

## ABSTRACT

**Background:** Children aged 14 years old are susceptible to dental caries, because children at that age, parental influence wanes and they become independent in oral and dental health behavior. The characteristics of saliva, such as pH and salivary flowrate, have significant roles in the process of caries protection.

**Objective of the Research:** To find out the effect of salivary pH and salivary flow rate towards dental caries status of 14 year old students in SMPN 1 Gamping.

**Research Method:** This study was an analytical observational research with cross sectional approach implemented on 58 students of 14 year old in SMPN 1 Gamping. The sampling technique used was simple random sampling. The dental caries status measurement used DMFS index. The salivary pH measurement was conducted by using digital pH meter. The salivary flowrate measurement was conducted by using Mettler Toledo PL303. The statistical analysis used was pearson correlation and multiple linier regression.

**Research Result:** Based on the pearson correlation and multiple linear regression test result, there is a correlation between salivary pH and salivary flow rate towards DMFS index. The correlation between salivary pH and DMFS index gains 0,000 p value, while the correlation between salivary flowrate and DMFS index gains 0,001 p value ( $p < 0,05$ ). The multiple linear regression analysis results in adjusted  $R^2 = 0,361$ , which means salivary pH and salivary flowrate have correlation with DMFS index as much as 36.1%.

**Conclusion:** The degree of salivary pH and salivary flowrate were positively associated to the dental caries ststus of 14 year old students in SMPN 1 Gamping.

**Keywords :**14-year-old children, DMFS index, flowrate, pH and salivary

## INTISARI

**Latar Belakang:** Anak usia 14 tahun rentan terjadi karies gigi, karena pada usia tersebut pengaruh dari orangtua mulai berkurang dan anak menjadi lebih mandiri dalam menjaga kesehatan gigi dan mulutnya. Berbagai karakteristik didalam saliva seperti pH dan laju aliran saliva memiliki peran penting dalam proses pertahanan karies.

**Tujuan Penelitian:** Untuk mengetahui pengaruh pH saliva dan laju aliran saliva terhadap status karies gigi anak usia 14 tahun pada SMPN 1 Gamping.

**Metode Penelitian:** Penelitian ini merupakan penelitian observasional analitik dengan pendekatan *crosssectional* yang dilakukan pada 58 siswa usia 14 tahun di SMPN 1 Gamping. Teknik pengambilan sampel menggunakan *simple random sampling*. Pengukuran status karies gigi menggunakan indeks DMFS. Pengukuran pH saliva diukur dengan menggunakan pH meter digital. Pengukuran laju aliran saliva diukur dengan menggunakan timbangan Mettler Toledo PL303. Analisis statistik yang digunakan adalah *pearson correlation* dan regresi linier berganda.

**Hasil Penelitian:** Berdasarkan hasil uji *pearson correlation* dan analisis regresi linier berganda menunjukkan terdapat pengaruh pH saliva serta laju aliran saliva terhadap indeks DMFS. Didapatkan nilai p sebesar 0,000 untuk pengaruh pH saliva terhadap indeks DMFS serta 0,001 untuk pengaruh laju aliran saliva terhadap indeks DMFS ( $p < 0,05$ ). Analisis regresi linier berganda didapatkan nilai *adjusted R<sup>2</sup>* = 0,361, artinya pH saliva dan laju aliran saliva berpengaruh terhadap indeks DMFS sebesar 36,1%.

**Kesimpulan:** Terdapat pengaruh pH saliva dan laju aliran saliva terhadap status karies gigi anak usia 14 tahun pada SMPN 1 Gamping.

**Kata kunci:** Anak usia 14 tahun, indeks DMFS, laju aliran, pH, saliva