

Oral Habits That Cause Malocclusion Problems

Maloklusi Yang Terjadi Akibat Kebiasaan Buruk Pada Anak

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Abstract

Oral habits that place pressure on the teeth may slowly move the teeth out of place. The aim of this study was to review the literature for articles referring the most common oral habits that cause malocclusion. The oral bad habits that cause malocclusion problems include: Thumb sucking, It is a normal habit for babies, but causes serious orthodontic problems if it continues long after the eruption of permanent teeth. Prolonged thumb sucking can create crowded, crooked teeth, or bite problems and speech problems. Protrusion and displacement of front teeth are usual results of thumb sucking. Lip-biting or fingernail biting, both habits can shift the teeth out of alignment. Tongue thrusting, some children thrust their tongue forward, pressing it against the lips with a force that can result in teeth malocclusions such as 'open bite' or teeth protrusion (overjet). While parents can not do much to prevent an orthodontic problem caused by hereditary factors, they can help their kids to avoid the need for braces, by maintaining good oral hygiene and avoiding bad oral habits that could cause teeth malocclusion problems. Modern orthodontics are usually able to treat most teeth malocclusions successfully, but prevention can help the family to avoid the large cost of orthodontic treatment and the child will not have to wear dental braces and feel uncomfortable.

Keywords : oral habits, malocclusion, orthodontic treatment

Abstrak

Adanya kebiasaan buruk yang menimbulkan tekanan pada gigi-gigi dapat secara perlahan akan menggerakkan gigi ke luar lengkungnya. Tujuan dari penulisan ini adalah mengulas berbagai artikel tentang kebiasaan-kebiasaan buruk yang dapat menimbulkan maloklusi. Kebiasaan buruk (oral bad habits) meliputi diantaranya: Menghisap jempol (thumb sucking), meskipun kebiasaan ini sesuatu yang normal pada bayi, namun dapat menyebabkan masalah orthodontik yang serius. Hal ini terutama bila terus berlanjut hingga periode erupsi gigi permanennya. Kebiasaan ini dapat menimbulkan gigi berdesakan, miring, atau munculnya masalah oklusi dan bicara. Selain Protrusi dan displacement gigi anterior. Menggigit bibir (Lip-biting or fingernail biting), juga dapat mengganggu dan merubah letak gigi pada lengkung yang benar. Cara menelan yang salah (tongue thrusting), yaitu dengan menjulurkan ujung lidah dan menekan pada bibir, kebiasaan ini dapat mengakibatkan maloklusi seperti gigitan terbuka (open bite) atau protrusi. Pada beberapa kasus dapat timbul karena adanya faktor herediter, orang tua dapat membantu tindakan pencegahan pada anak-anaknya dengan pemeliharaan kesehatan mulutnya dan menghilangkan kebiasaannya agar tidak terjadi maloklusi. Ortodontik modern saat ini umumnya dapat menangani kasus maloklusi dengan sukses. Namun tetap diperlukan tindakan pencegahan dari pihak keluarga untuk menghindari besarnya biaya yang diperlukan pada perawatan ortodontik dan ketidaknyamanan pada penggunaan alat ortodontik.

Kata kunci : oral habits, malocclusion, orthodontic treatment

Introduction

There are various bad habits in the children's mouth, i.e mouth breathing, tongue thrusting, finger biting, finger biting, finger sucking, lip sucking. Bad habits on someone can stand independently or occur together with other bad habits. It means the same patients may occur some bad habits.¹

Based on research, that performed to 92 children of Yayasan Bahtera Bandung with 6-12 years of age, reported that about 50% of children have a oral habits, with the proportion of thumb sucking habit 43.8%, lip biting and lip sucking 34,8%, and tongue thrusting 8.7%, nail biting as well as mouth breathing each 6.55%.²

Oral bad habits that are abnormal often associated with disorders of growth of the jaw, teeth malposition, respiratory disorder, difficulty speaking, muscle imbalances, and face psychological problems².

In dentistry, there are three major problems that occur frequently, i.e. caries, periodontal disease, and malocclusion. Prevention of caries and periodontal disease has been a lot of done but prevention against malocclusion still requires serious research.³ The aim of this study was to review about malocclusion caused by oral bad habits and how to prevent increased malocclusion caused by oral bad habits.

The occurrence of malocclusion in children

Occlusion according to Dewanto (1993) is teeth surface of the upper jaw contact to occlusal surface of lower jaw teeth at the time of the upper jaw and lower jaw closes. An occlusion is the change in the relationship of teeth surface (maxilla) in the upper jaw and lower jaw (mandible) that occurred during the movement of the mandible and ended with full contact to the teeth of both jaw . An occlusion occurs due to the interaction between the dental system, skeletal system, and muscular system. An occlusion of teeth is not a state condition during the mandible movement, so there are various forms of an occlusion such as: centric, eccentric, habitual, supra-infra, mesial, distal, lingual.⁴

Malocclusion is abnormality of teeth arrangement or abnormality of the relationship between the upper jaw and lower jaw. The word of "malocclusion" literally means as bad bite. This condition can be either irregular bites, crossbite, or overbite. Malocclusion can also be tilted teeth, protrusion, or crowded. This can interfere with the appearance, phonetic, or mastication.

Malocclusion still remains one of the major problems in oral health in Indonesia, especially in the children's oral and dental health. Many factors that can lead to the occurrence of malocclusion in children. In addition to dental caries, the behavior in children has an sufficient important role in the process of malocclusion. Such behavior can be either oral and dental health measurement as well as a bad habit. Bad habits in the child, particularly oral bad habits, if continued until the age where permanent teeth begin to erupt, it will lead to the risk of malocclusion.

Malocclusion can lead to the occurrence of speaking disorder, where most letters of the alphabet need teeth to pronounce clearly. Results of studies about the relationship with malocclusion disorder in adolescents with an average age of 18 years old that occurred as much disruption with an mesial occlusion 33,8% of students, 27,8% with mandible over jet, 25.6% with incisal open bite and 12.8% with lateral crossbite. Malocclusion can also lead to the occurrence of mastication disorders in which the occurrence of pain in jaw when chewing. Studies results of Oktavia on the high school student in Medan shown that there were difficulties in mastication in individuals with malocclusion amounted to 11.8%, food stuck up 35.1%, pain when chewing 22.3%, any discomfort when chewing 44.1%.

Malocclusion in addition to have an impact on the phonetic and mastication, malocclusion can also have an impact on the aesthetic and affect social relationship of the child. The results showed as much as 41,89% children have difficulties to associate, easily offended of 47,22%, lazy to go out home of 16,71%.

Bad habits can occur to child in the growth and development. There are finger sucking, mouth breathing, lip sucking and biting, jaw pushing forward, tongue thrusting, or nail biting. The habit is more commonly known as oral habit. Oral habit is normal behavior in infants. Usually temporary and disappear by itself at the age of about 3-4 years. Oral habit will not cause a problem which means the mouth cavity at that time, because basically the body can give a response to the stimulus from the outside since in the womb. This response is a sign that the psychological development of the child has already started, which is visible from the spontaneous or repetitive reaction. Problems will arise when recurring oral habit that continues until the child enters school age where this habit continued to do because parents are less regard for their children.

Oral bad habits is a perversity oral activities and surroundings that continuously occur, which is one of the environmental factors that causes malocclusion.

Malocclusion is a form of relationship of the upper and lower jaw which deviate from the standard form that is accepted as a normal form, malocclusion can be caused by imbalance of dentofacial.⁵

Classification of Malocclusion

a. Protrusion

Protrusion is a tooth that its position is forward. Protrusion can be caused by heredity, bad habits as finger sucking and lower lip sucking, pushing the tongue forward, wrong habit of swallowing as well as mouth breathing.

b. Intrusion and Extrusion

Intrusion is the movement of the teeth away from the occlusal. The movement of the intrusion requires good control of forces. Extrusion is the movement of the teeth near occlusal plane.

c. Crossbite

Crossbite is a state if the jaw is in centric relation. There are abnormalities of the teeth in a direction transverse of maxilla teeth to the mandible teeth that

can affect the whole or half-jaw, teeth, or a single tooth only.

Based on the location, cross bite can be divided into two:

1) Anterior crossbite

A state of centric relations in the jaw, but there are one or more anterior teeth maxilla that its position is next to the lingual of mandible anterior teeth.

2) Posterior crossbite

Abnormal relationship of bucolingual from one or more mandible. posterior teeth

d. Deep bite

Deep bite is a condition where the distance of maxilla incisivus incisal contact to the mandible incisivus incisal in the vertical direction is more than 2-3 mm. In the case of deep bite, posterior teeth is often linguo version or tilted to the mesial and mandible incisivus often crow ded, linguoversion, and supraocclusion.

e. Open bite

Open bite is condition if there is presence of a occlusal or incisal space of the teeth when the upper jaw and lower jaw in centric occlusion. open bite according to the location are :

1) Anterior open bite

Class I Angle of anterior open bite occurs because of upper jaw narrowing, forward inclination of anterior teeth , and supraocclusion of anterior teeth, whereas division of class II angle caused by bad habits or hereditary.

2) Posterior *open bite* on premolar and molar region

3) Combination of anterior and posterior (a total of open bite) exists in both the anterior and posterior, unilaterally or bilaterally.

f. Crowded

Crowded is a condition when teeth arranged outside the normal arrangement. Crowded due to basal arch are smaller than Coronal arch. Basal arc is a place of processus alveolaris which are teeth lied on, coronal arch is the most width of the coronal teeth or the number of the most mas-

sive of mesiodistal teeth crown. The degree of severity of crowded teeth are:

1) Mild *Crowded*

There are little of crowded teeth, often occur in mandible anterior teeth, and considered as normal variation . This no need a treatment.

2) Severe crowded

There are severe crowded teeth so that may lead to bad oralhygiene.

Classification of oral bad habit in children

1. Mouth breathing

Mouth breathing can be classified into three as follows:

- a. Obstructif : Children who have had interruptions in inhale air through the nose (nasal passage).
- b. Habitual : This is due to habit although abnormal disorder has been eliminated
- c. Anatomical: when the anatomy of upper and lower lip is short so it can't be closed perfectly without effort to close it.

Children who are mouth breathing usually narrowfaced, anterior teeth forward to the labial direction, and the lips open with the lower lip lies behind the upper incisive. Due to lack of normal muscular stimulation of the tongue and because of the excess pressure on the caninus and in the molar area due to the orbicularis oris and buccinators muscles, then segment buccal of maxilla contracted and result in shaped V of maxilla and palatal height. So according to some opinions, mouth breathing tend to present clinically has long faced and narrow. When this is performed continuously, it can result in abnormalities in the anterior teeth of upper jaw (protrusive) and the anterior bite will be open (open bite).

2. Thumb sucking habit

Thumb sucking is a habit that is common in children. The habit of thumb sucking that prolonged can cause malocclusion. According to Profit (2000) 6, characteristics malocclusion related to the combination of pressure directly from the

thumb and change patterns of pressure cheeks and lips. Cheek pressure on the mouth corner is the highest pressure, the pressure of cheek muscle to the posterior teeth of upper jaw increased due to the contraction of buccinators muscles during sucking at the same time so it makes maxilla into shaped V. ⁶

3. Tongue thrusting habit

Tongue thrusting habit can caused by improper bootlefeeding and is usually accompanied by other bad habits such as thumb sucking, lip biting, and nail biting. If this habits occur continuously, it will cause an open bite and incomplete overbite as well as the position of tongue tip more anterior than normal.

4. Objects biting habit areconsits of :

a. Nail biting

This oral bad habit which is position of upper and lower incisive teeth have pressured by nail. According to Finn (1971), the habit of nail biting habit is normal in children who previously have a habit of finger biting. In addition, according to Alexander and Lane (1990), etiology of nail biting due to stress, imitation of family members, hereditary, the transfer from the habit of finger sucking, and fingernail is not neat. In some cases these habits can cause atrision in the lower anterior teeth. ⁷

b. Finger biting

Finger sucking habits in children occurs at age 1-2 years. If left constantly until the age of 5 years or more can result in abnormalities in the position of the teeth. The fingers will press the upper jaw teeth forward and the lower jaw inward, so it appears to be protrusive. ⁵

Children bad habits in addition to the above are :

1. Bruxism

This is a bad habit of scraping upper jaw and lower jaw teeth, it can arise at childhood as well as adults. Usually this is done at the time of sleep at night and they don't realize that they have a bad habit.

Bruxism is often occurred by women compared to men. Bruxism can cause abrasion (wear out) of teeth surface in the upper jaw and lower jaw, both in deciduous teeth and permanent teeth. Enamel layers (outer layer of the teeth) that protects the surface of the tooth is missing, so it make pain in the teeth. When this habit was continued and prolonged, can cause damage to the periodontal tissue (tissue that supports teeth), malocclusion, teeth fracture due to excessive pressure, and abnormalities in the Temporo Mandibular Joint (joints that connect the lower jaw and head bones). For the treatment of these cases, the dentist will make certain tools that are specially designed and built in accordance with the arrangement of patients teeth, these tools are called night guard and used while sleeping at night. This tool will form the boundary between the teeth upper jaw and lower jaw so there will be pitted against each other. Use this tool will prevent further damage on teeth and assist patients in stopping bad habits. When the main cause of bruxism is stressed out, then doing a consultation with a psychologist is the one thing that can help in eliminating these bad habits.

2. Sustaining chin habit

Due to excessive pressure on joints are prolonged or continuously, it can cause the disc (meniscus) tear and suffered a dislocation is in front of condilus. In circumstances like this, the opening movement of mouth caused the condilus to move forward and pressing the disc in front of it. If this is occurs continuously, condilus can just skip the disc and clash with bone causing a either a clicking sound. This can also occur in the opposite movement. Often, this sound is not accompanied by pain so that the patient does not realize that the sound is a symptom of temporomandibular joint disorders.

Discussion

Oral Bad habits have a great impact on malocclusion, particularly during the period

of mixed teeth. One of them is the habit of finger sucking habit, it leads to permanent insisivus upper teeth protrusion and also inhibit the development of mandible arch.

A bad habit that is often carried out repeatedly by the children can result in teeth and a their support tissue, which are include:

1. Sucking thumb

Thumb sucking is not a cause or a symptom of a physical problem or psychologic. Some cases show the thumb sucking habit can be a problem because there is the possibility of misalignment of permanent teeth if a child aged five or six years still doing the thumb sucking habit . This Oral habit can cause change field of incisal incisors, which retroclination on the lower jaw incisor and teeth proclination on the upper jaw incisor jaw thus increasing overjet and creating a unilaterally crossbite bucal as it relates to the shift of the mandible. It can also change the ratio between the top and bottom anterior face height. As a result, anterior teeth position is much more advanced than the lower teeth, and going on an open bite. 8,9

Finger sucking habit arising in children aged 1 to 2 years. And if it is left continuously until the age of 5 years or more can result in abnormalities in the position of the teeth. Finger sucking habit can cause abnormality cavum oris and surrounding structures, anatomically can cause anterior open bite that is a form of upper and lower anterior teeth abnormalities and there is overlapping when an occlusion, thus formed a gap open when an occlusion. At the time of sucking finger pressure changes occur in the cavum oris. This is because while sucking, tongue was pushed down by the finger so that it is separate from the palatum. Then the orbicularis muscle contraction and buccinators continually separate causes leading to make colaps maxillaris arch so it occurs crossbite, i.e. a disorder in which the superior teeth on sis buccal go deeper into than the inferior teeth. 8

2. Mouth breathing

If the child has nasal cavities disorder, then he/she will breathe through the mouth cavity. The habit of breathing from the mouth can cause malocclusion with retraction of the upper anterior teeth with, or crowded or protrusion.

Breath pathway has two way that are the nose cavity and the mouth cavity, one individual has its own variations in breathing, one of which is by from mouth cavity often use on the nose. Breathing in this manner can change posture bone jaw, head and tongue, and this can change the pressure balance of jawbone and tooth position. Breathe in the mouth can decrease the position of the mandible and the tongue, as well as extend the head, facial height will increase and the posterior teeth will experience super-eruption (excessive eruptions) occur a little vertical growth of the mandible ramus, anterior open bite, overjet, as well as increasing the pressure of the buccal area of muscles caused by constriction on maxila arch. Breathing from the nose also has risk but rather is an infection resulting from prolonged chronic inflammation of nasal mucosa caused by allergen materials. 9

3. Bruxism

This is a bad habit of scraping upper jaw and lower jaw teeth, it can arise at childhood as well as adults. Usually this is done at the time of sleep at night and they don't realize that they have a bad habit. Bruxism is often occurred by women compared to men.

In children, sometimes this habit arise in the time of teeth development. in adults bruxism usually occurs due to malocclusion (good relationship between the upper jaw and lower jaw teeth), stress, anger, pain, or frustrating.

Bruxism can cause abrasion (wear out) of teeth surface in the upper jaw and lower jaw, both in deciduous teeth and permanent teeth. Email layers (outer layer of the teeth) that protects the surface of the tooth is missing, so it make pain in the teeth. When this habit was continued and prolonged, can cause damage to the periodon-

tal tissue (tissue that supports teeth), malocclusion, teeth fracture due to excessive pressure, and abnormalities in the Temporo Mandibular Joint (joints that connect the lower jaw and head bones).

4. Lip Sucking

Lip sucking is a abnormal habit that is conducted continuously either consciously or unconsciously. Generally conducted on the lower lip. The habit of lip sucking often bring up the bad habits of other new that is tongue sticking. The presence of oral bad habits are no longer considered as normal in children aged up to three years.¹

The habit of lip sucking more rare compared to other oral bad habits, but abnormal sucking habits whatever its shape may cause malocclusion. The cause of someone has a habit of lip sucking allegedly due to environmental factors and psychological factors.

Some researchers reported that there is manifestation in the mouth cavity due to the habit of lip sucking that is over a fairly large overjet, second molar relationships, as well as the existence of open-bite anterior and posterior crossbite. Sucking is often a compensation activity stemming from excessive overjet and difficulty of closing the lips at the moment of swallowing. 1

5. Tongue thrusting

The habit of tongue thrusting is a form of ingestion, which pushes the tongue forward or lateral or between the teeth during ingestion. The habit of tongue thrusting shows the tongue movement against teeth development during the ingestion and at the time of the break. There is also an opinion that the habit tongue stick (tongue thrust) is the habit of tongue pushing and pressing anterior teeth (general definition) or tongue in thrust out and lying between the upper and lower incisal anterior teeth surface (conservative definition). This habit illustrates imbalances of orofacial muscle. 10

The habit of tongue thrusting can become a bad habit if the tongue pushes the upper and lower teeth because it could

lead to an open bite and many other malocclusion. If the tongue cannot work well, a patient may not be able to swallow appropriately and trouble swallowing pills tablet drug. Some of the typical symptoms are shown in the tongue thrusting habit include: 10

- b. the patient has over jet or open bite
- c. patients speak unclearly
- d. the patient breathe through the mouth.
- e. lip licking before ingestion
- f. face grinning when swallowing

6. Lip biting habit

Lip biting habit is a habit which is conducted repeatedly in the lower lip. Lip biting will cause the upper teeth to move in anterior abnormally. Lip biting in the lower teeth will also move the lower jaw teeth towards the lingual and upper jaw teeth to the anterior. As a result of lower lip biting is protrusion of upper jaw anterior teeth, lower jaw anterior teeth retrusion, soft tissue inflammation and anterior open bite. 11

Conclusion

Child bad habit is a perversity activities and surroundings that are continuous, which is one of the environmental factors cause malocclusion and complaints on the part of the mouth such as dry mouth, mucocel, perleche and stomatitis. There are various of bad habits, include mouth breathing, tongue thrusting, finger biting, finger sucking, lip sucking.

References

1. Yuniasih EN, Soenawan H, 2006. Menghilangkan kebiasaan menghisap bibir dengan alat bumper. *Jurnal Kedokteran Gigi Universitas Indonesia*. Edisi Khusus KPPIKG XIV.
2. Trasti. 2007. Pertumbuhan dan perkembangan orokraniofacial yang normal. Fakultas Kedokteran Gigi Universitas Indonesia.
3. Enarti. 2010. <http://eprint.ui.ac.id/128112-R17-pro-176-hub%20antra%20pendahulu.pdf>
4. Dewanto H. 2004. *Aspek-aspek epidemiologi maloklusi*. Yogyakarta: Gajahmada University Press.
5. Suanto C. 2010. Need and demand serta akibat dari maloklusi pada siswa SMU negeri.
6. Proffit WR, Fields HW. 2000. *Contemporary Orthodontics*. 4th edition. Mosby Inc, St.Louis. 154-158
7. Finn SB. 1962. *Clinical Pedodontics*. 2nd edition. Philadelphia and London. W.B. Saunders co. 325-328, 311-312.
8. Dionne W. 2001. Little thumbs. Los Angeles: Pelican publishing company.
9. Stuani AS, Maria BBS, Maria da CPS, Mirian ANM. 2006. Anterior open bite chephalometric evaluation of dental pattern.
10. Jusuf L. 2005. Kebiasaan menjulurkan lidah dan penanggulangannya. Medan: Universitas Sumatra Utara.
11. Astuti L, Ratna S. 2007. Pemakaian lip bumper pada anak-anak dengan kebiasaan jelek menggigit bibir bawah dan menghisap ibu jari. *Dental Journal Kedokteran Gigi FKG-UHT*. Vol 1 no 2.