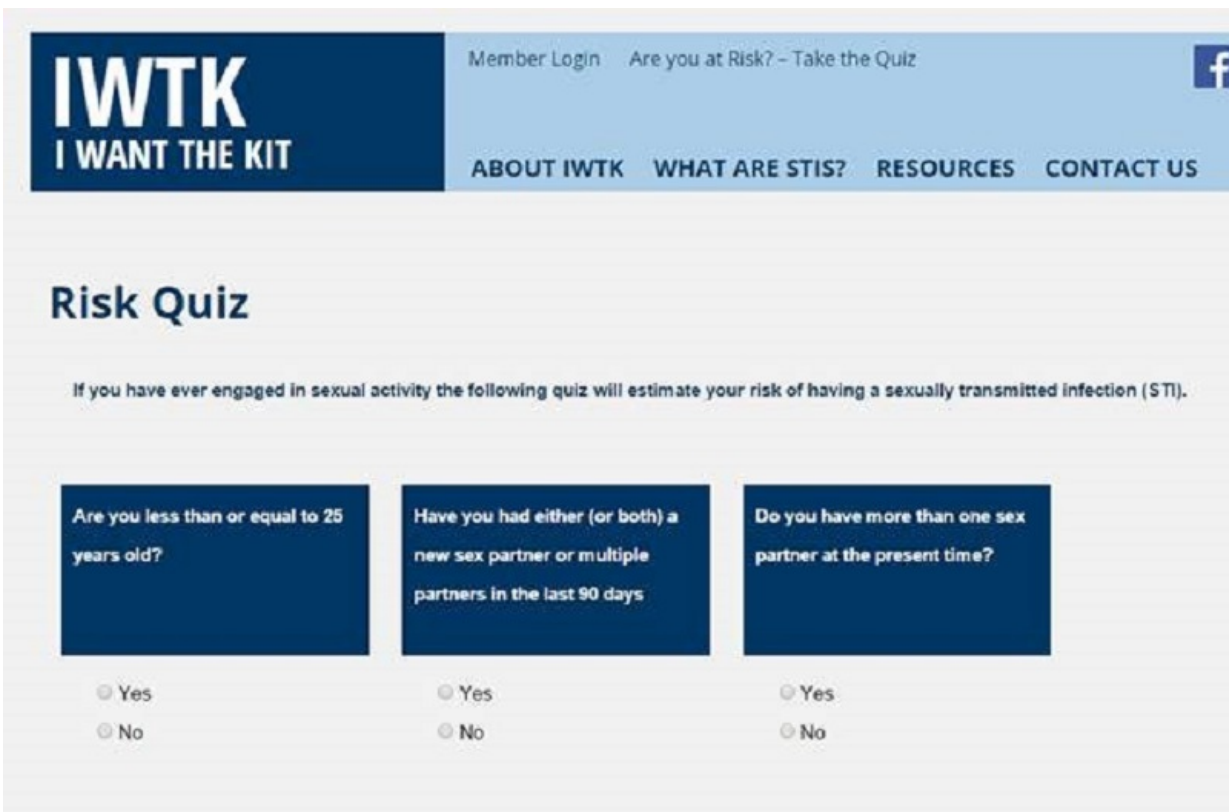


'Pop quiz' could help predict sexually transmitted infections in young women

January 29 2016



A picture of the STI risk quiz. Credit: Johns Hopkins Medicine

Researchers at Johns Hopkins say an online "pop quiz" they developed in 2009 shows promising accuracy in predicting sexually transmitted infections (STIs) in young women, although not, apparently, in young

men.

A description of the quiz and some field test results, published in the Jan. 29, 2016 issue of the journal [*Sexually Transmitted Infections*](#), suggests the self-administered quiz may encourage teenage girls and young women to get laboratory tests for several STIs if their quiz results show them to be at high risk for infection. And if used in clinical settings, the online questions could help physicians assess the need for STI testing of those patients at most risk, the researchers say.

"We test a lot of people who are not infected, and although a tool like this might not predict every single case, we think it can be helpful in rapidly predicting the likelihood of an STI for physicians and patients," says lead author Charlotte Gaydos, Dr.P.H., M.P.H., M.S., professor of medicine in the Division of Infectious Diseases at the Johns Hopkins University School of Medicine.

The quiz is a simple, six-question survey designed to evaluate behaviors linked to STI risk, Gaydos says. It was developed with the help of specialists in adolescent sexual health care and data from previously published research. The questions ask about the number of sex partners, the frequency of use of condoms, and the age and past infection status of a respondent.

The quiz was originally developed by investigators as a supplement to their home STI testing kit campaign, <http://www.iwantthekit.org>, for teens and young adults whose concerns about STIs were complicated by the desire for privacy and limited access to health care.

(To see a page from the quiz, [click here](#).)

The researchers note that a mobile-friendly version of the site and quiz will be available soon to accommodate frequent users of smart devices.

Since the campaign launch in 2004, says Gaydos, more than 6,500 women and 3,500 men have self-screened in Maryland and Washington, D.C.

For the new study, nearly 3,200 people 14 and older from Maryland and Washington, D.C., and who accessed the kit website were invited to take a mailed or online risk quiz as well as order a free home testing kit. About one-half of those invited to take the quiz took it—830 females and 550 males averaging between 20 to 24 years old.

Quizzes were scored on a zero to 10-point scale. Participants were categorized as high risk if they scored eight to 10 points for women and seven to 10 for men; medium risk if they scored five to seven points for women and three to six for men; and low risk if they scored zero to four points for women and zero to two for men. Women were categorized differently, the researchers say, because females tend to have higher rates of STIs than do men.

For the quiz, researchers suspected that the higher the score, the more likely a respondent would be to screen positive for an STI using the home test kit.

Although each question on its own was designed to be predictive of STI status, all questions were weighted differently based on the strength of evidence associating a particular behavior with infection. For example, questions related to condom use and number of sexual partners were weighted higher than questions about age or past positive STI tests.

As part of this research, respondents were mailed a home collection test kit, which included a penile or vaginal and/or rectal swab that could be used, then sent, free of charge, directly to the Gaydos laboratory for detection of chlamydia, gonorrhea and trichomonas, the first two caused by bacteria and the third by a parasite. Gaydos says these three

infections were chosen because they are easily screened for and treated. Other infections, such as HIV, herpes and syphilis, require blood testing.

Results showed a higher rate of STIs in women compared to men, at 14 percent versus 7 percent, respectively. The quiz was also able to predict that women who scored in the high-risk or medium-risk categories were four times and two times more likely to have an STI, respectively, than those who scored lower. In absolute numbers, 117 women and 39 men had at least one of the three STIs, Gaydos adds.

While the "pop quiz" accurately predicted STI status in women, it did not do so for men. "We are not quite sure why this is, but untruthfulness or the fact that men tend to have lower rates of STIs are possibilities," says Gaydos, who says follow-up research is planned to increase accuracy of the quiz for both men and women.

The Centers for Disease Control and Prevention recommends all [women](#) under 25 be tested for STIs, such as chlamydia and gonorrhea, once a year. A self-risk quiz, such as the one Gaydos' team created, could help clinicians and consumers decide whether or not testing is a priority, she says.

Gaydos cautions that the quiz has serious limitations as a screening tool: It is voluntary, less than one-half of those tested took the quiz, and many respondents may have taken the quiz but did not order a home collection kit (this data was not captured in the research), potentially altering the generalizability of the results.

Gaydos says the home collection kit website averages 20,000 hits a month and is made possible by funding from the National Institutes of Health and the state of Maryland.

Importantly, Gaydos mentions, the site now offers a home-performed

HIV test in addition to the STI tests, which started in early January 2016.

She says if further research affirms the value of the [quiz](#) and the kit, a properly funded national campaign could be useful to thousands.

An estimated 19 million STI cases are diagnosed annually in the U.S., underscoring a significant need for affordable, quick assessment tools, she says.

Provided by Johns Hopkins University School of Medicine

Citation: 'Pop quiz' could help predict sexually transmitted infections in young women (2016, January 29) retrieved 23 April 2024 from <https://medicalxpress.com/news/2016-01-quiz-sexually-transmitted-infections-young.html>

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