

UNDERGRADUATE ARTICLE

Knowledge about Genital Herpes Amongst First Time Attenders at a Department of Genitourinary Medicine

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Abstract

Background and Aims

Genital herpes is the most common cause of genital ulceration in the developed world, and its prevalence in the United Kingdom is rising. Public knowledge of the infection is often limited. We aimed to assess knowledge among patients attending an outpatient genitourinary clinic in Scotland.

Methods

A questionnaire was designed to collect information about educational qualifications and knowledge of genital herpes. In the knowledge section, each correct answer was given a score of 1; thus the maximum possible score was 12. Two hundred and ten individuals who attended as new patients at a walk-in genitourinary medicine clinic were invited to complete the questionnaire.

Results

Two hundred and seven patients completed the questionnaire. Overall 63% of responses were answered correctly. Knowledge of genital herpes was better in patients who worked in healthcare (8.3 v 6.9, $p=0.019$) and in patients with educational qualifications gained from college or university compared to those gained at school (7.6 v 6.5, $p=0.009$). Level of knowledge was not related to age or gender; receiving sex education at school did not appear to improve knowledge of genital herpes.

Conclusion

Knowledge of genital herpes among patients attending an outpatient genitourinary clinic in Scotland is reasonable but needs to improve to combat the rising prevalence of the infection. The areas of misunderstanding identified in our study could be targeted for public education.

Introduction

Genital herpes is the most common cause of genital ulceration in the developed world¹ and its prevalence in Scotland and the United Kingdom is rising. Between 1971 and 2005 the number of genital herpes simplex virus (HSV) diagnoses (both first time and recurrent) in the United Kingdom increased five-fold in men and 21-fold in women.² The number of new diagnoses in Scotland increased by 30% between 1992 and 2001.³ This situation urgently requires public health intervention, yet there are few studies examining public knowledge of this infection^{4,5,6,7} and there is no information about public knowledge in Scotland.

A study of American college students suggested that some of the concepts of HSV infections are difficult to understand, particularly with regard to asymptomatic infection and spread of infection.⁴ When coupled with the fact that around 90% of those infected with genital herpes are unaware that they have a chronic infection which can be spread sexually,⁸ it is clear to see why the prevalence of genital herpes is rising. Given this sharp increase, it would be expected that first line healthcare professionals would be equipped with enough information and knowledge to deal with this infection. However, a study of general practitioners working in Coventry found a lack of knowledge, with only 56% of questions about genital herpes answered correctly.⁹

The aim of the present study was to assess knowledge of genital herpes among patients attending an outpatient genitourinary medicine clinic in Scotland. It was hoped to identify areas of misunderstanding about genital herpes that might allow specific suggestions for public health intervention and education.

Methods

Setting and patients

Ethical approval for the study was obtained from the local Research and Ethics Committee. Two hundred and ten patients who consecutively attended the morning walk-in clinics of the Department of Genitourinary Medicine, Royal Infirmary of Edinburgh, were invited to participate. This Department sees about 11,000 patients annually, 300 of whom are diagnosed with genital herpes.

Study design

As part of a first year medical student project, a short questionnaire was designed which patients were asked to complete. The questionnaire had two separate sections. The first section collected personal information about gender, age, sexual behaviour and orientation, details of any sex education which had been received at school, and if the patient had heard of genital herpes. The second section used multiple choice questions to gather data about sources of information, knowledge of clinical presentation, routes of transmission and methods for preventing transmission of genital herpes. Some questions had "yes/no/don't know" answers and others had multiple options with between one and three correct answers. The number of correct answers to each question was not indicated to the subjects. Each correct answer was given a score of 1; incorrect answers scored 0. For questions with multiple answers, each correct response was given a score of 1. There were 12 possible correct answers in the questionnaire.

Patients who had not heard of genital herpes were asked to ignore the second section of the questionnaire. An initial questionnaire was piloted on 20 patients, and minor changes were made before distributing the final questionnaire. The data for subjects included in the pilot were not included in the analysis.

Statistical analysis

Data were entered into a Microsoft Access database, and the ANOVA tests were used in the statistical analyses, using Minitab commercial software (version 12.1). A *p* value of less than 0.05 was considered to be statistically significant.

Results

Personal Information and Sexual Behaviour

Three men declined to participate in the study, leaving data for 207 patients. The characteristics of these patients are shown in Table I. The mean age for all respondents was 27 (range 16 – 64) years.

Knowledge

Sixteen (8%) subjects had not previously heard of genital herpes. These patients tended to be younger, had achieved lower educational qualifications and were less likely to have received sex education at school. The responses from the 191 subjects who had heard of genital herpes are shown in Table II. Sixty-three percent of all responses were correct, 14% were incorrect and 23% were don't know. The mean (SD) score out of 12 possible correct answers for these subjects was 7.1 (2.8).

One subject answered all questions correctly; seven subjects answered all questions incorrectly. Knowledge of genital herpes was not related to age ($p=0.512$). Female subjects scored higher than males but this did not reach statistical significance (7.4 v 6.9, $p=0.184$). Knowledge of genital herpes tended to improve with increasing educational qualifications but any difference was not statistically significant (Standard Grade 6.4, Higher 6.5, Advanced Higher 6.5, HNC 7.5, Degree 7.6, $p=0.152$).

Table 1

Characteristics, sexual orientation and behaviour, and educational qualifications for respondents to the questionnaire. Some respondents omitted to give certain details. Data are shown as numbers (%).

| | All subjects (n=207) | Subjects who had heard of genital herpes (n=191) | Subjects who had not heard of genital herpes (n=16) |
|--|-------------------------|---|--|
| Male:Female (n=207) | 106:101 | 99:92 | 7:9 |
| Age, yr (n=201) | | | |
| <21 | 42 (21) | 38 (20) | 4 (25) |
| 21-30 | 114 (57) | 104 (54) | 10 (63) |
| 31-40 | 28 (14) | 26 (14) | 2 (13) |
| >41 | 17 (8) | 17 (9) | 0 (0) |
| Sexual Orientation (n=206) | | | |
| Heterosexual | 183 (89) | 168 (88) | 15 (94) |
| Homosexual | 16 (8) | 15 (8) | 1 (6) |
| Bisexual | 7 (3) | 7 (4) | 0 (0) |
| Sexual Behaviour (n =202) | | | |
| Oral | 170 (84) | 161 (84) | 9 (57) |
| Vaginal | 189 (94) | 174 (91) | 15 (94) |
| Anal | 41 (20) | 38 (20) | 3 (19) |
| Educational Qualifications (n=202) | | | |
| Standard Grades (GSCes) | 41 (20) | 32 (17) | 9 (57) |
| Highers (A-levels) | 25 (12) | 24 (13) | 1 (6) |
| HNC | 26 (13) | 26 (14) | 0 (0) |
| Advanced Highers (AS-levels) | 23 (11) | 20 (10) | 3 (19) |
| Degree | 87 (43) | 84 (44) | 3 (19) |
| Sex Education (n=207) | 177 (86) | 166 (87) | 11 (69) |

Table 2

Percentage of correctly answered questions regarding knowledge about genital herpes. Possible responses are shown in brackets with correct answers shown in bold. For questions where more than one answer could be selected, correct answers were deemed to be subjects who correctly identified the right answer(s) without selecting any incorrect answers.

| Knowledge of genital herpes | Correct answers <i>n</i> (%) | Incorrect answers <i>n</i> (%) | Don't know <i>n</i> (%) |
|---|---------------------------------|-----------------------------------|----------------------------|
| Q1. How many types of virus can cause genital herpes? (1, 2, 3, 4+) | 17 (9) | 29 (15) | 145 (76) |
| Q2. What can genital herpes cause? (Cancer, genital sores , warts, infertility, thrush) | 48 (25) | 101 (53) | 42 (22) |
| Q3. Once you have genital herpes can you get rid of it? (Yes, No) | 101 (53) | 40 (21) | 50 (26) |
| Q4. Can you have genital herpes without knowing it? (Yes, No) | 135 (71) | 9 (5) | 47 (25) |
| Q5. How can genital herpes be spread? (Toilet seats, anal sex , holding hands, oral sex , contact with animals, vaginal sex) | 91 (48) | 72 (38) | 28 (15) |
| Q6. How can you lower the risk of spreading genital herpes? (Using condoms , contraceptive pill, vaccination, medicine , can't lower the risk) | 14 (7) | 159 (83) | 18 (9) |
| Q7. If a partner in a long-term relationship suddenly shows signs of genital herpes, does it mean he/she has been unfaithful? (Yes, No) | 115 (60) | 14 (7) | 62 (32) |
| Q8. If the signs of genital herpes disappear, does it mean that...? (The virus has disappeared, the virus stays in the body but does not reappear, the virus stays in the body but can reappear) | 133 (70) | 13 (7) | 45 (24) |
| Q9. Which of the following has the most new cases in the UK per year? (Chlamydia , genital herpes, HIV/AIDS) | 119 (62) | 25 (13) | 47 (25) |

These groups were combined to assess any difference between subjects who had gained qualifications at school (Standard Grades, Highers and Advanced Highers) and those who had attended college or university (HNC and degree). Subjects who had obtained college or university qualifications scored higher than those who had gained qualifications at school (7.6 v 6.5, $p=0.009$).

The mean score achieved by 166 subjects who had received sex education at school was 7.2 compared with 6.6 for those who had received no sex education ($p=0.362$). Twenty-seven respondents worked in a healthcare-associated profession; these subjects scored higher than those who did not work in healthcare (8.3 v 6.9, $p=0.019$).

One hundred and forty nine subjects (78%) correctly identified that genital herpes could be spread by vaginal sex, 133 (69%) by oral sex and 119 (62%) by anal sex. Only 91 (48%) subjects correctly identified that genital herpes could be spread by all three types of sex. Thirteen subjects thought spread could occur via toilet seats and five thought contact with animals could transmit the infection. One hundred and seventy one (90%) subjects correctly identified that condoms could reduce the risk of transmission, but only 16 (8%) were aware that medication could also inhibit transmission. Five subjects indicated that they have been diagnosed with genital herpes. These subjects achieved scores of 7, 9, 9, 10, and 10.

All five subjects correctly identified that vaginal, oral and anal sex were routes of transmission and that condoms could reduce the risk of transmission.

Sources of Information

Seventy-six subjects (40%) had received information on genital herpes from magazines, 67 (35%) from someone they knew, 61 (32%) from sex education at school, 43 (23%) from leaflets, 32 (17%) from books, 18 (9%) from the internet and 10 (5%) from medical staff. Of the five subjects diagnosed with genital herpes, only two had received information about the infection from medical staff.

Discussion

Although the prevalence of genital herpes is rising, there are few studies examining public knowledge of this infection, particularly in Scotland.^{4,5,6,7} In America it has been shown that increased knowledge of genital herpes leads to behaviour modification which reduces the risk of transmitting the infection.¹⁰ Therefore, increasing awareness of the condition in Scotland should lead to reduced transmission and a fall in the number of new diagnoses. Our results highlight that public knowledge of genital herpes is incomplete and although 63% of answers were correct there are some notable areas of misinformation. For example, most subjects correctly identified that it was possible

to have genital herpes without knowing it but only 25% could recognise the symptoms caused by genital herpes.

Nonetheless, current sexual health campaigns, such as the "Condom: Essential Wear" campaign,¹¹ appear to be having a positive effect as 90% of subjects correctly identified that condoms can be used to lower the risk of transmitting genital herpes. However, as our study showed that recognition of genital herpes was poor it is likely that many of these subjects would not perceive themselves to be at risk of spreading the infection and consequently it is reasonable to assume that not all would use condoms routinely. Whilst it is understandable that current sexual health campaigns are focusing on prevention it is important to realise the significance of the public being able to recognise the symptoms of common sexually transmitted infections (STIs). Consequently we believe that sexual health campaigns and sex education need to improve identification of STIs.

We found that knowledge of genital herpes was better in patients who had studied in further education than those who had only school qualifications. This is consistent with the findings of an American study which examined awareness and knowledge of genital herpes around the same time that the condition was given extensive media exposure.¹⁰ Given that the highest prevalence of genital herpes in the United Kingdom occurs in 20-24 year olds,² it is obvious that those in school education need to be a target group for raising awareness of this infection.

We anticipated that sex education in school would improve knowledge of genital herpes. Although scores in this group were higher we could not demonstrate a measurable benefit. Indeed, it was interesting that 11 of the 16 subjects who had not heard of herpes had received sex education in the past. Despite the fact that Scotland has a relatively comprehensive sex education programme which incorporates an understanding of contraception and STIs,¹² we have demonstrated that sex education does not appear to improve awareness and understanding of genital herpes. We believe this area requires attention and further studies examining the effectiveness of sex education in Scotland might identify areas for future improvement and change.

We noted the sources from which subjects had received information on genital herpes. It was worrying to find that only two of the five subjects who had been diagnosed with genital herpes had received information from medical staff. Such small numbers means that this finding may not be representative of all patients with genital herpes in Lothian. Nonetheless, this is a worrying finding and suggests that healthcare professionals may not be giving patients adequate information about their condition. The findings of the study of general practitioners in Coventry⁹ may apply to Lothian and it would be interesting to examine if this situation is consistent throughout Scotland.

As there has been little media attention given to the increasing prevalence of genital herpes, it is not surprising that few subjects cited the media as a source of their information. However, previous studies^{10,13} have shown the media to be very effective in conveying information about sexual health. This suggests that increased media exposure could improve public awareness of genital herpes.

Our study was slightly limited by the way that we allocated the marks. As we did not use negative marking, it was possible for patients to obtain full marks by ticking every available option. We also gave every question the same weighting; however the answers to some questions may be more important than others for prevention and treatment of genital herpes.

It is also important to note that the sixteen patients who had never heard of genital herpes did not answer the multiple choice section on knowledge of genital herpes; thus the sample represents individuals who attended a genitourinary clinic and who had heard of genital herpes.

We hope that our findings may raise awareness of genital herpes and have identified areas for education, particularly in school children. It is hoped that that improved awareness and understanding of genital herpes among the general public in Scotland will lead to reduced transmission and lower prevalence with time.

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