanımını sınırlamamayı kabul ediyorsunuz. Kişisel verilerinizin dünyadaki tüm Sağlık Bakanlıklarına aktarılabileceğini biliyor ve kabul ediyorsunuz. İlgili ve koruma yasalarınca tanınan haklarınız etkilenmeyecektir.

Kendi haklarınız veya araştırma ile ilgili herhangi bir yan etki hakkında herhangi bir sorunuz olduğunda 24 saat ulaşabileceğiniz telefon numaraları: Dr. Öğr. Üyesi Hatice Selin Yıldırım Tel: 0 533 542 68 12, Dt. Mustafa Sayed İessa Tel: 0 536 058 83 17.

GÖNÜLLÜ OLURU

Sayın Dr. H. Selin Yıldırım/Mustafa Sayed Iessa tarafından Marmara Üniversitesi Diş Hekimliği Fakültesi Periodontoloji Anabilim Dalı'nda tıbbi bir araştırma yapılacağı belirtilerek bu araştırma ile ilgili yukarıdaki bilgiler bana aktarıldı. Bu bilgilerden sonra böyle bir araştırmaya "katılımcı" olarak davet edildim.

Eğer bu araştırmaya katılırsam hekim ile aramda kalması gereken bana ait bilgilerin gizliliğine bu araştırma sırasında da büyük özen ve saygı ile yaklaşılacağına inanıyorum. Araştırma sonuçlarının eğitim ve bilimsel amaçlarla kullanımı sırasında kişisel bilgilerimin ihtimamla korunacağı konusunda bana yeterli güven verildi.

Projenin yürütülmesi sırasında herhangi bir sebep göstermeden araştırmadan çekilebilirim. Ancak araştırmacıları zor durumda bırakmamak için araştırmadan çekileceğimi önceden bildirmemim uygun olacağının bilincindeyim. Ayrıca tıbbi durumuma herhangi bir zarar verilmemesi amacıyla araştırmacı tarafından araştırmadan çıkartılabileceğimi de biliyorum. Araştırma için yapılacak harcamalarla ilgili herhangi bir parasal sorumluluk altına girmiyorum. Bana da bir ödeme yapılmayacaktır. İster doğrudan, ister dolaylı olsun araştırma uygulamasından kaynaklanan nedenlerle meydana gelebilecek herhangi bir sağlık sorunumun ortaya çıkması halinde, her türlü tıbbi müdahalenin sağlanacağı konusunda gerekli güvence verildi. Bu tıbbi müdahalelerle ilgili olarak da parasal bir yük altına girmeyeceğimi biliyorum.

Araştırma sırasında bir sağlık sorunu ile karşılaştığımda; herhangi bir saatte, Dr. H. Selin Yıldırım/Mustafa Sayed Iessa, 0 533 542 68 12/ (0 536) 058 83 17 nolu telefondan, Marmara Üniversitesi Diş Hekimliği Fakültesi Periodontoloji Anabilim Dalı, Başıbüyük Mahallesi, Başıbüyük Yolu 9/3, 34854 Başıbüyük /Maltepe/İstanbul adresinden arayabileceğimi biliyorum. Bu araştırmaya katılmak zorunda değilim ve katılmayabilirim. Araştırmaya katılmam konusunda zorlayıcı bir davranışla karşılaşmış değilim. Eğer katılmayı reddedersem, bu durumun tıbbi bakımıma ve hekim ile olan ilişkime herhangi bir zarar getirmeyeceğini de biliyorum.

Bana yapılan tüm açıklamaları ayrıntılarıyla anlamış bulunmaktayım. Kendi başıma belli bir düşünme süresi sonunda adı geçen bu araştırma projesinde "katılımcı" olarak yer alma kararını aldım. Bu konuda yapılan daveti büyük bir

memnuniyet ve gönüllülük içerisinde kabul ediyorum. İmzalamış bulunduğum bu form kâğıdının bir kopyası bana verilecektir.

GÖNÜLLÜ ONAY FORMU

Yukarıda gönüllüye araştırmadan önce verilmesi gereken bilgileri gösteren metni okudum. Bunlar hakkında bana yazılı ve sözlü açıklamalar yapıldı. Bu koşullarla söz konusu klinik araştırmaya kendi rızamla hiçbir baskı ve zorlama olmaksızın katılmayı kabul ediyorum.

Gönüllünün Adı-Soyadı:

Tarih:

İmza:

Adres:

Telefon no:

Açıklamaları yapan araştırmacının Adı-Soyadı:

Tarih:

İmza:

Rıza alma işlemine başından sonuna kadar tanıklık eden kuruluş görevlisinin Adı-Soyadı:

Tarih:

İmza:

Görevi:

En 4. Patient Card

M.Ü. DİŞ HEKİMLİĞİ FAKÜLTESİ PERİODONTOLOJİ A.D. HASTA KARTI

SEANS BAŞLANGIÇLARI:

Tarih : ..... Tarih : ..... Tarih : .....
Box İmzası : ..... Box İmzası : ..... Box İmzası : .....

Tarih : ..... Tarih : ..... İşlendi imzası : .....
Box İmzası : ..... Box İmzası : ..... (Sekreter)

HASTA BİLGİLERİ:

Adı, Soyadı : ..... Meslek : .....
Yaş, Cinsiyet : ..... Protokol no : .....
Tel (Cep) : ..... Gönderen: .....
Adres : .....

TEDAVİ EDEN HEKİM: Adı, Soyadı : ..... Sınıfı : .....

DENTAL ANAMNEZ:

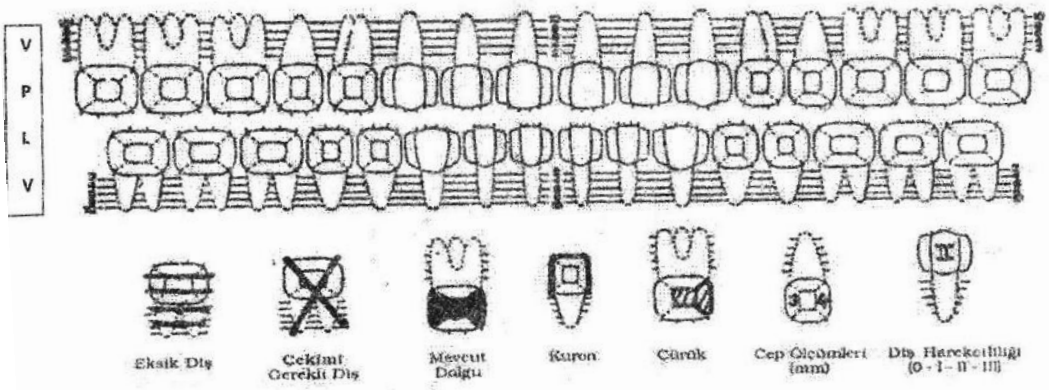
Ağrı : .....
Kanama : .....
Dişetinde ödem/hiperplazi : .....
Dişeti çekilmesi : .....
Ağız kokusu : .....
Dişlerde yer değiştirme / sallantı : .....
Diş sıkma / gıcırdatma : .....
Ağızdan solunum : .....

Tek taraflı çiğneme (sağ/sol) : .....
Tırnak yeme : .....
Sigara kullanımı / günde : .....
Daha önce diştaşı temizliği yapıldı mı? : .....
(ne zaman, nerede)
Daha önce dişeti tedavisi yapıldı mı? : .....
(ne zaman, nerede)
Diş fırçalama sıklığı / şekli : .....

SİSTEMİK ANAMNEZ:

Hastanede yattınız mı, neden? : .....
Sarılık : .....
Tüberküloz / AIDS : .....
Ateşli romatizma : .....
Diabet : .....
Hipertansiyon : .....
Hormonal hastalıklar : .....
Sürekli kullanılan ilaç : .....
Ailedeki genel hastalıklar : .....
Ailedeki dişeti hastalıkları : .....

Kalp-damar hastalıkları : .....
Sindirim sist. hastalıkları : .....
Karaciğer hastalığı : .....
Böbrek hastalığı : .....
Solunum sist. hastalığı : .....
Kan hastalığı, anemi : .....
Kanama zamanı : .....
Pıhtılaşma zamanı : .....
Alerji sorunu var mı? : .....
(gıda, penisilin, anestezik madde, ağrı kesici)

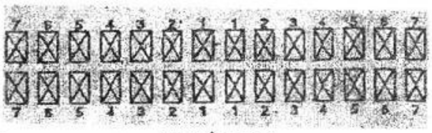


HASTANIN ŞİKAYETİ: .....
TEŞHİS: .....

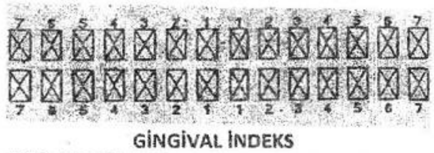
Tarih

Tedavi Öncesi

PLAK İNDEKS

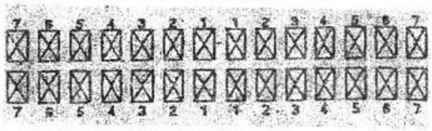


GİNGİVAL İNDEKS

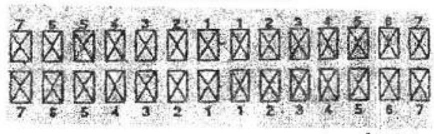


Tedavi Sonrası

PLAK İNDEKS



GİNGİVAL İNDEKS



Tarih ....

PERİODONTAL TEDAVİ PLANI: **İMZA**

....

....

....

Cerrahi TP Endodontik TP Konservatif TP Protetik TP Ortodontik TP

Periodontal hastalık hakkında bilgi .... Hasta ağzında hijyen eğitimi ....

Diş fırçası: .... Diş ipi: .... Arayüz fırçası: ....

Tarih	Her seans başlangıcında ağız hijyeni (AH) değerlendirmenizi yazınız (+, -)	Seans imzası	Box imzası
....	....		
....	....		
....	....		
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....	....		
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....	....		
....	....	Bitim imzası	
....	....		

En 5. O.H.I.P.-14 TR

	OHIP-14 TR	Çok sık	Sıklıkla	Bazen	Nadiren	Hiçbir zaman
1	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile herhangi bir kelimeyi telaffuz etmekte sorununuz oldu mu?					
2	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile tat alma hissinizin bozulduğunu hissediyor musunuz?					
3	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile ağzınızda ağrılı bir durum yaşadınız mı?					
4	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile yemek yemeyi rahatsız edici buldunuz mu?					
5	Daha önceden, dişleriniz, ağzınız veya protezlerinizle ilgili bilinç ve bilgiye sahip miydiniz?					
6	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile gerginlik hissettiniz mi?					
7	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile diyetinizin tatmin edici olmadığı oldu mu?					
8	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile yemeğinizi yarıda bırakmak zorunda kaldınız mı?					
9	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile gevşemede zorlandığınız oldu mu?					
10	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile utandığınız bir durum oldu mu?					
11	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile diğer insanlara az da olsa asabi davrandığınız oldu mu?					
12	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile her zaman yaptığınız işinizi yapmada herhangi bir zorluk yaşadınız mı?					
13	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile genelde hayatın daha az tatmin edici olduğu hissine kapıldınız mı?					
14	Dişleriniz, ağzınız veya protezleriniz ile ilgili problemler nedeni ile fonksiyonlarınızı tümüyle yapamayacak duruma geldiniz mi?					

10. *Evaluate as very good, good, moderate, poor

CURRICULUM VITAE

Name	Mustafa	**Surname**	Sayed Iessa
Place of Birth	Idleb	**Date of Birth**	2-1-1990
Nationality	Syrian	**Tel**	05360588317
E-mail	Mostafa.adlip@hotmail.com		

Educational Level

	Name of the Institution where he/she was graduated	**Graduation year**
Postgraduate/Specialization	Intership	2016-2017
Masters		
Undergraduate	AL-Farabi Colleges	2016
High school	AL-Faisalia High School	2007

Job Experience

	Duty	**Institution**	**Duration (Year - Year)**

Foreign Languages	**Reading comprehension**	**Speaking***	**Writing***
Arabic	Very good	Very good	Very good
English	Very good	Very good	Very good

Foreign Language Examination Grade#								
YDS	ÜDS	IELTS	TOEFL IBT	TOEFL PBT	TOEFL CBT	FCE	CAE	CPE
		7						

	Math	**Equally weighted**	**Non-math**
ALES Grade			
(Other) Grade			

Computer Knowledge

Program	**Use proficiency**
Microsoft Word	Very good