Reviewer's report

Title: Too many crying babies: A systematic review of pain management practices during immunizations on YouTube

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Reviewer: Moshe Ipp

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This is a valuable systematic review of parent posted YouTube videos using a validated scoring tool to measure infant pain and distress during intramuscular vaccinations. In addition observation was used to evaluate the use of caregiver evidence-based pain management strategies including pharmacological, physical and psychological interventions.

What this study adds to the current published literature is:

1. The novel use of social media, namely YouTube videos, to document and measure infant pain responses to intramuscular vaccinations.
2. An awareness of how social media might be used in future to instruct and educate consumers.

What this study confirms and is not new and has been previously documented is:

1. Vaccinations are painful for infants and distressing for parents and confirm that pain management strategies are needed to minimize this discomfort.
2. Few of the evidence-based strategies that have been published to date have actually been implemented.

The following are Minor essential Revisions:

There are several limitations to this study beyond those mentioned by the authors that need to be addressed as they all influence pain responses:

1. Consumers posted all the videos making each anecdotal, with many variables, resulting in an outcome that lacks the rigor of a controlled trial.
2. The sample selection is problematic as the majority of the infants vaccinated (55%) were 2 months of age and it is known that younger infants cry more readily than older infants when vaccinated.
3. The technique of vaccine administration was not documented (rapid, slow, aspiration etc.) and the type of vaccine injected is unknown (some are known to be more painful than others) and multiple injections are more painful than single ones (the order of vaccine injections affects pain).
4. The oldest posted video was in 2006, quite some time before the most comprehensive CPG on pain management strategies was published, in 2010. Furthermore an education YouTube video on the subject was only made available in 2012.
Abstract
1. Background 2nd line - Effective pain management...authors need to include the other outcomes addressed in the results, namely the use (or not) of topical anesthetics & distraction.
2. Results – 1st line – add in the word trained individual viewers
Last line – eliminate this sentence. Substitute with – Distraction was the most commonly used (66%) pain management strategy.

Discussion
There is no discussion on what the potential barriers might be to the gap between pain relieving recommendations and clinical practice. This is essential, as it would highlight the problem that this study addresses and emphasizes the need for future research direction, which the authors allude to in their conclusion. They might speculate on why there was no breast-feeding observed, no use of sugar solution, no use of topical anesthesia or holding of infants. These factors might be vaccinator specific (no time, no interest ["it only hurts for a second"], lack of knowledge, absence of child-focused vs. vaccinator-focused approach [e.g. lying down on the examining table is easier for the vaccinator], no commercial sugar solution available, etc.) or caregiver specific (embarrassment to publicly breast feed or to do so on video, expense of topical anesthetic, no knowledge of how to make a home made sugar solution etc.).

Psychological factors in attempting to alleviate pain were used by the majority of caregivers (66%) and this intervention needs to be addressed in the discussion. The authors ought to speculate why this was used more than other strategies, but also why this was ineffective

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests