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ORIGINAL RESEARCH ARTICLE

The role of illness perceptions: psychological distress and treatment-seeking delay in patients with genital warts

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Summary: This study examined the relationships between illness perceptions, psychological distress and treatment-seeking delay in genital warts patients. Sixty-six genital warts patients were approached while attending a sexual health clinic. They completed a questionnaire assessing their illness perceptions, psychological distress and treatment-seeking delay. Negative perceptions of illness consequences and control and a perceived cyclical timeline were associated with increased psychological distress. Perceived illness consequences maintained significance in a multiple regression equation, which accounted for 25% variance in distress. Depression was associated with treatment-seeking delay ($r = 0.28$, $P = 0.03$). In conclusion, illness perceptions may play an important role in the experience of psychological distress in genital warts patients. The implications of these findings for the design of health-care interventions are discussed.

Keywords: illness perceptions, distress, treatment-seeking delay, genital warts, HPV

Introduction

Genital warts, a clinical manifestation of human papillomavirus (HPV) infection, is one of the most common sexually transmitted diseases (STD) with which patients present at sexual health clinics in New Zealand.[1,2] HPV is spread through direct skin to skin contact[3] and can be transmitted even during protected sex as the virus can infect any area of the genital region from the inner thigh to the cervix. Treatment involves eradication of lesions by a variety of methods, but standard therapies are primarily cosmetic and recurrences are common. Warts generally appear three to six months after initial infection with HPV, but the virus can remain inactive or latent for months or years before any physical symptoms develop.[3]

Persson *et al*.[4] suggest that the emotional impact of a genital wart infection is long lasting and profound. Reactions include anger, guilt, depression, social isolation, shame and embarrassment.[4–6] Patients have also expressed worry about transmission to sexual partners, worry about the associations with cancer, fear of pain and worry about treatment.[5–9] However, no research has attempted to explain why patients who are diagnosed with genital warts respond to the diagnosis differently, with some experiencing psychological distress but others not.

The illness perceptions paradigm has demonstrated that the way patients think about their illness can influence their experience of the illness. It is based on the self-regulatory model,[10] which proposes that patients create cognitive models of their illness, which aid them in coping with and understanding their illness. These cognitive models consist of five core dimensions: identity, cause, control, timeline and consequences. The dimensions act as standards against which patients match and evaluate information about experienced symptoms.[11] Illness perceptions have been associated with a range of health outcomes. In particular, beliefs in serious consequences and poor treatment control have been related to increased depression in rheumatoid arthritis patients[12] and low levels of psychological adjustment in Chronic Fatigue Syndrome patients.[13] The illness perceptions paradigm may, therefore, be of use in predicting which genital warts patients are likely to be distressed.

Treatment-seeking delay, the time from the first awareness of symptoms to the time of medical consultation,[14] can be significant for STD patients, with one-third reporting that they delayed for more than one week[8,15] and 12% for more than 30 days.[15] However, there is a shortage of literature on treatment-seeking delay for genital warts and no

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research using an explanatory model of why STD patients may delay has been reported.

The present study aimed, therefore, to examine the relationships between illness perceptions, distress and treatment-seeking delay in a sample of patients with genital warts. It was predicted that patients who perceived genital warts as more serious, with poor personal control and curability, and cyclical in nature would have higher levels of distress. A perception of poor treatment control was predicted to be associated with a longer treatment-seeking delay.

Methods

Participants

Participants were 66 genital wart patients being treated at the Auckland Sexual Health Service. This is a free, confidential service, which provides treatment and advice for sexual health for the Auckland region. The mean age was 27 years (standard deviation [SD] = 7.5) and 34 (52%) of the participants were men. New Zealand Europeans comprised 56 (86%) of the sample with five Maoris, two Pacific Islanders and two patients from other ethnicities. Twenty-seven patients (41%) indicated that they were currently married or in a steady relationship. Fifty-eight participants (92%) stated they had partners of the opposite sex; three had partners of the same sex and two had partners of both sexes. Patients were invited to take part in the study by a member of the medical staff while attending the Auckland Sexual Health Service. Consenting participants completed the questionnaire measures below. The study was approved by the Auckland Ethics Committee.

Measures

Illness perceptions were assessed using the Illness Perceptions Questionnaire (Revised).[16] Items assessed perceived Timeline (Chronic/Acute and Cyclical), Consequences of the STD, Treatment Control and Personal Control of the illness.

Participants completed the Hospital Anxiety and Depression Scale[17] and the Rosenberg Self-Esteem Scale.[18] Standardized total scores of Anxiety, Depression and Self-esteem (reversed) were summed to create a composite Distress score.

Treatment-seeking delay was assessed with a single, free-response item: 'What was the time period between when you found out that you had an STD and coming to the Sexual Health Clinic?'

Data analysis

Illness perceptions of patients with high, medium and low distress scores were compared using ANOVA. Correlations were performed to examine the relationships between illness perceptions and distress. Illness perceptions significantly related with distress were entered into a multiple regression equation with distress as the dependent variable. Correlations of illness perceptions and distress with delay were also examined.

Results

Duration of illness

At the time of completing the questionnaire, 16% of the sample had had genital warts for less than one month, 23% between one and three months, 17% between three and six months and 31% for over a year. Length of time with genital warts was recoded into three equal groups and ANOVAs were conducted comparing the groups on measures of distress and illness perceptions. No significant differences emerged.

Illness perceptions

Intercorrelations of illness perceptions are shown in Table 1. Timeline (Acute/Chronic) and Timeline (Cyclical) were associated such that the longer the perceived duration of genital warts, the more they were perceived to be cyclical in nature. More chronic and cyclical Timelines and more serious perceived Consequences were associated with lower perceptions of Treatment and Personal Control. Personal Control and Treatment Control were strongly positively associated.

Illness perceptions and distress

In order to examine the relationships between illness perceptions and psychological distress, the

Table 1 Correlations between illness perceptions

	Timeline (acute/chronic)	Timeline (cyclical)	Consequences	Treatment control
Timeline (acute/chronic)	1	—	—	—
Timeline (cyclical)	0.52*	1	—	—
Consequences	0.20	0.19	1	—
Treatment control	−0.58*	−0.44*	−0.49*	1
Personal control	−0.46*	−0.37*	−0.33*	0.63*

*$P < 0.001$

sample was divided into three equal groups by distress score: high, medium and low distress. Analysis of variance (ANOVA) indicated significant differences in perceptions of Timeline (Cyclical), Consequences and Treatment Control (Table 2). 'High Distress' participants perceived more serious Consequences, less Treatment Control and a more cyclical Timeline than did 'Low Distress' participants.

Correlations between illness perceptions and distress were calculated. Greater Distress was associated with perceptions of a cyclical Timeline ($r = 0.33$, $P = 0.01$), serious Consequences ($r = 0.43$, $P = 0.00$), poor Treatment Control ($r = -0.30$, $P = 0.01$) and poor Personal Control ($r = -0.25$, $P = 0.04$). The correlation with Timeline (Acute/Chronic) was non-significant ($r = 0.21$, $P = 0.09$).

A multiple regression equation was performed with Timeline (Cyclical), Consequences, Treatment Control and Personal Control entered as independent variables and Distress as the dependent variable. The overall equation was significant ($F = 5.05$, $P = 0.001$) and accounted for a quarter of the variance in distress ($R^2 = .25$). Consequences significantly contributed to the equation ($\beta = 0.38$, $P = 0.00$) and Timeline (Cyclical) bordered on significance ($\beta = 0.25$, $P = 0.051$); the contributions of Treatment Control and Personal Control were non-significant ($\beta = 0.03$, $P = 0.87$; $\beta = -0.05$, $P = 0.71$, respectively). It would appear, therefore, that a belief in serious Consequences of genital warts and perceived cyclical Timeline are associated with high levels of psychological distress.

Treatment-seeking delay, perceptions of illness and psychological distress

Sixty-one percent of participants sought medical treatment within six weeks, but 13% reported delaying for over a year. Correlations were performed to assess relationships between delay, illness perceptions and psychological distress (Table 3). Depression was associated with delay, but there were no significant relationships between illness perceptions and delay. The more depressed patients were, the longer they delayed seeking treatment ($r = 0.28$, $P = 0.03$).

Table 2 Distress group means for illness perceptions dimensions and ANOVA statistics

	Low distress	Medium distress	High distress	*F*	*P value*
Timeline (acute/chronic)	16.73	17.59	18.59	0.79	0.46
Timeline (cyclical)	7.77*	9.50	9.77*	4.44	0.02
Consequences	14.18*	16.72	17.95*	3.54	0.04
Treatment control	19.14*	7.50	16.64*	3.13	0.05
Personal control	21.32	19.36	19.09	1.94	0.15

*Denotes pairs of groups significant at $P < 0.05$ identified by Bonferroni *post hoc* tests

Table 3 Treatment-seeking delay correlated with illness perceptions and psychological distress

	r	*P* value
Timeline (acute/chronic)	0.14	0.92
Timeline (cyclical)	0.01	0.93
Consequences	0.09	0.48
Personal control	−0.09	0.48
Treatment control	−0.10	0.44
Self-esteem	0.07	0.58
Anxiety	0.16	0.22
Depression	0.28	0.03
Psychological distress	0.19	0.15

Discussion

This study found viewing Consequences, Timeline (Cyclical) and Personal and Treatment Control negatively to be associated with higher psychological distress. This is consistent with previous research,[12,13,20] which has demonstrated that perceiving illnesses as being out of ones control, incurable, cyclical in nature and having serious consequences is associated with anxiety and depression. The perception that an illness has no cure could create thoughts and feelings of helplessness, which then lead to distress. A cyclical timeline is an uncertain timeline, which could be seen as being out of one's control and therefore associated with helplessness and distress. Patients' illness perceptions were highly intercorrelated, as found with other patient populations (e.g. Moss-Morris *et al.*[13]). This suggests that the cognitive representations of an illness as a whole may influence the emotional response and coping behaviours in response to the illness. Nevertheless, in a regression equation accounting for 25% of the variance in psychological distress, Consequences maintained significance, indicating an independent contribution, with Timeline (Cyclical) bordering on significance. This is consistent with previous research: Moss-Morris *et al.*[13] reported perceiving chronic fatigue syndrome as having serious consequences to be associated with psychological adjustment and vitality. Jopson[21] found beliefs in a cyclical timeline to be associated with adjustment to multiple sclerosis.

The majority of the sample sought treatment within six weeks of symptom recognition, although 39% delayed for longer than six weeks. In comparison with samples of general STD patients, this study's population delayed for a considerable amount of time. For example, Hook *et al.*[15] reported a median delay time to be five days for men and seven days for women with 65% seeking treatment within one week and only 13.5% seeking treatment after 30 days. However, when focusing on the data of genital warts patients, Hook *et al.*'s patients were also seen to delay, with 73.3% of male and 59% of female genital warts patients delaying for more than seven days.

The hypothesis that poor perceived treatment control would be associated with longer treatment-seeking delay was not supported by this study. Measuring perceptions of treatment control after treatment has begun could be problematic though; perceptions may change after diagnosis, consultation with medical staff and being informed of treatment options. Information given to the patients by staff (e.g. patients received a written information pamphlet about genital warts) may already have altered participants' perceptions by the time they were measured in this study, where the majority of patients (84%) had had genital warts for at least one month. Self-regulatory theory proposes that beliefs develop and change over time, with experience of illness and from information patients receive through social messages and from medical professionals. Delay was found to be related to depression, but it is not clear whether patients were depressed because they delayed for a long period of time and hence were suffering consequences or whether depression led to delayed care-seeking. Alternative causes of delay are the hope that symptoms will disappear, belief that symptoms will resolve without treatment, difficulty getting to the clinic, stigma, embarrassment, lack of understanding and low prioritization of genital symptoms.[8,15] Whether such factors may have an impact over and above that of distress was not investigated in the present study.

This study's main limitation was the cross-sectional design, which makes it impossible to make causal statements. Additionally, the sample was self-selected and to maintain confidentiality no data on non-responders could be collected. If these were the more distressed patients, they may have delayed for longer than the responders.

Results from this study could provide the basis for interventions based on illness perceptions. An information package could be developed to further patients' knowledge about genital warts and HPV and to correct any inaccurate illness beliefs individual patients may have, thus minimizing psychological distress. It is important that sexual health clinics be familiar with these results as recognizing that patients with certain beliefs may have psychological distress could enable such patients to receive psychological assistance earlier. Prospective research needs to be carried out in this subject area to determine the direction of causality. Further research could also evaluate how perceptions change over time and over the course of illness.

This study has demonstrated that illness perceptions play a significant role in the experience of psychological distress post genital wart diagnosis. Psychological distress (depression) was associated with treatment-seeking delay.

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