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Intention of Mothers in Israel to Vaccinate their Sons against the Human Papilloma Virus

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ABSTRACT

Purpose: This study investigated the intention of mothers in Israel to vaccinate their sons against HPV, using the Health Belief Model (HBM) as a framework, while comparing between Arab and Jewish mothers.
Design and Methods: The study has a quantitative cross-sectional design. A convenience sample of 200 Jewish and Arab mothers of boys aged 5–18 completed a questionnaire based on the HBM.
Results: The research findings indicate that only 14% of the mothers, constituting mostly Arab mothers, vaccinated their sons against HPV. Moreover, mothers showed a moderate level of intention to vaccinate their sons. This level was similar among Arab and Jewish mothers. However, the health beliefs of Jewish and Arab mothers differed. The HBM was found to explain 68% of mothers' intention to vaccinate their sons against HPV, and the perceived benefits of the vaccine were the factor most affecting this intention.
Conclusions: Although mothers' health beliefs concerning vaccinating their sons against HPV may vary between sectors, the HBM can be used to explain what motivates mothers to vaccinate their sons.
Practice Implications: The research findings can assist in designing a national project among mothers of boys aimed at raising HPV vaccination rates, in both the Jewish and the Arab sector.
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Introduction

The HPV Vaccine

The Human Papilloma Virus (HPV) is the most common sexually transmitted infection (Taylor et al., 2014). HPV is a contagious virus transmitted through skin and sexual contact (Dempsey, Butchart, Singer, Clark, & Davis, 2011). Among men, HPV is linked to approximately 80% of all cases of anal and penile cancer (Ortashi, Raheel, & Khamis, 2013). HPV causes some 33,000 cancers a year in the US, of which 12,000 are among men (Perkins et al., 2013). In Israel, approximately 60 men with HPV are diagnosed with anal cancer every year and around 100 are diagnosed with penile cancer (Ministry of Health, 2015).

In June 2006, the World Health Organization (WHO) approved the use of the quadrivalent prophylactic HPV vaccine. The vaccine is administered in three doses over a period of six months (In: Dempsey et al., 2011). In Israel, the instruction to vaccinate boys was publicized in early 2015, recommending that the vaccine be given to eighth grade boys aged 13–14 years old beginning in September 2015 (Ministry of Health, 2015). Unfortunately, there are still no data on the HPV vaccination rate of boys in Israel and on the difference between Arabs and Jews. Nonetheless, data derived from the Ministry of Health website indicates that the uptake of routine vaccinations among boys aged 0–2 during 2009–2011 was 98.5% in the Arab sector versus 93.5% in the Jewish sector (Ministry of Health, 2015). A study that examined the prevalence of vaccination uptake among various population groups in Israel found a vaccination rate of 95% among the Arab population, versus 89% among the Jewish population (Degani & Degani, 2008).

In Israel, the HPV vaccine is administered to eighth grade students by school nurses at school at no cost. Vaccinations are only administered to students whose parents give their permission. Usually, mothers are those who give this permission.

Factors Affecting Mothers' Intention to Vaccinate

Many factors affect the intention of mothers to vaccinate their sons, first and foremost their belief in the benefits of the vaccine for preventing HPV infection. Vaccination of men, in addition to women, raises the overall vaccination rate (Seven, Güvenç, Şahin, & Akyüz, 2015). There are also several barriers to vaccination uptake. One of the apparent barriers to vaccination is its side effects, which consist mainly of pain, inflammation, and redness of the vaccination site (Madrid-Marina, Torres-Poveda, López-Toledo, & García-Carrancá, 2009). In certain cases more serious side effects were reported, such as fainting and anaphylaxis, however these are no different than the side effects of the

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pneumococcal vaccine (Madrid-Marina et al., 2009). Moreover, the need for three vaccine doses to complete each vaccination series is a source of inconvenience and might affect parental decisions concerning the male HPV vaccine (Zimet & Rosenthal, 2010).

Social perceptions of the vaccine might also constitute a barrier to mothers' intention to vaccinate their sons. Because HPV is a sexually transmitted illness, this might be reflected in the stigmatic perceptions of parents, who might perceive the vaccine as increasing their children's tendency to sexual promiscuity (Muhwezi, Banura, Turiho, & Mirembe, 2014). Nonetheless, in a study conducted by Taylor et al. (2014), parents felt more comfortable vaccinating their young sons than their young daughters, as the concept of male sexual activity caused less discomfort than that of female sexual activity.

The variable of perceived susceptibility to the disease also impacts mothers' decision whether to vaccinate their sons against HPV. Mothers of sexually active teens in the US reported a higher vaccination intention (Brewer & Fazekas, 2007). Moreover, the more parents perceive the disease as severe the more they are inclined to vaccinate their children. Mothers who had more information about causes of cervical cancer and about the possibility of preventing cervical cancer through vaccination demonstrated a greater intention to vaccinate their daughters (Ben Natan, Aharon, Palickshvili, & Gurman, 2011).

Medical recommendations also have a significant impact on mothers' intention to vaccinate their sons (Perkins et al., 2013). Rosenthal et al. (2008) showed that mothers who consulted with a doctor had a more positive attitude towards administering the vaccine before their sons had become sexually active. Information provided by healthcare service providers also affects vaccine uptake (Dahlström et al., 2010). Furthermore, sons whose mothers had high health motivation, demonstrated increased HPV vaccination rates (Muhwezi et al., 2014).

The cultural and ethnic features of mothers affect their decision whether to vaccinate their sons against HPV. Seven et al. (2015) found that mothers' willingness to vaccinate their sons may vary according to their ethnicity and according to cultural beliefs concerning men's sexual activity. In certain cultures, such as Turkey, premarital sex is more customary for men than for women and society expects women to have only one intimate partner. Taylor et al. (2014) found that black and Hispanic parents had a greater intention of vaccinating their children than white parents. White parents believed that the male HPV vaccine is not important, compared to other parents in the sample, such as black parents. Additionally, Reiter et al. (2013) found that the difference in vaccination between non-whites and whites may stem from the different socioeconomic status of these groups.

Ortashi et al. (2013) examined knowledge and views on HPV vaccine uptake among Arab men at the United Arab Emirates University. Participants displayed a low level of knowledge. Moreover, factors such as safety, protection of one's spouse, and medical recommendations were significant factors in the decision whether to be vaccinated. Furthermore, the leading factor found to inhibit the vaccination of students was fear of side effects. Yet another study on the attitudes of mothers and daughters with regard to their motivation for consenting to the HPV vaccine found limited knowledge among Arab mothers in Denmark. While they knew that HPV can cause cervical cancer, they did not know that the virus might cause genital warts (Zeraiq, Nielsen, & Sodemann, 2015).

Theoretical Framework

The Health Belief Model (HBM) was developed by Becker (1974) and is designed to explain decision making and behaviors associated with health and illness based on the individual's subjective perceptions in states of uncertainty. The premise underlying the HBM is that one must be in a state of psychological willingness in order to effect a change in his or her health behavior, i.e., to take preventive action against illness. The major constructs of the model are as follows:

Perceived Susceptibility

Perceived susceptibility to the disease, meaning one's subjective perception of his or her risk of contracting the disease. In the current study this means susceptibility to anal cancer, genital warts, penile cancer, and oropharyngeal cancer.

Perceived Severity

Perceived severity of the illness, meaning the severity of the health problem as evaluated by the individual. In the current study, this means the severity of possible damage and the implications if the mother should decide against permitting her sons to receive the HPV vaccine.

Perceived Benefits

The individual's perceptions of his or her susceptibility to the disease and belief that it is indeed a grave disease constitute motivation for action, i.e., the benefits of receiving the HPV vaccine.

Perceived Barriers

The perceived barriers to taking action refer to those negative aspects that accompany health actions or that serve as barriers to taking action, and/or that arouse conflicting motivations for avoiding action. In the current study, this means those barriers and obstacles that prevent mothers from vaccinating their sons against HPV.

Health Motivation

Health motivation refers to the individual's level of interest in health issues, the desire to realize or to preserve a positive state of health and to avoid a state of illness. The higher health motivation of mothers will result in greater intention to vaccinate their sons.

Cues to Action

Cues to action refer to factors that influence the individual and encourage him or her to take a health action. In the current study, this means those factors that affect and encourage mothers to vaccinate their sons against HPV.

Several studies examined the prediction ability of the HBM. Dempsey et al. (2011) found that mothers had the greatest intention of vaccinating their sons against HPV when perceiving the vaccine as having significant health benefits and few barriers. Similar results were found in a study conducted among adolescents, young adults, and parents of adolescents in the United States, which found that perceived benefits were the main predictor of HPV vaccine uptake (Brewer & Fazekas, 2007). In contrast, Reiter et al. (2013) found that the most important factor affecting parents' intention to vaccinate their daughters was the parent's beliefs concerning the HPV vaccine. Moreover, in a study conducted among Afro-American women aged 18–26, the most prominent factor affecting HPV vaccine uptake were cues to action (Bynum, Brandt, Sharpe, Williams, & Kerr, 2011). Hence, the issue is still ambiguous; in addition, it is not clear which factors most affect the intention of Arab and Jewish mothers in Israel to vaccinate their sons against HPV. In light of the lack of clarity in the literature regarding the ability of the HBM to predict mothers' intention to vaccinate their sons against HPV, the study will investigate this issue.

Methods

Study Design and Participants

This study has a quantitative cross-sectional design. A convenience sample of 200 Israeli mothers – 100 Jewish and 100 Arab – took part in the study. The inclusion criteria were: Mothers of sons, of whom at least one was between the ages of 5–18. The exclusion criteria were lack of good literacy skills in Hebrew or Arabic. A total sample size of 220 was determined. This size was calculated at 80% power with 95% confidence interval for a 2-tailed difference of means test. Calculations were based on seeking a difference of 0.5 on the Likert scale.

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