How to Handle Your Shots Like a Champ

Raising vaccine literacy among youth with the right intervention at the right time in the right place

Where local learning meets global giving

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Introduction

Kids Boost Immunity (KBI) is a free World Health Organization-accredited online educational resource for children that **pairs local learning about immunization-related topics with a global reward: vaccines for children in need through UNICEF.**

Students from grades 4-12 across Canada participate in a series of interactive online lessons aligned to school curriculum in science, health, and the humanities. After completing a lesson, students use a computer or their own device to test their knowledge by taking an online quiz. The more quizzes a student completes, the more vaccines they earn for children in support of UNICEF.

The site hosts over 400 free online lessons in English and French for Canadians. Students have answered over **4 million questions while earning 318,000 vaccines** for UNICEF since the platform was launched in 2018.

KBI's ***How to Handle your Shots Like a Champ*** Lesson was designed to educate students about the importance of vaccines and strategies to make immunization day easier.

Background & Rationale

There is currently sub-optimal HPV vaccine uptake among 6th-grade students across British Columbia (BC), reflecting broader hesitancy towards the HPV vaccine, especially compared to other vaccines. Grade 6 students' anxiety when receiving vaccinations is also a concern as it may lead to vaccine hesitancy more generally.

The 3 parts of the "Champ" lesson work synergistically to build vaccine literacy, particularly about the HPV vaccine, among adolescents in Grade 6 in BC. It also intends to meet ethical and pragmatic imperatives to improve the vaccine experience for students who attend the school vaccination clinics by teaching them evidence-based coping strategies. Ultimately the aim of the lesson is to improve HPV (and other) vaccine uptake at the local and provincial levels.

> *"The information is presented in such a great way that they all remembered [to] have breakfast and wear a short sleeve shirt and drink lots of water and deep breathing."* (Teacher 3)

Methods

The program evaluation was comprised of 2 components:

1) The **process evaluation** that assessed the implementation fidelity of the lesson and 4 key areas of teachers' perceptions about the lesson: acceptability, appropriateness, implementation barriers/facilitators, and satisfaction.

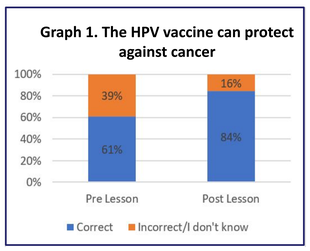
2) The **outcome evaluation** that examined short-term student outcomes. This component of the evaluation used a pre-post survey design and specifically examined a) Knowledge of vaccines and coping strategies, b) Perceptions about vaccines and c) Experiences of receiving the HPV vaccine at the school clinic.

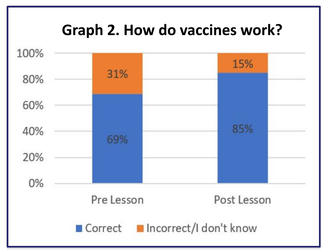
Recruitment: The KBI team reached out to 161 teachers across BC in Fall 2022. **11 classrooms and 186 students** across the **11 classroom teams** did the lesson. **All students completed at least part of a pre-post knowledge quiz** and perception survey, and **9 Teachers** completed an online feedback survey. **6 teachers** participated in a 20 minute semi-structured interview in March 2023.

> *"They were the calmest I've ever seen them. And so, I [thought], "Oh maybe this worked…maybe they understand". [But] I also do think COVID had a part to play in that as well..."* (Teacher 5)

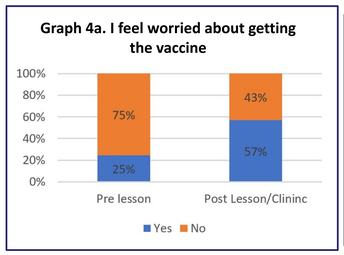
Results

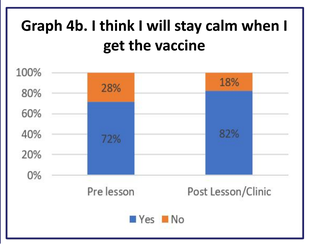
Student Surveys



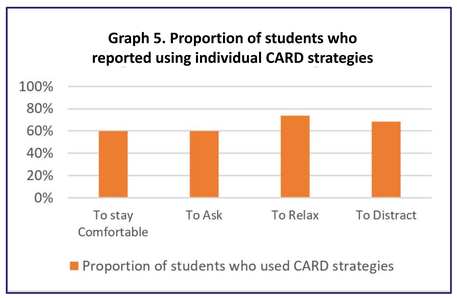


There was a **statistically significant increase in the number of students who responded correctly in the post-lesson knowledge quizzes** about 'How do vaccines work?' (61%=>84%) and 'The HPV vaccine can protect against cancer' (69% =>85%).

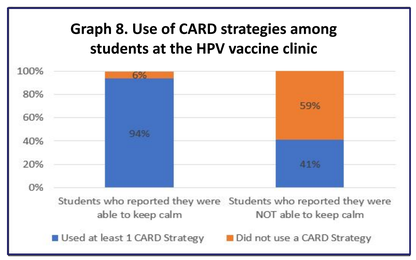




While there was a statistically significant increase in students worried about getting their vaccine just before the vaccine clinic (57%) compared to before the lesson (25%), **there was also a statistically significant increase reported in the number of students who felt calm going into the vaccine clinic** (82%) as compared to before the lesson (72%).



85% of students reported using at least one CARD™ strategy while getting their vaccine, and 74% reported using at least two strategies. **Several teachers reported that students actively and enthusiastically discussed CARD™ and other strategies described in the lesson to help them on vaccine day.**



Almost all (94%) students who reported that they were able to keep calm during the vaccine clinic also indicated that they used at least one CARD™ strategy. This contrasts to the 41% of students who reported that they were not able to keep calm at the vaccine clinic while using at least one CARD™ strategy.

Teacher Interviews

Despite considerable differences in student ability, **teachers found the lesson straightforward to deliver** to most students, both in terms of its presentation & delivery mode online.

Most teachers believed that their **students were less anxious before the vaccine clinic in comparison to previous years,** and students felt better equipped to cope with receiving their vaccines than previous years.

Teachers felt comfortable delivering the lesson because of its **scientific and factual basis; it removed any semblance of socio-political vaccine issues** from classroom discussions.

Discussion

- While a majority of the students were knowledgeable about vaccines before the lesson, **the increase in the proportion of students who responded correctly in the post-lesson quiz** for all 5 knowledge-based questions **indicates that the lesson had an impact on overall students knowledge**.
- Student anxiety before the school vaccine clinic was not unexpected, given that students often feel heightened anxiety immediately before receiving a vaccine and may also get 'hyped up' by anxious peers around them. The results suggest **students generally felt equipped to stay calm and manage their anxiety** when receiving their shots.
- There appeared to be an association between students' ability to keep calm and their use of CARD™ strategies.
- **Teachers had positive experiences delivering the lesson** due largely to the alignment of its content to the broader BC science curriculum, appropriate online format, and flexibility in terms of how it can be delivered in the classroom setting.
- While most teachers expressed a strong desire to help students before the clinic, **it is not surprising that some teachers were hesitant to discuss vaccines, given the potential sensitivity in the broader community.**

Overall Key Findings:

The '*How to Handle your Shots Like A Champ*' lesson appears to have had a **positive impact** on Grade 6 students' **knowledge and perception of vaccines and experience at the vaccine clinic.**

Recommendations

- To facilitate **better student engagement**, **encourage teachers to take a teacher-led approach** to delivering the lesson rather than a student–led approach. This could stop students from racing through the lesson to answer quizzes.
- Where possible, **seek out PHN's or nursing / pharmacy / medical students to take the lead** in teaching the lesson in the classroom.
- To ensure that the lesson is as effective as possible, **target recruitment in communities that are known to have low vaccine uptake rates and lower levels of vaccine literacy**.
- In the future, assess program effectiveness by **comparing a group of classrooms that receive the lesson to a matched control group** that did not.

Acknowledgements

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