



Short communication

What lies behind the low rates of vaccinations among nurses who treat infants?

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ABSTRACT

Background: In most countries rates of immunizations of health care workers with recommended vaccines are not satisfactory.

Objectives: To identify reasons behind the low rates of compliance of Israeli nurses in Mother and Child Healthcare Centers (MCHC) with an official request for pertussis vaccination.

Methods: Three focus groups were conducted. Qualitative analysis identified themes that could explain the nurses' non-compliance.

Results: Trust in health authorities was low, mainly following the A/H1N1 purported influenza pandemic. In addition, nurses did not see the importance of being role models for the public and demanded the autonomy to decide whether to receive vaccinations. The nurses differentiated between their role as nurses and their personal life, expressed fear of new vaccines and exhibited low levels of risk perception. Misconceptions regarding vaccinations were expressed by the nurses.

Conclusions: Antivaccinationist ideas were expressed by MCHC nurses and these attitudes may have led to non-compliance with vaccination guidelines.

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1. Introduction

Pertussis vaccines have been in routine pediatric use for 60 years. An adult pertussis vaccine was developed in 2005. Because immunity wanes over time, reimmunization of health care workers (HCW) with one dose was recommended by the CDC in 2006 [1]. In Israel the pertussis vaccine was recommended to HCW's in 2009. Reimmunization is imperative to prevent HCWs from transmitting pertussis to their patients, especially to infants in whom the case fatality rate is high [2]. Acceptance of vaccinations among HCW is low for influenza and other vaccines [3]. Low acceptance of vaccinations among HCWs has been reported all around the world, including Israel, mainly for influenza but also for other vaccines [4–8]. Campaigns targeting HCWs were only partially successful in increasing levels of vaccinations [9,10].

Most studies looked for the reasons of non-compliance with influenza vaccination by HCWs [8,11–13]. Recently Miller et al. [14] reported that low collective awareness of tetanus, diphtheria and acellular pertussis vaccine (Tdap) and low perceived risk to the diseases added to the low levels of vaccination among US adults. Poland and Jacobson [15] highlighted the struggle against the antivaccinationists and their ideas against vaccinations. These

antivaccinationist's ideas may also exist among HCWs and may compromise compliance with recommended vaccinations.

In the summer of 2010 pertussis was diagnosed among 20 nurses and physicians in obstetric and neonatal departments in a large hospital in Haifa, Israel. The Ministry of Health (MOH) recommended immunizing the HCWs in these departments, and in two nearby hospitals. In addition, nurses working with infants in the Mother and Child Healthcare Centers (MCHCs) in this district were also asked to immunize themselves. After three months only two percent of the MCHC nurses did so.

The aim of this study was to identify the barriers and reasons why these nurses did not vaccinate themselves against pertussis despite the fact that the pertussis vaccine is the vaccine these nurses administer to infants every day. These barriers may not be specific towards the pertussis vaccine and may help understand non-compliance towards other vaccines.

2. Methods

Three focus groups with nurses working in the MCHC were conducted ($n=9$, $n=8$, $n=8$). The discussions were transcribed and qualitative analysis was performed. For further details of the study sample and analysis see [Appendix A](#).

3. Results

Two major and two minor themes were identified based on qualitative methods as described in the literature [16].

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3.1. Lack of trust in the health authorities

The majority of nurses in all focus groups expressed, to varying degrees, lack of trust in the health authorities regarding their recommendation to be immunized. This was related to the recent influenza pandemic.

“...there was a drastic change in trust...”

“...I feel a real crisis in trust due to the swine flu affair.”

The general mistrust generated during the A/H1N1 pandemic was directed to the pertussis vaccine when they were asked to vaccinate themselves.

“...now in the last vaccine (the pertussis) I understood that I was doing this all without thinking, because someone there decided...”

Within this general theme of mistrust we identified some sub-themes:

3.1.1. Treatment of nurses by the employer (MOH)

The nurses expressed their frustration with the administration and complained of the treatment they received from the administration that had no respect for them as individuals.

Some of the comments were related to the pertussis vaccine

“They should treat us like human beings.”

“...we are not soldiers...”

Most of the comments were related to the influenza vaccine:

“...we were threatened, we got multiple emails asking who got vaccinated and if not why not...”

3.1.2. The right for autonomy

The nurses expressed strong feelings against the MOH's recommendation for HCW's to be vaccinated. They do not want to be told what to do and want to make the decision themselves.

Regarding pertussis:

“One nurse in the hospital got pertussis, and infected someone or not- don't know. So then 'wham' all the nurses have to get immunized, so no one got immunized and they are right!...what are we?- in Soviet Russia?...on principle I am not getting vaccinated this year.”

Regarding influenza:

“...if I want to, I will get the vaccine, I am a grownup, I am responsible, if I want I will get vaccinated, it will not help whatever he says (the MD).”

3.1.3. Mistrust of health information

Many nurses (but not all) had misconceptions about the vaccines. They also felt that the information they received was not adequate and did not answer their needs. They felt the information they received did not help them counsel families or make decisions regarding their vaccinations. This was in the context of their mistrust in the MOH.

“With the swine flu there was a lot of disinformation at the beginning, there was a lot of confusion at the beginning.”

“...you can't brain wash us, they expect us to forget what they said three months ago or a year ago and start again, part of what we did was not so good, now we do something else. ...you can do that at work but not in my private life, I can't...”

3.2. The split between professional role and personal life

Generally, nurses spoke of their two roles: their professional role and their personal lives. They perceived these two roles as separate.

“no, no, no, we do not mix personal life and work.”

3.2.1. The right for autonomy

Within this conflict between self and profession they wanted to be given the opportunity to decide for themselves if to get vaccinated. They knew they had to work by “the book” regarding the infants they treat. However, they do not accept the recommendations blindly for themselves.

“...the line runs between me giving vaccines and receiving vaccines, I can personally be against vaccinations but am not against the national policy regarding vaccines, whoever wants can get vaccinated...”

“I don't want anybody to make me get immunized, I do not want to, even if it is mandatory, even if it is pertussis, I don't want to get it.”

3.2.2. Being a role model

Most nurses did not see themselves as role models and did not think they should reveal their personal behaviors or beliefs to patients who ask them about themselves. However, a few nurses found their decision not to be immunized problematic and debates between nurses started in all focus groups.

“What I do as a person and my beliefs are not relevant at all as a professional.”

3.3. Fear of side effects

The nurses reported on their experiences of side effects of vaccines. They felt that the risk of contracting the diseases and the severity were not worth the risk of being injected with a vaccine that was not in use long enough to know what the side effects were. This was directed towards both influenza and pertussis vaccines, and they felt the authorities were using them as guinea pigs.

3.4. Risk perception

Many nurses did not perceive themselves at risk for the diseases and the perception of severity of the diseases was not high.

“I think that at my age I should be immune to pertussis, I am sure I was exposed during my life, I am not ten years old, and not twenty, and also, how many nurses had pertussis and infected others?”

They wanted to be tested for levels of immunity to pertussis and not blindly assume that they were at risk of contracting the disease.

“I would be willing to do an immunological test and if I don't have antibodies (for pertussis) I would take the vaccine.”

The nurse thought the vaccines were very important for children and infants. However, for adults, that was another story:

“We need to separate vaccines for children and adults. We always want to immunize the little ones and protect them, but we ourselves? Why should we? Why do I need it...”

4. Discussion

This study was initiated to identify reasons for the low rate of compliance with the pertussis vaccine among MCHC nurses in Israel. However, from the discussion groups it was apparent that

the nurses' attitudes towards vaccines in general and pertussis specifically were affected by their experiences with seasonal and A/H1N1 influenza vaccines. As the A/H1N1 influenza scare preceded the request to be vaccinated against pertussis by less than a year it may be assumed that the negative experience these nurses expressed regarding the influenza vaccines may have affected their attitudes towards other vaccines and not the opposite way round.

In our study the nurses expressed an array of negative feelings against vaccines, these feelings include anger at the authorities, anger at loss of independence, fear of a new vaccine (being a guinea pig), fear of the side effects, and more. It seems that these feelings had a major effect on their decision making and led to negative attitudes towards their individual acceptance of the vaccinations, preventing them from vaccinating themselves for pertussis, not only seasonal and A/H1N1 influenza. This is especially striking as their everyday routine work includes immunizing infants with this same pertussis vaccine.

A major theme that emerged from our qualitative data was the feeling of mistrust the nurses expressed towards the health authorities. This mistrust was mainly associated with A/H1N1 and seems to have added to the mistrust expressed towards the next vaccine they were asked to immunize themselves for, which happened to be pertussis. This mistrust is similar to the mistrust described by the antivaccinationists [15].

The nurses expressed the importance of having autonomy in the decision to be immunized against pertussis. Although the nurses followed protocol and accepted authority in treating patients, they did not accept authority to govern their own healthcare. This desire for autonomy was due to both a mistrust of the health authorities, as well as a perception that their personal and professional lives were separate. They also thought their clients had the same right to decide for themselves whether or not to immunize their children. They accepted the parents' opinions about vaccinating their children and respected this. They demanded this same respect for themselves.

Interestingly enough, the fact that they themselves can infect the infants that they come in contact with came up only once in all the discussions, and was not discussed in depth. This issue seems not to bother them and they do not see the ethical problems related to the possibility of their being infectors. There is a need to increase the nurses' awareness of the unethical aspect of not being immunized and increase the perception of themselves as transmitters of diseases.

The ideas the nurses expressed regarding the difference between their professional role and their private life gives the impression that they regard their profession as technical. They are the authorities' technical arm or service, they are not there to think or make decisions, and they work by the "book". The nurses differentiate between adult and infant vaccines and routine and seasonal vaccines. It seems that the authorities cannot expect the nurses to comply with the recommendations for the pertussis vaccine even though it is a vaccine they immunize children with daily.

As this is a qualitative study including a small group of nurses in only two areas in Israel we cannot generalize to other HCWs groups. However, similar results have been reported in other studies where issues such as low perceived risk and fear of adverse reactions were found [7,8,10,17]. For example, Hollmeyer et al. [16] identified a wide range of misconceptions or lack of knowledge about influenza, and Virseda et al. [7] reported that fear of adverse effects was one of the main arguments against the vaccine among HCWs. In addition, this study illuminates a major antivaccinationist idea: the mistrust in the medical establishment [15]. This adds to our in-depth understanding of why HCWs may not immunize themselves. We suggest that the non-compliance is embedded deep in the mistrust the nurses have towards the health authorities and

the nurses' desire for autonomy. It seems that these two overall themes that were identified as reasons for non-compliance are not vaccine specific, and will affect any compliance with recommended vaccinations.

5. Conclusions

The nurses expressed antivaccinationist ideas and these may be preventing them from being immunized as recommended. Emotions and attitudes such as fear of the vaccines, mistrust in the health authorities, a demand for autonomy, low risk perception, perceiving themselves as private persons and not only nurses, in addition to not perceiving themselves role models, lower the compliance with vaccine guidelines for HCWs. These attitudes and emotions may influence their actions toward other vaccines in the future. Stemming from this study an ethical problem is raised: to what extent should the health authorities give autonomy regarding vaccination to HCWs working with vulnerable populations? Additional research and interventions to increase trust between nurses and the authorities and knowledge regarding vaccines is needed.

Appendix A.

A.1. Methods

After an outbreak of pertussis in a nearby hospital the Ministry of Health (MOH) took the opportunity to approach the nurses working with infants in the Mother and Child Healthcare Centers (MCHCs) in the same district and asked them to adhere to the existing recommendations for pertussis vaccinations and vaccinate themselves. A letter signed by the Sub-district Health Officers was sent to all MCHCs with the pertussis vaccines asking the nurses to vaccinate themselves. After three months only two percent of the nurses did so.

A.2. Study design

The qualitative data for this study were gathered using the focus group method. The second author (Shiran Bord) served as the facilitator in the three focus groups held between August and November 2010. A research assistant served as an observer. The facilitator was not affiliated with the local public health authorities and the nurses regarded her as an "outsider" to the organization. Each focus group lasted an average of 90 min and 8–9 nurses attended each one. Each session was audio-recorded and written notes were taken. The audio-recordings were transcribed verbatim.

A.3. Sample

Nurses working in the MCHCs managed by the Ministry of Health in the Haifa district were invited to take part in the focus groups. This was a convenience sample not based on vaccine status. Two focus groups including 17 nurses were conducted in the sub-district of Haifa and one focus group was conducted in the sub-district of Hedera including eight nurses. The two sites were chosen to capture a variety of opinions in different areas. The nurses had an average age of 45 and all were licensed public health nurses, about 40% of them had an academic degree in addition to being registered nurses.

A.4. Focus group discussion guide and procedure

A discussion guideline was developed during meetings of the research team (all authors) to ensure that the groups were facilitated consistently. The discussion guidelines included issues

related to what nurses thought about vaccines in general and specifically pertussis and feelings towards vaccinations, perceived effectiveness of vaccination, differences between population groups such as children and adults, chances of contracting the diseases, side effects of the vaccines and what they thought could increase compliance. After the first focus group the research team met and discussed the results and guidelines. The facilitator then went back to conduct two more groups, there were no major changes in the guidelines between the groups.

After the first two focus groups were conducted and an analysis was performed and categories and themes were identified, another group was conducted. As no new themes emerged there was no need for additional groups.

The facilitator started by asking the participants why they thought people get vaccinated, and then moved on to ask what they thought about the effectiveness of vaccines. The discussion was mainly about the seasonal influenza vaccines and the pertussis vaccine but other vaccines were also mentioned. Dialogue between the participants was encouraged and the facilitator intervened infrequently in the discussion to bring up topics not discussed yet according to the guidelines.

A.5. Data analysis

Data were analyzed qualitatively according to guidelines [18], i.e., dividing the text into meaningful units, identifying categories in the text, and finally explaining and interpreting the data. Three members of the research team (Baron-Epel, Bord, Madjar) read the transcripts and coded and organized the data to identify key categories. The lists of categories were compared and where inconsistencies were found they were resolved by first revisiting and reviewing the data then reaching an agreement through discussion. The researchers then went back and reread all the transcripts and identified the themes running through the focus groups [19]. The same process was used to attain a unified list of two major, and two minor themes.

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