

Fathers' knowledge of and attitude towards human papillomavirus infection, genitoanal warts, cervical cancer and HPV vaccine

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Dear Editor,

We read the paper by Perkins et al. (2011) with great interest because it highlighted a very important issue about fathers' attitudes towards HPV infection and their intentions regarding HPV vaccine. No surveys have been published yet demonstrating the extent of fathers' knowledge of HPV and HPV vaccine together with its acceptance in Germany. In an attempt to fill this gap, we would like to share our findings from a recent pilot survey investigating the awareness of HPV infection and related health outcomes as well as HPV prevention by vaccination, in fathers and non-fathers attending the Munich University outpatient clinic (non-sexually transmitted infections/HIV or genito-urinary medicine).

Between January and February 2010, consecutive male German-speaking patients who were 18 years of age or older were asked to participate in an anonymous cross-sectional survey on HPV, HPV vaccination and genitoanal neoplasms. Multiple regression was used to analyse the association between age, family status, education and parental status, and HPV-related knowledge, reporting adjusted odds ratios (ORs) with their 95% confidence intervals (95% CI). A p value <0.05 was considered as significant. Statistical analyses were performed using the PASW Statistics 18 software (SPSS, Chicago, IL). The survey was approved by

the Ethics Committee of the Medical Faculty of Ludwig-Maximilian University.

The final sample included 243 respondents (75.9% out of 320 questionnaires handed out). The median age of the participants was 44.4 (mean = 43.8, standard deviation ± 15.2) years; almost half (43.6%, $n = 106$) of the respondents were married, 32.1% ($n = 78$) single, 45.7% ($n = 111$) fathers, one-third had a college (34.4%, $n = 83$) or university education (29%, $n = 70$), and 61.2% ($n = 148$) were in employment.

Less than one-third (29.2% out of 243) of the participants had heard of HPV and only 14% of HPV vaccine. The HPV and genitoanal warts-related knowledge in the whole sample and by parental status is presented in Table 1. About half of our respondents were fathers who had, on average, 1.8 children (median = 2). Only 19.8% of fathers were aware of HPV, 8.2% had heard of HPV vaccine and only two of them let their daughters have the HPV vaccination; five would let their daughter get vaccinated if they had one. Non-fathers were significantly more aware of HPV and HPV vaccination than fathers (Table 1). Being a father was associated with an increased probability of not having heard of HPV (OR = 2.33, 1.29–4.19; $n = 241$), HPV vaccine (OR = 2.64, 1.17–5.94; $n = 237$) and not knowing of the causal link between HPV and genitoanal warts (asked as a one term) (OR = 2.03, 1.19–3.46; $n = 234$) compared to non-fathers.

The study showed a very limited knowledge in males and especially in fathers regarding HPV infection and vaccination. In an Italian study, 76.9% fathers (of $n = 1,093$) had heard of HPV (Pelucchi et al. 2010) and in an American study, 85% (of $n = 111$) were aware of HPV vaccine (Cates et al. 2010).

The majority of our respondents who were aware of HPV correctly indicated the most common HPV

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Table 1 HPV and HPV vaccine related knowledge of the study population and by parental status, Munich 2010

Items	Percentage of correct answer (out of <i>n</i>) ^c	Fathers (<i>n</i> = 111) % (<i>n</i>) Correct	Non-fathers (<i>n</i> = 143) % (<i>n</i>) Correct	<i>p</i> [#]
HPV related knowledge				
Ever heard of HPV	29.2 (243)	19.8 (22)	37.1 (49)	0.003
HPV infection is very common/common ^a	63.5 (63)	52.4 (11)	69.0 (29)	ns
HPV causes genital warts ^a	88.5 (61)	94.7 (18)	85.7 (36)	ns
HPV causes anal warts ^a	63.2 (57)	61.1 (11)	64.1 (25)	ns
HPV causes cervical cancer ^a	62.1 (58)	50.0 (9)	67.5 (27)	ns
HPV is transmitted through sexual intercourse without condom use ^a	85.7 (63)	90.5 (19)	83.3 (35)	ns
HPV transmission risk having many sexual partners ^a	82.3 (62)	80.0 (16)	83.3 (35)	ns
HPV transmission risk by early age of sexual debut ^a	32.1 (53)	33.3 (6)	31.4 (11)	ns
Condom prevents against HPV ^a	85.2 (61)	85.0 (17)	85.4 (35)	ns
Vaccination prevents against HPV ^a	50.0 (56)	33.3 (6)	57.9 (22)	ns
Genitoanal warts are an STD	80.7 (233)	75.0 (81)	85.6 (107)	0.041
HPV vaccine related knowledge				
Ever heard of HPV vaccine	14.2 (239)	8.2 (9)	19.4 (25)	0.014
HPV vaccine prevents against genitoanal warts ^b	86.2 (29)	100.0 (7)	81.8 (18)	ns
HPV vaccine prevents against cervical cancer ^b	83.3 (30)	57.1 (4)	91.3 (21)	ns

ns not significant, STD sexually transmitted disease

Bivariate Chi² or Fisher's exact test

^a Those who had heard of HPV infection

^b Those who had heard of HPV vaccine

^c Missings excluded

transmission risk routes. However, knowledge of the other risk factors such as early age of first sexual activity and smoking was rather poor. Surveyed males were more aware of the causal link between genital warts and HPV than between HPV and cervical cancer. The use of condom as a possible preventive measure against HPV transmission was very well known, but it was not the case for HPV vaccination. Some other studies of the general population also showed lower HPV related knowledge in men (Waller et al. 2004; Pitts et al. 2009). A Belgian study of a sample of male general practice attendees demonstrated that awareness of HPV, including unsafe sex and its link to cervical cancer was low (mean risk perception score = 2.73, range 1–5) and that male sexual behaviour was perceived as a relatively low risk (score = 2.63) in the context of cervical cancer (Verhoeven et al. 2006). Another study found that increasing men's understanding of HPV and its consequences for women can increase the likelihood of the men modifying their sexual behaviour (McPartland et al. 2005).

In our survey, being a father was significantly associated with non-knowledge about HPV and HPV vaccine, which highlights a strong educational need focusing on fathers' comprehension of the risks associated with HPV infection and on the benefits of HPV immunisation for their offspring. However, due to the study's cross-sectional

monocentric design and to the sample of the male hospital attendees, caution should be taken when drawing wider conclusions.

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