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What influences university students to seek sexually transmitted infection testing?: A qualitative study in New Zealand

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Abstract

Objective—Untreated sexually transmitted infections (STIs) can lead to serious health complications, increase susceptibility to contracting further STIs including human immunodeficiency virus (HIV), and can be transmitted to others. The early diagnosis and treatment of STIs is therefore central to comprehensive STI management and prevention, but this relies on those at risk of STIs presenting for testing. In order to understand STI testing behaviours in view of their improvement, this study aimed to elucidate why people seek STI testing.

Methods—Qualitative semi-structured interviews were conducted with 24 university students who had recently had an STI test. Resulting data were analysed employing a qualitative thematic analysis method to produce a final set of themes.

Results—Five drivers for STI testing were identified from the data: crisis, partners, clinicians, routines, and previous knowledge. The final driver, previous knowledge, intersected with the previous four, particularly in relation to routines. Many participants acknowledged that the more they knew about STIs the more likely they were to undertake routine tests. However, at the same time, many participants felt they did not have a good knowledge base and that their school-based sex education had been lacking.

Conclusion—This study highlights important drivers for STI testing, which may aid the design of public health campaigns. It also underlines that school-based education could provide stronger foundations with regards to STIs and their prevention.

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Introduction

Sexually transmitted infections (STIs) are a serious public health problem, with more than a million STIs acquired every day [1]. Young people are disproportionately affected by STIs. For example, in New Zealand, 83% of chlamydia cases and 73% of gonorrhoea cases in 2014 were among people aged between 15 and 29 years [2]. Several reasons have been proposed for this. Firstly, young people partake in higher-risk sexual behaviours and change sexual partners more frequently [3]. Young people may also be less well able to negotiate condom use than older, more experienced men and women, and less able to conceptualize actions and their consequences due to incomplete cognitive development [4]. There are also several biological reasons which make adolescent females more vulnerable to some STIs, including high vaginal pH, lack of mucus secretion and cervical ectopy [3, 5].

Untreated STIs can have serious sequelae including pelvic inflammatory disease, infertility, adverse pregnancy outcomes, cancer and death [6–8]. Furthermore, having an STI increases susceptibility to contracting further STIs, including human immunodeficiency virus (HIV) [9]. Non-diagnosis of any STI also increases the likelihood that an infected individual will transmit the infection to a sexual partner. Therefore, the early diagnosis and treatment of STIs is central to comprehensive STI management and prevention [10].

Understanding the views and behaviours of sexually active young people towards STI testing may enable us to tailor sexual health programmes and interventions to encourage presentation for STI testing. Much research has focussed on the barriers to testing, identifying factors such as stigma, embarrassment, feelings of invulnerability, fear of the test itself, or the cost of testing [11–14]. While the barriers to STI testing have been well documented, the factors influencing presenting for testing remain less researched. Some studies have focussed on what facilitates testing, with common facilitators being: normalisation of testing; education; access to testing and services; patient comfort with general practice; and incentives [15]. Fewer studies have focussed on the factors that are likely to instigate STI testing.

Investigating this in New Zealand is of considerable relevance, as infection rates in this country are high by international standards [16] and testing coverage rates are below the level mathematical modelling has suggested is required to decrease chlamydia prevalence [2]. National guidelines in New Zealand recommend that clinicians test people under the age of 30 years who are sexually active for chlamydia, or anyone who is at risk of an STI [17]. However, there is no systematic opportunistic population screening programme in New Zealand such as the National Chlamydia Screening Programme in England, so individuals are responsible for seeking an STI test. There are several services that provide STI testing in New Zealand, including sexual health clinics (SHCs), Family Planning Clinics (FPCs), the New Zealand AIDS Foundation (NZAF), student and youth health clinics, local M ori and

Pacific healthcare providers, and general practitioners (GP). While it is likely that the barriers and drivers for testing will differ by setting, we chose to focus on university students, as previous research has demonstrated high-risk sexual behaviour among this population, including infrequent condom use, sex with multiple partners, and casual sex [18, 19].

In order to better understand the factors influencing STI testing behaviours, university students who had recently had an STI test were recruited to a multi-methods study. The results of analyses relating to the barriers to STI testing have previously been published [20]. The objective of this paper was to identify factors which led these students to STI testing ("drivers" for testing).

Methods

Since the purpose of this research was to seek insight into the attitudes, views and opinions of individuals, a qualitative methodology was the most appropriate. The methods have been described in detail previously [20]; a summary is provided below.

Participants and Recruitment

The participants were students from a New Zealand university who had had an STI test at the university medical clinic and had completed a questionnaire about their visit. An invitation to participate in a follow-up interview was emailed to those who had agreed to be contacted. Participants were given a grocery voucher of small value (NZ \$30) as compensation for their participation. Ethical approval was granted by the *[name of ethical review board removed for purposes of blinded review]* Human Ethics Committee (ref: 22110).

A purposeful sampling strategy was used, aided by responses to a questionnaire item where participants could select their reason for testing from a list of ten possible answers or write in their own reason. During the initial stages of recruitment, we aimed to capture a range of motivations for testing. As the study progressed, categories began to emerge in relation to drivers for STI testing, and the sampling strategy was then adjusted to seek participants who had experienced specific drivers so that we could saturate the categories [21, 22]. Participants were sought until the point of data saturation; this was deemed to have been achieved when no new drivers for testing were proposed by participants in the interviews.

Data Collection

Interviews were held in private rooms on the university campus and were conducted by one researcher (*initials removed for purposes of blinded review*), with the exception of the first two interviews where a second researcher (*initials removed for purposes of blinded review*) also attended with the participants' permission. Informed, written consent was obtained before the interview commenced.

The interview was semi-structured and focused on the factors contributing to the decision-making process about going for an STI test. The opening question was 'why did you go for an STI test?' Follow-up questions and probes were used to investigate drivers for testing in

more detail. The researcher referred to a list of key questions during interviews when necessary (Table 1).

The interviews were tape recorded and transcribed verbatim. The interviewer made extensive observational notes immediately following each interview, and kept a separate, reflective diary of the process. A summary of the main points was prepared and sent to the participant for review to confirm their decision-making process and views had been correctly understood. No changes to the data analysis needed to be made as a result of this process.

Analysis

Immersion in the data took place using familiarisation techniques including: listening to the audio of each interview multiple times; reading transcripts repeatedly; and going over observational notes. The data were analysed using a qualitative thematic analysis method [23]. NVivo software (v11) was used to help manage the data. One researcher (*initials removed for purposes of blinded review*) systematically coded each unit of information (a sentence or part of a sentence) using key words or phrases. Codes were drawn directly from the data and assigned to the transcripts inductively. A constant comparative approach was taken to ensure coding categories were used consistently. The codes were then grouped together to form categories which became the main themes of the analysis. A thematic map was drawn, grouping codes, to help the researchers visualise the data. Identification of the main themes from the codes was carried out by two researchers (*initials removed for purposes of blinded review*), who worked together using the observational notes and reflective diary to aid a rigorous analysis.

Results

In total, we approached 57 students who had completed the questionnaire to participate in interviews. Of these, 30 responded but five were no longer living in the area so could not take part in a face-to-face interview, and one was subsequently uncontactable. Recruitment took place concurrently with interviews to allow sampling and assessment of data saturation. Interviews lasted an average of 40 minutes (24–62 minutes). Saturation was reached after 24 interviews. The characteristics of participants are summarised in Table 2.

From the data, we identified five ‘drivers’ for testing. They included: crisis, partners, clinicians, and routines. The final driver, previous knowledge, intersected with the other four, but most prominently in relation to routine-driven testing, whereby better knowledge encouraged more regular testing. However, we discuss this knowledge as a separate theme below, because the lack of, and/or the desire for, knowledge emerged as relevant to the other drivers too.

Crisis

For some, the first STI test was prompted by an event the person experienced as a crisis, such as: developing symptoms; finding out that a previous sexual partner had been diagnosed with an STI; or having engaged in a sexual encounter which they perceived to be high-risk. A male participant explained:

My ex-girlfriend came to me like two or three months later after we'd broken up and said "look I've got herpes" or something like that and I had a terrible terrible moment, I said "oh my god" you know? I got myself checked out and they were like "no you haven't got anything". – Interview 24 (male, 20 years)

Another participant reflected on a situation that had happened some years before:

I had an HIV scare when I was about 18. I was with this guy and I broke up with him, and then after that somebody informed me that someone he had been sleeping with before was HIV positive, and I had not used protection with that guy. So I went and got checked and it was fine but that really scared me. – Interview 6 (female, 32 years)

Partners

A second driver was the perspective of, or advice from, sexual partners. Male participants, in particular, were motivated to seek testing after discussion with their female sexual partners. Often, the individual had been asked to get tested by a current girlfriend:

I'd had a few partners but not many and always used condoms and everything and so that was the first time that someone had said to me "when was the last time you had an STI test?" I was like "never." She was like "you should get tested". – Interview 18 (male, 24 years)

Another reported that his girlfriend had withheld sex until he was tested:

It just kind of came up about our past and that she wanted me to get checked and her to get checked before we got into anything serious really so we didn't catch anything from either one. Yeah. ...She kind of used it like a threat that if I didn't go then we couldn't have sex until I got checked. – Interview 16 (male 21 years)

Some female participants in the study discussed protecting their own health by refusing to engage in sexual intercourse until their partner had been tested. For example, one female explained: 'We're all adults and it's a fairly common issue, and I'll just be like "I'm sorry but I don't feel comfortable having sex with you until we both get checked".' – Interview 9 (female, 27 years)

There was an implication that it was the testing, rather than the result per se, that mattered most to the women. Perhaps this was viewed as an opportunity to educate or impress the notion of sexual health responsibility, which many of the women felt that their male counterparts lacked:

"I feel like it's always put onto the women, like the responsibility to go and get a regular check." – Interview 10 (female, 21 years)

Clinicians

Another important driver to having an STI test reported by the participants was the opportunistic advice of a doctor or nurse who suggested an STI test while the individual was attending the clinic for a different reason. This often occurred when attending for sexual health related matters, such as a cervical smear. As one women explained:

The first one I think was when I was vaguely scared that I was pregnant and so I got an STI check kind of at the same time just because I was there and the other time I think I was getting a smear and I also got offered an STI check I think – Interview 23 (female, 24 years)

For another, the disclosure of unprotected sex appeared to have prompted the clinician to advise an STI test: ‘I told the doctor that I had a serious boyfriend and we don’t use protection at all and she panicked for me and said “we’re just going to test you”.’ – Interview 8 (female, 29 years)

This driver was not mentioned by any of the males in study.

Routines

The fourth driver to seeking an STI test was routine. Some participants went for STI tests regularly, as part of their routine health care. These participants reported either being tested at regular intervals, or testing either at the end of a sexual relationship or the beginning of a new one. Those who used this reason for testing commonly emphasised that they did not think that they had an STI, but were motivated by wanting ‘peace of mind’ about their own health and/or to know they would not be passing an infection on to their partner(s). These positions seem contradictory, therefore this may be characterised as a ‘just in case’ routine prevention strategy driven by a feeling of responsibility.. While they might have had a partner in mind, they made their decisions autonomously without discussion with partners or friends. As one participant reported:

Being single, I just, it’s something that I do on a regular basis. I had no reason to suspect that I had anything I didn’t have any symptoms or anything like that it was just ... if you’re going to be single and be sexually active you have to do that. I mean well that’s the way that I see it you should do that in order to make sure that you’re healthy, for peace of mind and yep it’s like brushing your teeth... but every few months. – Interview 22 (female, 30 years)

This rationale was held mainly, but not exclusively, by female participants. One 23 year old male who regularly tested explained: “I feel like it’s my obligation if I’m sexually active then I’d better make sure that I’m okay, that I’m not spreading anything to someone else.” – Interview 20 (male, 23 years)

Believing that an STI test was just another part of routine health maintenance was demonstrated by those who grouped testing with other health issues for which they sought medical advice. One woman explained:

And you usually try, you like try and roll four issues into the same one. Like the last one I went to I was like “okay so I’ve got this thing on my leg and I think it’s a blood clot, I’d also like an STI check and I have the ‘flu, I’d like some antibiotics and I also would like to quit smoking so we can talk about some anti-smoking things please”. Because you just have to do it because otherwise you won’t get in there for another like three or four weeks, you’ve got to like just ball it in kind of thing. – Interview 2 (female, 23 years).

A clinical attitude towards STIs seemed to facilitate STI testing; unsurprisingly this view was commonly exhibited by those who had come from a family where sexual health was discussed openly and/or had a parent who was a health-care professional. One participant explained:

I think because my mum's a midwife and like that sort of thing for her is just like common occurrence like she looks at vaginas all day. It's kind of like I've always had that in my head so it's not embarrassing thing to go to the doctors to get done, but I think with lots of people it would be. – Interview 11 (female, 19 years)

Previous knowledge

Knowledge about STIs motivated many of the participants to seek STI testing. For example, one participant explained that it was realising how prevalent STIs are which prompted him to consider going for a test:

In first year we were talking, one of the guys talked about how he'd had one before and so I was like "oh maybe I should actually think about them now, it's not just kind of this very rare thing that only occasionally happens". – Interview 16 (male, 21 years)

About one third of participants reported being aware that STIs such as chlamydia were common. Their awareness often came from friends who had been diagnosed with an STI. As one woman described:

I had two friends who had it at high school, three maybe all throughout, but like these last two years there's been heaps of people that have had it. I mean it's probably because people are having more sex but yeah that probably motivates me to get a check-up more because I realise that people aren't careful and they don't care. – Interview 1 (female, 19 years)

Many participants felt that knowledge was the key to safer behaviour and it was common for participants to express that they wanted to be more knowledgeable, especially among those whose test had been crisis-driven. A large number of participants felt that the sex education they had received at school had not adequately prepared them for the potential dangers associated with sexual relationships. Some were quite angry that their sex education had not been comprehensive enough or had been designed to scare rather than inform. Female participants were especially passionate about this. One woman described the sex education she received as school:

They would just show us like slideshows of like the worst possible looking STI that you could possibly find on the internet and go "this is what's going to happen if you don't use condoms" and then like I didn't realise you could get treated for the majority of them I just thought "oh crap now I've got it I'm chuffed [ruined] for life", because they didn't really explain it. – Interview 3 (female, 20 years).

Many males and some females felt that sex education had not been relevant to them at the age they received it at school, as they had not begun to have sex yet, but acknowledged that it was necessary for those who had started having sex. Many could not recall what was

included in their sex education and expressed a desire to have had sex education sessions at older ages as well, including at university.

No participant mentioned having been told about the necessity of STI testing in the absence of symptoms, or about the STI testing process as part of their formal school sex education.

Discussion

Five drivers for testing were identified from the data, including crisis, partners, clinicians, routines and knowledge. Crisis situations were events such as developing symptoms or finding out a sexual partner had been diagnosed with an STI. These situations are unsurprisingly important drivers for seeking an STI test. For males, being influenced by a female who was a potential sexual partner was highly persuasive, and was often the driver for their first STI test. This is a potential opportunity for developing strategies to encourage testing among males. For example, campaigns could be established which encourage and empower people to talk to their partners about sexual health and the importance of STI testing.

While partner driven testing was influential among males, opportunistic testing was more commonly a driver among females. This finding may have been due to the smaller number of male participants in the study, or it may be because females are more commonly offered testing. The latter may occur because women are viewed as a priority because of their increased risk of sequelae, or because of a belief that women are more likely to be at ease with screening offers due to their experiences of sexual and reproductive health checks such as cervical smears [24]. The emphasis on women, however, overlooks the role of men in the spread of infection, and fosters the attitude that STIs are a women's issue and responsibility, which ultimately results in less healthcare-seeking for STI testing by men [25].

Routine driven testing was also more commonly mentioned by females, though the reasons for this are unclear. Again, it may be related to an attitude of female responsibility for sexual health.

Lastly, the interviewees wanted to be more knowledgeable about STIs, and felt that better knowledge would encourage testing, a finding echoed in other studies [26, 27]. Upon realising that STIs are common and can happen to anyone (often because a personal contact such as a friend or housemate had contracted an STI), many young people felt angry that their sex education had been misleading and that they had not been made aware of the risks. These findings echo those from Allen's 2005 study involving 1180 students in 15 New Zealand schools, in which students were critical of the way potential dangers of sexual activity dominated programme content and approaches [28]. Dissatisfaction with sex education has also been reported in other studies from parts of the world [29].

Several of the male respondents and a few of the females commented that sex education had occurred too early for them as they were not yet having sex, a finding reflected in other studies [30]. It may be beneficial for sexuality education refresher to be included at university, a time of sexual exploration for many young people. This has recently been

suggested by researchers in Australia following a similar research among male students in Victoria [31].

A study of young people in Ireland identified four main reasons for seeking an STI test; having had unprotected sex, developing symptoms, being required to do so by an employer or for a visa, or reaching a transitional moment in life [32]. Examples of transitional moments were the end of a risky relationship or the beginning of a new intimate relationship, which were also offered as reasons for testing in the current study. However, we found that if people tested in these situations, they did so as a matter of routine every time a relationship ended or started. Testing because of employer or visa requirement was not reported in our study, which is likely a reflection of the participants being university students.

The results of the current study are also broadly similar to those found in an American study of men who have sex with men [12], where three categories of reason for seeking an STI test were identified: event-driven (experiencing symptoms or illness, having engaged in 'risky' sex, or finding out a partner was infected); prevention-driven (being tested as a matter of routine care); and socially driven (entering a new relationship, being encouraged by others, and/or following peer norms). This suggests that drivers for STI testing may be fairly consistent across different population groups.

To our knowledge, only one previous study has explored why young people in New Zealand seek STI testing. Rose et al. [33] conducted focus groups in which they asked young New Zealanders what they thought would encourage chlamydia test uptake. One suggestion was that better education would improve testing, which is reflective of the knowledge theme in this study. Another suggestion was to normalise testing, which is implied by routine testing in the current study. The study by Rose et al. was conducted almost a decade before ours, yet it seems these issues have not been addressed in New Zealand.

There are some limitations to the current study. Although we explored the attitudes and thoughts that individuals had prior to their first test, the experience of having a test may have influenced their recall of these. In addition, being diagnosed with an STI is an emotionally charged event; therefore it is possible that the individuals for which this occurred may have reconstructed their views and opinions about STIs, so that their reasoning for seeking the test may have changed in light of their diagnosis. However, whatever the reasoning, it is still likely to influence future behaviours [34]. Lastly, those who agreed to take part in the study may have had more of an interest in the topic and thus a greater awareness of the issues compared to those who decided not to take part.

These findings provide us with rich directions to explore methods of encouraging people to seek STI testing. As STI knowledge was an important driver for STI testing in this study, as well as in others, educational interventions have the potential to improve levels of testing [35]. The design and efficacy of these interventions should be tested among members of the target population before implementation, to ensure they are evidence-based. School-based sexuality education could also be improved by including more information about STIs and STI testing. Males may need a particular focus as they are less likely to attend the doctor for

other reasons, meaning alternative educational opportunities will need to be exploited, for example continuing sexuality education to the later years of high-school when first sexual intercourse is likely to occur, or encouraging sexual partners to suggest testing.

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Interview Guide**Table 1**

Why did you go for an STI test?
How did you arrive at that decision/was there anything in particular that prompted you?
For how long had you been considering going for a check-up?
Was there anything that stopped you from wanting to go/put you off going?
Did you have any symptoms?
Had you had an STI test before?
How did you feel about going for a test?
How concerned were you that you may have picked up an STI?
What were you most concerned about when the test results were positive/if the test results had been positive?
What is the worst thing about going for an STI test?
Where do you get information about STIs?
Do you talk about STIs with anyone (friends/family/partner)?
Did you have sex education at school?

Table 2
Demographic profile of participants

Demographics	<i>n</i>	%
Gender		
Female	16	67
Male	7	29
Genderqueer	1	4
Age (years)		
Median (range)	23	(19–32)
Ethnicity		
New Zealand European	16	67
New Zealand European/M ori	2	8
New Zealand European/Other	2	8
British	3	12
Other	1	4
Educational level		
Undergraduate	22	92
Postgraduate	2	8