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[Intervention Review]

School dental screening programmes for oral health

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ABSTRACT

Background

School dental screening refers to visual inspection of children's oral cavity in a school setting followed by making parents aware of their child's current oral health status and treatment needs. Screening at school intends to identify children at an earlier stage than symptomatic disease presentation, hence prompting preventive and therapeutic oral health care for the children. This review evaluates the effectiveness of school dental screening in improving oral health status.

Objectives

To assess the effectiveness of school dental screening programmes on overall oral health status and use of dental services.

Search methods

Cochrane Oral Health's Information Specialist searched the following databases: Cochrane Oral Health's Trials Register (to 15 March 2017), the Cochrane Central Register of Controlled Trials (CENTRAL, the Cochrane Register of Studies, to 15 March 2017), MEDLINE Ovid (1946 to 15 March 2017), and Embase Ovid (15 September 2016 to 15 March 2017). The US National Institutes of Health Trials Registry (ClinicalTrials.gov) and the [World Health Organization International Clinical Trials Registry Platform](http://www.who.int/clinicaltrialsregistryplatform) were searched for ongoing trials. No restrictions were placed on language or publication status when searching the electronic databases; however, the search of Embase was restricted to the last six months due to the Cochrane Centralised Search Project to identify all clinical trials and add them to CENTRAL.

Selection criteria

We included randomised controlled trials (RCTs) (cluster or parallel) that evaluated school dental screening compared with no intervention or with one type of screening compared with another.

Data collection and analysis

We used standard methodological procedures expected by Cochrane.

Main results

We included six trials (four were cluster-RCTs) with 19,498 children who were 4 to 15 years of age. Four trials were conducted in the UK and two were based in India. We assessed two trials to be at low risk of bias, one trial to be at high risk of bias and three trials to be at unclear risk of bias.

None of the six trials reported the proportion of children with untreated caries or other oral diseases.

Four trials evaluated traditional screening versus no screening. We performed a meta-analysis for the outcome 'dental attendance' and found an inconclusive result with high heterogeneity. The heterogeneity was found to be, in part, due to study design (three cluster-RCTs and one individual-level RCT). Due to the inconsistency, we downgraded the evidence to 'very low certainty' and are unable to draw conclusions about this comparison.

Two cluster-RCTs (both four-arm trials) evaluated criteria-based screening versus no screening and showed a pooled effect estimate of RR 1.07 (95% CI 0.99 to 1.16), suggesting a possible benefit for screening (low-certainty evidence). There was no evidence of a difference when criteria-based screening was compared to traditional screening (RR 1.01, 95% CI 0.94 to 1.08) (very low-certainty evidence).

In one trial, a specific (personalised) referral letter was compared to a non-specific one. Results favoured the specific referral letter with an effect estimate of RR 1.39 (95% CI 1.09 to 1.77) for attendance at general dentist services and effect estimate of RR 1.90 (95% CI 1.18 to 3.06) for attendance at specialist orthodontist services (low-certainty evidence).

One trial compared screening supplemented with motivation to screening alone. Dental attendance was more likely after screening supplemented with motivation, with an effect estimate of RR 3.08 (95% CI 2.57 to 3.71) (low-certainty evidence).

None of the trials had long-term follow-up to ascertain the lasting effects of school dental screening.

None of the trials reported cost-effectiveness and adverse events.

Authors' conclusions

The trials included in this review evaluated short-term effects of screening, assessing follow-up periods of three to eight months. We found very low certainty evidence that was insufficient to allow us to draw conclusions about whether there is a role for traditional school dental screening in improving dental attendance. For criteria-based screening, we found low-certainty evidence that it may improve dental attendance when compared to no screening. However, when compared to traditional screening there was no evidence of a difference in dental attendance (very low-certainty evidence).

We found low-certainty evidence to conclude that personalised or specific referral letters improve dental attendance when compared to non-specific counterparts. We also found low-certainty evidence that screening supplemented with motivation (oral health education and offer of free treatment) improves dental attendance in comparison to screening alone.

We did not find any trials addressing cost-effectiveness and adverse effects of school dental screening.

PLAIN LANGUAGE SUMMARY

School dental screening programmes for improving oral health of children

What was the aim of this review?

The aim of this Cochrane Review was to find out if school dental screening improves oral health of children; and if it does, which is the best screening method. We found six relevant studies to answer this question.

Key messages

There is insufficient evidence to draw conclusions about whether there is a role for traditional school dental screening in improving dental attendance. School dental screening programmes with personalised referral letters or additional motivation elements probably have the ability to improve dental attendance over the short term (follow-up of three months up to two years). Screening based on specific criteria may possibly be better than no screening. However, it is not clear if improvement in dental attendance leads to better oral health of children. We still need high-quality studies that measure the impact of screening on oral health carried out over longer periods of time.

What was studied in this review?

Oral diseases, especially dental caries, affect children worldwide. If unchecked, oral health can deteriorate progressively and adversely impact children's general well-being. It also has a financial bearing at family and community levels.

School dental screening is a public health measure wherein oral examination of children is carried out in the school setting followed by informing parents about the oral condition and treatment needs of their child. It aims to identify oral health concerns at an early stage and prompt parents to seek treatment where required. Whether this actually improves children's oral health is the concern of this review.

What are the main results of this review?

We found six relevant studies, with 19,498 children included in the analysis. Four studies were conducted in the UK and two were based in India. The children in these studies were 4 to 15 years old. Studies compared children who were screened in school to children who did

not undergo screening in terms of their oral health and visits to the dentist. Studies also compared one type of screening to another (for example, variations in clinical examination or referral process).

We are uncertain whether traditional school dental screening improves dental attendance as we assessed the certainty of the evidence as very low.

Screening based on specific criteria (e.g. non-registration with a dentist) seems to be more effective for improving attendance at the dentist than no screening (low-certainty evidence), but there may be no difference between criteria-based and general screening (very low-certainty evidence).

A personalised referral letter to parents seems to improve dental attendance (low-certainty evidence).

Screening when supplemented with motivation in terms of health education and offer of free treatment seems to improve dental attendance (low-certainty evidence).

All the six studies followed up children for three to eight months after they received screening. We therefore do not know if benefits of screening lasted over time.

We did not find trials that addressed the cost-effectiveness of these programmes or any adverse effects.

How up to date is the review?

We searched for published studies up to 15 March 2017.