

Acceptability of microneedle-patch vaccines: a qualitative analysis of the opinions of Irish parents

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BACKGROUND

- Microneedle-patch vaccines offer advantages over conventional hypodermic injections including:
 - ✓ reduced costs associated with vaccination programmes
 - ✓ reduced pain and bleeding on administration
- Exploratory research suggested that microneedles would be “ideal” for the administration of medicines to children (1).
- Knowledge gap: what is the perceived acceptability of microneedle technology for paediatric vaccination in a parent population?

METHODS

- Ethical approval was obtained from UCC.
- Focus groups (n=6) were convened through purposive sampling of Cork city primary schools.
- **Inclusion criteria:** self-declared satisfactory English language competency and parent/guardian of a child/children <12 years of age.
- **Demographics:** gender, age, highest level of education, number of children <12 years of age and vaccination status of their children.
- Description of microneedle-patches was provided by the moderator, (SM) with accompanying placebo prototype (Figure 1).
- A topic guide, based upon results of a literature review to determine perception, acceptability and suitability of microneedle technology for paediatric immunisation (2), was used to minimise bias.
- All focus groups were audio-recorded, transcribed verbatim, anonymised, independently verified and analysed by thematic analysis.

RESULTS

- Opinions of 32 parents compiled (3 male, 29 female).
- Most commonly reported: age range (30-39 years), highest education level (Higher Education) and number of children <12 years (two).
- All participants declared that their children were fully vaccinated.

Theme	Sub-theme	Quotes
Concern	Current vaccines Vaccine hesitancy Safety & efficacy	<i>“I love the idea of it in theory being able to give it but at the same time, before I’d give it to my child I’d want it to be tested in hundreds of thousands of people across the world for ideally at least 10 years”</i>
Suitability for paediatric use	Practicality Child-friendly design Transfer of acceptability	<i>“What about making them more child-friendly, like with Disney princesses or superheroes?”</i>
Potential for parental administration	Benefits of parental administration Disadvantages of parental administration Delivery indicator	<i>“This is more casual and relaxed. Just like putting on a band aid”</i>
The role of the healthcare professional	Source of healthcare information	<i>“I think if my doctor recommended this patch and trusted it, I would be happy with it”</i>
Special populations	Allergic potential Special populations	<i>“Like insulin for diabetics. I think a patch like this would be great”</i>

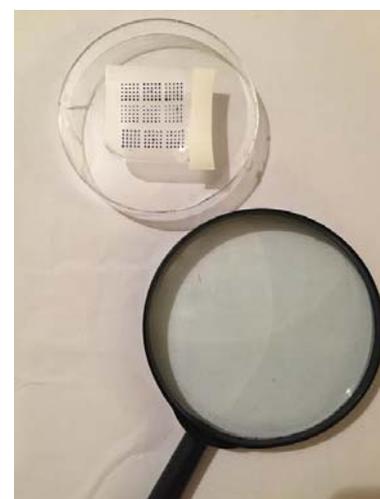


Figure 1 Prototype, placebo microneedle-patch & magnifying glass given to participants at the outset of the focus group.

CONCLUSIONS

- First study to explore parental acceptance of microneedle-patch vaccines: drivers for and barriers against their use were found.
- Parent tentativeness of novel microneedle-patch vaccines could be reduced by healthcare professional endorsement.
- A proactive response is required to increase awareness of microneedle technology through education of healthcare professionals, who will disseminate reliable information to their patients, permitting informed decision-making regarding their children, the eventual end-users of microneedle-patch vaccines.

REFERENCES:

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