

## Factors affecting knowledge about human papillomavirus and its vaccination programme

We have recently read an article in this Journal by Bowyer *et al.*<sup>1</sup> that found ethnicity to be the only significant factor that predicted human papillomavirus (HPV) vaccine uptake amongst adolescent girls in England, UK.

Shortly after the start of the vaccination programme, multivariate analysis of our cross-sectional study demonstrated that the level of knowledge regarding the HPV vaccination programme was significantly lower amongst children of non-white ethnicity.<sup>2</sup> It is worth considering therefore that lower level of knowledge could lead to lower uptake.

Bowyer *et al.* also suggest researching additional factors that may predict HPV vaccine uptake. Having further analysed our data, we would like to report new relevant findings.

Our study involved distributing a questionnaire to students and respective parents from a girls' private school, a girls' comprehensive (state) school and a mixed-sex comprehensive school in Birmingham, UK. The questionnaire consisted of eight knowledge-based questions regarding HPV and its vaccination programme. These questions were based on a National Health Service leaflet provided to all children at

vaccination.<sup>3</sup> In total, 568 questionnaires were distributed, with 434 responses (76.4%).

Interestingly we have found no significant difference in the level of knowledge between students from the girls' private school and the girls' comprehensive school. However, even when taking into account the general poor performance of males and ethnic minority participants in the study,<sup>2</sup> students from the mixed comprehensive school obtained lower scores in the test. Students from the girls' comprehensive school obtained on average 1.5 (out of 8) marks higher than students from the mixed comprehensive school ( $p < 0.001$ ). Girls from the private school obtained on average 2 (out of 8) marks higher than students from the mixed comprehensive school ( $p < 0.001$ ) (Table 1).

Furthermore, in the questionnaire we asked the students' parents/guardians how many other sons/daughters they had. We then compared the scores obtained from different families. The results showed that families with more daughters obtained higher marks in the test. Conversely, families with more sons obtained poorer scores.

In summary, our results demonstrate that schools and even families with more male children are more likely to have poor knowledge about HPV and its vaccination programme. This may lead to lower intention to promote uptake in such schools and families. Countries including the USA and Australia have

already started offering the HPV vaccine to males. There is still ongoing debate about introducing the male HPV vaccine in the UK. Our results therefore could have significant implications for information provision and the targeting of future education programmes.

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**Competing interests** None.

*J Fam Plann Reprod Health Care* 2014;**40**:155.  
doi:10.1136/jfprhc-2014-100894

**Table 1** Linear regression of mean score of students from different schools

Subjects	AMD	95% CI of the AMD		p
		Lower limit	Upper limit	
Males	1.340	0.511	2.169	0.002
Females				
White	-0.652	-1.039	-2.666	0.001
Ethnic minority				
Mixed comprehensive school	1.498	0.765	2.231	<0.001
Girls' comprehensive school				
Mixed comprehensive school	1.986	1.227	2.746	<0.001
Private girls' school				

AMD, adjusted mean difference; CI, confidence interval.

## REFERENCES

- 1 Bowyer HL, Forster AS, Marlow LA, *et al.* Predicting human papillomavirus vaccination behaviour among adolescent girls: results from a prospective study. *J Fam Plann Reprod Health Care* 2014;**40**:14–22.
- 2 Das A, Madhwapathi V, Davies P, *et al.* Knowledge and acceptability of the HPV vaccine by school children and their parents in Birmingham. *Vaccine* 2010;**28**:1440–1446.
- 3 NHS – Your Guide to the HPV Vaccination. 2009. <http://www.nhs.uk/Planners/vaccinations/Documents/HPV.pdf> [accessed 2 February 2014].