



Carolina HPV Immunization Measurement and Evaluation (CHIME) Project

Updated 12/17/2010

Carolina HPV Immunization Attitudes & Beliefs Scale (CHIAS; 2009)

This scale is based on data from Wave 1 of the CHIME Caregiver Survey (2007). The CHIME survey was designed by Noel Brewer and colleagues at the UNC Gillings School of Global Public Health and the Centers for Disease Control and Prevention (<http://www.unc.edu/~ntbrewer/hpv.htm>).

Preferred citation:

McRee, A. L., Brewer, N. T., Reiter, P. L., Gottlieb, S. L., & Smith, J. S. (2010). The Carolina HPV Immunization Attitudes and Beliefs Scale (CHIAS): Scale development and associations with intentions to vaccinate. *Sexually Transmitted Diseases*, 37(4): 234-239.

Items

The CHIAS is composed of sixteen items measuring a range of parent attitudes and beliefs about HPV vaccine (Table 1). Using a principal components analysis, we identified four CHIAS factors, all of which had acceptable scale alphas and one-year test-retest reliability.

Six items (#1-6) were related to perceived potential harms of HPV vaccine including health problems and an increased likelihood of the daughter becoming sexually active. These items used a 4-point response scale ("strongly disagree," "somewhat disagree," "somewhat agree" and "strongly agree"). Responses were coded so that higher values indicate stronger agreement.

Five items assessed perceived barriers to vaccination including costs and access to a health care provider. Four of these (#3-6) were accompanied by a 3-point response scale ("not hard at all," "somewhat hard," and "very hard"). To better match the other scales, these variables were rescaled to values of 1, 2.5, and 4, respectively, with higher values indicating greater barriers. The fifth item (#7) used a 4-point response scale ("strongly disagree," "somewhat disagree," "somewhat agree" and "strongly agree"), coded so that higher values indicate stronger agreement.

Two items (#12-13) assessed perceived effectiveness of HPV vaccine against genital warts and cervical cancer. Items had a 4-point response scale ("slightly effective," "moderately," "very," and "extremely effective"). Higher values indicate higher perceived effectiveness.

Three items (#14-16) assessed uncertainty about HPV vaccine. These items used a 4-point response scale ("strongly disagree," "somewhat disagree," "somewhat agree" and "strongly agree"), coded so that higher values indicate stronger agreement.

For all items, we recoded responses of "do not know" to the mean.

Table 1. Carolina HPV vaccine attitude and belief scale (CHIAS) items

	Cronbach's alpha (α)
Harms (perceived harms of HPV vaccine)	.69
1. The HPV vaccine might cause short term problems, like fever or discomfort.	
2. The HPV vaccine is being pushed to make money for drug companies.	
3. The HPV vaccine might cause lasting health problems.	
4. If a teenage girl gets the HPV vaccine, she may be more likely to have sex.	
5. I think the HPV vaccine is unsafe.	
6. [Child's name] is too young to get a vaccine for a sexually transmitted infection like HPV.	
Barriers (perceived barriers to HPV vaccination)	.69
7. How hard do you think it would be to find a provider or clinic where you can afford the vaccine?	
8. How hard do you think it would be to find a provider or clinic that is easy to get to?	
9. How hard do you think it would be to find a provider or clinic that has the vaccine available?	
10. I am concerned that the HPV vaccine costs more than I can pay.	
11. How hard do you think it would be to find a provider or clinic where you don't have to wait long to get an appointment?	
Effectiveness (perceived HPV vaccine effectiveness)	.61
12. How effective do you think the HPV vaccine is in preventing genital warts?	
13. How effective do you think the HPV vaccine is in preventing cervical cancer?	
Uncertainty (uncertainty about HPV vaccine)	.66
14. I don't have enough information about the HPV vaccine to decide whether to give it to [child's name].	
15. The HPV vaccine is so new that I want to wait a while before deciding if my daughter should get it.	
16. Other parents in my community are getting their daughters the HPV vaccine.*	

Note: Table shows exact item wording.

* Reverse coded

Changes to the scale

For studies of non-parent populations, we recommend the changes in Table 2 (see underlined text) In web or print versions of the scale, we recommend either not using a middle category and allowing people not to answer, or adding a middle “neither agree nor disagree” option. The CHIAS items can also be modified for use with parents of adolescent males, and with adolescents (For examples, see the HPV Immunization in Sons (HIS) parent and son surveys at <http://www.unc.edu/~ntbrewer/hpv.htm>)

Table 2. Recommended changes to CHIAS items for study populations who are not parents

Harms

6. Adolescent girls are too young to get a vaccine for a sexually transmitted infection like HPV.

Uncertainty

14. I don't have enough information about the HPV vaccine to decide whether to get it.

15. The HPV vaccine is so new that I want to wait a while before deciding if I should get it.

16. Other women my age in my community are getting their daughters the HPV vaccine.
