Aim: To investigate the caries inhibitory effect of fluoride containing varnish (F), fluoride/ tricalcium phosphate containing varnish (FTCP), chlorhexidine containing varnish (CHX) on enamel surfaces subjected to fixed orthodontic appliances when assessed by laser fluorescence (LF).

Material-method: 408 teeth in 17 patients (aged 14-22) wearing fixed orthodontic appliances are included in the study. Split-mouth design was used for each patient (1 quadrant each application); Group 1: Fluoride varnish (Fluor Protector); Group 2: F/FTCP varnish (Clinik Pro TCP Varnish), Group 3: CHX; (Cervical Plus), Group 4: no treatment (control). Each application was performed at every 3 months during the orthodontic treatment. All patients were instructed to use a standard fluoride containing toothpaste (1450 ppm NaF) and informed about their basic oral hygiene routines. Brackets bonded buccal enamel surfaces were measured at the four surrounding side by laser fluorescence device; DIAGNOdent (Kavo) by two calibrated examiners at the baseline, 3.6-12 months and after 24 months. The mean reading value was calculated for each tooth and the LF changes between the time intervals were evaluated. LF changes between the groups were analyzed by Friedman Variance Analysis Test while Kruskal Wallis test revealed the changes due to time intervals.

Results: LF readings increased with time in all groups especially in the control and CHX group when compared to F and FTCP (p < 0.001). Both F and FTCP group showed lesser LF difference in treatment duration (p > 0.05) except when compared between baseline and 24-months (p < 0.001). The findings of this in vivo study indicated that fluoride containing varnishes are recommended during the fixed orthodontic treatments to inhibit the enamel demineralization assessed by LF.

Theme: Preventive Dentistry: Public Health

PD014
Evaluation of an Oral Health Improvement Programme in a Prison Setting
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Aim: To evaluate the effectiveness of a three-year oral health improvement programme which was designed using a whole settings approach to improve the oral health of prisoners, their families and prison staff in a local prison in Lanarkshire, Scotland.

Methods: A controlled questionnaire-based survey was used to measure the oral health knowledge, attitudes and behaviours of two groups of prisoners, including intervention and control groups. Focus groups were carried out among selected prisoners and prison staff. Interviews were also conducted among prison staff and stakeholders to investigate the process, challenges and sustainability.

Results: A total of 107 prisoner questionnaires were completed. The intervention group consisted of 58 prisoners while the control group had 49 prisoners. The intervention group showed statistically significant differences in oral health knowledge and attitudes compared with the control group. However, there was no statistically significant difference in oral health behaviours between these two groups. A convenience sample of 14 prisoners and 20 staff participated in focus groups. Qualitative data suggested improvement in the oral health knowledge and behaviours of the prisoner, but little change in environment, culture and policy for the whole prison. Other initiatives such as father-child activities were assessed as having worked well. Eight stakeholders were interviewed and completed the Nuffield Partnership Assessment Tool. Scores indicated that partners were working well together.

Conclusions: The three-year oral health improvement programme was successful in improving oral health knowledge and attitudes of prisoners, but change in behaviours was only indicated in qualitative data.