

**THE EFFECT OF CHEWING XYLITHOL CHEWING GUM
ON INCREASING SALIVARY pH ON
THE USE OF THE FIXED ORTHODONTIC DEVICE**

Catur Wulandari *, Taadi, Siti Hidayati
The majors of Dental Nursing in *Poltekkes Kemenkes Yogyakarta*
Kyai Mojo street No. 56, Pingit, Yogyakarta 555234 tel. 0274-514306
Email: caturwulandari2096@gmail.com

ABSTRACT

Background: The increasing of the disease during orthodontic treatment occurs due to several factors, namely the initial difficulty on reaching lesion, the decreasing on saliva's pH level, and the increasing of the number of bacteria that cause caries. Giving chewing gum containing *xylitol* has been observed and proven to be effective on increasing amount of salivary pH. *Xylitol* stimulates the amount of saliva and helps bringing back the salivary acid/base balance because it cannot be converted into acid by oral bacteria.

Research objective: To find out the effect of chewing xylitol chewing gum toward increasing saliva pH in fixed orthodontic device.

Research Method: the type of research in this study was Quasi experimental that used the Non Equivalent Control Group design. In this design, the treatment group and the control group were compared. The first comparison was the sample existing groups in both of the group were given a pre-test, then they were given a treatment, and finally the post-test was given to know the final result. The sample in this study was fixed orthodontic control patients by testing the data analysis using the Paired t-Test.

Research Result: The salivary pH of the fixed orthodontic appliance before chewed the xylitol chewing gum had the highest acid criteria. It was 50%. After chewed the *xylitol* chewing gum, the percentage was raising until 76.67%. From the result of Paired t-Test, the effect of chewing the *xylitol* chewing gum toward salivary pH in the use of fixed orthodontic device had total $P 0,00 < \alpha 0,05$.

Research conclusion: There was a significant effect which was showed the increasing salivary pH before and after chewed the *xylitol* chewing gum on the users of fixed orthodontic device.

Key words: pH saliva, *xylitol*, *orthodontic*.

PENGARUH MENGUNYAH PERMEN KARET *XYLITHOL*
TERHADAP PENINGKATAN pH SALIVA PADA
PEMAKAI ALAT *ORTHODONTI* CEKAT

Catur Wulandari*, Taadi, Siti Hidayati
Jurusan Keperawatan Gigi Poltekkes Kemenkes Yogyakarta
Jl. Kyai Mojo No. 56, Pingit, Yogyakarta 555234 telp . 0274-514306
Email : caturwulandari2096@gmail.com

ABSTRAK

Latar Belakang: Peningkatan penyakit selama perawatan orthodonti terjadi oleh karena beberapa faktor, yaitu lesi awal sulit untuk dijangkau, penurunan kadar pH *saliva*, dan peningkatan jumlah bakteri penyebab karies. Pemberian permen karet yang mengandung *xylitol* telah diteliti dan terbukti efektif dalam meningkatkan curah pH *saliva*. *Xylithol* menstimulasi curah pH *saliva* dan membantu mengembalikan keseimbangan asam/basa *saliva* karena tidak dapat diubah menjadi asam oleh bakteri mulut.

Tujuan Penelitian: Mengetahui pengaruh mengunyah permen karet *xylithol* terhadap peningkatan pH *saliva* pada pemakai alat *orthodonti* cekat.

Metode Penelitian: Jenis penelitian pada penelitian ini adalah *Quasi experimental* dengan menggunakan rancangan *Non Equivalent Control Group*. Dalam desain ini, kelompok perlakuan maupun kelompok kontrol dibandingkan, dua kelompok yang ada diberi pretest, kemudian diberi perlakuan, dan terakhir diberikan posttest. Sampel dalam penelitian ini adalah pasien kontrol *orthodonti* cekat, dengan uji analisa data menggunakan uji *Paired t-Test*.

Hasil Penelitian: pH *saliva* pemakai alat *orthodonti* cekat sebelum mengunyah permen karet *xylithol* kriteria asam paling banyak dengan prosentase 50% . setelah mengunyah permen karet *xylithol* pH *saliva* pada pemakai alat *orthodonti* cekat paling banyak adalah kriteria basa dengan prosentase 76,67%. Dari hasil uji *Paired t-Test* , pengaruh mengunyah permen karet *xylithol* terhadap pH *saliva* pada pemakai alat *orthodonti* cekat jumlah P didapat nilai $0,00 < \alpha < 0,05$.

Kesimpulan: Terdapat pengaruh yang bermakna dengan adanya peningkatan pH *saliva* sebelum dan sesudah mengunyah permen karet *xylithol* pada pemakai alat *orthodonti* cekat.

Kata Kunci: pH *saliva*, *xylithol*, *orthodonti*