Reviewer's report

Title: Awareness of Human papillomavirus and factors associated with intention to obtain HPV vaccination among Korean youth: Quasi experimental study

Version: 3
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Reviewer: Allison Friedman

Reviewer's report:

Compulsory Revisions

1. A key assumption upon which this intervention is based is that child education and intent to vaccinate are critical to HPV vaccine uptake in Korea. However, it is not clear to what extent children make their own vaccination decisions (or influence those who do) in Korea. More information about the context of HPV vaccination in Korea is needed to orient readers and to justify the case for such an intervention. Specifically, is the vaccine recommended and available to both girls and boys? What age groups? Is it free? Where is it offered? Are school vaccination programs in place? Who are the vaccine decision makers? Is parental permission required? If possible, research findings on the predictors of and barriers to vaccination in Korea should be elaborated upon, since findings from other countries may not be relevant to the Korean context. In short, the authors’ assertion that “HPV education should be provided for children of both genders, and should be tailored to their sociocultural background” should be supported by available evidence in Korea.

2. Self-efficacy is a key construct of HBM, yet it does not appear to have been evaluated (not included in Tables). Given that these are youth (who may lack self-efficacy and autonomy to make vaccination decisions), this seems to be an important omission. If it was not included, authors should explain why and/or note it as a limitation.

3. Additional data should be provided to support the following assertions (Discussion section), or the language should be softened for accuracy:

- “…results support the provision of focused, timely, and ongoing education in the school setting to increase HPV vaccination rates” – This seems too strong, given that the evaluation assessed immediate (post-intervention) intention to vaccinate, not vaccination rates. There is a link that needs to be made between children’s intent to vaccinate and actual vaccination. Data about vaccine decision-making in Korea would help support the authors’ argument. At a minimum, this language could be softened to state that “education in the school setting may help increase vaccination rates,” but the limitations and unknowns regarding vaccine decision making should be noted.

- Similarly, authors should be cautious about drawing conclusions about the potential of this intervention “to reduce the likelihood that [students] will take part
in risky sexual behaviors,” when sexual behavior (or intent) was not measured.

- “Findings suggest that all adolescents should be taught not only about the HPV vaccination but also the facts about HPV prevention in the classroom, and that this should be done by experts.” –This study did not compare education in classroom settings to other settings, nor did it compare education delivered by teachers to other sources, such as parents, nurses, or peers.

- “The first step toward promoting HPV prevention would be to provide HPV education in the classroom as early as possible” – Given that we don’t know whether the observed knowledge or attitude changes were sustained beyond post-test (or whether they influenced vaccination uptake), this seems unfounded.

4. In the Discussion, authors note that “almost all of the HBM variables were significantly related to intention” to vaccinate, but they do not elaborate on which variables were not related or what the implications might be for future curricula development. Also, could it be that other variables are important to consider? For example, to what extent does perceived social norms (re vaccination) play a role in Korean culture?

5. Among the limitations noted, authors should acknowledge that we do not know whether short-term changes in knowledge and attitudes/intentions were sustained, or whether they translated into changes in sexual-risk behaviors, discussions with parents about vaccination, or subsequent vaccination.

Minor Essential Revisions

1. It would be helpful to offer some information about the setting in which this school is located (Gangneung City): Why was this setting selected? Is anything about rates of cervical cancer or access to vaccination or sexual/reproductive health services in this area?

2. It is acknowledged that teacher competency and autonomy may play a role in the quality of education provided, and that sexual health education (contraception, STD prevention) is typically offered at older grade levels. It would be helpful if authors could also speak to whether any teacher training is required for such an intervention, and what teacher (or classroom) qualities might be important for such an intervention to succeed.

3. If possible, please elaborate on the “gender-based HPV prevention approach” (Discussion) as it relates to the context (or current debate) in Korea. Are there stigma concerns, or has health equity been an issue in targeting females only?

4. Was student comfort in co-ed classes assessed? If not, how can we know that they were in fact comfortable with co-ed classes, or that single-sex education wouldn’t be more effective?

Discretionary Revisions

1. The introduction makes no mention of HPV as a cause of cervical and other cancers, which should be added, given that this is the primary public health
concern related to HPV and apparently a central focus of the intervention.

2. Authors should specify how the vaccine was positioned in the curriculum. It is curious that Table 2 refers generally to the prevention of viral infection, STDs and cancer, without specifying HPV infection or cervical/penile/anal/other HPV-associated cancers. Were respondents not assessed specifically on knowledge and attitudes regarding HPV infection and associated cancers?

3. It is noted that girls’ concern about injection pain was not reduced by the intervention; but was content developed to minimize perceived pain from needles among children? [This isn’t clear.]

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.