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Does informing or educating parents about early childhood vaccination improve uptake?

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COCHRANE COMMENTARIES



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Title: Does informing or educating parents about early childhood vaccination improve uptake?

Kaufman J, Ryan R, Walsh L, Horey D, Leask J, Robinson P, Hill S. Face-to-face interventions for informing or educating parents about early childhood vaccination. Cochrane Database of Systematic Reviews 2018, Issue 5. Art. No.: CD010038. DOI: 10.1002/14651858.CD010038.pub3.
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What is this review about?

The effects of face-to-face information or education delivered to parents or expectant parents to increase children's vaccination status, knowledge or understanding of vaccination, attitudes or beliefs about vaccination and intention to vaccinate.

What are the findings?

Face-to-face information or education:

- may improve children's vaccination status (low certainty evidence) (Figure 1)
- probably slightly improve parents' knowledge or understanding of vaccination (moderate certainty evidence)
- may slightly improve parents' intention to vaccinate (low certainty evidence)
- may lead to little or no difference in parental attitudes or anxiety related to the intervention (low certainty evidence)

What are the findings based on?

Study and participant details

Ten trials examined the effects of information or education about childhood vaccinations, delivered in a face-to-face format to parents or expectant parents.¹⁻¹² Half the studies involved

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100 to 250 participants, and half involved more than 400 participants. Three trials were conducted in low- or middle-income countries (Nepal and Pakistan).^{4,11,12}

In two trials, the intervention was delivered to a group^{3,6}; the rest were delivered to individuals. Seven trials looked at a single information or education session^{3-6,8,11,12} and three evaluated a multi-session intervention. The intervention sessions varied substantially in length: in five studies, the sessions were ten minutes or less, while in two they were over an hour long.^{6,7} The majority of the interventions focused on immunisation alone, but three interventions also included information about other child health topics such as breastfeeding.^{1,2,4,7} One study measured intervention cost^{1,2}, but the study was older and not widely generalisable. No studies measured parent experience of the intervention (e.g. satisfaction).

The control groups in the included studies received either no education, printed materials, general routine vaccination information, or an educational video covering the same topic as the face-to-face intervention.

Outcomes

The primary outcomes of the review were vaccination status of child, parent knowledge or understanding of vaccination, parent attitudes or beliefs about vaccination, parent intention to vaccinate, and any adverse effects associated with the intervention. Secondary outcomes were parent experience of intervention (e.g. satisfaction, assessment of communication) and cost of the intervention.

Nine of the ten studies measured vaccination status (either up-to-date status or receipt of a single vaccine). However, data could not be used in two of these studies^{1,2,7} because the interventions also included reminders, making it impossible to isolate the effects of the face-to-face intervention on this outcome. The vaccination status outcome was measured variously at three months, six months, 12 months or 15 months post-intervention.

Five studies measured knowledge or understanding of vaccination at either three or six months post-intervention, using customised knowledge scales, including two multi-component intervention studies.^{1,2,6-10} Three studies measured a range of attitudes or beliefs about vaccination.^{6,8-10} The most comparable measure across studies was perceived severity of vaccine preventable diseases (measured in two studies, at three months post-intervention) and beliefs about the necessity of vaccines (measured in one study, six months post-intervention). Two studies measured parents' intention to vaccinate at three months post-intervention.^{6,8} One study measured anxiety associated with the intervention⁶; one study measured intervention cost^{1,2} and no studies measured parents' experiences or satisfaction with the intervention.

Bias and evidence certainty

The authors rated the studies at moderate to high risk of bias, overall, with most studies at unclear risk of bias due to incomplete outcome data and selective reporting. The certainty of the evidence (based on the GRADE approach)¹³ was moderate for parents' knowledge or understanding, but low for all other outcomes.

Implications for practice

Information or education about childhood vaccination delivered through face-to-face communication may improve vaccination coverage and parents' knowledge. This practice is likely already taking place in the majority of clinical encounters related to childhood vaccination, and supports the key role of the healthcare provider in communicating about vaccines with parents.

Clinical perspective

Primary healthcare providers already talk to parents about vaccination regularly, but thus far there has been limited evidence about the effects of face-to-face provision of information or education. It is encouraging to see from this review that there are likely to be small to moderate positive effects on important outcomes like vaccination status and parent knowledge and understanding of vaccines. The studies showing positive effect were all single-session discussions. However, only one study testing a multi-session intervention was included in the meta-analysis, so more evidence on the optimal number of discussions is needed.

The authors note that face-to-face communication may be more effective in populations where awareness or understanding of vaccines is a barrier. For example, two studies conducted in Pakistan showed positive effects on vaccination status.^{11,12} The authors specifically note that mothers' lack of knowledge is a factor known to affect immunisation schedule adherence in low or middle-income countries.¹¹ In one study conducted in Japan the intervention was effective, particularly with regard to improving uptake of 'voluntary' vaccines not required by law.⁸ The authors suggest there is insufficient immunisation education for parents regarding the voluntary vaccines, which leads parents to view these as less important.

It is possible that providing information or education in resource-poor settings, or where some vaccines are less widely promoted than others, may have different effects than doing so with a specifically vaccine-hesitant population. None of the included studies identified and addressed

vaccine-hesitant parents in particular. This doesn't mean information or education interventions are ineffective in vaccine hesitant populations, but more evidence is needed.

For the purposes of this review, the authors excluded 'multi-component' interventions, where the impact of the face-to-face communication elements could not be isolated. While this streamlines the meta-analysis, there is a growing body of evidence that suggests multi-component interventions may be the most effective approach to vaccine behaviour change.¹⁴ This is because the determinants of vaccine decision-making and behaviour are varied and complex, requiring a number of intervention components at different levels of the healthcare process rather than trying to target a very specific population with a single tailored intervention. In a clinical practice setting, face-to-face communication may be one important part of a larger intervention that includes practice-level vaccine reminders and promotion, provider-level prompts and communication training, and parent-level information and decision support tools.¹⁵

This review did not find any eligible studies that tested *how* information or education should be provided. Some approaches that have been considered in other studies are presumptive or participatory communication, including motivational interviewing.^{16,17} Additional high-quality studies looking at how these types of communication approaches can be used by providers to optimally support vaccine decision-making are needed and are underway.

An important point made in this review is that understanding vaccination and healthcare in general is a parent's right. The focus on increasing vaccine uptake often overshadows our responsibility to ensure adequate informed consent and that parents feel involved in the decision-making process, comfortable with the communication encounter and respected. The authors of this review were unable to find studies that measured parents' satisfaction with the communication experience. These aspects of the decision-making process have value for every encounter, even if a parent does not decide to vaccinate on that day, as they may lead to more sustained confidence in vaccination which creates more resilience in the face of vaccine safety scares. Building and maintaining a respectful and trusting relationship with parents is a key factor in guiding them towards vaccination and ensuring that they feel comfortable asking their questions. This highlights the role of *communication* (or the *HOW*) in addition to the transfer of factual information (the *WHAT* is said).

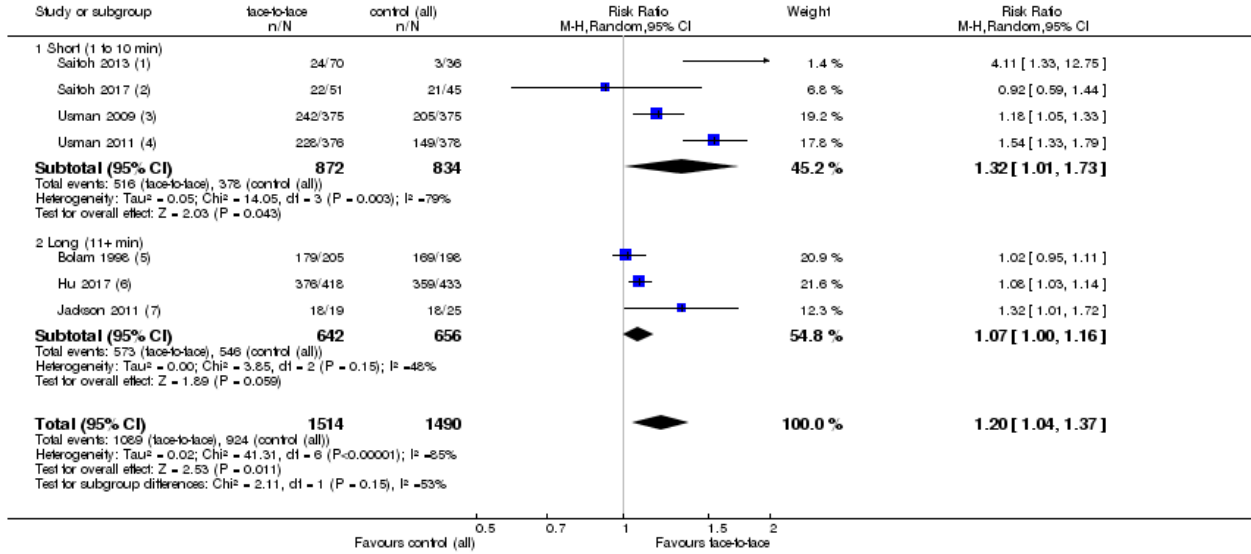
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Figure 1 Change in vaccination status after face-to-face information or education intervention

Review: Face-to-face interventions for informing or educating parents about early childhood vaccination
 Comparison: 1 Face-to-face education versus control or non-face-to-face education (all)
 Outcome: 1 Vaccination status (stratified by length)



- (1) 10 min
- (2) 3 x 5-min sessions; analysis adjusted for clustering (design effect of 1.95)
- (3) 2 to 3 min
- (4) 2 to 3 min
- (5) Groups A + B (intervention at birth) vs Groups C + D (no intervention) measured at 3 months postpartum (20 min)
- (6) 15 min
- (7) 2 hrs; analysis adjusted for clustering (design effect of 1.5)