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Research Article

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Human Papilloma Virus (HPV) Vaccine Acceptance for Girls Among Jewish and Muslim Parents in Israel

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Abstract

Several hundred species of Papillomaviridae (papillomaviruses) have been identified. The Human Papilloma Virus (HPV), transmitted by sexual intercourse, is the most common venereal disease in the western world, and the main cause of cervical cancer. Two approved vaccines are recommended during puberty to vaccinate recipients before they are sexually active. Most parents decide to administer the vaccine, but some oppose the vaccine for different reasons. Various factors can affect parents' decision to vaccinate their daughters. The goal of this study was to examine Israeli parents' attitudes and knowledge about the HPV vaccine, and the differences between them in their decision whether to administer the vaccine to their daughters. A cross-sectional study examined the knowledge, behavioral beliefs, intention-to-administer HPV vaccines, and self-reported screening behavior of 150 Jewish and Muslims parents. Results indicated a link between knowledge and attitudes toward the vaccine. The more the knowledge, the higher parents' intention was to administer the vaccine. Significant differences were found between Jewish and Muslim parents' knowledge about the HPV vaccine. Religious parents knew less and were less inclined to vaccinate. We concluded that it is very important to clarify the factors influencing parents' decision to vaccinate their daughters.

Keywords: Human Papilloma Virus (HPV), HPV vaccine, parents' attitudes, knowledge

Introduction

Perceptions and attitudes about vaccinations are affected by culture, social norms, and other health-related and moral aspects. In Israel, the Human Papilloma Virus (HPV) vaccine has been included in the 'health basket' since 2012. However, unlike in other countries, the HPV vaccine is not mandatory in Israel. The papilloma virus could be the most common venereal disease in the western world, and is the main cause of cervical cancer. The human papilloma virus is a type of virus that includes over 100 types of the Papillomaviridae family. It is transmitted during sexual intercourse [1, 2], and is the most common sexually transmitted infection in the world. It is estimated that in the US about 75% of sexually active individuals would be infected with HPV at least once in their lifetime [3]. The main diseases that could develop from the virus are condyloma (genital warts), pre-cancerous changes in the cervix, cervical cancer, and other types of cancer [2, 4]. 300 million people worldwide are infected annually, and about 250,000 die of the disease. In Israel, 160 women are diagnosed with cervical cancer every year, and about 70 die of the disease [5].

Of the various types of HPV, 35 are contagious in the genitals. The low risk types cause genital warts, and the high risk types were found to significantly contribute to the development of lesions and cancer [5]. Most cases are self-healing and the infection disappears itself (because the damage is to short-lived cells, which does not destroy cells and does not stimulate reactions from the immune system). However, in some cases the virus remains dormant, and the infected person becomes a carrier. Prolonged infection can increase the chances of malignant development. The powerful connection between a prolonged infection and cancer development has prompted the need to create a vaccine. The vaccine is produced by means of genetic engineering. The virus-like particle contains no cellular material so that no contagion occurs. The goal is to stimulate an immunological reaction [6]. The papilloma virus is released from the body after 6-18 months, but some cases grow to various types of cancer or death [3]. The virus becomes dormant in the cell, which either creates a permanent infection or becomes a carrier [2, 4, 6].

The development of the infection or disease can be prevented by avoiding sexual activity, or having sexual relations with permanent partners and a monogamous relationship. Use of contraceptives could also reduce contagiousness, but not entirely. Testing for pre-cancerous lesions could prevent the risk of contagion. Pap tests have significantly reduced cervical cancer morbidity and mortality [5]. Despite all these options, HPV vaccines are necessary to prevent the risk of infection [3].

There are two HPV vaccines: Cervarix and Gardasil. Both protect against HPV 16 and 18, and Gardasil also prevents the strains responsible for condyloma [7]. In Israel, as mentioned, HPV vaccines are not mandatory, but it has been considered whether to include the vaccine in the routine vaccination programs, i.e. to fund the vaccine and include it in regular frameworks such as the education system [2, 8].

Both vaccines have been approved and recommended by the Ministry of Health and by the Israeli Pediatric Infectious Diseases Society and pediatricians' organizations [5].

Despite the availability of the vaccine, doubts have been raised as to its effectiveness and safety, alongside dilemmas concerning its moral aspect. It is recommended to administer the vaccine at a young age (from age 9 onwards), and thus the moral quandary: it is assumed that at this age there is neither sexual activity nor multiple partners, which would increase the probability of contagion [9].

Recent research has indicated that the parents' cultural background affects the decision whether to vaccinate their children. However, the reasons for the differences between those who decide to administer the vaccine and those who do no are not fully clear. It could be ideological, economic or religious reasons, lack of awareness, or something else entirely [10, 11]. A link has been found between mothers' degree of religiosity and their decision to administer the HPV vaccine, so that religious mothers tend to vaccinate less than non-religious mother do [12]. Cultural beliefs were also found to affect the attitude to vaccination in general [13]. Every society has its 'local vaccination culture', namely beliefs and knowledge about vaccines, their effectiveness in preventing diseases, and in general – the place of science and medicine in society and their degree of authority [14]. Dubé and colleagues (2013) presented a model that links the cultural and social context with vaccine hesitancy and relevant decisions to vaccinate [14]. Accordingly, the cultural environment influences the decision to accept or reject a vaccine. The environmental factors include the historic, political and sociocultural context, the government's vaccination policy (including policy regarding information dissemination), recommendations by healthcare professional (doctors, nurses, pharmacists), and the media (TV, radio, internet and social networks, and anti-vaccine activists). Any one of these factors could have an impact if people believe in them. For instance, if doctors and nurses are trusted, then people who get advice from them will agree to vaccinate [15]. If people trust the media, then they will believe it, and make a decision according to its recommendation. Many people are afraid of vaccinations, and prefer to trust certain factors over others; for example, they might prefer to believe news items that promote public fear rather than scientific research or doctors. The internet has become a source of information that, for many people, replaces professional advice. Activists who publish opposition to vaccines on social networks affect parents' decisions whether to accept or reject vaccinations.

In addition to social factors, the family has a strong impact, especially in cultures with strong family values, in which other family members' opinions influence the decision to vaccinate [16]. For instance, regarding the HPV vaccine, even if the girl's mother agrees to the vaccine, the father or grandmother might have a different opinion. Some fathers are afraid that their daughter might engage in sexual behavior at a young age, and therefore object to the vaccine. It follows that in this type of culture, other family members could affect the decision whether to vaccinate or not.

Other barriers to administering the HPV vaccine are its high cost, lack of time, lack of knowledge, lack of medical insurance, fear of sexual misconduct, and fear of side effects [17].

In view of the above, the goal of the present study was to examine the factors that affected the objection to the HPV vaccine among parents from different sectors in Israel (Jews and Muslims), as well as among parents who work in the health system vs. parents who do not, and to examine their attitudes and the potential factors that could explain their objections. Additionally, the relationship between vaccinating behaviors and culture and religion were examined, as well as the differences between the sectors, since different cultures and religions affect the attitude to early sexual activity and the need for vaccination. The findings could contribute to improving foci, in which the acceptance of the HPV vaccine is low (also among healthcare professionals), to understanding the reasons for vaccinating or not, to increasing awareness and reducing human risk and financial costs, and to creating a therapeutic intervention program that is appropriate for populations that oppose the HPV vaccine.

The following hypotheses were derived from the literature review:

H1: A link will be found between the degree of knowledge about the HPV vaccine and the intention to vaccinate, so that the more the knowledge, the greater the intention to vaccinate.

H2: A difference will be found in knowledge and attitudes about the HPV vaccine between groups of parents who are pro and con vaccination.

H3: A difference will be found between Jews and Muslims in knowledge, attitudes and intention to administer HPV vaccines.

H4: A negative relationship will be found between the degree of religiosity and the intention to vaccinate, so that the more religious parents are, the less willing they are to administer HPV vaccines.

Method

Research design and procedure

This descriptive, correlational, cross-sectional study examined the knowledge, behavioral beliefs, intention-to-administer HPV vaccines, and self-reported screening behavior of Jewish and Muslim parents of daughters under the age of 18.

Participants

The research was based on a convenience sample of 150 parents of daughters (18 years and younger). The data were collected via forums of parents and health workers on the internet. Questionnaires were distributed to 180 parents; however, only 150 (83.3%) fully completed questionnaires were returned.

Instrument

A structured questionnaire was used to collect data for the proposed study. The questionnaire included three parts: sociodemographic data, attitudes to the HPV vaccine, and degree of knowledge about the HPV vaccine.

The sociodemographic data included questions about age, gender, marital status, nationality, religiosity, country of origin, current place of residence, and whether or not the parent worked in the healthcare system.

The second part of the questionnaire included statements about vaccinations in general (for example, "Vaccinations generally protect against diseases"), beliefs about the HPV vaccine, and questions about the intention to vaccinate under various conditions. The respondents' replies were measured on a Likert scale of 1 ("Do not

agree at all") to 5 ("Agree completely"). A high score indicated low intention to administer the HPV vaccine.

The third part included a number of true facts about HPV and its vaccine. The respondents' replies were measured on a Likert scale of 1 ("Do not agree at all") to 5 ("Agree completely"). A high score indicated more knowledge about the HPV vaccine.

Procedure

The study began after approval from the ethics board of the author's institution. The respondents were approached on parents' internet forums and healthcare professionals' internet forums. The questionnaire was sent online by means of Google Forms, and all participants signed a consent form. The questionnaires were filled out anonymously. They were sent directly to the researchers' computer. All the filled-out questionnaires (N=150) were used.

Data analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS) Version 21 for Windows. Descriptive statistics were used to depict the demographic characteristics of the sample. Means and standard deviations of the responses were calculated. Pearson correlations were calculated to examine the relationship between the degree of knowledge about the HPV vaccine and the intention to vaccinate, and the relationship between the degree of religiosity and the intention to vaccinate. T-tests for independent samples were used to examine the differences between Jews and Muslims, and the differences between knowledge and attitudes about the HPV vaccine.

Results

The sociodemographic data of the respondents are summarized in Table 1.

Table 1: Sociodemographic data of the respondents (N=150)

Variable		N	%
Age	19-25	78	52.1
	26-35	51	34.2
	36-53	12	14.1
Gender	Male	51	34
	Female	99	66
Marital status	Single	97	64.7
	Married	47	31.3
	Divorced	5	3.3
	Widowed	1	.7
Nationality	Jewish	78	52.0
	Muslim	55	36.7
	Christian	12	8.0
	Druze	2	1.3
	Other	3	2.0
Religiosity	Religious	41	27.3
	Traditional	33	22.0
	Non-religious	72	48.0
	Other	4	2.7
Education	High school	12	8.0
	Registered nurse	2	1.3
	Academic (BA)	36	24.0
	Academic (MA and MD/PhD)	77	51.3
	Other	23	15.3
Healthcare system employee	Yes	78	52
	No	72	48

The first hypothesis (H1) posited that a link would be found between the degree of knowledge about the HPV vaccine and the intention to vaccinate, so that the more the knowledge, the more positive the attitude to vaccination is. Pearson correlations found a positive relationship between knowledge and intention ($r=.551$; $p<0.001$).

The second hypothesis (H2) assumed that a difference would be found in knowledge and attitudes about the HPV vaccine between groups of parents who were pro and con vaccination. A t-test for independent samples was conducted to test the hypothesis. The results are presented in Table 2, and indicate a significant difference between the intention of parents who are for and against vaccination, but not in their degree of knowledge about HPV.

Table 2: Difference in knowledge and attitudes among parents who were pro and con vaccination

		N	Mean	SD	t
Attitude	Intend to vaccinate	100	3.63	0.58	5.14**
	Do not intend to vaccinate	11	2.67	0.63	
Knowledge	Intend to vaccinate	100	3.66	0.70	0.20
	Do not intend to vaccinate	11	3.61	0.60	

**p<0.01

The third hypothesis (H3) posited that a difference would be found between Jews and Muslims in knowledge, attitudes and intention to administer HPV vaccines. A t-test for independent samples was conducted to test this hypothesis. The results are presented in Table 3. Differences were found between Jews and Muslims. Jews know significantly more than Muslims about HPV, and are significantly more prepared to administer more doses of the vaccine. However, no differences were found in attitudes and willingness to vaccinate.

Table 3: Difference Jews and Muslims in knowledge, attitudes and intention to administer HPV vaccines

		N	Mean	SD	t
Attitude	Jews	78	3.40	0.61	1.37
	Muslims	54	3.55	0.68	
Knowledge	Jews	78	3.65	0.66	2.21*
	Muslims	54	3.38	0.76	
Intention to vaccinate	Jews	78	1.46	0.70	1.56
	Muslims	55	1.29	0.50	
Number of doses	Jews	72	2.68	0.60	5.03**
	Muslim	52	2.06	0.78	

*p<0.05 **p<0.01

Hypothesis 4 (H4) assumed a negative relationship between the degree of religiosity and the intention to vaccinate. Pearson correlations were conducted to examine the correlations between degree of religiosity and attitudes, knowledge and intention to vaccinate. The results are presented in Table 4. A negative relationship was found between religiosity and knowledge about HPV – the more religious parents were, the less knowledge they had about HPV. Knowledge was also related to intention to vaccinate and the number of doses, so that the more knowledge there is, the more intention there is to vaccinate, and the more parents are willing to administer the full dosage needed. No significant relationship was found between degree of religiosity and attitudes and intention to vaccinate.

Table 4: Pearson correlations between degree of religiosity and attitudes, knowledge and intention to vaccinate

	Attitude	Knowledge	Degree of religiosity	Intention to vaccinate	Number of doses
Attitude	-	.551**	0.015	-.436**	0.098
Knowledge		-	.244**	-.165*	.179*
Degree of religiosity			-	-.104	.346**
Intention to vaccinate				-	-.13
Number of doses					-

*p<0.05 **p<0.01

In addition, differences were found in the level of knowledge and the intention to vaccinate between parents who were employees of the healthcare system and those who were not. Employees of the healthcare system knew significantly more about HPV and had more intention to administer the HPV vaccine compared to parents who were not, although no significant result was found for attitude. Table 5 depicts the results.

Table 5: Differences in attitude, level of knowledge and intention to vaccinate between employees of the healthcare system and those who are not

		N	Mean	SD	t
Attitude	Healthcare employee	78	3.42	0.66	-.868
	Not healthcare employee	71	3.51	0.62	
Knowledge	Healthcare employee	78	3.69	0.71	2.691**
	Not healthcare employee	71	3.38	0.69	
Intention to vaccinate	Healthcare employee	78	1.41	0.67	0.209*
	Not healthcare employee	71	1.39	0.57	

*p<0.05 **p<0.01

Discussion

The present study examined how factors like knowledge about the HPV vaccine, parents' attitudes and intention, as well as religiosity and cultural differences, affect the decision to administer the vaccine. Differences between the Jewish and Muslim sectors, and between healthcare system employees and others, were also examined.

As posited, a relationship was found between knowledge and intention to vaccinate. It was found that the more parents know about the HPV vaccine, the more they are willing to vaccinate their daughters. Previous studies have shown that lack of knowledge about HPV and the vaccine is a barrier to vaccination [18].

The second hypothesis was that there would be differences in knowledge and attitudes to the HPV vaccine between groups of parents who were pro and con vaccination. This hypothesis was partially corroborated: a significant difference in the parents' attitudes, but not in their knowledge about the HPV vaccine. Previous studies have shown that the chances of administering a vaccine rise dramatically when there is more knowledge and awareness [19], and that more knowledge about the disease and its risks increases the intention to administer the vaccine [6, 20]. However, it is possible that other mediating or indirect factors could lead to the decision whether to vaccinate or not.

The third hypothesis, which posited that a difference would be found between Jews and Muslims in knowledge, attitudes and intention to administer HPV vaccines, was partially supported. Jews were found to know significantly more than Muslims about HPV, and were significantly more prepared to administer more doses of the vaccine. However, no differences were found in attitudes and intention to vaccinate. These findings indicate that inter-cultural differences could affect the intent/decision to administer the HPV vaccine. It could be that that the reason for these differences is rooted in the amount of available information [18, 21]. Here we found a difference between the level of Jewish and Muslim parents' knowledge, and this probably affects the decision to administer the vaccine [14]. Lai et al. (2017) found that communities described a need for more in-depth information about the HPV vaccine, and culturally and linguistically appropriate educational materials [21]. In addition, culturally-competent delivery of HPV information through the healthcare system sources may be important in improving knowledge and acceptability of the HPV vaccine among diverse families.

The fourth hypothesis, which assumed that parents' degree of religiosity would negatively affect their intention to administer the HPV vaccine, was partially corroborated. A link was found between religiosity and level of knowledge – the less religious parents were, the more they knew about the HPV vaccine. Knowledge was also linked to intention to vaccinate and the number of doses so that the more knowledge there is, the more intention there is to vaccinate, and the more parents are willing to administer the full dosage needed. No significant relationship was found between degree of religiosity and attitudes and willingness to vaccinate. It seems that the more religious populations are less exposed to information about the vaccine. Nevertheless, religious parents' intention to vaccinate is similar to that of less religious parents.

The present study has also examined the differences between employees of the healthcare system and other parents. Differences were found on knowledge, but no differences were found on attitudes and intention to vaccinate. It is obvious that people in the healthcare professions know more about HPV and the vaccine, and if knowledge is an important factor that affects the intention to vaccinate, the general population's knowledge about HPV and the diseases that the papilloma types could cause should be increased.

Conclusions

As a result, it is very important to clarify the factors influencing parents' decision to vaccinate their daughters. In conclusion, the results of this study indicate that a proper background has been partially provided about the acceptability of the vaccine between Jewish and Muslim parents. Increasing the knowledge about HPV infection and vaccination is needed. Furthermore, the study shows how important it is for nurses to raise the knowledge level of parents regarding HPV vaccination, particularly among religious and Muslim populations, among whom the knowledge about HPV and the vaccine, as well as willingness to vaccinate, are low.

Limitations

The sample is relatively small, and does not necessarily represent the varied Jewish and Muslim population is Israel, or the healthcare professionals, and therefore generalizing conclusions should be made with caution. In addition, all respondents who consented to complete the questionnaire were included in the study, and there is a high probability of selection bias. It is recommended to conduct further Randomized Control Trials (RCT), which examine the issues on a larger sample that represents greater parts of the population.

How might this information affect nursing practice?

Nursing staff and related interventions should address barriers to HPV vaccination and emphasize the high vaccine effectiveness, the high likelihood of HPV infection, and its complications. These barriers are primarily related to parents' concerns that vaccination could promote adolescent sexual activity. Low perceived vaccine safety and anticipated side effects of the HPV vaccine (such as pain or discomfort) are also reasons for low acceptability.

Recommendations from physicians or nurses to administer the HPV vaccine should raise the HPV vaccine acceptability rates. Furthermore, nurses should promote HPV immunization programs among groups that are less likely to be vaccinated because of cultural and religious barriers. Such programs are expected to have a significant impact on public health.

References

1. Cunningham-Erves J, Talbot LL, O'neal MR, Ivankova NV, Walston KH (2016) Development of a Theory-based, Sociocultural Instrument to Assess Black Maternal Intentions to Vaccinate Their Daughters Aged 9 to 12 against HPV. Journal of Cancer Education 31: 514-521. doi: 10.1007/s13187-015-0867-3
2. Hakim M & Peled-Raz M (2007) The HPV vaccine: If and how to include it in the routine vaccination program. Refuah U'Mishpat (Medicine and Law) 37: 55-65.
3. Jones G, Perez S, Huta V, Rosberger Z & Lebel S (2016) The role of human papillomavirus (HPV)-related stigma on HPV vaccine decision-making among college males. Journal of American College Health 64: 545-554. doi: 10.1080/07448481.2016.1192542
4. Reiter PL, Gerend MA, Gilkey MB, Perkins RB, Saslow D, et al. (2018) Advancing Human Papillomavirus Vaccine Delivery: 12 Priority Research Gaps. Academic Pediatrics 18: S14-S16. doi: 10.1016/j.acap.2017.04.023
5. Shahor-Meyuhas Y (2010) HPV vaccines. The Medical – Israeli Physicians Website. Retrieved from http://www.themedical.co.il/Article.aspx?f=33&s=2&id=2916 (Hebrew)
6. Garland SM, Kjaer SK, Muñoz N, Block SL, Brown DR, et al. (2016) Impact and Effectiveness of the Quadrivalent Human Papillomavirus Vaccine: A Systematic Review of 10 Years of Real-world Experience. Clinical Infectious Diseases 63: 519–527. doi: 10.1093/cid/ciw354
7. Porterab RM, Aminab AB, Bednarczykabc RA, Omerabcd SB (2018) Cancer-salient messaging for Human Papillomavirus vaccine uptake: A randomized controlled trial. Vaccine 36: 2494-2500. doi: 10.1016/j.vaccine.2018.01.040

8. Sarid A, Shraga Y, Pereg A & Reuveni H (2015) The effect of mothers' ethno-cultural background and their health beliefs on infant vaccination behaviors. Bitahon Sotziali (Social Security) 96: 87-112.
9. Herrero R, González P & Markowitz LE (2015) Present status of human papillomavirus vaccine development and implementation. Lancet Oncology 16: e206-16.
10. Alberstein M & Davidovich N (2010) Healthcare law and public health: An Israeli perspective. Mehkarey Mishpat (Legal Studies) 2: 549-588.
11. Lechuga J, Weinhardt LS & Swain G (2011) Impact of Framing on Intentions to Vaccinate Daughters against HPV: A Cross-Cultural Perspective. Annual Behavioral Medicine 42: 221-226. doi: 10.1007/s12160-011-9273-1
12. Itzkovich N (2014) Attitudes of mothers of 9-17-year-old daughters to the HPV vaccine. 10th Annual Conference on Health Policy. National Institute for Research of Health Policy and Services. (Hebrew)
13. Stephens DP, Thomas TL & Eaton A (2016) Identifying Health Beliefs Influencing Hispanic College Men's Willingness to Vaccinate against HPV. American Journal of Sexuality Education 11: 267-286. doi.org/10.1080/15546128.2016.1198733
14. Dubé E, Laberge C, Guay M, Bramadat P, Roy R & Bettinger JA (2013) Vaccine hesitancy. Human Vaccines & Immunotherapeutics 9: 1763-1773.
15. Kim J & Kang H (2014) Mothers' knowledge, health beliefs and intentions to vaccinate their daughters against human papillomavirus in Korea. Contemporary Nurse 47: 97-107. doi: 10.5172/conu.2014.47.1-2.97
16. Ben Natan M, Kabha S, Yehia M & Hamza O (2016) Factors that Influence Israeli-Muslim Arab Parents' Intention to Vaccinate their Children against Influenza. Journal of Pediatric Nursing 31: 293-8. doi: 10.1016/j.pedn.2015.12.014
17. Moran MB, Murphy ST, Chatterjee JS, Amezola-Herrera P & Baezconde-Garbanati L (2014) Mexican-American Mothers' Perceptions Regarding Vaccinating Their Daughters against HPV and Recommended Strategies to Promote Vaccine Uptake. Women's Reproductive Health 1: 106-119. doi.org/10.1080/23293691.2014.966033
18. Bair RM, Mays RM, Sturm LA & Zimet GD (2008) Acceptability of the Human Papillomavirus Vaccine among Latina Mothers. Journal of Pediatric Adolescent Gynecology 21: 329-334. doi: 10.1016/j.jpag.2008.02.007
19. Yi JK, Lackey SC, Zahn M, Casteneda JJ & Hwang JP (2013) Human Papillomavirus Knowledge and Awareness among Vietnamese Mothers. Journal of Community Health 38: 1003-1009. doi: 10.1007/s10900-013-9709-6.
20. Dany M, Chidiac A & Nassar A H (2015) Human papillomavirus vaccination: Assessing knowledge, attitudes, and intentions of college female students in Lebanon, a developing country. Vaccine 33: 1001-1007. doi: 10.1016/j.vaccine.2015.01.009
21. Lai D, Bodson J, Davis FA, Lee D, Tavake-Pase F, et al. (2017) Diverse Families' Experiences with HPV Vaccine Information Sources: A Community-Based Participatory Approach. Journal of Community Health 42: 400-412. doi: 10.1007/s10900-016-0269-4
22. Kim M, Lee H, Kiang P, Aronowitz T, Kennedy Sheldon L, et al. (2019) HPV Vaccination and Korean American College Women: Cultural Factors, Knowledge, and Attitudes in Cervical Cancer Prevention. Journal of Community Health doi: 10.1007/s10900-019-00634-9.