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Evaluation of a New Website Design for iwantthekit for Chlamydia, Gonorrhea, and Trichomonas Screening

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Abstract

The www.iwantthekit.org provides Internet-based, at-home sexually-transmitted infection screening. The website implemented an automated test result- access system. To evaluate potential deleterious effects of the new system, we analyzed demographics, website-usage, and treatment. The post-website design captured more participant information and no decrease in requests, kit return, or treatment adherence.

Keywords

Internet; *Chlamydia trachomatis*; *Neisseria gonorrhoeae*; *Trichomonas vaginalis*; website evaluation; home sample collection; screening for sexually transmitted infections; sexual risk scores

Sexually transmitted infections (STIs) pose a significant health burden in the United States, with an estimated prevalence of over 110 million, plus 19 million annual incident cases. [1] The Internet provides a method to combat this growing epidemic via online access to STI screening. Over half of Americans search for health information online, [2] and there are a growing number of effective digital resources dedicated to STIs. [3–10] Study results show that patients are open to receiving STI testing information and results online. [11,12] These online STI tests provide benefits, such as anonymity, convenience, and patient control.[4–7,13]

Researchers created the website www.iwantthekit.org (IWTK) in 2004, which provides Internet-based screening for chlamydia, gonorrhea, and trichomonas. The website has been shown to be a successful and cost-effective means of STI testing in men and women. [3,14–16] To reduce staff workload and improve data collection, the website underwent significant design changes to create an automated result access system in August 2013. Previously, participants were instructed to call website staff to receive their test results. Post-website design change, participants create a unique, password-protected user-account that allows

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them to access their results online. Positive test results are faxed to a clinic chosen by the participant at the time of kit request. The new system relies on participants accessing their results online and independently seeking needed treatment at their elected clinic.

Previously, participants completed an optional paper or online sexual health risk quiz and demographic information. Post-website design changes, the quiz and demographic information are mandatory for all participants. More complete information will allow the researchers to further tailor the website to address participants' needs.

Post-website design change, we were concerned participants would be less likely to use the website given the required submission of information for user-account creation or might not access their results and seek treatment if required. The current study aimed to evaluate the number of kits requested and returned, as well as treatment adherence, given the automated system to ensure there were no deleterious effects of the design changes. Additionally, it aimed to provide a description of results of required sexual risk quiz scores.

Participants included men and women ≥14 years from Maryland and Washington, D.C. requesting an STI kit at IWTK. IWTK provides at-home penile, vaginal, and rectal collection for chlamydia, gonorrhea, and trichomonas testing. The tests are free and kits are mailed to an address provided by the participant, with enclosed instructions to return the swabs to the testing laboratory. Testing was performed with FDA-cleared nucleic acid amplification tests (NAATs), Aptima (Gen-Probe/Hologic, San Diego, CA). This evaluation study was deemed human subjects research exempt by the Johns Hopkins University Institutional Review Board.

Pre-website design change, participants were not required to create a user account. They requested a kit, and entered the address at which to send it with each request. Kits included paperwork for demographic information and an optional sexual risk quiz, which could also be taken on-line. Kit information instructed participants to call for results within 1–2 weeks after kit submission. If they did not call, negative results were given to participants via telephone, text message, or email, which were generated by staff. Staff called all users that tested positive to share results and discuss treatment options. During this phone call, participants decided on a treatment clinic, to which results were faxed. In order to assess treatment adherence, website staff assessed clinic treatment records for positive participants. If treatment was not recorded, staff made several weekly phone calls following initial contact with the participant to ascertain if they accessed treatment.

Post-website design change, participants were required to create a unique, password-protected user account to request a test. During each test kit request, the participant was required to take a sexual risk quiz and supply demographic information. The website automatically tallied the risk score. Website staff entered test results into the automated database, which then texted or emailed the participants that their test results were available online. Participants could then log into their account and access their results. When requesting the test, participants chose the clinic at which they would obtain treatment should their results return positive. For every positive result, laboratory staff faxed the result to the clinic previously chosen by the participant.

In order to assess treatment adherence post-design change, website personnel accessed clinic records to determine if participants who tested positive sought treatment. If they did not receive treatment at the clinic, the staff member then called participants with positive results two weeks after their results became available on the website. If the first attempt at contact failed, or the individual had not received treatment at the time of the contact, one additional attempt was made one month after results were made available. All participants who tested positive for chlamydia or gonorrhea were reported to the Baltimore City Health Department in accordance with Maryland law. Trichomonas results are not required to be reported.

This study evaluated the new website over its first six months of function, from September 2013 through February 2014. It compared selected statistics (kits requested, kits returned, age, gender, race, sexual-risk quiz, STI positivity, and treatment adherence) to statistics from the same six months of the previous year (September 2012 through February 2013), in order to evaluate pre- and post-website update. In subsequent text, “pre-design change” refers to September 2013-February 2014 and “post-design change” refers to September 2012-February 2013.

To calculate the proportion of kits returned, we used the raw number of kits requested and returned during each sixth month period. Some individuals requested more than one kit (vaginal and rectal or penile and rectal) and returned more than one. The proportion does not reflect the number of participants that requested and returned kits, but rather the number of kits themselves. The sexual risk variable consisted of a six-question quiz that scored individuals from 1–10 for risk for STI infection. The questions were based on age, partner number, partner concurrency, previous STI, and condom use. Participant STI positivity was defined as at least one positive result for the participant (vaginal or rectal for females or penile or rectal for males). Chi-squared analysis was used to determine statistically significant differences between pre- and post-website design change. Descriptive statistics were used to analyze the treatment adherence.

Post-website design changes, a total of 1,303 kits were requested and a total of 858 (65.8%) kits were returned. Pre-website design change, a total of 1,116 kits requested and 691 (61.9%) kits were returned. Demographic comparisons between pre- and post-design change are described in (Table 1).

There were 87 participants who tested positive after requesting a kit post-website design change. Of these tested participants, 76 (87.3%) sought treatment within one month of result dissemination. Sixty-seven of those participants (77.0%) independently (before contact by website personnel) sought treatment at the clinic they chose during the kit request process. The remaining 9 users either sought treatment at a different clinic (n=5, 5.7%) or sought treatment greater than two weeks after result dissemination (n=4, 6.8%), after website personnel had contacted them to assess treatment adherence. For Pre-website design, 57 individuals tested positive and 44 of those individuals received treatment (78%). Individuals who did not receive treatment either had given incorrect methods of contact on their test request forms or did not cooperate when website personnel called. There was no statistical difference in treatment adherence between Pre- and Post-website design (p=0.075).

Previous studies have shown the effectiveness of the IWTK website for internet-based STI-testing. [6] The recent redesign was intended to decrease staff workload and improve data collection. Three-fourths of individuals with positive STI results sought treatment for the post-website design change before contact from website personnel, and the treatment adherence was not significantly different from pre-website design change. It is important for all positive individuals to receive treatment; however, this initial finding demonstrated that an automated test result access system can be equally effective as the pre-website change design.

Additionally, the number of kits requested (n=1,303 compared to n=1,116) and the percentage of kits that were returned (65.8% compared to 61.9%) did not decrease with the post-website design. Previous literature has indicated that providing personal information on the Internet can be a deterrent of using online STI testing services; however, an earlier IWTK study found that most website participants felt that Internet-based testing was confidential. [14,17] Given that the number of requested and returned kits did not decrease, it appears the newly required creation of a secure user account and password did not deter individuals from using the website.

Interestingly, almost half of the contacted individuals had received treatment at a different clinic than they had specified when requesting the kit. In this case, the website was still effective in that it prompted positive individuals to seek treatment. Nevertheless, these clinics likely had to retest the individuals to confirm their positive results. Future website design changes may add an additional option to alter clinic choice when clients access a positive result.

There are limitations in this study. The large amount of missing demographic data for pre-website design change participants makes direct comparison between the two time periods difficult. This may have compromised the comparison. We are hopeful that the more complete assessment of demographic and sexual risk quiz information will better inform future options for internet-based STI treatment efforts. Additionally, the differing in time between staff calls to participants in pre- and post-website design change must be considered in the comparison of treatment adherence. However, we feel that the reduced number of phone calls and significant decrease in staff time to assess treatment adherence in the post-design change time period, and the lack of statistical significance in treatment adherence, can make us more confident that there was not a deleterious effect with the design changes.

In summary, the treatment adherence did not change post-website design change, suggesting that individuals are using the new automated system to retrieve their results and receive treatment when needed. Additionally, the number of kits requested and returned did not change, suggesting participants were not deterred by the requirement of a user-account. The successful functioning of this website and its new automated system serves as a model that other organizations can use to develop similar internet-based testing services. Future research could investigate the acceptability of similar Internet-based testing in other geographical areas.

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Table 1

Comparison of selected demographics pre- and post- website design change

Variable	Pre-website design change (N=575)	Post-website design change (N=636)	p-value (** indicates statistical significance)
Age (Mean, SD)	28.1 (8.2)	26.9 (8.0)	0.013**
Missing Age (N, %)	15 (2.6)	0(0)	
Gender (total, %)			0.572
Male	225	259 (59.3)	
Female	350	377 (40.7)	
Missing	0 (0)	0 (0)	
Race (N, %)			0.006**
White	142 (24.7)	211 (33.2)	
African American	142 (24.7)	337 (53)	
Other	52 (9.0)	88 (13.8)	
Missing	239 (41.6)	0 (0)	
Location			0.012**
Baltimore City	180 (31.3)	251 (39.5)	
Maryland	367 (63.8)	358 (56.3)	
Washington D.C.	28 (4.9)	27 (4.2)	
Missing	0 (0)	0 (0)	
Risk Score (Mean, SD)	4.7 (1.9)	5.2 (1.8)	0.000**
Missing Risk Score (N, %)	248 (43.1)	0 (0)	
Positive STI results (N, %)	57 (9.9)	87 (13.7)	0.043**
Treatment Adherence			0.075
Yes	44 (77.2)	76 (88.4)	
No	13 (22.8)	10 (11.6)	
Return participants			0.261
Yes	159 (27.7)	207 (32.6)	
No	380 (66)	429 (67.4)	
Missing	36 (6.3)	0 (0)	
Number of uses in the 6-month study period			
1	Unavailable	506 (79.6)	
2	Unavailable	92 (14.5)	
3	Unavailable	33 (5.2)	
4 – 5	Unavailable	5 (0.8)	
Participants testing for a rescreen			0.016**

Variable	Pre-website design change (N=575)	Post-website design change (N=636)	p-value (** indicates statistical significance)
Yes	72 (12.5)	145 (22.8)	
No	358 (62.3)	491 (77.2)	
Missing	145 (25.2)	0 (0)	