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Attitude of Israeli Mothers With Vaccination of Their Daughters Against Human Papilloma Virus

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The purpose of the study is to examine whether the model based on the Theory of Reasoned Action (TRA) succeeds in predicting mothers' intention to vaccinate their daughters against the human papilloma virus infection. Questionnaires were distributed among convenience sample of 103 mothers of daughters 18 years and younger. Approximately 65% of mothers intend to vaccinate their daughters. Behavioral beliefs, normative beliefs, and level of knowledge had a significant positive effect on mothers' intention to vaccinate their daughters. High levels of religiosity were found to negatively affect mothers' intention to vaccinate their daughters. The TRA combined with level of knowledge and level of religiosity succeeds in predicting mothers' behavioral intentions regarding vaccinating daughters. This indicates the significance of nurses' roles in imparting information and increasing awareness among mothers.

INFECTION WITH THE human papilloma virus (HPV) is the primary cause of death by cervical cancer among women in developed countries (Bornstein, Toma, Tzarfati, & Ofir, 2007). According to data from the World Health Organization, 300 million people contract the HPV infection yearly (Bornstein et al., 2007). Every year, 493,000 women develop cervical cancer, and in around 230,000 of these cases, the disease proves fatal (Bornstein et al., 2007).

A vaccine preventing contraction of the HPV infection was introduced in many countries following its approval by the U.S. Food and Drug Administration (FDA) in June 2006. This vaccine is intended for girls aged 9–26 (Farrell & Rome, 2007). The Israel Pediatric Association recommended administration of the HPV vaccine in 2007, and consequently, the Ministry of Health began recommending vaccination of girls aged 9–26. The HPV infection has a tendency to spread epidemically, indicating the significance of complying with vaccination against the virus. The larger the population vaccinated, the smaller the proliferation of the virus (Bornstein et al., 2007).

Review of Literature

HPV is transmitted through sexual contact (Safra, 2007). The prevalence of HPV among sexually active youth has reached 82% worldwide (Bornstein et al., 2007). Research indicates that the prevalence of the virus is rising throughout the world. In the United States, around 20 million people have already contracted the HPV. It is estimated that 5.5–6.2 million people are infected every year (Bornstein et al., 2007). The annual mortality rate is close to 3 in every 100,000 women. Young, sexually active adults are at a high risk for contracting HPV due to its prevalence among these age groups. At least 80% of sexually active women are at risk of contracting genital HPV during their lifetime (Lenselink et al., 2008). In Israel, the phenomenon is less prevalent; nonetheless, 500,000 men and women have been infected by the disease (7% of the population, which numbers 7 million).

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In more than 90% of cases, the infection disappears unaided in the span of 2 years; however, 10% of the women will develop a chronic infection, and they are at increased risk of developing advanced precancerous lesions of the cervix and even cancer, including cancers of related organs (Bornstein et al., 2007; Maymoni et al., 2007).

Women carrying the type 16 papillomavirus are at a higher risk for developing cervical cancer—a risk 434 times greater than women not carrying this virus (Bornstein et al., 2007). More than 50% of all women who have been infected with some type of HPV at least once may contract the virus again because the level of antibodies formed is very low and because the E6 and E7 genes of the papillomavirus depress the production of the interferon, which otherwise would activate their immune system (Maymoni et al., 2007).

Women who contract the virus are usually younger than 25 years. They contract a type of HPV that has no clinical manifestations, and they are therefore not aware of being infected (Safra, 2007). Following exposure to the virus, normal tissue becomes precancerous and years later might become cancerous. The HPV infection causes cervical cancer, which is the second prevalent type of cancer among women and the primary cause of cancer mortality among women worldwide (Bornstein et al., 2007).

A prophylactic vaccine against HPV was developed to prevent HPV infection and precancerous genital lesions due to HR-HPV genotypes 16 and 18 and genital warts due to low-risk HPV genotypes 6 and 11 (Lenselink et al., 2008). The vaccine consists of virus-like particles assembled from recombinant HPV coat proteins of which the carcinogenic contents have been removed (Bornstein et al., 2007). In June 2006, the U.S. FDA and in September 2006, the European Medicines Agency declared their approval of the vaccine, which was developed with the intention of preventing cervical cancer, precancerous lesions, and genital warts. In Israel, the HPV vaccine was developed mainly against the cancerous types of the virus type 16 and 18 since these are responsible for 70% of all cervical cancer (Lenselink et al., 2008). The HPV vaccine is considered safe, and it is characterized by a high level of tolerance and high efficacy (Bornstein et al., 2007; Lenselink et al., 2008). The vaccine elicits antibody responses against both types of the virus and thus prevents chronic HPV infection and related diseases (Bornstein et al., 2007). According to Safra (2007), the vaccine is estimated to decrease cancer morbidity and mortality by more than 60%, and vaccination of 12-year-old females against HPV is expected to lower their risk of contracting cervical cancer by 61.8% (Lenselink et al., 2008; Bornstein et al., 2007).

In Israel, the same vaccine is administered by intramuscular injection in a three-dose series, with the second and third doses administered 2 and 6 months after the first dose. It is offered to females in the eighth grade and recommended for girls who have not yet become sexually active. In Israel, a fee is charged for the vaccine; however, the various HMOs cover a certain percentage of the cost (Maymoni et al., 2007).

Factors Influencing Parents' Decision to Vaccinate Their Children

Various factors influence parents' intention to vaccinate their children, including parents' attitudes and beliefs on vaccination, their level of knowledge, objective social norms regarding vaccination, and normative beliefs and socio-demographic variables.

Waller, Marlow, and Wardle (2006) found that the variables with the most impact on parental intention to vaccinate their children are attitudes toward vaccination, the effect of vaccination, the price of vaccination, and the risk involved in vaccination. In general, parents' inclination to vaccinate their adolescent children depends on their perception of possible implications of refraining from doing so. Zimet et al. (2005) examined attitudes affecting parents' inclination to vaccinate their adolescent children. The study included attitudes toward vaccines against sexually transmitted diseases, including HPV. They found that the greater the parents' perception of the severity of the disease if not vaccinated and the greater their perception of the vaccine's efficacy, the more they were inclined to vaccinate their children.

In a study held in Australia, Marshall, Ryan, Roberton, and Baghurst (2007) asked parents and the general population about the significance of vaccines for preventing cervical cancer. They found that most respondents acknowledged the need to vaccinate both women and men. Parents thought that it is necessary to vaccinate boys and girls younger than 18 years and agreed that the optimal age for vaccination is 14–15. Waller et al. (2006) found that some parents agree that vaccination should be discussed with their children. Similarly, Lenselink et al. (2008) also found that parents who hypothetically objected to vaccinating their children believed that the child must be included in the decision more than parents who were in favor of vaccination.

Parents who had completed their children's vaccination plan were more inclined to consent to vaccinate their children against HPV than parents who had not previously vaccinated their children. Parents who theoretically agreed to vaccinate their daughters were found to be in favor of vaccination (Marshall et al., 2007). Chan, Cheung, and Chung (2006) found that parents were inclined to vaccinate their children against sexually transmitted infections when these diseases were found to have a higher prevalence among the children.

However, in contrast, other studies found that various attitudes had an impact on objecting to vaccination, for example, Weinstock, Berman, and Cates (2004) found that in the United States, sexually transmitted diseases are stigmatized, preventing respondents' vaccination against HPV. Thus, despite the prevalence of cervical cancer in the United States and respondents' wish to know more about HPV, they have developed concern and fear of vaccination.

Lenselink et al. (2008) found that parents objected to vaccinating their children because the vaccine had only recently been introduced and expressed greater intention to