

## ORIGINAL ARTICLE

# From knowledge to a gendered event and trustful ties: HPV vaccine framings of eligible Finnish girls and school nurses

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## Abstract

In the present study, we examine socio-cultural and practical aspects of human papillomavirus vaccination (HPVV) through a multi-sited study of framings. We ask how HPVV is framed in the daily lives of vaccination-aged Finnish girls and in school nurses' everyday work. We then mirror these framings against both each other and Finland's official vaccination campaign. Based on analysis of interviews with 24 nurses and 12 girls and the campaign materials, we argue first that the campaign frames vaccination as an individual, knowledge-based decision reflecting the informed consent principle. Second, however, the vaccination is framed in the everyday lives of eligible girls through gendered social ties and as a gendered and cohort-specific event pivoting around the needle prick. Third, HPVV is not primarily framed in the school nurses' work as preparing the girls for the vaccination decision by sharing official information but through trust-based social relationships with the girls and their parents. We conclude that, as the vaccination is not an issue of individually reflected and knowledge-based decision-making for the two interviewed key groups, the official Finnish HPVV campaign and the undergirding informed consent principle drift into problems in their practical implementation.

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## INTRODUCTION

The public health aim of vaccination – achieving herd immunity to prevent insidious and often lethal diseases at relatively low cost (Virtanen, 2019) – can be reached only through each individual's consent to vaccinate. The principle of consent is founded on basic human rights around personal autonomy and bodily integrity. The consent to vaccinate must thus be voluntary and 'informed', which here means providing information about the vaccination and ensuring it is understood by a potential recipient competent to make a voluntary choice about vaccination (Faden & Beauchamp, 1986: 278). In this context, official vaccination campaigns seek the aim of herd immunity as the sum of informed, knowledge-based vaccination decisions by one individual at a time.

We ask in this paper how human papillomavirus (HPV) vaccination (HPVV) is framed in the daily lives of 10- to 12-year-old Finnish girls and in school nurses' everyday work. Based on our study, the underlying individualised and knowledge-based formula of Finland's official HPVV campaign appears as problematic. First, the eligible girls do not reflect on the vaccination decision as deliberately as the campaign presumes. Second, entrusting the school nurses, responsible for administering vaccinations, to share more vaccine knowledge more effectively with the girls does not help. This is because, third, HPVV does not appear as a matter of individual, knowledge-based decision-making for either the girls or the nurses to start with; rather, it is framed through diverse socio-cultural processes.

By analysing these processes, the paper makes a contribution to the lively, multi-disciplinary research on HPV vaccination. We use a multi-sited research design to explore how the vaccination is framed in the everyday lives of two key groups, both largely neglected in previous sociological studies: Finnish girls aged 10 to 12, who have final say over whether to take the shots,<sup>1</sup> and the school nurses responsible for sharing official information and administering vaccinations. We also bring the vaccine framings of both groups together and reflect them against the core frame of the Finnish official HPVV campaign, which is based on the informed consent principle and addresses the eligible girls and school nurses through it: vaccination is a matter of individual, knowledge-based decision-making. Based on frictions in the implementation of this official campaign frame in the two key groups' everyday experiences, we also discuss the thematic of understanding vaccine information and competence to make an informed choice (cf. Coonagh, 2003; Petherick et al., 2016).

To grasp these issues, we begin by contextualising our case and reviewing previous research. The fourth and fifth sections contain our research design, materials and methods, and the description of the research process. In the sixth section, we present our analyses of vaccine framings of both key groups and their juxtaposition with Finland's official campaign frame. The final section concludes our empirical findings and discusses the problems of understanding vaccination information and obtaining competence to make a knowledgeable choice.

## SALIENT FEATURES OF THE HPV VACCINE AND FINNISH CONTEXT

HPVV is a vital research topic especially due to its four interlinked targets. First, it is the first 'cancer vaccine' (Gericke, 2008). HPV infection is a necessary but not sufficient factor in developing invasive

cervical cancer (zur Hausen, 2000), and the vaccination's ultimate purpose is to prevent this cancer by blocking HPV from infecting cells. Second, while HPV is tied to many cancers such as mouth and head and neck cancers and some cancers of the anal and genital areas, vaccination campaigns around the world primarily target cervical cancer and the vaccine has been marketed as for girls to prevent the cancer. However, and third, the direct target of the vaccine is not cervical cancer but HPV. The virus is transmitted mainly through sexual contact, affects all people and is practically endemic globally. Fourth, the epidemiological target group of the vaccination is distinct. The vaccine must be given both before HPV infection is acquired – before the sexual debut – and late enough to provide the longest possible protection against the virus.

Based on these aetiologically and epidemiologically reasoned considerations (Petrosky et al., 2017; Virtanen, 2019), HPV vaccination occurs at a liminal phase of life, usually between ages 10 to 12 in Finland; while no longer children, the vaccine recipients are not quite adults. Moreover, the decision to undergo vaccination is not trivial; it is morally laden and concerns preadolescents' future health in terms of protection against a sexually transmitted virus connected to an often-lethal cancer.

The Finnish context provides an illuminating case to study these *problématiques*. First, unlike some other European countries (Paul, 2016; Paul et al., 2018; Stöckl, 2010), the public discussion around the vaccination in Finland has thus far been remarkably epidemiology-driven and completely gendered.<sup>2</sup> Second, the country was late to implement the vaccine by European standards; HPVV has been included in the Finnish national vaccination programme since 2013, several years after Germany, France and the United Kingdom. The late implementation was primarily due to the success of publicly administered, population-based Pap screening (Virtanen, 2019). Third, Finland's official HPVV campaign has not met its goals. The vaccine is readily accessible and free, yet full-course vaccination coverage has remained around 70 per cent, well below the minimum goal of 80 per cent, which neighbouring Sweden and Norway have met. Finland's HPVV figures also contrast with extremely high childhood vaccination coverage in the country.<sup>3</sup>

Currently, the prophylactic HPV vaccine Cervarix is given in two doses in a school-based programme, making Finnish primary schools the key loci of the campaign. School nurses have usually permanent consulting rooms in schools, and nurses are an everyday presence in pupils' lives. Based on our data, the nurses know the preadolescent girls' social world, and the girls characterise the nurses as familiar, safe adults and reliable health authorities.

School nurses arrange vaccinations within their daily work, typically as part of regular health checks or on specific 'vaccination days' when girls in a cohort who have opted in and whose parents have not refused their vaccination<sup>1</sup> come to the nurse's office to be vaccinated. Additionally, girls' parents, usually mothers, discuss HPVV with school nurses, mostly in regular health checks but also by ad hoc phone calls. Consequently, the school mediates the public health care aims that the nurses represent and fulfil and the social worlds of pupils and their parents. Focusing on schools thus offers the opportunity to study how the vaccine framings of eligible girls and school nurses are connected in practice.

## FINDINGS OF APPLIED HEALTH RESEARCH AND HEALTH SOCIOLOGY

The fourfold thematic of cancer, the virus, the target population's liminality, and the genderedness of HPVV and its sexual transmission combine to make the vaccine an important research topic across disciplines (Jenkins & Bosch, 2019; Wailoo et al., 2010; Zimet & Osazuwa-Peters, 2019). Applied

health sciences have largely focused on epistemic gaps and practical barriers to be overcome to improve vaccination coverage. Research has targeted, first, vaccination decision-making and pointed out factors related to decision outcomes. The role of mothers prior to consent has been found to be crucial, yet their opinions are not dispositive in the decision but become manifest in mother–daughter communication, where girls’ opinions also play an important role (Griffioen et al., 2012; McRee et al., 2011). Furthermore, gaps in basic knowledge and deficiencies in understanding the subject, especially among eligible girls and to some extent their mothers, have been identified as challenges to making a knowledgeable choice. Consequently, education campaigns for girls and their parents have been advocated to raise awareness, especially of the vaccine’s safety and efficacy (Cohen & Head, 2013; Das et al., 2010; Davies et al., 2017; Patel et al., 2016; Waller et al., 2020).

Second, studies focusing on the work of the health-care providers responsible for delivering the vaccine have identified both epistemic gaps and practical barriers to HPVV uptake. A lack of awareness and insufficient quality in vaccination recommendations have been pointed out, along with professionals’ reluctance to adopt an opinion leader role and increase positive attitudes towards the vaccine among girls and young women (Gilkey et al., 2016; Patel et al., 2017; Rosen et al., 2017). In addition, gaps in nurses’ knowledge and their views on the need for more education have been reported in school-based programmes (Grandahl et al., 2017; Nilsen et al., 2017). Finally, practical problems in vaccine delivery like a lack of planning and increased workloads have been highlighted (Hilton et al., 2011; Rockliffe et al., 2020).

In contrast to the applied approach of improving vaccine uptake, health sociological enquiries have targeted HPVV as infused with subtle processes of power and governance. Public health rationales mould the lives of vaccination-aged girls: girlhood is depicted as risky and girls’ bodies as vulnerable and thus in urgent need of pharmaceutical protection (Casper & Carpenter, 2008; Charles, 2013; Mamo et al., 2010; Rail et al., 2018). At the same time, the vaccine is thoroughly gendered and gendering: HPVV is tightly anchored in the “‘innately female’ biological body’, as ‘the rationale and administration of HPV immunisation sustain specific clinical concepts of gender identity centred on the possession of a uterine cervix’ (Mishra & Graham, 2012: 59). In this context, vaccination campaigns shape pre-sexual girls as responsible for protecting their fragile female bodies and frame their mothers as naturalised and affectual caregivers to their daughters (Albert, 2019; Connell & Hunt, 2010; Lindén, 2017; Mara, 2010).

Second, previous sociological research has questioned the straightforward narratives of bio-scientific progress and preventive innovations in developing and diffusing the vaccine. By targeting the messy background of incorporating HPVV into national vaccine programmes, research has revealed the entanglement of bio-medical research with economic, political and administrative rationales (Gottlieb, 2018; Maldonado Castañeda, 2019). Similarly, frictions and tensions in the implementation of vaccination policies and campaigns, discursive shifts in those campaigns and media-driven public controversies around HPVV have been identified (Lindén, 2016, 2019; Mohr & Fredriksen, 2020).

We combine applied and critical strains of HPVV research in certain key respects. From applied health research, we use insights into the epistemic and practical issues that affect vaccination decision-making and vaccine delivery at schools but without the framework of overcoming knowledge gaps and its implication that individuals are bearers of knowledge. Second, we follow critical studies in emphasising the governing genderedness of the vaccine and share their starting point of unpacking the premise of rational individuals by approaching eligible girls’ and nurses’ agency as shaped through HPVV campaigns.

## RESEARCH DESIGN: VACCINE FRAMINGS

To analyse how the vaccine becomes part of the daily lives of Finnish vaccination-aged girls and school nurses' everyday work and how these relate to the official campaign, we use a research design of multi-sited analysis of framings (Silvast & Virtanen, 2019; Virtanen, 2019). The vaccine is framed in different sites and both shapes and mediates the framings at those sites. Therefore, different framings are not approached as adjacent and symmetrical but as connected and as potentially shaping each other.

Our analytical concept of framing, championed by Goffman (1974), refers to the mundane ways by which individuals make sense of situations at hand. According to Goffman, 'definitions of a situation are built up in accordance with principles of organisation which govern events – at least social ones – and our subjective involvement in them'; he suggests using frame 'to refer to such of these basic elements' (Goffman, 1974: 10–11). Consequently, framings mediate the subjective and the objective: subjects use framings to make sense of what is going on in a situation, yet the framings are neither completely arbitrary nor voluntaristic (Silvast & Virtanen, 2019: 464).

By using the concept of framing, we ask how HPVV is framed both in Finnish vaccination-aged girls' daily lives and in school nurses' everyday work. We then reflect these framings against each other and analyse them against Finland's official vaccination campaign, which emphasises individual, knowledge-based decisions. As the informed consent principle is central in the knowledge-laden campaign frame, our focus on girls' and nurses' vaccine framings *vis-à-vis* that frame highlights socio-cultural frictions in implementing the principle.

## MATERIALS, METHODS AND RESEARCH PROCESS

We gathered a two-part data corpus. The first part consists of interviews with 12 vaccination-aged girls and 24 female school nurses; the second contains the textual and visual materials of Finland's official *Girls' thing* vaccination campaign. The campaign materials were analysed by interpretative, thematic analysis focusing on the framings of HPV and cervical cancer and their subject-shaping of adolescent girls (see Virtanen, 2019 for details).

All interviews but one with a pair of nurses were conducted on-site at schools. The girls were interviewed in classrooms familiar to them and the nurses in their own work areas.<sup>4</sup> Both girls and school nurses were recruited in two different large cities in southern Finland. Girls were contacted through their schools by approaching headmasters and nurses through an invitation letter to municipal healthcare organisations. Final interviewees were selected to represent diversity in school settings and professional career stages. Thus, three nursing students conducting their final-stage practical training in schools were interviewed, along with 21 registered nurses.

Official research permissions were secured from the municipal organisations of both cities. All participants and the girls' parents were also offered information on the study in advance; permissions were obtained in writing (girls' parents) and orally in the interview situation (girls and nurses). The study was conducted along the ethical guidelines of Finnish National Board on Research Integrity, and research ethics were considered in depth in all phases, especially regarding the underaged girls' interviews.

Interviews of 12 vaccination-aged girls were semi-structured and ranged from 10 to 27 minutes; all interviewees had taken the vaccine. The interviews dealt with general understandings and perceptions of the vaccine and HPV, information retrieval, social relations and sex and gender. These interviews were rather brief, as the topic was evidently difficult for 12-year-olds. It was also important from an

ethical perspective to remain sensitive to adolescents' capacity and willingness to remain in the interview situation.

Eventually, the girls' reflections provided a rich reservoir of framings of HPVV in their everyday lives. The transcribed interviews were analysed using AtlasTI software by following the principles of Straussian grounded theory (Corbin & Strauss, 2012) to grasp girls' views in as much detail as possible. Then, based on cross-coding and merging the codes and conducting constant comparison between different codes, four central themes were identified: knowledge, event, social ties and trust, all pierced by the dimension of gender. The themes are not mutually exclusive, as each utterance could contain several codes.

The school nurses were interviewed after the girls, making it possible to target themes and questions in light of the girls' interviews. The 50- to 97-min semi-structured interviews shared recurring questions around HPV knowledge and information sharing, vaccination practices and challenges and reflections on encounters with girls and their parents. The transcribed interviews were analysed as theory-driven using AtlasTI, with the themes interpreted from the girls' interviews as theory.

To highlight the interwovenness of HPVV framings of eligible girls and school nurses, we present them as blended in our analysis. We begin with a summary of our analysis of the Finnish HPVV campaign before turning to the central themes interpreted based on the coding work: knowledge, event, gender and the social ties around the vaccination. We also reflect the girls' and nurses' framings against the core frame of the official HPVV campaign to trace frictions between them.

## ANALYSIS AND RESULTS

### **The *Girls' thing* campaign: 'girls' cancer vaccine' frame**

To achieve high vaccination coverage, Finland's official *Girls' thing* HPVV campaign is tailored to be familiar and interesting to eligible girls, to 'satisfy [their] "social worlds" to become embedded in them' (Paul et al., 2018: 69). The pink campaign materials portray adolescent girls as actively doing their own things together; they are approached by markedly 'girly' discourse with exclusive and empowering tones. Yet this exclusive girls' thing frame is subordinate to an individual-rational one: while girls are approached through socio-cultural imagery familiar to them, they are ultimately addressed as individual decision-makers and given official knowledge to make a rational choice. This is no peculiarity of HPVV or the Finnish case, as the campaign follows the informed consent principle anchored deeply in elementary socio-moral principles of Western liberal democracies: consent to vaccinate is given individually based on rational reflection on vaccine knowledge.

The *Girls' thing* campaign shares information for the eligible girls to make an informed HPVV choice. At the same time, and similarly to the campaigns in other countries (e.g. Connell & Hunt, 2010; Lindén, 2017), the campaign also shapes the 10- to 12-year-old girls as self-responsible health subjects able to take care of their female health. Moreover, the connection between the campaign and informed consent ultimately appears to be contingent: the tricky, interconnected issues of the HPV–cervical cancer link, sexual transmission of the virus and its gender neutrality are pushed into the background in the pink materials and the 'cancer effect' (Rail et al., 2018) is at play: a culturally anchored and shared understanding of cancers as scary and serious diseases makes the vaccination important; and as the vaccination prevents a female-only cancer, it is girls' responsibility to arm themselves against it.

Consequently, the campaign pivots around and enacts a simplified 'girls' cancer vaccine' frame: the right and wise thing to do is be vaccinated, and opting out is an irrational and irresponsible choice,

since that means consciously risking a serious cancer. The public health goal to reduce the prevalence of cervical cancer is sought as the sum of one knowledge-based decision of each adolescent girl, yet the campaign's simplified 'girls' cancer vaccine' frame ultimately narrows down the vaccination knowledge offered to the girls.

## From knowledge to a gendered event

HPVV is not framed through individual, knowledge-laden reflection in the girls' interviews but as an experience and event centred around the needle prick. The girls are given the shots, which may cause tension, anxiety and fear. They also depict some side effects. Yet these are not framed as knowledge issues to be considered carefully but through mundane events that affect daily life, such as participating in hobbies. Maria reports that 'lifting up that arm, it hurt a bit, so luckily, I took it on the left arm, which was good, but I couldn't go to the training then, but it was only that one day'.

In a similar vein, the school nurses highlight the event of injection as a core matter for the girls. Although HPVV and the decision to vaccinate are packed with complex issues, the girls ask mostly about the pricking event: Kerstin says that '99 percent of [the questions] are related to pain'; for Mirva, it 'feels like their attention is caught only on the very event of the vaccination, about which they are nervous, so they are not even interested in what the vaccination actually is about'. Pricking with a needle emerges as an enormous matter for fifth- and sixth-grade girls, which causes nervousness and leaves little space for thorough reflection.

In the current Finnish national curriculum for primary schools, health education is integrated in environmental studies subject group, along with biology, geography, chemistry and physics. Sexual development and reproduction are included in the health education and typically taught in the fifth or sixth grade. Some of the interviewed school nurses also explain the background of the vaccination when informing about the upcoming vaccination: that HPVV prevents certain common, sexually transmitted papillomavirus types that may cause cervical cancer.

However, the interviewed girls are largely unfamiliar with this mechanism. In general, they do not understand the connections between sex, the virus and cancer. The role of sex appears to be especially remote for them, thus blurring the essential connection between having sex and exposure to cancer via the virus:

Maria: I'm still not sure of how it is possible, maybe it's then just the virus that comes from [sex], I don't know. [...] Then there was maybe something like that it can also come without [sex].

Most of the interviewed nurses confirm that the girls are not very aware of the vaccine mechanism and only rarely reflect on these issues based on the knowledge provided.

Interviewer: What do you think, what do the girls know about this vaccine?

Seija: I would say quite little. Especially when we were still instructed by the officials to give these kind of vaccination briefings in the classroom, I had always made them know about them beforehand, shared material and told both parents and children to get familiar with the Girls' thing website. And still in the vaccination situation when I asked, 'Hey, did you talk with your parents or did you visit the website?', I would say 90% would say no. So, no, at least the children – I think they have very little information.

Instead of sexually transmitted HPV, girls remember cancer; they are aware that the vaccine is given to prevent a cancer and understanding of cancers as scary and serious diseases makes the vaccination important. Cancer is not framed as an actual threat to the girls' lives, however, but as something to be prevented in the future. Yet this future orientation remains loose and does not lead to rational reflection on the risks and probabilities of getting cervical cancer. Instead, the vaccine is taken to play it safe. Laura says, 'I don't think it affects that much, because I don't think that many people get that cancer thing'. She made the decision to opt in to 'be kind of wary, so at least there is no need to think about it'.

According to the nurses, cancer – not the virus – is indeed fixed in the girls' minds.

Karita: The girls use the word 'cancer'; they talk about it as the cancer vaccine, that it prevents cancer, but they don't necessarily perceive what a papillomavirus is or that a certain papillomavirus might cause [cancer].

Unlike the girls, the connection between sex, the virus and cervical cancer is clear to the school nurses. This understanding is accompanied by medically accurate descriptions of why HPV is targeted to those aged 10 to 12.

Josefin: Of course, it is given to us as information that it is given precisely before the sexual debut, and it protects against the papillomavirus and its after-infections, and to minimise the cancer risk.

In Finland's comprehensive schools, pupils of all genders are mixed in classes. In this context, the exclusiveness of HPV as a girls-only vaccine stands out. Only girls leave class to receive the vaccination; a special event and experience concerns a certain age group of girls. In this context, it is obvious that all the interviewed girls had noticed that the vaccination is delivered only to girls. This has also some empowering overtones for the interviewees; the 'girls' vaccine' is exclusive to them, even a privilege, and contrasted to ones for boys.

Iida: Boys, I think, get some vaccine in the military service, so we talked about that. But we didn't realise why girls get it at this young age and not at the same age as boys.

The girls-only disposition of HPV is also interwoven with the simplified 'girls' cancer vaccine' frame which blurs the vaccine mechanism: the shots are given to girls because girls have wombs that can develop cancer.

Interviewer: Do you remember, did you wonder why only girls get the vaccine?

Maria: Well, like, maybe because boys don't have a womb (laughing).

Martta remembers only that the vaccine is female specific: 'Isn't it against breast cancer – this kind of preventive med – or prevents breast cancer?'

In contrast to the simplified girls' cancer vaccine, HPV is not framed as naturally and definitively gendered by the school nurses. On one hand, nurses welcome the positive and empowering frame of the official campaign: it is good to highlight the vaccine as girls' own thing, as something special for them. The pink campaign materials have also succeeded by gaining girls' attention in the desired way. On the other hand, nurses also criticise the campaign's stereotypical perceptions of girlness. They spontaneously raise the question of vaccinating boys and challenge the intrinsic heteronormativity of the campaign and its pinkness. Virve, for instance, reflects on the questions of multiple genders and varying sexualities – and also conflates these – in her criticism of the official campaign:



From the viewpoint of multiple genders, that makes me think. [...] Someone who is gay then thinks that I won't ever be needing it because I will never have sexual intercourse with a girl, what kind of thoughts that raises then. [...] That's why I didn't like it. They promoted the girly and the pink stuff, and I don't think that's apt for the present day, in the world where today's children live.

The criticism reflects the interviewed nurses' vaccine framings *vis-à-vis* those deployed by the official campaign. Even though the nurses are committed to the public health mission, attend to vaccination education, follow the official instructions precisely and display scarcely any vaccine hesitancy in the interviews, they do not straightforwardly embed the official campaign's knowledge-based frame into the girls' lives. First, the vaccine is framed as a task that keeps the school nurses busy: they depict processes of ordering vaccines and needles, storing them, briefing girls and their parents about vaccination procedures and, finally, delivering the shots and keeping track of who has been vaccinated and who has opted out. In their busy workdays, the possibilities of and resources for intensive vaccination promotion and health education are scant. In practice, most of the interviewed nurses drop into classrooms to announce upcoming vaccinations and brief parents by short, free-form messages through the Wilma web interface.<sup>1</sup>

Second, how profoundly HPVV is discussed in this context ultimately depends on the girls and their parents.

Seija: The information goes to the families through Wilma and the families discuss the issue, and we ask them to check these links [to the official campaign site].

Consequently, a tension arises between the official aim of the HPVV campaign to reach herd immunity through summing individual, knowledge-based decisions by preadolescent girls and school nurses' practical possibilities of forwarding and clarifying the official information as grounds for those girls' decisions.

In a similar vein, the interviewed girls' vaccine framings contrast with the official campaign's frame of individual-rational reflection and knowledge-based decision-making. For the girls, the key knowledge related to HPVV, that of the mechanism connecting sex, the virus and cancer, was blurry. Sharing more information is not necessarily of help, however, as the vaccination is not framed as a question of knowledge-based choice to begin with. Instead, HPVV is for the vaccination-aged girls about a gendered event pivoting around needle-pricking which is necessary because it prevents some female cancer.

## Social ties and trust

The gendered and event-centred framing of HPVV is connected to other social and equally gendered framings. The vaccination event and experience are shared with peers and especially classmates. The interviewed girls discuss with their friends whether to opt in or out and reflect on the possible harms and inconveniences of taking the vaccination, especially pain.

Heidi: Well, for example, how the arm has recovered, and did it hurt a lot or if someone hadn't taken it yet. We could like help them a little in that [situation].

The vaccination event, which affects the whole age group simultaneously, also causes some uncertainty and gossiping. Rumours about pain or severe side effects circulate rapidly around the classroom. Some, like Veera, had heard about alternative ways of protecting oneself against this cancer; two girls in

her class said that ‘if at some point we get men, we will have them taken to some doctor if they have been together with another woman’.

The parents – especially mothers – help the girls to frame the vaccination rationally. Mothers process misconceptions and rumours circling around in schools or direct needle-fearing girls to choose protection from cancer and ‘playing it safe’.

Maria: When I said that some of the people in our class won’t take it because for some reason they don’t trust it, my mom told me that it would still be quite good to take it, that you’d rather take that than a cancer (laughing); good to be sure of everything.

For the girls, their mothers are framed as those to whom they naturally turn for health matters; mothers act as partners when seeking information and as reliable authorities in questions of facts and reasoning. While the girls rarely consider the vaccination in depth themselves, their mothers help them frame it rationally and as based on knowledge.

The school nurses also come across rumours and frightening stories about the unbearable pain of the injection. Besides, they describe a ‘mass hysteria’ that sometimes appears on vaccination days, when dozens of girls are vaccinated. Even though this kind of social panic makes the actual vaccination more difficult, the nurses nevertheless acknowledge the importance of friends among girls aged 10 to 12. They emphasise the girls’ social framing of the vaccination and even allow a close friend to be present to hold hands and offer comfort. However, the nurses consider the parental role and opinions the most important in the final vaccination decision: ‘In this, what is decided at home is the stronger one’ (Karita). Best friends may come together to the nurse’s office so that one takes the shot, with the other present only for support.

School nurses work as ‘representatives of the official healthcare system in the educational environment at the centre of which is not health but learning’ (Hannele). Unlike many other healthcare professionals, they have relatively few peer contacts in their everyday work. The interviewed nurses discuss the vaccination and especially its practical arrangements with their colleagues during team meetings and training seminars but, in their daily work in schools, they cross paths mainly with pupils. Because those pupils are underaged, the nurses also take up their work around health issues with parents.

Titta: The idea in school health care is that we are somehow involved in this everyday life, and I like to maintain this kind of open thought. That’s why I call [the parents] at quite a low threshold: to show that we are here as much as their children are here.

In this context, HPVV mediates the pupils, their home and the school nurses. This mediation is not primarily about practical vaccination arrangements but takes place in a web of trust-based relationships that are formed throughout the pupils’ school careers.

To the girls we interviewed, school nurses appear trustworthy in a double sense: familiar and safe adults and reliable health authorities. Even though the girls scarcely discuss the vaccination with the nurses in detail and seldom ask questions about it, their familiarity with the nurses who share the information and prick them with a needle helps. In addition, the familiar school setting frames HPVV as intrinsically trustworthy and safe: ‘I thought, as it’s given like at schools, that it must be safe’ (Maisa).

Relationships based on mutual trust also appear to be important for the interviewed nurses. They follow the girls through their school careers and become aware of their diverse backgrounds. In this vein, some regard the knowledge-laden vaccination campaign as insufficiently sensitive to cultural and ideological differences. Kaija is especially critical:

The officials' view on that is 'some narrow-minded people don't want this kind of sex vaccine for their children'. I wouldn't trust the kind of an organisation who thinks that I am, as a client or as a parent, inherently wrong and that my culture is totally wrong and if I disagree then I'm only dumb. [...] It's no wonder why the information we offer is not good enough, that people would rather believe some web columns.

Kaija knows the backgrounds of the vaccination-aged girls and tries to strike a balance between fulfilling her official health promotion responsibilities and her role of an understanding, listening and trustworthy nurse present during the pupils' school years. Moreover, HPVV is framed as only one of many healthcare interventions and duties the school nurses see to in the interviews, and issues around the vaccination should not interfere with the long-lasting, trust-based relationships with the girls and their parents.

In this regard, and even though the nurses reflect on backgrounds when consent is withheld, they avoid pressing parents for specific reasons for opting out. In their discussions around the vaccine with parents, the interviewed nurses try their best to phrase things to avoid appearing 'pushy'.

Kerstin: I've wanted to maintain a good collaboration with the family and never wanted to go against the parents. I've been understanding towards their views and that everyone has their right to their own opinion. I've never wanted to impose them or such. But then you can always discuss anyway, this kind of constructive discussion.

Both decisions are respected, while maintaining a mutually trusting relationship is sought in the end.

At times, the school nurses come across conflicting views between girls and their parents on the vaccination decision. On such occasions, the nurses are forced to reflect on the possibility that the web of trust is unravelling. If a girl wants the vaccination but the parent refuses, is it more important to maintain the parent's trust or to maintain or even deepen the girl's trust? In more general terms, how can a nurse balance the official task of population-level cancer health promotion and the socially delicate process of building and maintaining trust?

According to the interviewed nurses, written permission, which was required until 2019,<sup>1</sup> clarified the issue, even though it increased their workload:

Virve: Now that the permit paper is no longer shared, then one [wonders] a bit on their own legal protection. One could trust that [the parents] have received it so you don't have to thrash it out afterwards that I wouldn't have wanted this for my child. Surely at this age they can usually say themselves whether they want it or not, so that should also be considered.

At present, the nurses face the challenging issue of informed consent on a practical level and without the help of a written permission: 'if a 12-year-old comes like, "Yes, you can give me the vaccine," who is it who decides?' (Virve). They strive to determine the parents' opinion in detail, to decide how far to go in respecting it and to decide whether a girl is mature enough to make the choice independently.

On the school floor level, the campaign frame of individual, knowledge-based decision-making and nurses' role of preparing the girls for knowledgeable vaccination choice by providing information appear simplified, even illusory. Instead, the vaccination is framed through trust-based relationships between the nurses and the girls and their parents. These social ties are already in place before the vaccination and are actively maintained after it, regardless of the vaccination decision.

## CONCLUSION AND DISCUSSION

Previous health sociological studies on HPV have pointed out subtle power and subject-shaping aspects of the vaccination, especially through gendered risk discourses, and revealed frictions and tensions in the practical implementation of vaccination policies and campaigns (e.g. Casper & Carpenter, 2008; Gottlieb, 2018; Lindén, 2016; Rail et al., 2018). The focus has been predominantly on official campaigns and policy-settings, however, and girls' and nurses' own vaccine framings have been largely neglected. The present paper has addressed this gap by analysing both the Finnish eligible girls' and school nurses' vaccine framings in addition to the official campaign frame and by reflecting these three against one another.

The goal of Finland's official *Girls' thing* campaign is determined and justified in public health terms; it aims at cost-effective health benefit to the population by reaching herd immunity to reduce the prevalence of cervical cancer. This aim is sought as the sum of a knowledge-based decision by each responsible preadolescent girl. In this context, it is school nurses' task to embed the individual responsibility into girls' lives at schools, ensure their understanding of the official vaccination information and, in so doing, to provide them competence to make an informed vaccination choice.

However, our multi-sited analysis shows that school nurses do not merely perform the public health mission in their daily work, and this is not due to gaps in their vaccination knowledge (e.g. Nilsen et al., 2017). The nurses are thoroughly aware of the connection between HPV and cervical cancer but are reluctant to adopt an active opinion leader role to increase positive attitudes towards the vaccine among girls and their parents (e.g. Patel et al., 2017). HPV is only one duty among many in the busy everyday world of school health care and overly pushy promotion of the vaccine risks the nurses' long-lasting, trust-based relationships with girls and their parents. Consequently, the nurses try their best to find a balance between the official task of population-level cancer health promotion and the socially delicate process of building and maintaining themselves as trustworthy and understanding *vis-à-vis* diverse backgrounds and differing opinions of the girls and their parents.

Our analysis also reveals a tension between the official knowledge-laden campaign frame and the eligible girls' mundane vaccine framings. In partial contrast to some previous findings regarding the HPV views of eligible girls (Virtanen, 2019), we argue that Finnish girls aged 10 to 12 do not reflect upon the vaccination decision as deliberate and based on knowledge as the campaign stresses. This is not news in applied health research (e.g. Patel et al., 2016). However, based on our analysis, pointing out gaps in individuals' vaccination knowledge to bridge these gaps with more knowledge and more effective knowledge diffusion (e.g. Rosen et al., 2017) does not help in three respects.

First, HPV vaccination is not a matter of individual, knowledge-based decision-making for the vaccination-aged girls. Instead, it is framed both as a cohort-specific and gendered event centred around the needle prick and invoking everyday social ties. Classmates share the same experience, issues around vaccination are discussed with mothers, and school nurses serve as understanding, listening and trustworthy adults and health professionals in the educational environment.

Second, the eligible girls' knowledge of sex, the virus and cancer was unclear, but not to the extent that it could be tackled with more HPV education. Instead, sex, HPV and cervical cancer emerged as deeply interwoven with both one another and with other socio-cultural framings of the vaccine. This interwovenness makes the tangle hard to unravel based on the premise of individuals as bearers of knowledge. Instead, a detailed sociological analysis is required to unpack this *problématique*.

Sex is intrinsically connected to HPV because the virus is sexually transmitted. Although the interviewed girls were to some degree informed about this, sex was largely shunted aside in the interviews. A contradiction thus emerges between the medically reasoned aim of HPV and anchoring this aim in informed decision-making: on one hand, both doses of the vaccine are administered before the

(statistically average) sexual debut to secure its maximal effectiveness; on the other, the awareness of the role of sex was low because sex was not part of the lives of these 10- to 12-year-old girls.

The interviewed girls were also informed about HPV, but that information framed the vaccination in ways which sidelined the role of the virus. Instead of its direct target, HPV, the vaccination was framed through its ultimate target: cervical cancer. At the same time, this cancer vaccine framing naturalised the genderedness of the vaccination: the shots are given to girls because girls have wombs that can develop cancer. Consequently, the simplified ‘girls’ cancer vaccine’ frame concealed the key mechanisms between the virus, the vaccine and cancer and thus thinned down girls’ vaccination knowledge.

Third, this thinned-down HPV knowledge gibes with the official *Girls’ thing* campaign frame. The campaign guides the vaccination-aged girls to take care of their female health, absorb research-based knowledge and make knowledgeable vaccination decisions. However, instead of highlighting the virus–cervical cancer link, the sexual transmission of the virus and its gender neutrality, the campaign frame is straightforward (cf. Petherick et al., 2016): HPV is common among females and causes cervical cancer; cervical cancer is deadly; vaccination is the most effective defence against this insidious cancer; it is rational for one to consent.

Official vaccination campaigns seek the aim of herd immunity as the sum of informed, knowledge-based vaccination decisions by one individual at a time and reflect the principle of informed consent in so doing. Based on our analysis, however, this formula is problematic in the context of HPV vaccination given to 10- to 12-year-olds. The official Finnish HPVV campaign does emphasise knowledge-based decision-making, yet the vaccination knowledge is thinned down in the campaign materials: the preadolescent girls are addressed by a simplified and gendered ‘girls’ cancer vaccine’ frame that blurs the key mechanisms of the vaccination and prevents its comprehensive understanding. The school nurses share this official information but are also critical of the simplified and gendered vaccine framing and discuss girls’ vaccination knowledge in doubtful tones. Sharing more knowledge more effectively does not help, however, as the girls do not frame the vaccination as a question of knowledge-based choice to begin with; instead, it becomes part of their lives through gendered social ties and as a gendered and cohort-specific event pivoting around the needle prick.

Our study of vaccine framings highlights pivotal paradoxes of HPVV campaigns – and of public health messaging in general – in the era of individualism. First, HPVV is inherently social but marketed as an individualised choice. The ultimate target of the vaccination is herd immunity, the health intervention is justified by its benefit to the population, the shots are given in social encounters, and the direct target of the vaccination is HPV, which spreads through intimate contact. Yet the campaign addresses one individual at a time to rationally arm themselves, and not against intrinsically social HPV but against a cancer in the individual female body. Second, this cancer vaccine marketing conceals the key mechanism of HPVV: the virus–cervical cancer link, the sexual transmission of the virus, and its endemicity and gender neutrality. In so doing, and third, the campaign eventually contradicts itself: it pivots around the idea of a knowledge-based vaccination choice but at the same time narrows down the vaccination knowledge.

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## AUTHOR CONTRIBUTION

**Mikko J. Virtanen:** Conceptualization (lead); Data curation (equal); Formal analysis (equal); Funding acquisition (lead); Investigation (lead); Methodology (lead); Project administration (lead); Resources (lead); Software (equal); Supervision (lead); Validation (lead); Visualization (equal);

Writing-original draft (lead); Writing-review & editing (lead). **Saara Salmivaara:** Conceptualization (supporting); Data curation (equal); Formal analysis (equal); Funding acquisition (supporting); Investigation (supporting); Methodology (supporting); Project administration (supporting); Software (equal); Supervision (supporting); Validation (supporting); Visualization (equal); Writing-original draft (supporting); Writing-review & editing (supporting).

## DATA AVAILABILITY STATEMENT

The data are not publicly available due to their containing information that could compromise the privacy of research participants.

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## ENDNOTES

- <sup>1</sup> Until 2019, HPVV was given in Finland after obtaining a girl's assent and her guardian's consent. Written consent is no longer needed, and the consent procedure is more inexact and girl-centric. School nurses inform the eligible girls and their guardians about the upcoming vaccination on three occasions: during the regular health checks in primary school, through short visits to classes and by brief free-form messages through an official web interface named Wilma that is used by schools to inform guardians about instruction and teaching arrangements. Parents who wish to opt their girls out of HPVV must actively communicate that decision during health checks if they are present, by responding to the nurse's Wilma message or by phoning the nurse. However, it is also possible to vaccinate against the guardian's wishes if the school nurse assesses a pupil to be mature enough to make the choice independently. According to the interviewed nurses, this is extremely rare in the primary school context but happens at times from the seventh grade on. The girls can opt out by simply not coming to the nurses' premises when the shots are given on vaccination days or by telling the nurse that they do not want the vaccine.
- <sup>2</sup> Boys were added to Finland's school-based HPVV programme as of 23 March 2020, when our study was in its final phase, with vaccinations set to begin in autumn 2020. The decision to include all genders in the programme was not based on public debate around gender issues but was grounded on public health and cost-benefit terms (cf. Paul, 2016). As boys' vaccinations had not begun and as we examine the transitions in the Finnish official HPVV campaign and school nurses' insights after the boys' inclusion in our ongoing follow-up study, we do not focus on these issues in the present paper.
- <sup>3</sup> More than 98 per cent of the children born in 2017 have received the 5-in-1 vaccination and the MMR vaccine has been given to approximately 96 per cent of infants.
- <sup>4</sup> All interviews were conducted and recorded in Finnish, then transcribed verbatim and pseudonymised. The quotations in this paper were translated by the authors into English as semantically accurately as possible.

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