Health Seeking Behaviours in a Sexual Health Clinic Population

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ABSTRACT

Introduction:

Patients with genital symptoms frequently use complementary therapies during their treatment at a clinic. Some of the therapies used are beneficial, some are ineffective and others are potentially harmful. This study examined the extent and range of health products and methods used by patients of two Sexual Health clinics and tried to identify predictors of complementary health utilisation.

Methods:

The health seeking behaviour of four groups, patients with chlamydia infection, genital herpes, genital warts and vulvodynia, was studied in a cross-sectional survey of patients presenting to Manly Sexual Health Service (MSHS) and at Livingstone Road Clinic (LRC). A self administered questionnaire was used to assess patients' perceptions of their condition and their use of complementary therapies.

Results:

Seventy nine patients from MSHS and nine patients from LRC participated in the study. The majority (76 %) of patients from MSHS had used complementary health products or health methods and 22% had also visited complementary health providers for the treatment of their condition. Utilisation rates differed significantly between the four patient groups, and were the highest in the "vulvodynia" cohort. Overall, users of complementary therapies were most likely to be female and non-smokers with a low alcohol consumption. Users were also more likely to state that they were "worried about the condition" and to have "received conflicting information about the treatment in the past".

Conclusion:

Patients with chronic symptoms who are worried about their condition are likely to try a wide range of potential remedies. Acknowledgement of this search for complementary therapies and open discussion can help patients to make informed decisions, to avoid drug interactions and other complications, and may lead to a more comprehensive and holistic model of health care.

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AUTHOR'S CONTRIBUTION

The author designed the study protocol, conducted the literature review, developed the questionnaire, analysed the data and was responsible for the organisation, coordination and completion of the study.

ABBREVIATIONS

CAM	Complementary and alternative medicine
CH	Complementary health
CSASHS	Central Sydney Area Sexual Health Service
LRC	Livingstone Road Clinic
MSHS	Manly Sexual Health Service
STD	Sexually transmitted diseases

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1. INTRODUCTION

1.1 Health Seeking Behaviour

Health is defined as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.[1] Health seeking behaviour describes the manner in which persons take preventative and remedial actions and utilise the health care system in order to improve this state of wellbeing. People differentially perceive and evaluate their health, and such behaviour influences the way they respond to bodily changes and symptoms. The course of action taken depends on a variety of individual and illness related factors and ranges from waiting for spontaneous resolution and self-treatment to utilisation of different health services. Among other variables the level of psychological distress has been shown to be a significant factor in predicting the utilisation levels of general medical services.[2]

The socio-behavioral model proposed by Andersen[3] has frequently been used to analyse the decision to seek health care. It portrays the process of choosing health care as a complex of three interrelated sets of determinants: predisposing factors, enabling factors and the need for care. Predisposing variables refer to those that exist prior to the onset of illness and include demographic factors (ie. age and sex), social-structural variables (ethnicity, occupation, and education), and beliefs about medical care, physicians and disease. Enabling factors include family resources such as income and level of health insurance coverage, but also knowledge of and accessibility of health services. Need for care refers to illness variables such as worry about health, disability days, and severity and chronicity of symptoms.[3] These sets of variables try to explain why some patients will visit their doctor, some will see an alternative health provider, some will use an over-the-counter medicine or a home remedy, while others will take no action at all.

A study of illness behaviour in the general population showed[4] that the majority of individuals with any particular symptom do not present to a doctor, and this was especially true when self administered medication was used. For every medication prescribed by a doctor, two were taken either on the respondent's own initiative or on the recommendation of some other lay person. Of the persons who were taking prophylactic medicine or action, the majority did so on their own initiative.[4]

1.1.1 Self Care

Self care is a common and often necessary part of health care. It involves many different elements and ranges from self treatment of minor illnesses to patient participation in the management of major diseases. Self care also includes maximisation of a healthy state of well being by proper diet or exercise and the prevention of illness.[5] People's interest in taking responsibility for their health and managing their own health problems has been increasing over the last years and is reflected in the growth in health information services and healthy life style activities. A major reason for people to engage in self care is that it gives them a feeling of independence, self reliance, responsibility and control over their own health. Self treatment is also often part of the coping strategy for dealing with chronic illness.[6]

However, there are several obvious risks associated with self medication. Patients frequently do not inform their doctors about over the counter drug use and unexpected drug interactions can occur. People may also not be aware that certain common illnesses are symptoms of underlying disease which may be masked by self medication. In these cases self care can delay presentation to a doctor and proper treatment, often resulting in more severe symptoms, longer period of infectivity or increased risk of complications. [7]

1.1.2 Complementary and Alternative Medicine (CAM)

An increasing number of patients choose their treatment from the wide and diffuse field of medical practices, often described as unconventional, alternative or

complementary medicine. The two terms "alternative" or "complementary" medicine reflect the use of these therapies in relation to conventional medicine. The term "alternative medicine " implies that these treatments are substituting for conventional therapies, whereas the term "complementary medicine" suggests that the two are used in conjunction. The name "Complementary and Alternative medicine" (CAM) acknowledges both possibilities.[8]

In the first comprehensive survey of the utilisation of unconventional medicine in the United States[9] the authors acknowledged that these "unconventional, alternative or unorthodox therapies are difficult to define, because they encompass a broad spectrum of practices and beliefs". For the purpose of the study unconventional therapies were defined as "medical interventions not taught widely at U.S. medical schools or generally available at U.S. hospitals". The list of unconventional therapies included a wide range of different modalities such as relaxation techniques, chiropractic, massage, imagery, spiritual healing, commercial weight-loss programs, lifestyle diets, herbal medicine, megavitamin therapy, self-help groups, energy healing, biofeedback, hypnosis, homeopathy, acupuncture, folk remedies, exercise and prayer.[9]

Two other subsequent studies used the same negative definition of unconventional therapy with similar but not identical lists of therapies.[8,10] In one study, however, it was stated that "visits in which unconventional therapies were provided through a physician were considered to be conventional" [8], demonstrating the limitation of this definition. Furthermore, the range of therapies being taught at medical schools differs considerably among and within countries and has been changing rapidly over time. In Japan, for example, Traditional Chinese Medicine has been practised for over 2000 years and is deeply rooted in Japanese culture, whereas Western Medicine has only been in use for 200 years.[11] Meanwhile several US and European medical schools have integrated treatments, such as acupuncture or homeopathy, in their medical curriculum and increasing numbers of conventionally trained doctors practice these unconventional therapies.

Complementary medicine is now commonly defined as "diagnosis, treatment and/ or prevention which complements mainstream medicine by contributing to a

common whole, by satisfying a demand not met by orthodoxy or by diversifying the conceptual framework of medicine." [12]

1.1.3 Who uses CAM?

One of the first large studies, a 1991 national telephone survey of American adults 18 and older, found that 34% of the respondents had used at least one unconventional therapy in the previous year and a third of these had consulted a provider of unconventional medicine.[9] The highest frequency of use was reported by non-black persons from 25 to 49 years of age who had relatively more education and a higher income. However, only 4% saw a provider of unconventional therapy for a specific health problem without also seeing a medical doctor.[9] The suggestion that most practitioner based unconventional therapies serve more as a complement than an alternative to conventional medicine was confirmed by the results from the American Medical Expenditure Panel Survey. The study demonstrated that during 1996 an estimated 6.3% of the US Population had made visits for both unconventional therapies and conventional medical care, whereas only 1.8% had used unconventional services exclusively. All users of unconventional medicine were more likely to be female, white and more educated.[8]

An Australian survey assessed the utilisation rates of alternative and complementary medicine by over 3000 persons aged 15 or older.[13] 48.5% of respondents reported to have used at least one non-medically prescribed alternative medicine and 20.3% to have visited at least one alternative practitioner in the last year. Again, users of alternative medicine were found to be mostly female, aged between 15 and 34 years, single and of high socioeconomic status.[13] A similar picture of CAM users was drawn by a study of alternative practices in Sydney. Most patients were found to be female, between the ages of 30 and 49, university educated, English speaking, and covered by private health insurance. The proportion of active smokers and regular consumers of alcohol among the surveyed patients was also significantly less than for the adult population as a whole.[14]

1.1.4 Why do patients use CAM?

Patients use complementary and alternative medicine for a variety of health problems. The frequency of use of unconventional medicine was highest for back problems, anxiety, headaches, chronic pain, chronic fatigue syndrome and addictive problems in both American surveys.[9,10] The commonest cited reasons for a visit to an alternative therapist in the Sydney based study, were musculosceletal, digestive, emotional or nervous problems, or general ill health.[14] Overall, utilisation of alternative health care provider and health products tends to be highest for chronic conditions for which traditional medicine has little cure to offer. Most people use unconventional medicine and their provider as an "add on", rather than as a substitute for conventional medical treatment[8], but the reasons why patients spend this additional time and money are still poorly understood.

Several studies have tried to identify sociocultural and personal factors underlying a person's decision to use CAM and different theories have been proposed. Dissatisfaction with conventional treatment is one possible explanation for the use of alternative health care. Patients might be dissatisfied with the medical outcome, ie. feel frustrated with the inability of conventional medicine to successfully treat their illness. Patients might also be dissatisfied with the medical encounter itself, ie. feel that their doctors are too authoritative and spend too little time with them.[15] A different theory suggests that alternative therapies are attractive, because they are seen as more compatible with patients' values, worldviews, and spiritual/ religious philosophies.[10]

A written survey of over a thousand persons examined the use of alternative health care, health status, values and attitudes toward conventional care. The central finding of this study was that users of alternative health care are no more dissatisfied or distrustful of conventional care than nonusers are. It was also demonstrated that users tended to hold a holistic philosophical orientation toward health and were more likely to have had some type of transformational experience. Users of alternative health care were also more likely to report poorer health status than nonusers. [10]

An Australian study investigating the determinants of attitudes towards alternative medicine showed similar results. It was found that dissatisfaction with medical outcome had no impact on attitudes towards alternatives. On the other hand, subscribing to a post-modern philosophy, ie. holding anti-science sentiments, believing in a holistic view of health, rejecting authority and believing in individual responsibility, was strongly associated with a positive perception of alternatives.[15]

The theory that poorer health status predicts alternative medical use was supported by the findings of a study of women with early stage breast cancer. Three months after surgery the use of alternative medicine was independently associated with depression, fear of recurrence of cancer, lower scores for mental health and sexual satisfaction, and more physical symptoms. Thus in this study the use of alternative medicine was a marker of greater psychological distress and worse quality of life.[16]

A Canadian study examined the motivation of patients who choose to seek care from one of five different types of practitioners: family physicians, chiropractors, acupuncturists, naturopaths and Reiki practitioners. It was shown that the *need for care* was high among alternative users, who suffered predominantly from chronic ailments, which had not responded successfully to medical treatment but continued to negatively affect their daily lives. An alternative health ideology (ie. health beliefs) played another major part in people's decision to take up alternative health care. Over a quarter of respondents reported that they had chosen an alternative medicine because they believed in it and its principles. The wish for personal responsibility over health care decisions was also strong among alternative users, and most of them reported that they take a pro-active role in maintaining their health. In this study both ideological and pragmatic considerations influenced patients' decisions about what kind of treatment to seek.[17]

1.1.5 Risks and benefits of CAM

The ever-increasing popularity of CAM has prompted the medical community to call for rigorous scientific testing of unproven remedies. Special academic research units have been founded worldwide in order to evaluate alternative and complementary treatment modalities and examine their potential risks and benefits. It has been argued, that there is no alternative medicine, but only scientifically proven, evidence-based medicine supported by solid data or unproven medicine for which scientific evidence is lacking.[18] Although many advocates of alternative medicine believe that scientific methods are not applicable for the testing of their remedies, recent research projects have proven the contrary. The effectiveness of chinese herbal medicine and moxibustion (stimulation of acupuncture points with heat) for specific medical conditions, for example, has been demonstrated by the use of accepted rigorous research methods.[18] Further research in this wide field of complementary and alternative medicine will help to distinguish effective and beneficial from ineffective and potentially harmful therapies.

The use of alternative medicine is usually promoted as harmless and safe. Many patients prefer alternative to conventional therapies, because they perceive them as more natural and therefore free of adverse effects. However, this notion of safe medicine seems to be misleading, since adverse effects or complications have been repeatedly reported.[19] Case reports of severe cutaneous reactions to topically and systemically applied alternative remedies demonstrate the risk of untested health products.[20] Most alternative preparations, including herbal medicine, are not exposed to the pre-marketing evaluation process that prescription and scheduled proprietary medicines undergo. Mis-identification and lack of standardisation of herbal products make it difficult to assess their safety and monitor adverse effects. In an analysis of ginseng products, for example, the amount of the active ingredient in each pill varied by as much as a factor of 10 among brands that were labeled as containing the same amount.[22] Herbal products can also be contaminated by pesticide residues, microorganisms and heavy metals, and cases of lead poisoning from Asian traditional remedies have been reported.

Furthermore, adulteration of herbal products with prescription drugs have resulted in cases of severe medical adverse reactions.[21]

Many alternative health products are used by people who are healthy or who have common, relatively minor problems, such as back-ache and fatigue. People experiencing symptoms of serious disease, such as severe chest pain or blood in the urine, commonly seek additional help from conventional doctors. However, uncertainty about the seriousness of symptoms and preference of alternative remedies might result in a harmful delay of effective treatment. Some people may also embrace alternative medicine exclusively, putting themselves in great danger.[22]

Harm can also result where alternative medicine is unnecessarily expensive. Most alternative therapies are not covered by health insurance.[19]

Patients commonly do not disclose the utilisation of complementary and alternative medicine to their physicians. The perception, that the alternative treatments used are irrelevant to the biomedical treatment course, and anticipation of the physician's disinterest or negative response are the main reasons for non-disclosure.[23] It is essential that doctors discuss the use of alternative therapies in an open minded way with their patients and inform them about the potential risks and benefits. Ignorance or general discouragement of the use of complementary or alternative therapies will not stop patients from using them, but might increase the risk of inappropriate self treatment. The increasing desire of patients to play an active part in their treatment, may be beneficial in the management of some illnesses. Perhaps, doctors should encourage such interest and help patients to make an informed decision.

1.1.6 Self Treatment and CAM in Sexual Health

The infective nature of sexually transmitted diseases (STD) distinguishes its management from other diseases. Partner notification and screening for other STD is as important as effective treatment and control of symptoms. An early presentation of symptomatic patients to a qualified doctor is therefore essential for

the prevention of the further spread of STDs and avoidance of long term complications. Self treatment of STDs is not only mostly ineffective, but also delays the time to proper treatment and prolongs the period of infectivity. Fear of medical procedures, a stigmatising diagnosis or ignorance of available sexual health services are reasons why symptomatic individuals sometimes avoid or delay presentation. Patients' beliefs about STDs and their treatment, including the severity of STDs, personal susceptibility and efficacy of treatment, also influences their health seeking behaviour.[24]

The STD- related health care seeking behaviour of adolescents was examined at a public STD clinic in Chicago. A prolonged care seeking interval was associated with perceived seriousness of symptoms, greater knowledge and experience of sexually transmitted diseases, as well as a greater sense of STD associated stigma. The behavioural responses to the STD related problem included discussion of the problem with family and friends, self treatment, information seeking and waiting for resolution. The use of vaginal douches, antibiotics or non-prescription medications, such as analgesics and laxatives, was reported by more than 25% of symptomatic and asymptomatic adolescents.[25]

A study of women's treatment decisions for genital symptoms found that most women did not seek treatment, because they regarded the symptoms as normal or because they felt that symptoms were insufficiently serious. Women were only confident about the possibility of an STD when the symptoms were very pronounced or they arose in a stereotypical behavioural context. Several women who did not present to the clinic used self medication, mostly naturopathic diets, yoghurt or borrowed prescribed medicine, instead.[26]

The frequency of self-medication among symptomatic women was studied at a busy walk-in genitourinary medicine clinic in London. 103 women completed a questionnaire about their own diagnosis of symptoms and previous remedies. 56% of the women reported the use of one or more self administered therapies prior to their attendance. Clotrimazole cream, antibiotics, unspecified creams, natural yoghurt, paracetamol, garlic application and salt baths were some of the more frequently used remedies. The source of the self medication was reported as the

GP during a previous episode, a pharmacist, a previous consultation at a GUM clinic, friends or health food shops. 43% of women who treated themselves had improved symptoms, 5% felt worse and 52% reported no difference. A history of a previous episode of similar symptoms was significantly associated with the use of a self administered therapy.[27]

Self treatment in Sexual Health does not only potentially lead to the spread of STDs, but can also adversely affect other, non-infectious, genital diseases. A study of patients with chronic vaginal symptoms showed that 73.3% of patients had self treated with over-the-counter medicines, such as miconazole or povidone-iodine, and 41.9% had used alternative medicines, most frequently acidophilus pills, yogurt and vinegar douches, during the preceding year. Although most patients had thought that vulvovaginal candidiasis was the cause of their symptoms, vulvar vestibulitis, irritant dermatitis and bacterial vaginosis were diagnosed in a high percentage of patients. These results indicate, that in a patient population in which the initial diagnoses have not been clearly established, over-the-counter antimycotic agents are often overused. Furthermore, in patients with irritant dermatitis or vulvar vestibulitis the inappropriate use of topical therapy can exacerbate the condition and play a role in persistence of symptoms.[28]

Previous studies showed that patients suffering from chronic or recurrent conditions are especially prone to use CAM [9,10], and this is thought to be true for Sexual Health patients as well. The extent and range of therapies used are likely to differ between patient groups, depending on the type and severity of the condition. The use of CAM will be examined for four different genital conditions: chlamydia infection, genital herpes, genital warts and vulvodynia. The nature and management of these conditions will be discussed in the next chapters.

1.2 Chlamydia Infection

Chlamydia trachomatis is the most frequently occurring sexually transmitted bacterial infection in the developed world.[29] It causes a spectrum of diseases ranging from asymptomatic infection to severe cases of morbidity and even mortality.

Despite the availability of good diagnostic tests and effective treatment, both the incidence and the sequelae of genital chlamydia are on the increase. Over 33,000 cases are diagnosed annually in genitourinary medicine clinics in the United Kingdom, and probably many more cases of asymptomatic infection remain undetected in those groups perceived as low risk.[30]

Chlamydiae are obligate intracellular pathogens with a long life cycle. Transmission usually occurs during sexual intercourse and the incubation period typically takes between one and three weeks. The organism preferentially infects columnar or transitional epithelium causing cervicitis, urethritis or proctitis. Untreated the infection can progress and cause pelvic inflammatory disease in women and epidytimitis or orchitis in men. Possible long-term complication range from infertility and ectopic pregnancy to systemic conditions such as Reiter's disease.

The majority of infections in women are asymptomatic or associated with non-specific symptoms only. Few women present with symptoms of lower abdominal pain, menstrual disturbance, urethral difficulties and vaginal discharge. In men chlamydia may cause urethral discharge and dysuria, but up to 50 % of infections are also asymptomatic. Rectal infections usually do not cause symptoms, but rarely anal discharge and ano-rectal discomfort do occur. [29,31]

1.2.1 Management

Effective management of chlamydial disease depends on appropriate antibiotic treatment and follow up of patients but also the tracing of all sexual contacts. Several different antibiotic treatment regimens with good evidence for efficacy

exist. Ideally, treatment given should be effective, easy to take, with little side effects, and minimal interference with daily lifestyle. Patient education on the nature of the treatment, including the side effect profile of the chosen drug and on what to do if doses are missed, are also important to improve compliance.[29]

Oral doses of either *Doxycycline*, *Erythromycin*, or *Roxithromycin* for ten days are recommended for the treatment of uncomplicated chlamydial cervicitis or urethritis. *Azithromycin* is effective treatment in a single dose and is the preferred treatment if patient compliance is uncertain. Longer oral treatment regimens or intravenous administration of antibiotics become necessary once the chlamydial infection has progressed to pelvic inflammatory disease or epydydimitis.[32]

1.2.2 Self treatment

Despite free and confidential access to Sexual Health Clinics in many countries and the easy treatment of chlamydia infection, some symptomatic patients decide to self treat their symptoms and delay presentation. The prevalence of self-treatment in men with new episode of non gonococcal urethritis (NGU) was studied at an open access genitourinary clinic in London. Ten per cent of the three hundred men interviewed, had used treatment prior to their clinic attendance. Antibiotics were by far the most frequently used medication, followed by iodine, vitamin tablets, cisapride, local anaesthetic gel and antiseptic creams. The majority of men reporting antibiotic use had self medicated with therapies from their own medicine cabinet or via friends, and in all cases the antibiotic was either inappropriate or inadequate.[33] A high prevalence of self medication with antimicrobial agents was also demonstrated in a study of patients attending a STD clinic in Atlanta / USA. Fourteen percent of the 551 participants were classified as self medicators. They had either reported self medication with an antimicrobial agent in the week prior to the visit and/ or had a positive urine assay for antimicrobial agents.[34] Such use of unprescribed antibiotics does not only invalidate bacteriologic cultures and promote the development of antimicrobial resistance, but can also cause adverse effects or drug reactions.

Some lay books on natural therapies recommend tea tree oil pessaries, external washes with sandalwood oil or home made apple cider vinegar douches for vaginal discharge. The internal use of herbs, like barberry bark, raspberry leaf or thyme or specific supplements and diets are also promoted for the self treatment of vaginal itching, inflammation or "minor" infections.[35] While most of these home remedies probably do not have a direct negative impact on the patient, their use will delay effective treatment and therefore promote the development of long term complications. In the United States, where many women douche their vagina as part of routine hygiene or for postmenstrual or postcoital cleansing, the frequent use of vaginal douching was shown to be a risk factor for the development of pelvic inflammatory disease.[36]

1.3 Genital Herpes

Genital Herpes is a common chronic STD which results from infection with the herpes simplex virus (HSV), a double stranded DNA virus. Both types, HSV 1 and HSV 2, can cause genital infection, although type 1 more commonly causes lesions of the lips and face.

In several communities worldwide the prevalence of genital herpes has been increasing over the last decades. In the USA, for example, there has been a 30% increase in HSV-2 seropositivity between 1978 and 1992 with a marked shift towards younger age of acquisition. HSV-1 as a cause of genital herpes is also on the increase and it is now estimated that up to 50% of primary genital herpes result from HSV-1 infection.[37]

Transmission of HSV infection occurs through a close contact with a person who is shedding the virus at a peripheral site. Commonly lesions are present at the time, but transmission may also occur when the patient is unaware of lesions (atypical/ unrecognised lesions), or when lesions are not clinically apparent (asymptomatic shedding). Infection occurs via inoculation of virus onto susceptible mucosal surfaces or through small cracks in the skin. Concomitant with initial epithelial infection, HSV ascends peripheral sensory nerves and establishes latency in sensory or autonomic nerve root ganglia. Once latency is established, neither host immunity nor currently available chemotherapeutic agents can eradicate the latent virus. Reactivation of the virus and infection of the genital skin or mucosa cause the recurrent episodes of genital herpes.[38,39]

The clinical manifestations and recurrence rates of genital herpes are influenced by viral type and host factors such as past exposure to HSV-1, previous episodes of genital herpes and gender. As many as 50 to 70 per cent of HSV infections are asymptomatic, and several clinically symptomatic infections are so mild that they never result in the patient's attendance at a clinic. Recent studies suggest that the classic presentation of genital herpes, a cluster of painful vesicles on an erythematous base, is present in only 60-70% of persons with clinically symptomatic illness.[39]

First episodes of genital herpes often are associated with systemic symptoms, involve multiple genital and extragenital sites, and have a prolonged duration of viral shedding and lesions. Patients with first episodes of genital herpes who have clinical or serological evidence of prior HSV infection have a milder illness than those experiencing true primary infection. Prior oral-labial HSV-1 infection appears to protect against acquisition of genital HSV-1 disease and ameliorates the severity of first episodes of genital HSV-2 infection.[38]

Most episodes of *recurrent herpes* result from HSV 2 infection, since HSV 1 infections recur far less often. Patients typically experience four to five recurrences per year, but approximately 20% suffer from six to ten herpes outbreaks per year.[37] The lesions of recurrent genital herpes are usually confined to one side, are of shorter duration and less painful or itchy compared to the lesions in initial genital infection. Approximately 50 percent of persons with genital herpes develop symptoms in the prodromal phase of illness, varying from mild tingling sensations to shooting pain in the buttock or legs.[38]

Genital herpes is an emotive disease, particularly since it is recurrent and may interfere with sexual behaviour. For many patients the psychological and psychosocial effects of genital herpes are more troublesome than the actual physical manifestation. The diagnosis of herpes infection often comes unexpectedly, especially for those currently in monogamous relationships. Feelings of shock, anger, depression and embarrassment about having a "social disease" are common. Fear of discovery, rejection or of transmission to new sexual partners can lead to isolation and withdrawal from sexual relationships. The psychosocial impact of genital herpes changes over time and anxiety levels and concern usually decrease in patients who do not suffer frequent recurrences.[37]

1.3.1 Management

The development of effective antiviral drugs has substantially improved the management of genital herpes. Three antiviral agents are now available for the treatment of genital herpes.

The nucleoside analogue *Acyclovir* was the first antiherpes agent to be developed and is now approved for intravenous, oral or topical administration. Acyclovir exerts its antiviral effect after being metabolised by viral thymidine kinase to Acyclovir triphosphate in infected cells, where it then inhibits the synthesis of viral DNA. Although acyclovir is very effective it is poorly bioavailable following oral administration and the current topical formulation is not very effective. *Valacyclovir* is an ester of acyclovir that is rapidly and almost completely converted to acyclovir and increases the bioavailability of acyclovir from approximately 15% to 54%. *Famciclovir*, a prodrug of penciclovir, is another nucleoside analogue that effectively inhibits HSV1 and HSV 2. Similar to acyclovir, penciclovir requires viral thymidine kinase for the initial phosphorylation and acts by inhibiting viral DNA poymerase. Famciclovir has a high oral bioavailability of 77%.

All three antiviral agents have been shown to be beneficial in the *treatment of first episodes* of genital herpes. Symptoms are reduced both in duration and severity, and the time to lesion healing and duration of viral shedding are significantly shortened. All patients who present with suspected or proven first-episode genital herpes should be offered antiviral therapy at the time of initial evaluation, since antiviral agents are most effective when initiated early in the course of infection.

Strategies for management of recurrent genital herpes depend on the frequency and severity of recurrences, but also on relationship and lifestyle issues of the individual. *Episodic treatment* is initiated by the patient at the first sign or symptom of a recurrence, and usually reduces the duration of the episode by one or two days. Episodic treatment might be considered for patients who have only few serious recurrences per year and who are not very bothered by the frequency of the episodes. *Chronic suppressive antiviral therapy* is appropriate for most patients who suffer from recurrent genital herpes, since it does not only reduce the frequency of recurrences but also the severity of the associated symptoms. Continuous antiviral therapy decreases asymptomatic shedding and therefore probably also the risk of transmission.[37]

In the long term management, the patient's views of the disease and how it should be controlled are important considerations. The decision whether to take episodic, suppressive or no antiviral treatment at all will depend on the patient's social circumstances, sexual behaviour and attitude toward drugs. It is important to provide the patient with information about available treatment options so that an informed decision can be made.

1.3.2 Complementary therapy

Countless lay books on genital herpes offering advice and information to worried patients have been published over the years. Before the advent of antivirals no effective treatment was available and a variety of unproven home remedies has been advocated and tried by troubled patients. A significant number of patients still decide to substitute or complement antiviral treatment with alternative remedies. The recommendations given in lay books and magazines range from ineffective diets and potentially harmful preparations to useful information on how to look after sores and cope with stress. Taking active steps in their management can help patients to cope with this chronic illness, but accurate information is essential.

Various simple self applied methods, commonly recommended by practitioners of conventional medicine, can help in the management of existing herpes outbreaks. Left alone, herpes sores eventually heal, but they do so faster if they are kept dry and clean. *Loose clothing* and *cotton underwear* help to keep the affected area aired and free from friction. A *high fluid intake* reduces the acidity of the urine and therefore decreases stinging and burning during urination. Passing urine in a warm bath or shower or applying *Xylocaine* to the lesions are further methods to reduce discomfort. Pain caused by herpes lesions can be alleviated by local application of *ice packs* or *warm salt baths*, but also by the use of *non prescription pain medications*, such as Aspirin or Paracetamol.[40]

Some lay books on herpes also recommend the use of *sterilising chemicals*, like ether, chloroform or iodine solutions, for herpes sores. While these substances can inactivate the virus in the skin when applied topically, they have no effect on pain

and discomfort and furthermore irritate the skin.[41] *Natural oils and creams* containing cloves, wheatgerm and aloe vera are also frequently used by patients.[40] Not only do these agents slow healing by preventing the sores from drying, but they can potentially sensitise the skin, leading to allergic or irritant contact dermatitis.

Nutritional supplements like zinc, calcium, vitamin B12, C and E, lithium, selenium, red algae, garlic, ginseng and primrose oil, *various herbs* and *specific diets* have been advocated by some as a "natural treatment" or even "cure" for herpes.[42] While a healthy diet and the use of some supplements will be beneficial for the overall wellbeing, there is little evidence that they improve herpes symptoms or prevent recurrences. A study of *oral herbal medicine* for patients with herpes labialis and herpes genitalis reported decreased symptom duration and reduced pain with therapy.[43] However, no controlled trial was conducted and these case reports alone do not provide sufficient evidence for the effectiveness of this herbal therapy. The *amino acid lysine* has been claimed to be effective in the treatment and prevention of episodes of recurrent herpes infection. A double-blind, placebo controlled clinical trial studied the effect of oral lysine hydrochloride therapy on the frequency, duration and severity of herpes episodes. No substantial benefit of lysine therapy either as a treatment or for the prevention of recurrences could be detected and it was concluded that it is unlikely that lysine improves frequently recurrent HSV infections in the majority of patients.[44] *Various other drugs*, such as ibuprofen or cimetidine, and butylated hydroxytoluene, an antioxidant food preservative, have been promoted for the prevention of recurrent herpes. Not only are these drugs ineffective in reducing the frequency or severity of outbreaks, but they are also known to cause potentially severe adverse effects.[41]

The relationship between stress and recurrent genital herpes has been studied extensively. While some studies suggest that psychological stress and negative mood can trigger herpes recurrences, others indicate that it is rather the ongoing recurrences that cause the emotional stress and adversely affect personality. In a recent prospective cohort study persistent stressors and highest levels of anxiety predicted genital herpes recurrence, whereas transient mood states, short-term

stressors, and life-change events did not.[45] The importance of *stress management* and adequate *coping skills* for both the psychological and physical well being of herpes patients is, however, well established. *Simple life adjustments*, such as adequate sleep, a well-balanced diet, avoidance of tobacco and recreational drugs, can help a person to cope with stress. Other methods for stress management include meditation, hypnosis, biofeedback, visualisation and psychotherapy. A study of *hypnotherapy* demonstrated a significant reduction in herpes outbreaks among treated patients compared to controls. Improvers also showed a significant increase in the number of CD3 and CD8 lymphocytes, a rise in natural killer cell counts and reduced levels of anxiety.[46] The significance of these changes remain uncertain.

1.4 Genital Warts

Human Papillomavirus (HPV) infection of the lower genital tract is one of the most common sexually transmitted diseases. Estimates indicate that approximately one per cent of the sexually active population have clinically apparent genital warts. However, these cases are thought of representing the "tip of the iceberg" of genital HPV infection. Progressively more infections are detected by colposcopy, cytology, nucleic acid asays and antibody tests.[47]

The Human Papillomavirus is a 55-nm DNA virus that belongs to the Papovavirus family. The number of identified HPV types is continually increasing and now exceeds 150. However, HPV types 6 and 11 are the types mostly associated with genital warts. It is hypothesised that minor trauma to the epithelium allows the virus to enter into cells of the basal layer of skin and mucous membranes. It then replicates in the nuclei of infected cells. Most infections are asymptomatic, but in some patients the virus stimulates cell proliferation, which manifests itself as condylomata acuminata. Lesions that do occur, usually appear a few weeks or months after infection, but viral latency might take up to several years. Latency is characterised by non-productive infection, in which HPV DNA is present but no virions are assembled. Cell mediated immunity plays an important role in the immunologic response and can eradicate the virus.[48]

Genital warts usually do not cause many symptoms, but occasionally they can be painful, friable, or pruritic and, depending on their size and anatomical location, may interfere with sexual function. Some female patients also complain of vulvar tenderness, local pains or of abnormal discharge.[49] The psychological effects of genital warts are also substantial, and feelings of disgust, shame and embarrassment are common. Some patients are concerned about the risk of cancer, some feel depressed or angry and some develop negative feelings towards their partners. Patients also frequently report that having genital warts has changed their lifestyle.[50]

1.4.1 Management

Wart treatment is directed toward minimising this outer manifestation of HPV infection, not eradicating the virus itself. There are a variety of different treatments and no single modality has been found to be ideal for all patients or warts. The size, anatomic location, number and character of the warts affects treatment decision, as well as coexisting conditions such as pregnancy and immune deficiency. Repeated treatments are often necessary, either because individual warts are difficult to eradicate , or because new warts appear in areas of previously uninvolved skin.[48,51]

Most doctors prescribe cytotoxic agents, such as podophyllin or trichloracetic acid, and cryotherapy as first line treatments.[52,53] These treatment modalities have to be applied by a health professional and patients need to make several visits to the clinic.

Podophyllin is usually compounded as a 10% to 25% suspension in tincture of benzoin or absolute alcohol and contains a number of antimitotic ligands. It is applied with a cotton wool swab to each wart, and washed off in four hours. Podophyllin should not be used in pregnancy and prolonged use should be avoided, as systemic toxicity can occur. Local side effects include skin irritation, erythema, pain and ulcerations. Warts clear completely for 19% - 80% of patients, but between 23% and 70% of patients experience recurrent genital warts.

Trichloroacetic Acid (TCA) is a caustic agent that destroys warts by chemical coagulation of proteins. TCA solutions should be applied in low concentration and sparingly. Skin ulcerations, erosions, erythema, and irritation, as well as pain, burning and soreness, are adverse effects associated with this treatment. Clearance rates range between 50% and 100, but 6% to 50% of patients who clear the warts may experience recurrences.

Cryotherapy causes cryocytolysis, resulting in tissue sloughing and wart destruction. Effective cryotherapy can be achieved with the use of liquid nitrogen spray application, a N_2O cryoprobe or CO_2 snow applied with a cotton swab.

Local adverse events are the same as those for topical procedures, varying from edema, pain, and inflammation to severe ulceration. The frequency of these events is very low if the treatment is applied correctly. Between 60% and 97% of persons treated remain wart free for 3-6 weeks but recurrences occur in 20% to 79% of patients.

5 -Fluorouracil (5-FU), an antimetabolite, is applied as a 5% cream or a 1% solution to the lesional areas. 5-FU is a teratogen and mutagen and treatment is contraindicated for pregnant or lactating women. Local adverse effects are the same as described for podophyllin, but their frequency and intensity are higher, and severe chemical dermatitis with painful erosions is common. Cure rates depend on the anatomical site and range from10 to 50 %.

Surgical techniques, such as electrocautery, curettage or surgical excision, are mostly used as second line treatment for extensive warts. They require local anaesthesia and are initially time consuming. However, they give rapid results, are usually well tolerated and cause few side effects.

Patient applied therapeutic agents are most appropriate for patients who desire more control over their care or prefer treatment in the privacy of their homes. Both Imiquimod and Podophyllotoxin can be safely self applied, but accurate instruction and information on possible side effects is important.

Imiquimod is a topically active, immune response enhancing agent. It is a potent inducer of interferon-alpha and other cytokines and may also improve clearance of subclinical HPV infection. Localised burning, irritation and pain can occur and may be related to the direct therapeutic action of *Imiquimod.* Success rates for treatment range between37% and 85%, and it is estimated that as few as 13% - 19% of patients experience recurrences.

*Podophyllotoxin_* is a standardised preparation of the three most active agents of Podophyllin without the mutagenic ligands. It is available as a 0.5% solution or cream formulation and does not need to be washed off, as is the case with podophyllin. It is important to tell patients, that an excessive amount of the

product will not increase the efficacy, but will only increase the frequency and severity of side effects such as inflammation and burning. Between 45% and 82% of patients attain total clearance within 4-6 weeks of treatment, but up to 91% of patients experience recurrences.[48]

The prescription of podophyllin for self application should be avoided, as problems caused by too frequent or widespread use are common. Patients may be overzealous in their desire to get rid of the warts or may experience difficulties in achieving accurate application. Injudicious use of podophyllin can result in severe chemical burns requiring hospital care and even serious systemic toxicity and mortality.[52]

1.4.2 Complementary therapy

The clinical manifestation of HPV infection is influenced by the viral type and the patient's immune system, but also by certain characteristics of the patient's behaviour. Cigarette smoking, excessive alcohol intake, poor diet and a high number of sex partners have all been associated with HPV expression.[48]

A prospective cohort study of over five hundred women found that current smokers were five times more likely to develop genital warts than non-smoker.[54] Both active and passive cigarette smoking have been shown to result in a decreased number of Langerhans cells in the mucosa and probably interfere with the normal function of the immune system.[55] *Reduction in smoking* is therefore likely to improve local immunity and assist in the treatment of genital warts.

Nutritional factors, especially vitamin A, C, E and folate, and alcohol intake have also been shown to effect the immune response. In a case control study the consumption of two or more alcoholic drinks per week was associated with an elevated risk of genital warts. Vitamin A and C intakes as measured by a food frequency questionnaire, however, did not alter the risk of condylomiata.[56] The effect of nutritional factors on genital warts is still poorly understood, and recommendations for a *well balanced diet* or a *moderate alcohol consumption* should be aimed more at the overall wellbeing of patients, than at a specific treatment for warts.

The slow clearance and high recurrence rate of genital warts, but also the pain and discomfort associated with treatment, often frustrates patients and causes them to seek "more natural" therapies. Books on Alternative Therapies offer a wide range of different local and systemic remedies. Many promoted therapies aim to boost the immune system and assist the body in fighting the wart virus. *Herbal medicine* like echinacea, garlic, siberian ginseng and St. Mary's thistle are said to have powerful immune enhancing activity and are commonly recommended for the treatment of warts. *Homeopathic remedies* such as Thuja 200 are said to remove the constitutional tendency for warts and *Bach flower remedies* are used as "emotional cleansers".[42] While these therapies are unlikely to cause any harm, no studies have proven their effectiveness either. Herbal based balms and ointments, like celandine, thuja and golden seal, are also commonly applied to genital warts. Applications of all these substances, however natural, can cause local irritation and sensitisation of skin and their use should be discouraged.

1.5 Vulvodynia

Vulvodynia, also known as burning vulva syndrome or vulval pain syndrome, refers to symptoms of vulvar burning, rawness, stinging, or aching, not adequately explained by observable clinical findings. Patients with this condition do not have a specific underlying dermatological problem or infective cause which would explain the extent of their symptoms.[57] The incidence or prevalence of vulvodynia is not known, but recent studies indicate that this pain syndrome is more common than generally thought. It is estimated that at least 200 000 women in the United States have significant vulvar discomfort that greatly reduces their quality of life.[58]

Vulvodynia is commonly subdivided into Vulvar Vestibulitis and Dysaesthetic or Essential Vulvodynia, two distinct, but aetiologically and clinically overlapping, syndromes. Women affected by *Dysaesthetic Vulvodynia* complain of constant vulval pain, which is typically described as burning, and commonly has been present for months or years. The discomfort is usually aggravated by sitting, and worse towards the end of the day. Introital dyspareunia is often not considered as a principal problem and other accompaning symptoms like back pain and lower urinary tract symptoms frequently occur.

In women affected by *Vulvar Vestibulitis* the sensation of burning or rawness is limited to the vulvar vestibule. The diagnosis is based on the following criteria: (1) severe pain on vestibular touch or attempted vaginal entry, (2) tenderness to pressure localised within the vulvar vestibule, and (3) physical findings confined to vestibular erythema of various degrees. Vestibulitis can be characterised histologically as a non-specific chronic inflammatory condition.[59]

The aetiology and pathogenesis of both dysaesthetic vulvodynia and vulvar vestibulitis are still unclear. Infectious agents, such as candida albicans or Human Papillomavirus have been suggested as causes for vulvar vestibulitis. However, studies have demonstrated similar prevalence rates of yeast and HPV infection between affected women and healthy, asymptomatic controls.[59] Neural

hyperplasia has been demonstrated in vestibular tissue of women with vestibulitis, compared with only a few peripheral nerve bundles in control samples. This finding suggests hyperaesthesia secondary to a marked increase in the number of nerve endings. Essential vulvodynia may be part of the wider group of neuropathic pain syndromes, which are defined as 'pain felt in the absence of the nociceptor stimulus of pain injury.' A trigger is thought to release mediators that set off inappropriate impulses in non-myelinated pain fibres thus sensitising the dorsal horn neurons. Vulvodynia may also present as pudendal neuralgia, a hyperaesthesia following the S2-S4 distribution of the pudendal nerve. Pudendal nerve injuries may follow from obstetric or mechanical trauma, or possibly from viral infection.[57,59]

Although vulvodynia has been recognised as a histopathologic disease, psychological factors are likely to perpetuate or exaggerate painful sensations from the vulva and vestibule. Women with vulvodynia generally show a higher level of depression and a decrease in sexual interest, desire and activity. In a case control study patients with vulvar vestibulitis had significantly less sexual arousal, more negative feelings towards sexual intercourse and higher anxiety scores than controls. Vulvodynia is considered to be a major risk factor for developing psychosexual complications including vaginismus, low libido, and orgasmic dysfunction.[60]

1.5.1 Management

Patients diagnosed with vulvodynia characteristically have a long history of failed treatments and multiple visits to a variety of practitioners. This relative newly described condition is still unknown to many general practitioners and no standard recommendations for treatment exist. A referral to a specialist, acknowledgment of the disease related symptoms and reassurance that it is not all psychological are often the first important therapeutic steps. Treatment strategies are generally aimed at lessening the symptoms and developing coping strategies, since full recovery can take months and even years. The active participation of the patient is essential and a multidisciplinary approach beneficial for the successful management of this chronic disease. Comprehensive patient information and

education is especially important, since self treatment with over the counter creams and other substances can contribute to the development of further symptoms. Many patients find the attendance at *self help groups* helpful, where they can discuss specific problems and exchange experiences with different treatment regimens. Treatment options differ between subsets of vulvodynia, but some general therapeutic guidelines should be considered for all patients.

Simple *skin care measures*, such as the cessation of the use of all soaps, creams and douches, are important to avoid further irritation of the genital skin. Patients are advised to wash underwear and items of clothing worn next to the skin in pure soap and then rinse well in warm water. Tight clothing such as jeans and leggings should be avoided and *loose cotton underwear* and skirts should be recommended instead. Calcium oxalate crystals from the urine can act as local irritants and aggravate vulvar vestibulitis. Vulvodynia patients generally do not differ in their dietary intake and urinary excretion of oxalate from controls, but some women do have elevated oxalate levels in the urine. For this subset of patients treatment with *calcium citrate* and a *low oxalate diet* has been shown to decrease vulvar pain.[61] A *high water intake* and the consumption of *cranberry juice* have also been promoted as easy ways to reduce the concentration and acidity of the urine. Many patients find *ice packs, warm water salt baths* or *non irritant emollients*, such as vegetable oil, soothing. *Zinc oxide* as a protective agent is also helpful for some patients. While these measures might be sufficient for the treatment of very mild cases of vulvodynia, most patients require further treatment.

Mild topical steroids, such as 1% hydrocortisone ointment, can be beneficial for patients with inflammatory skin changes, whereas nonsteroidal antiinflammatory drugs usually do not have any effect. Patients with coexisting fungal infection will show some improvement from *oral antifungal drugs*, such as Fluconazole. The use of topical antifungals, however, can irritate the skin and should be avoided.
In patients with dysaesthetic vulvodynia *tricyclic antidepressants* have been shown to be useful. The most widely used medication is Amitryptiline, the daily dose of which should be gradually increased to reach a maximum dose of 50 –75 mg. It can take up to a month or more for patients to notice any benefit, but unless side effects, such as drowsiness, dry mouth or weight gain, are significant patients

should stay on the medication. Alternative effective tricyclic antidepressant drugs include Nortryptiline, Imipramine and Desipramine. A retrospective chart review of twenty patients with essential vulvodynia tried to determine the diagnostic profile of patients who are likely to respond to amitryptiline. It was found that perimenopausal and postmenopausal women, aged 43 to 85, who suffered from constant unremitting vulvar or perineal discomfort gained the most benefits from treatment with amitryptiline.[62] *Interferon* has occasionally been effective in vulvodynia patients with or without HPV infection, but the frequent and often severe side effects commonly outweigh its benefits.

Surgical procedures such as total vestibulectomy, vestibuloplasty and local excsion may be beneficial for Vulvar Vestibulitis patients with persistent symptoms. However, no properly controlled studies with adequate follow up have been conducted and surgery should be considered as the very last resort for patients unresponsive to conservative treatment.

1.5.2 Complementary therapy

Hyperirritability and destabilisation of pelvic floor muscles have been shown to contribute to the vulvar pain experienced by patients with Vulvar Vestibulitis. Restabilisation of these muscles by *biofeedback-assisted pelvic floor muscles exercises* has been proposed as treatment for this pain. A study of thirty-three women who undertook these exercises daily at home for an average of 16 weeks demonstrated a significant increase in pelvic floor muscle contractions and decrease in resting tension levels and muscle instability. Subjective reports of pain decreased an average of 83% and a six month follow-up indicated maintenance of therapeutic benefits.[63]

A variety of other complementary therapies have been used successfully for the management of chronic pain. *Transcutaneous electrical nerve stimulation (TENS)* has been shown to be effective in treating a variety of types of acute and chronic pain. The low voltage electrical impulses are thought to activate large myelinated fibres, which then block the painful stimuli coming from smaller fibres, and to increase endorphin release.[64] *Acupuncture* has been used for over 2000 years and

is one of the better studied complementary therapies. It can be performed with needles, heat, pressure or suction and is thought to work in a similar way to TENS. A recent study of weekly acupuncture for vulvodynia patients showed promising results and suggests that acupuncture is a valid treatment option for patients who poorly respond to other treatments.[65] *Hypnosis* and various *relaxation techniques* lead to a change in sympathetic activity and are successfully used for the treatment of chronic pelvic pain. These treatments have also shown to increase function and provide patients with better coping skills.[64]

When managing vulvodynia patients, the psychosexual and psychological issues must also be considered. The constant vulvar pain and the inability to enjoy sex often leads to conflicts, negative feelings and misunderstandings in relationships.[60] *Counselling* the patient and her partner is essential in overcoming the various personal and sexual difficulties associated with painful intercourse. In patients with more severe levels of anxiety or psychosexual problems *psychotherapy* should be considered, as this will play an important role in a successful multidisciplinary approach to vulvodynia management.

2. METHODS

2.1 Objectives

This study aimed:

- To explore the health seeking behaviour of patients currently treated at Sexual Health clinics.
- To examine patients' perceptions of their health condition and treatment and their need for information.
- To identify patient groups who are most likely to use complementary health services and products.

2.2 Hypothesis

Patients with conditions, where treatment has either low success rate and/ or is not well defined, tend to utilise more complementary health services and products outside the clinic setting.

2.3 Study type

This cross-sectional study compared the health seeking behaviour of four different groups of patients. The main explanatory variable was the type of condition diagnosed - chlamydia infection, genital warts, genital herpes or vulvodynia.

2.4 Ethical Considerations

The study was approved by the Manly Hospital Ethics and Research Committee on the 18th January 2000 and the Central Sydney Health Area Ethics Committee on the 17th April 2000.
Written and verbal information on the study's objectives and procedures was provided to all eligible patients and complete confidentiality was assured. All participants read and signed the consent form.

2.5 Questionnaire

A self-administered questionnaire was developed in order to examine patients' perceptions of their condition and treatment and search for complementary treatment options. To guarantee a high response rate the questionnaire was limited to four pages and it was estimated that time for completion would be no more than 5 to 10 minutes.

Participants were asked to answer all questions based on the condition for they were currently treated. The first part of the questionnaire included questions about the type of condition diagnosed and the time period from first symptoms to present date. The second part sought information about patients' perceptions regarding their condition and treatment. Participants were asked to rate on a 5 step scale (strongly agree/ agree/ uncertain/ disagree/ strongly disagree) how much they agreed with nine specific statements about their condition. In the third part patients' utilisation of other doctors or health providers, use of over-the-counter medicine or complementary health methods and sources of information was examined. Participants were given lists of various examples for each question and were asked to tick as many responses as applied to them. At the end of the questionnaire an open-ended question about further thoughts and suggestions regarding the treatment and management was asked.

The questionnaire was piloted at Manly Sexual Health Service from 27th of January to 25th of February 2000. 18 pilot questionnaires were completed and were reviewed for

ambiguous or unacceptable responses, non-answered questions and comments. The layout of the questionnaire was subsequently slightly modified and a "yes /no " category was added for questions regarding health care utilisation. None of the recorded variables was changed, however, and the pilot questionnaires could be included in the overall analysis.

2.6 Study population

The study was based at Manly Sexual Health Service and Livingstone Road Clinic. Both clinics offer free and confidential STD screening, diagnosis, treatment and counselling and are open five days per week. Manly Sexual Health Service is located in the centre of Manly, a suburb with a population from a predominant high socioeconomic background. Many patients with genital warts and vulvodynia are referred by general practitioners to the clinic, because of the special interest of one of the sexual health physicians.

Livingstone Road Clinic is located in the centre of Marrickville, a suburb with a high density of Greek, Vietnamese and other NESB populations. The centre offers a comprehensive STD and women's health service and special interpreter assisted clinics are available.

All patients who presented at Manly Sexual Health Centre or Livingstone Road Clinic during the study period and who were diagnosed with chlamydia infection, genital warts, genital herpes and vulvodynia were eligible to participate. Patients who did not speak sufficiently English to complete the questionnaire were excluded from the study.

2.7 Study period

The study was conducted at Manly Sexual Health Service from 27th of February to 15th of June 2000 and 79 patients (8 chlamydia, 8 genital herpes, 37 genital warts and

26 vulvodynia patients) consented to participate. From 26th of April to 15th of June the questionnaire was also administered at Livingstone Road Clinic and 9 patients with genital warts took part in the study. None of the patients asked to participate and complete a questionnaire declined to do so. However, time constraints limited the attention of some staff members and not all eligible patients were asked to participate in the study.

2.8 Data collection

During their visit at the clinic the patients were informed by their treating doctor, nurse or counsellor about the purpose of the study and were provided with written information. Patients were then asked to sign a consent form and fill out the questionnaire in the waiting room at the clinic. The completed forms were returned to a drop-in box at the reception desk, and were collected later by the researcher. Data from the completed questionnaires was coded and additional information on patients' characteristics and medical histories was collected from the matching clinical records. All information was entered on Excel Spreadsheets and the survey material was stored in locked cabinets at the Sexual Health clinics.

2.9 Statistical methods

The baseline characteristics and health conditions of the study populations differed between MSHS and LRC and it was decided to analyse the patients from the two clinics separately. All patients recruited from Livingstone Road Clinic belonged to the "genital warts" cohort. Therefore no comparisons between different patient groups could be made and the information from the questionnaire was presented in a descriptive way only. Patients from all four cohorts were recruited from Manly Sexual Health Service, but the groups showed considerable differences in size, with the "genital wart" and "vulvodynia" group being the biggest. The sample sizes of the "chlamydia" and "genital herpes" cohorts were too small to achieve statistical

significance and descriptive methods were used to demonstrate the differences between these two groups.

In order to explore patients' perceptions regarding their condition and their treatment, they were asked to rate how much they agreed or disagreed with nine specific statements. The different levels of agreement between the four patient groups were displayed with bar charts. The responses of the "Genital Wart" and the "Vulvodynia" cohort were compared using Mann-Whitney-U test statistics.

The outcome "Health seeking behaviour" included the four dichotomous variables "Visits to other doctors", "Visits to complementary health providers", "Use of complementary health products" and "Use of complementary health methods". Since all therapies were used in conjunction with visits to sexual health clinics, the term "complementary", rather than "alternative", was used. Information on utilisation of these options by the four patient groups was presented descriptively in tables. The statistical differences in these variables between the "Genital Warts" and the "Vulvodynia" cohort were calculated with Fisher's Exact tests. Logistic regression was used to analyse the association between patients' perceptions and health seeking behaviour while controlling for possible confounders. Data analysis was carried out using the statistical packages Minitab and SAS.

3. RESULTS

3.1 Characteristics of study population

Seventy-nine patients (8 patients diagnosed with chlamydia infection, 8 with genital herpes, 37 with genital warts and 26 with vulvodynia) completed the questionnaire at Manly Sexual Health Service over a period of four and a half months. The participants were aged 17 – 76 years (median age was 27), were mostly female (63%), and spoke predominantly English as their first language (89%). The majority (73%) of patients had a regular partner, and less than 30% had a previous history of sexually transmitted disease. The detailed characteristics of the four patient groups are shown in Table 1. The patients from the "genital wart" and the "vulvodynia" cohort differed in sex, but also in their drinking and smoking habits. Patients with genital warts showed a higher consumption of alcohol (x^2=9.10, 2 df, P=0.01) and were also more likely to be smokers (x^2=6.68, 1 df, P=0.01) than patients with vulvodynia. There was no significant difference in age, occupation, relationship or previous STD between the two groups. The characteristics of the 9 patients who were recruited from Livingstone Road Clinic are displayed in Table 11.

3.2 Perceptions of the condition and treatment

The responses of the four patient groups to the nine statements are shown in Figure 1 to Figure 9. Five statements produced significant different levels of agreement between the "genital wart" and the" vulvodynia" cohort. Patients with vulvodynia were more likely to agree with the statement " *I am worried about my current condition*" (P=0.0004) and disagree with the statement "*I believe that my condition can be treated successfully*" (P=0.001) than patients with genital warts. Vulvodynia patients were also more likely to agree that they had "*received conflicting information about the treatment in the past*" (P=0.0002), that "*the information was still very confusing or unsatisfying*" (P=0.003) and less likely to agree that they" *knew enough about the treatment of their condition*"

(P=0.02). The responses from the patients from Livingstone Road Clinic are shown in Table 12.

3.3 Health seeking behaviour

Participants from Manly Sexual Health Service completed the questionnaire at different stages of their condition. Fourteen (18%) patients had had symptoms for one month or less, 29 (37%) for up to 12 months and 35 (45%) for more than one year. The time from registration at MSHS to completion of the questionnaire ranged between 1 day and over four years (median was 29 days) and the number of visits for the current condition ranged between 1 and 49 (median was 3 visits). Sixty (76%) of all participants had also visited other doctors, and 17 (22%) had visited complementary health providers for the treatment of their current condition. Table 2 shows the "time since first symptoms" and the "number of visits" separately for the four patient cohorts. The different types of doctors and complementary health providers visited are displayed in Table 3 and Table 4. The majority of patients with genital herpes, genital warts and vulvodynia had had visited their general practitioner or other STD clinics before, and had been referred on to this clinic. Thirty (38%) patients had used complementary health products and 52 (67%) had used complementary health methods as treatment for their condition. Table 5 and Table 6 list the various products and methods used by the patient groups. The main sources of information about condition and treatment were Manly Sexual Health Service and other doctors or health providers (Table 7). The health seeking behaviour differed significantly between patients with genital warts and patients with vulvodynia (Table 8). A higher proportion of patients from the "Vulvodynia" group had visited a complementary health provider (P<0.001), had used a complementary health product (P<0.001) and used a complementary health method (P=0.009) for their treatment. The differences in visits to CH providers and use of CH products remained significant after controlling for gender (Table 9).

At the time of the study the majority (75%) of participants from Livingstone Road Clinic had had symptoms for less than 6 months and the number of visits to the clinic ranged from 1 to 9 (Table 13). Seven (78%) patients had visited other doctors (Table 14), but none of the participants had visited a complementary health provider or

had used a complementary health product for their condition. The use of complementary health methods and the sources of information are displayed in Table 15 and Table 16.

3.4 Association between patients' perceptions and health seeking behaviour

Patients from the "genital wart" and the "vulvodynia" cohort were shown to differ in their health seeking behaviour, but also in their perceptions regarding their condition. It was hypothesised that the two variables influence each other, and the relationship between them was examined for the study population as a whole, ignoring the four different patient cohorts. The level of agreement to the statements *"I believe that my condition can be treated successfully"*, *"I am worried about my current condition"* and *"I have received conflicting information about the treatment of my condition in the past"* showed the strongest association to health seeking behaviour. The responses to these statements were compared between patients who visited or did not visit other doctors (Figure 10 to Figure 12), patients who visited or did not visit complementary health providers (Figure 13 to Figure 15), patients who used or did not use complementary health products (Figure 16 to Figure 18) and patients who used or did not use complementary health methods (Figure 19 to Figure 21). Most of these associations were found to be statistically significant. However, health seeking behaviour was also influenced by other patient characteristics. Users of complementary health services and products were more likely to be female, non-smoker and have a lower alcohol consumption than non-users (Table 10). These characteristics were thought to confound the relationship between patients' perception and health seeking behaviour and logistic regression models were used to control for these variables. After adjusting for sex, smoking and alcohol consumption, agreement to the statement *"I am worried about my current condition"* was associated with visits to other doctors (x^2 (LR) = 12.52, P<0.001) and visits to complementary health providers (x^2 (LR) = 21.37, P<0.001). There was also still a statistically significant association between having *"received conflicting information about the treatment of the condition in the past"* and visits to other doctors (x^2 (LR) = 10.65, P=0.001), visits to complementary health providers (x^2 (LR) =15.55, P<0.001) and use of complementary health products (x^2 (LR) = 10.02, P=0.001).

3.5 Open comments

In the last part of the questionnaire an open ended question about personal experiences with the condition and its' treatment was asked. Several comments from patients with vulvodynia reflected the lack of knowledge and information about this relative "new" condition. One patient stated "*I knew absolutely nothing about my condition, I had not heard of it before*", and an other one remarked "*I have seen many doctors over 32 years and this is the only time I have been told what my problem was.*" The difficulties in finding effective treatment for vulvodynia are reflected in the following comment " *The problem with my condition is that is very "grey" and there is no clear cut method or way to clear the problem. As it is such a long, time-consuming, draining, and hard to talk about problem, it also becomes mentally draining, and can effect your lifestyle more than you realise.*" Some patients commented on their use of complementary health products and health methods. One patient with genital herpes wrote about her experience with a home remedy *"The homemade salve really helps with the pain and itching of the outbreak – though it does not really help the actual sores."* An other positive experience with health methods was described by a patient with vulvodynia "*I have found that a healthy diet, lots of exercise, yoga, massage and relaxation, and not focusing on your problem can help a lot*".

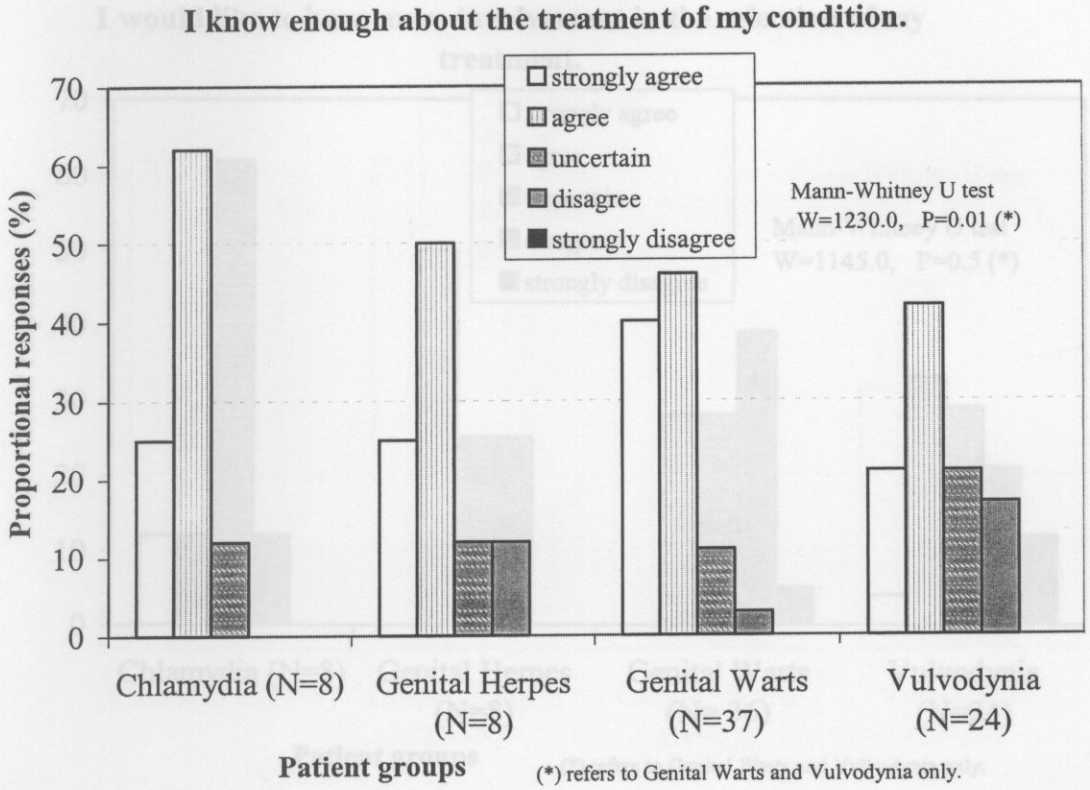

Figure 1. Responses by patient group: "I know enough about the treatment of my condition".

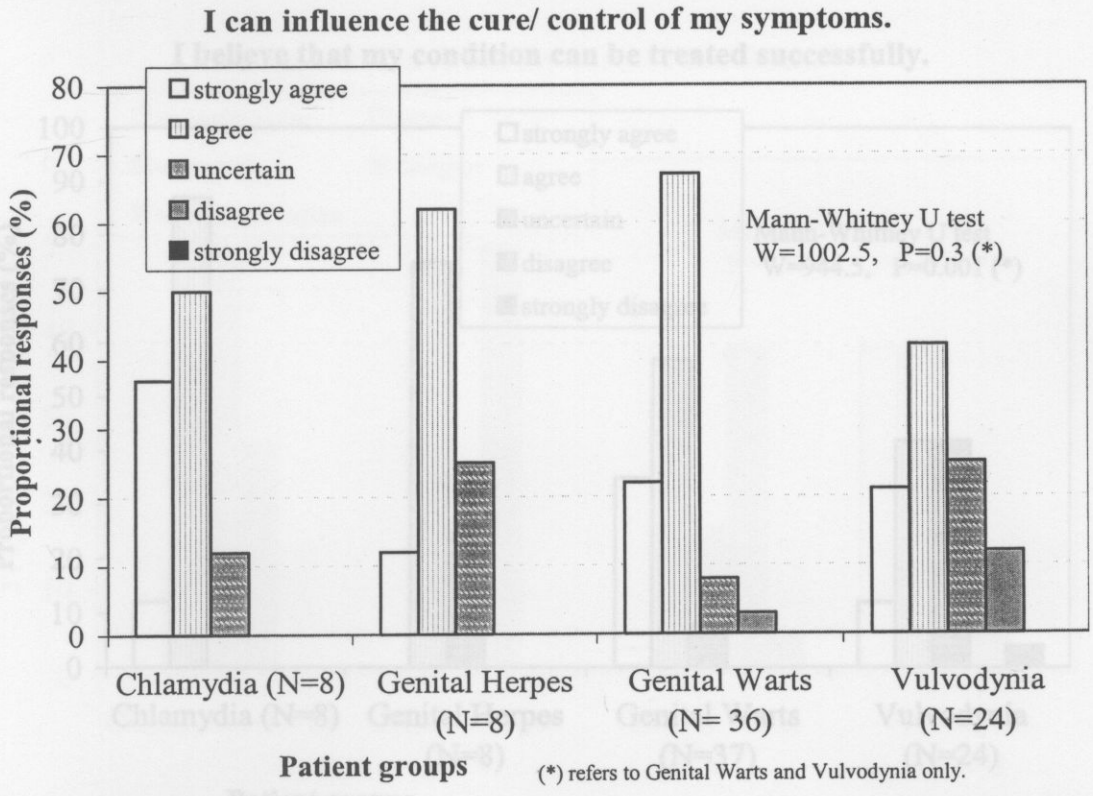

Figure 2. Responses by patient group: "I can influence the cure / control of my symptoms".

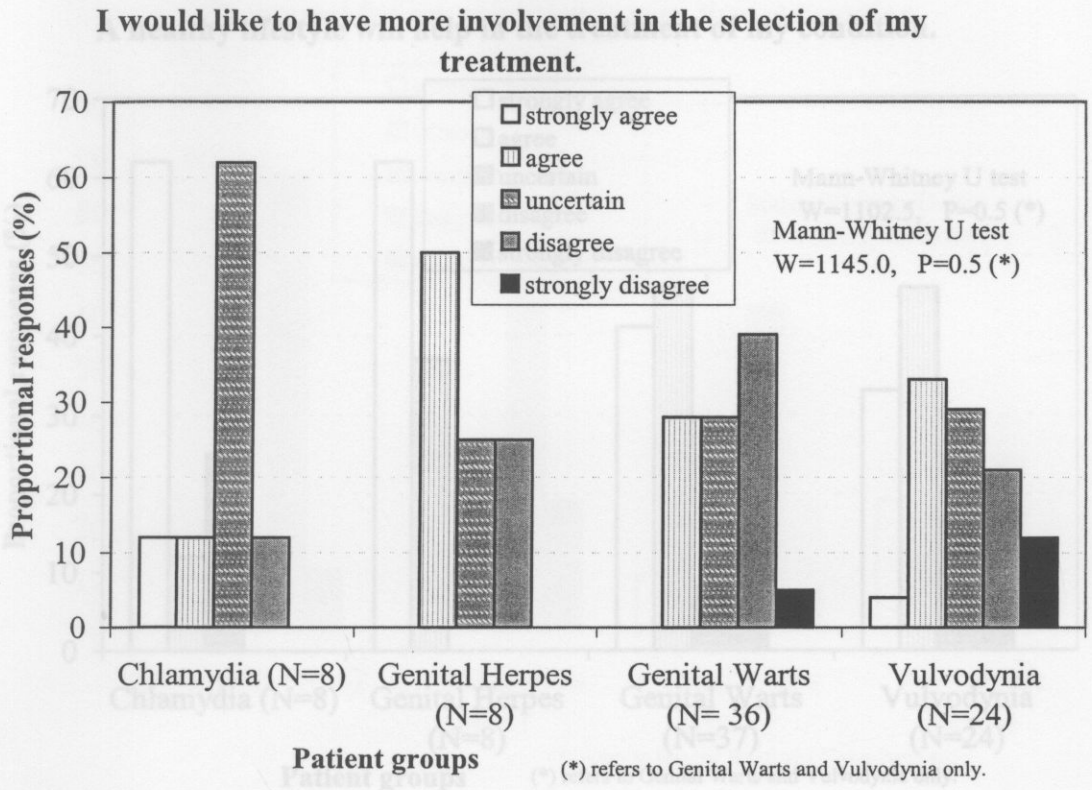

Figure 3. Responses by patient group: "I would like to have more involvement in the selection of my treatment"

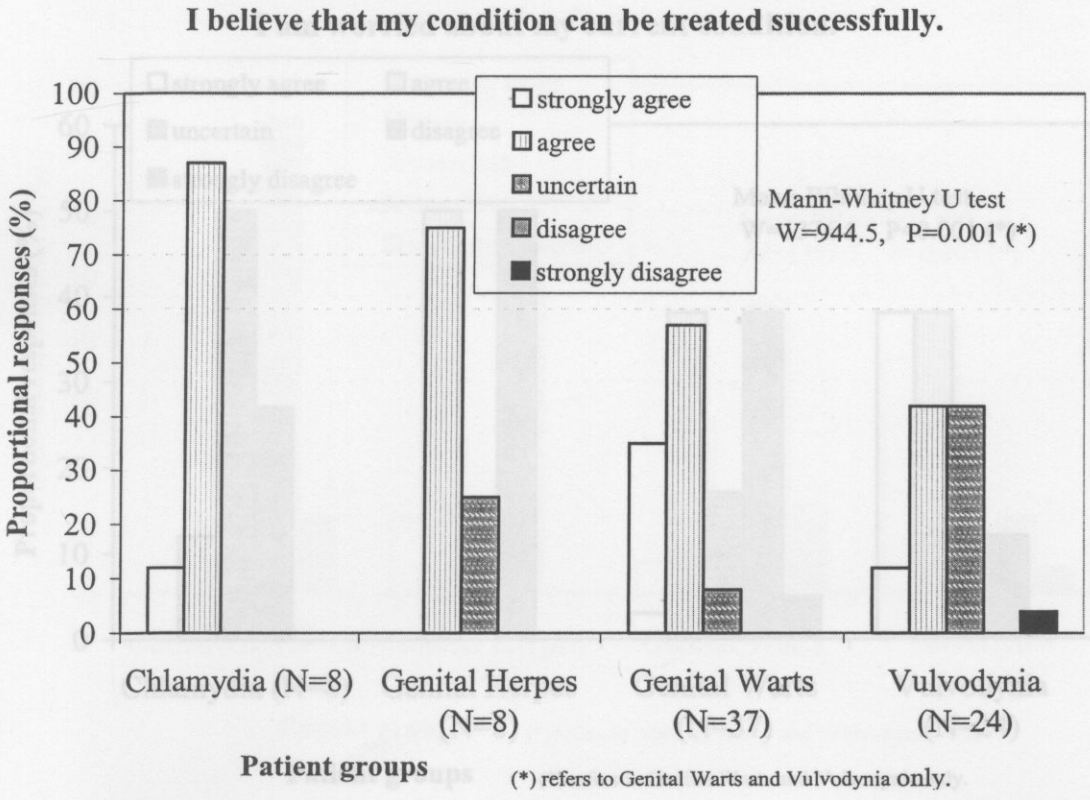

Figure 4. Responses by patient group: "I believe that my condition can be treated successfully".

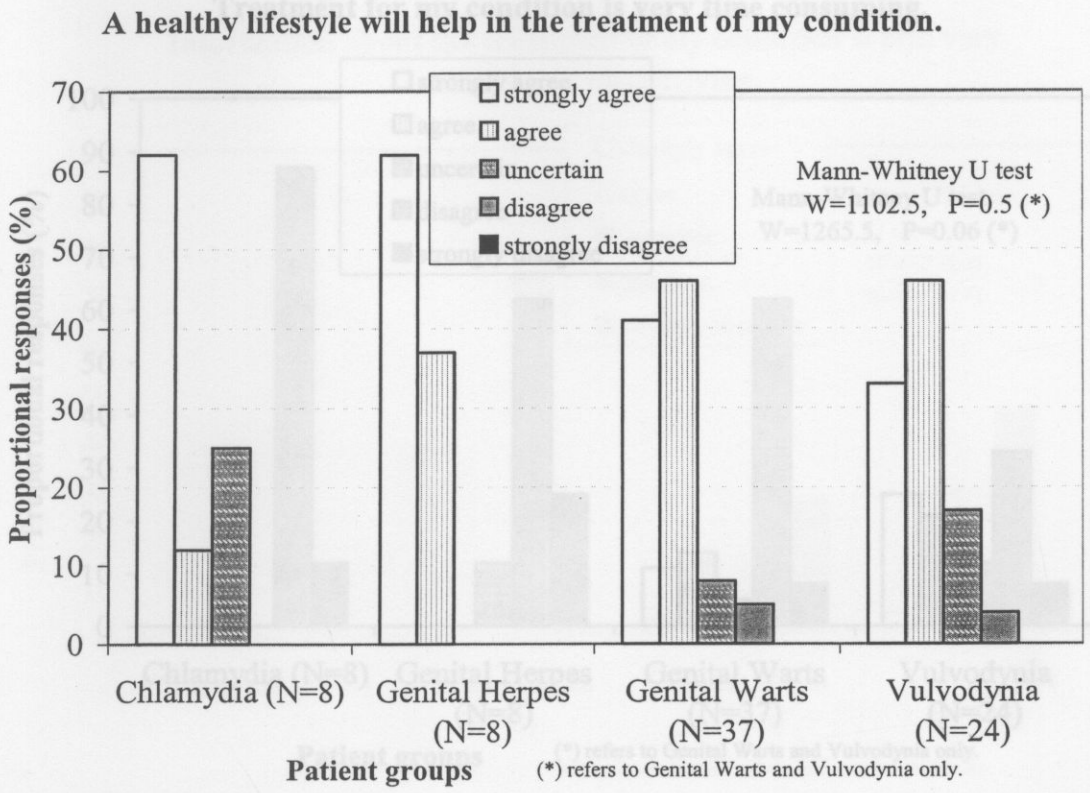

Figure 5. Responses by patient group: "A healthy lifestyle will help in the treatment of my condition".

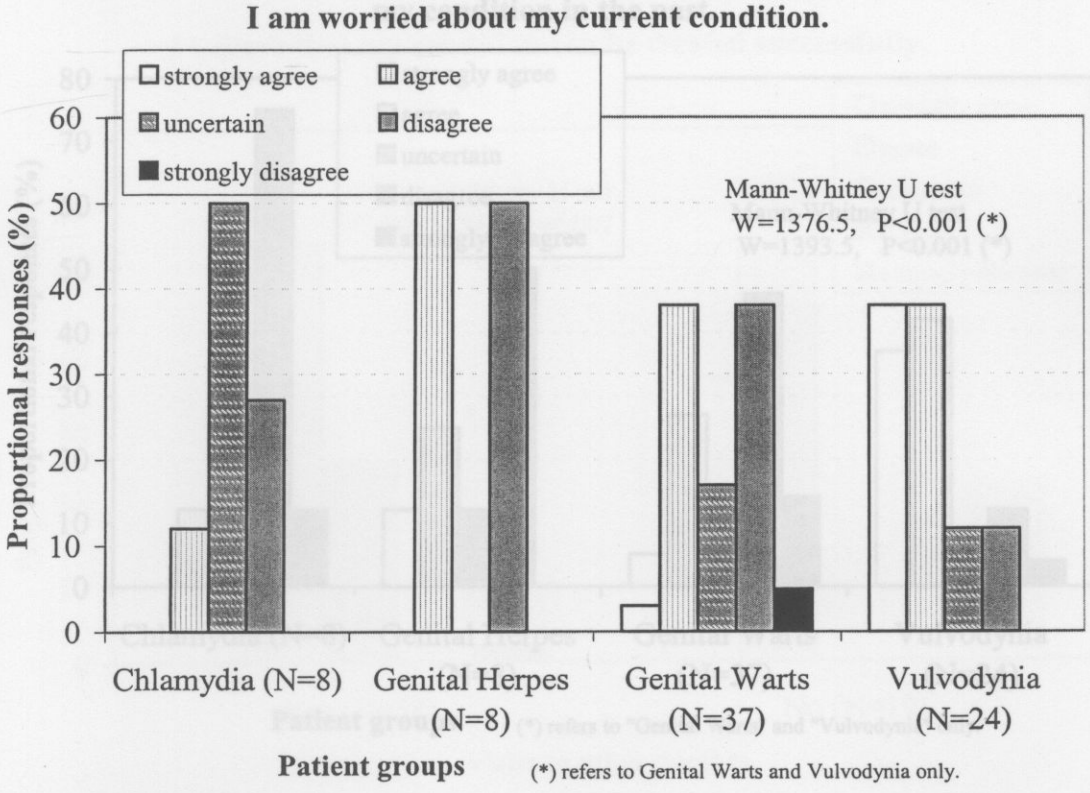

Figure 6. Responses by patient group: "I am worried about my current condition".

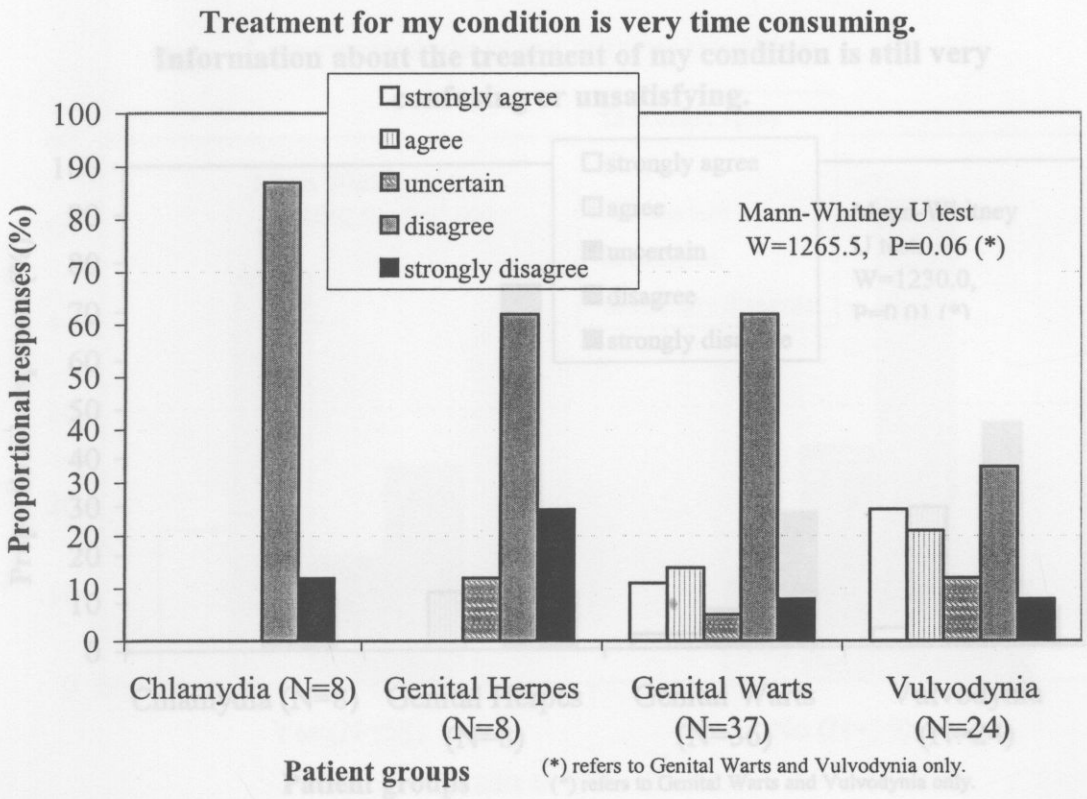

Figure 7. Responses by patient group: "Treatment for my condition is very time consuming".

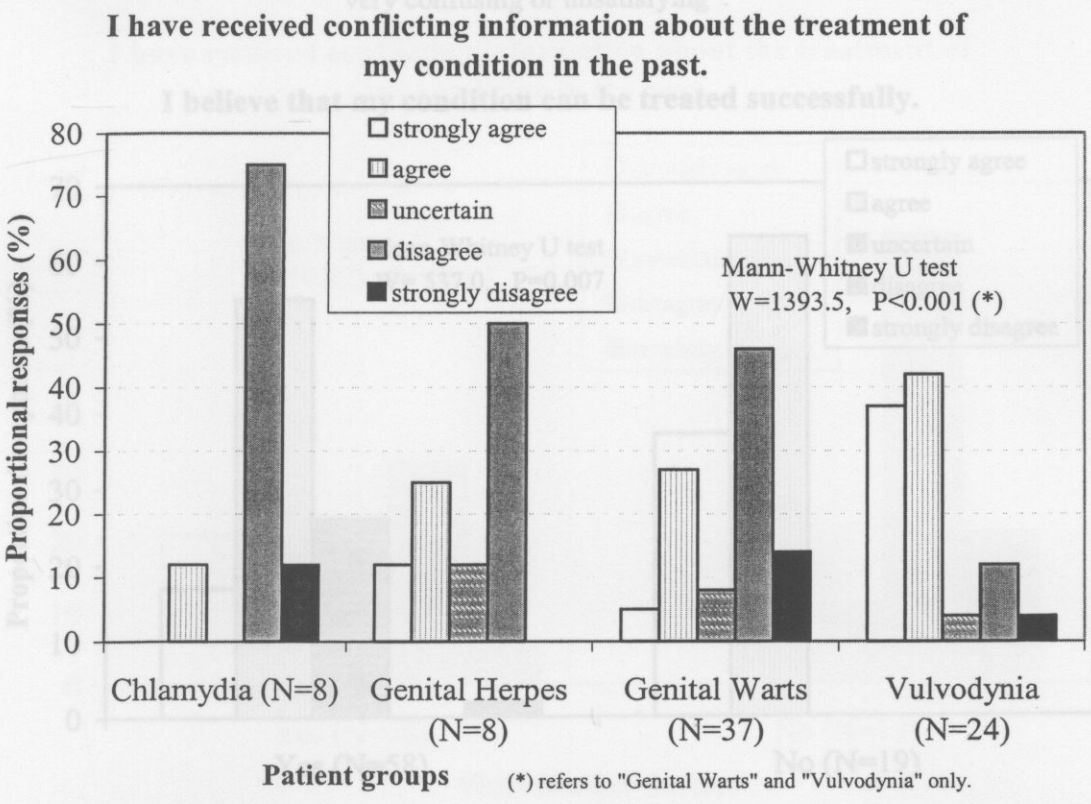

Figure 8. Responses by patient group: " I have received conflicting information about the treatment of my condition in the past".

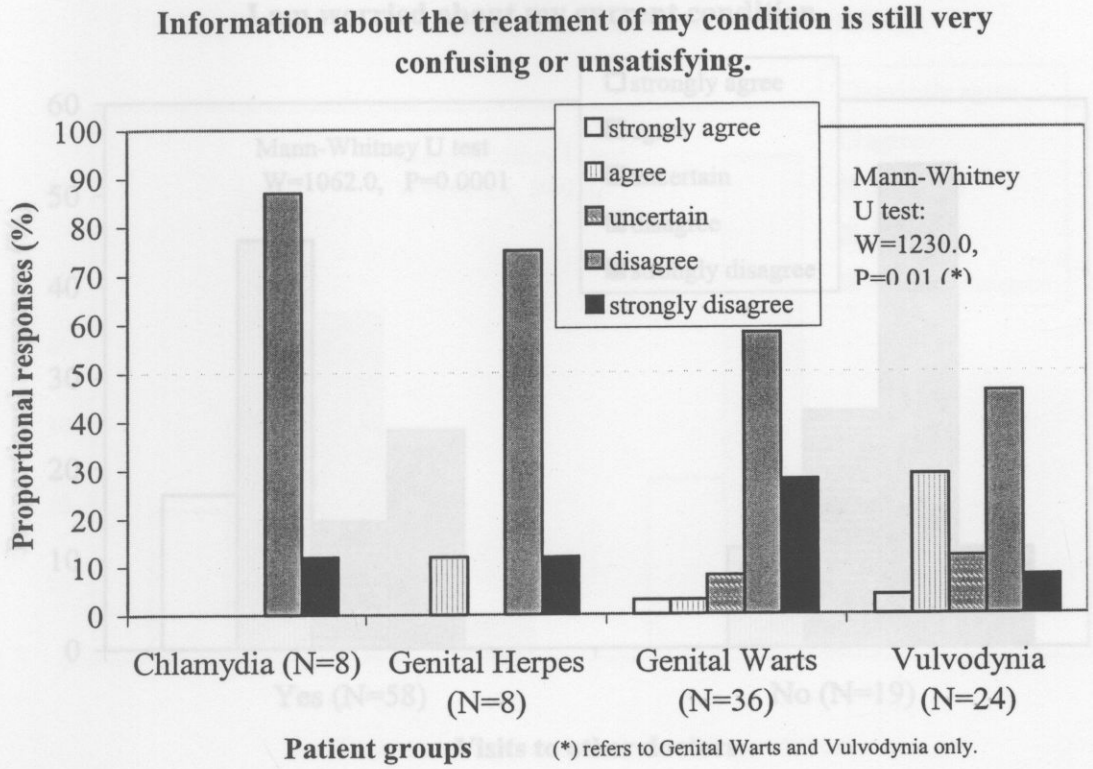

Figure 9. Responses by patient group: "Information about the treatment of my condition is still very confusing or unsatisfying".

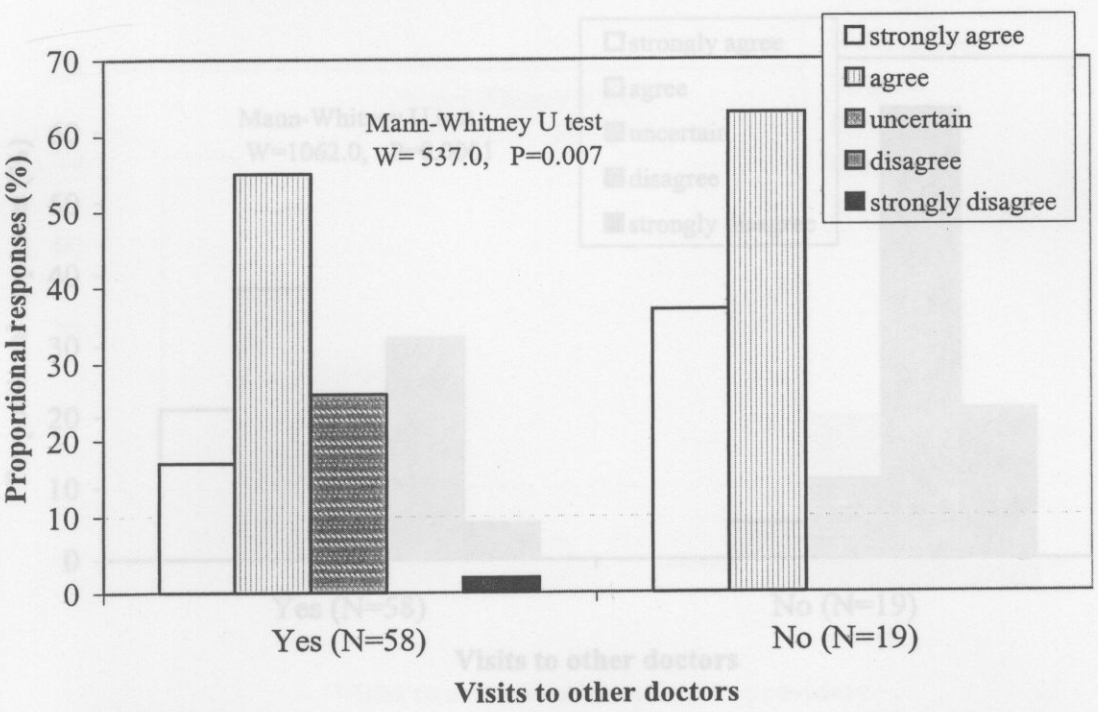

Figure 10. Responses by "Visits to other doctors": "I believe that my condition can be treated successfully

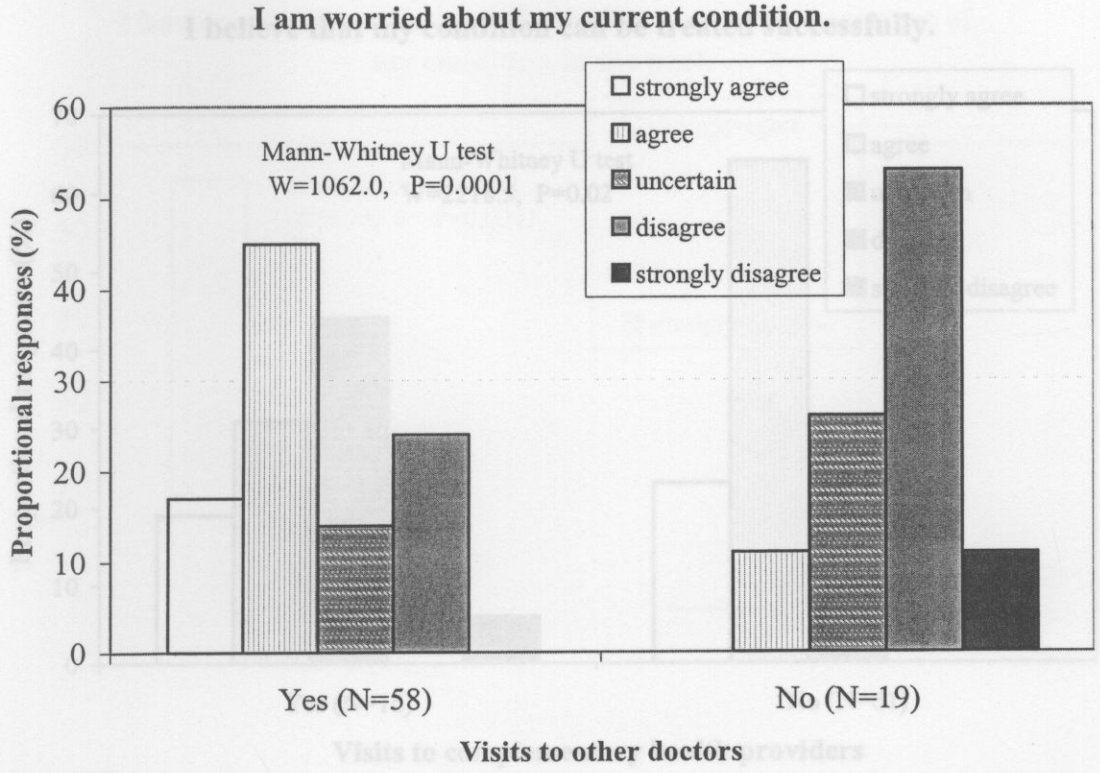

Figure 11. Responses by "Visits to other doctors" : "I am worried about my current condition".

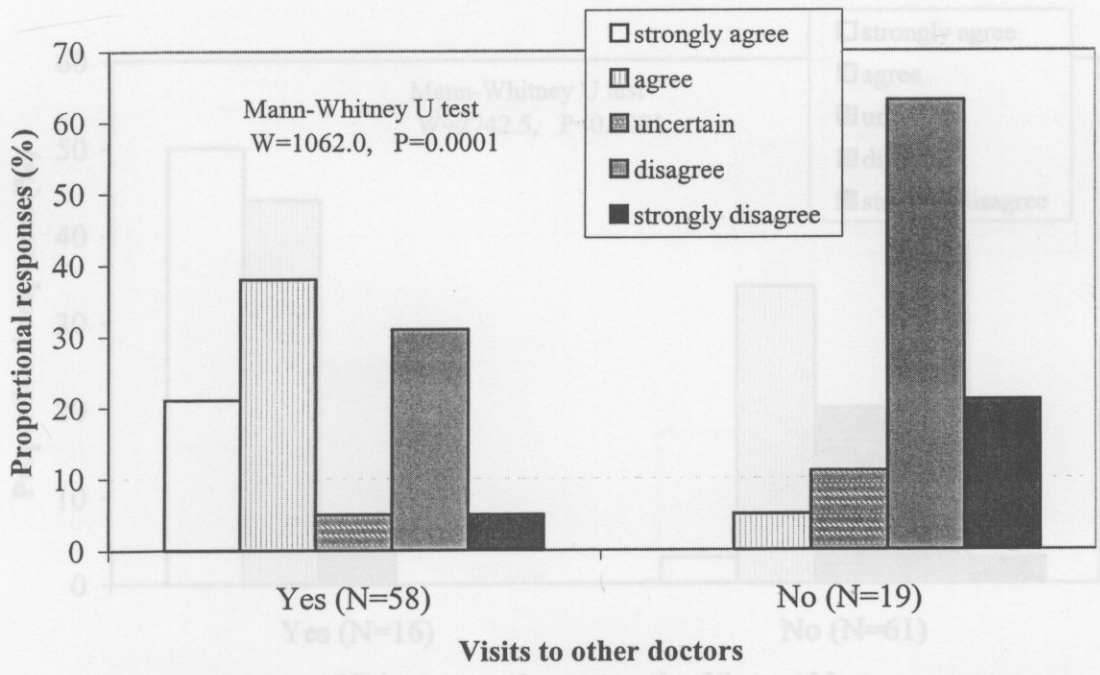

Figure 12. Responses by "Visits to other doctors": "I have received conflicting information about the treatment of my condition in the past".

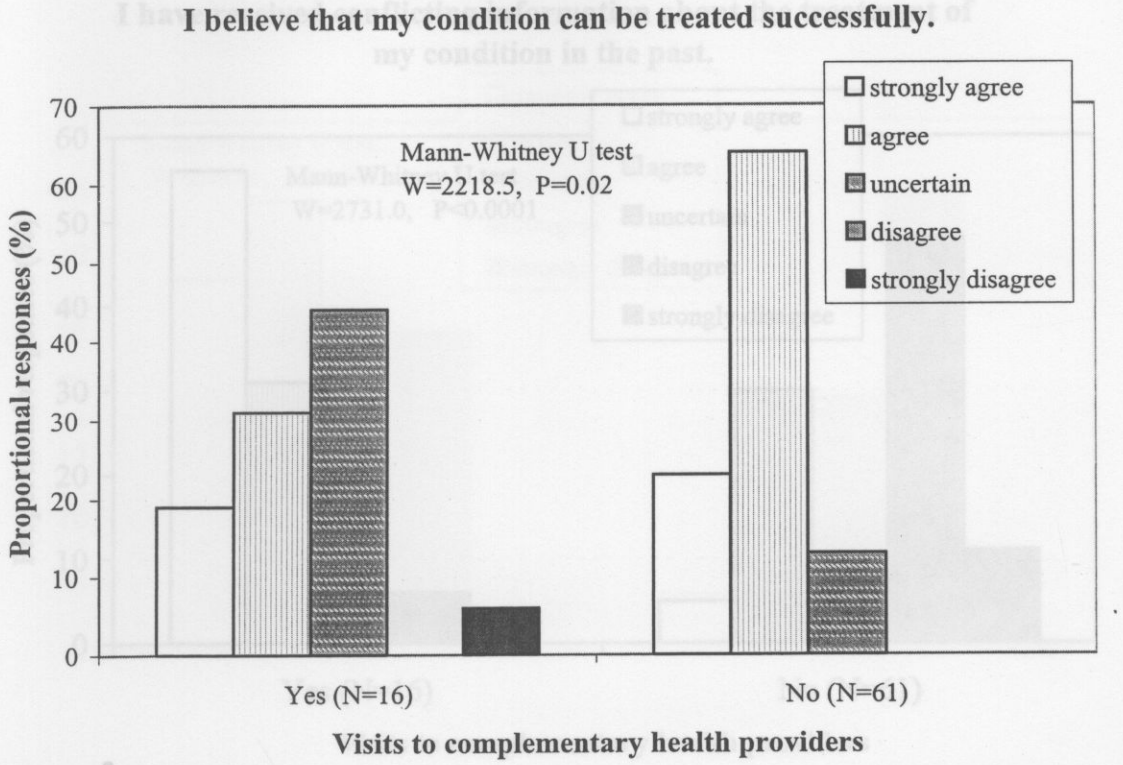

Figure 13. Responses by "Visits to CH providers": . "I believe that my condition can be treated successfully

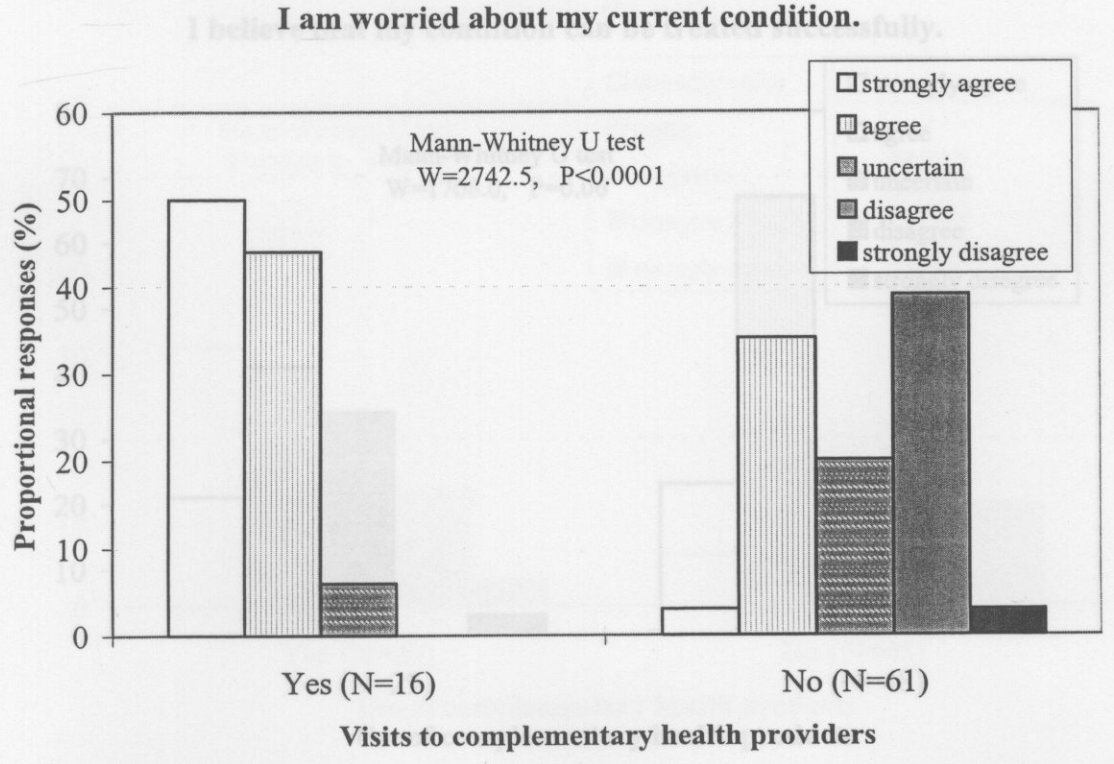

Figure 14. Responses by "Visits to CH providers": "I am worried about my current condition".

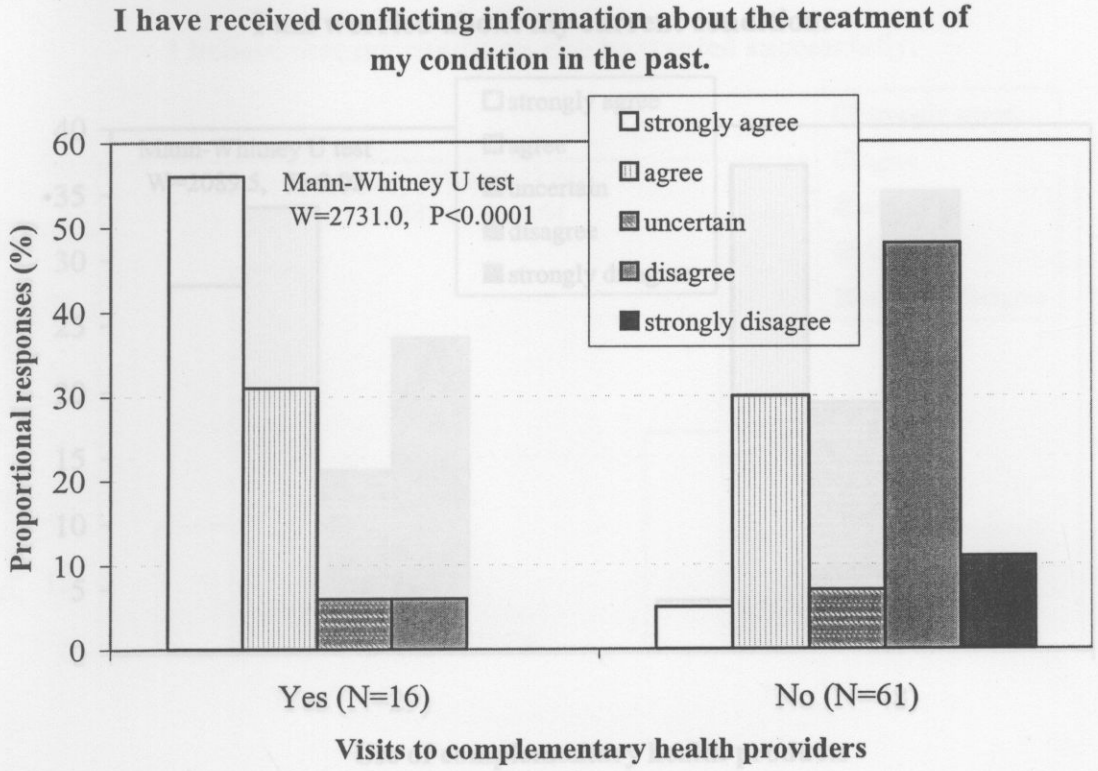

Figure 15. Responses by "Visits to CH providers": "I have received conflicting information about the treatment of my condition in the past"

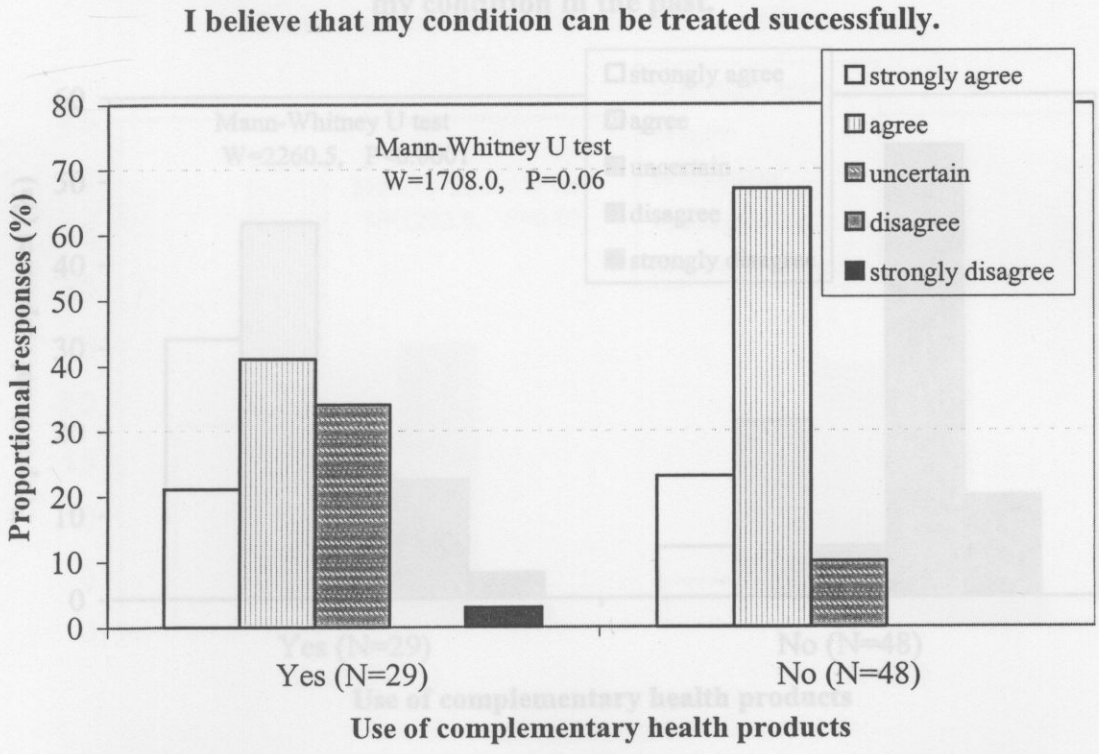

Figure 16. Response by "Use of CH products": "I believe that my condition can be treated successfully".

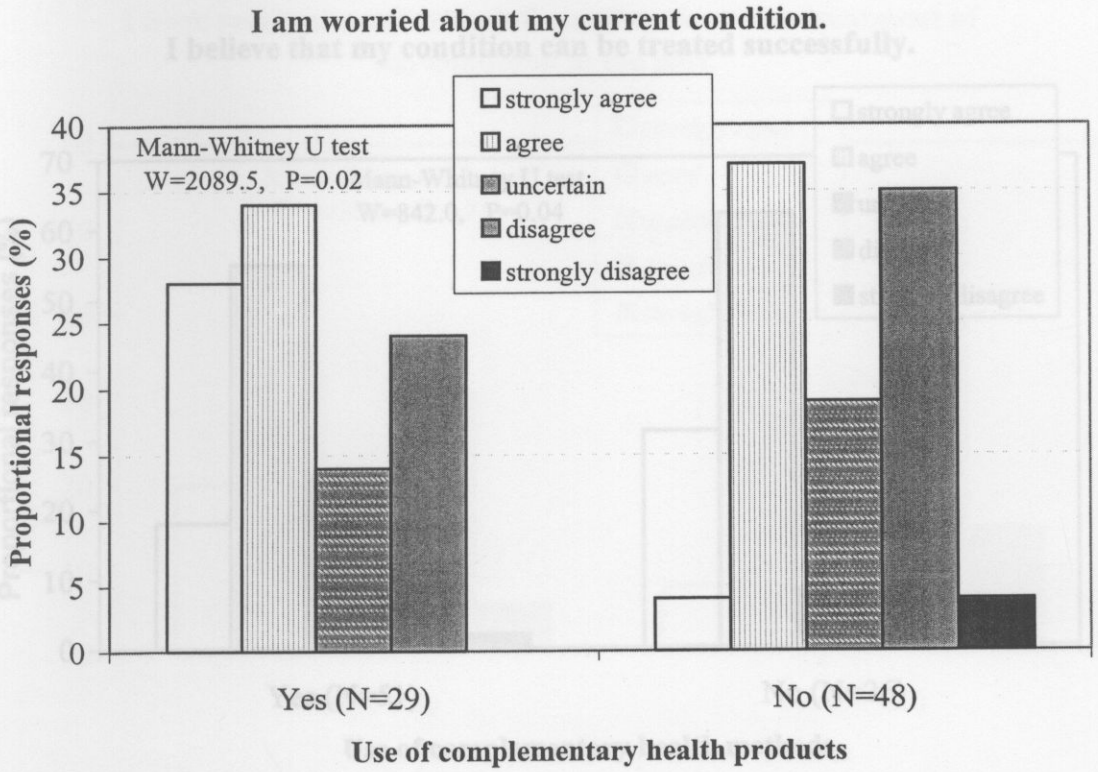

Figure 17. Response by "Use of CH products": "I am worried about my current condition".

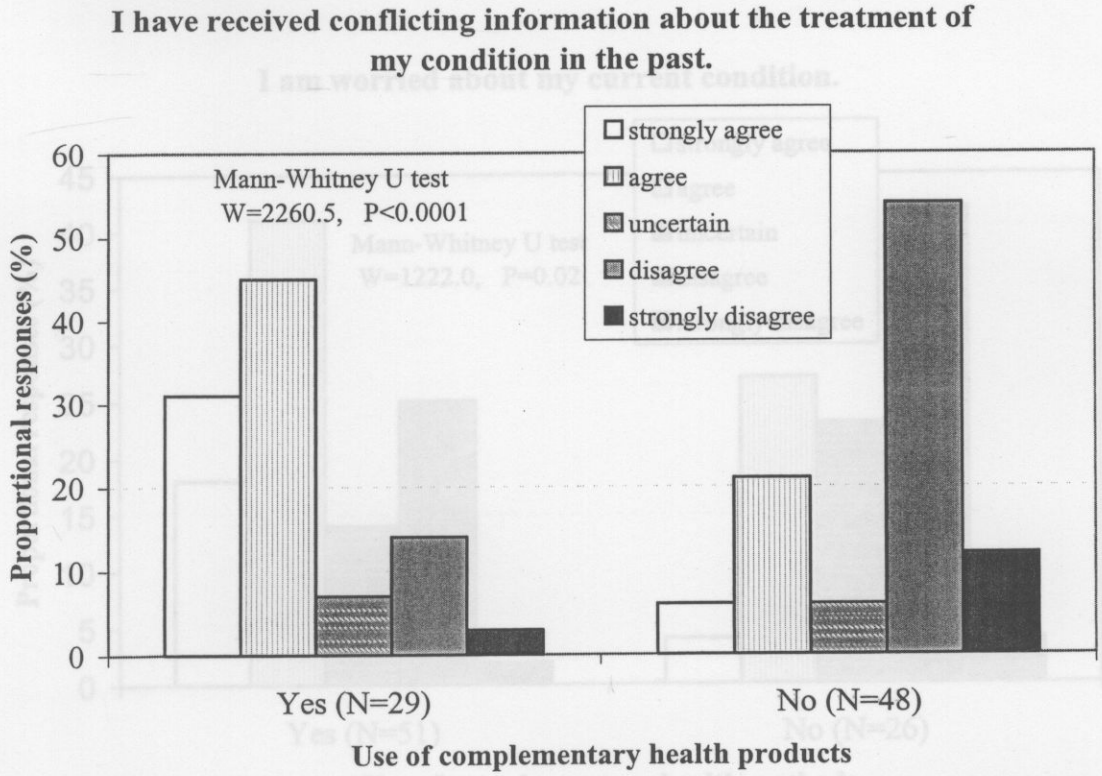

Figure 18. Response by "Use of CH products": "I have received conflicting information about the treatment of my condition in the past"

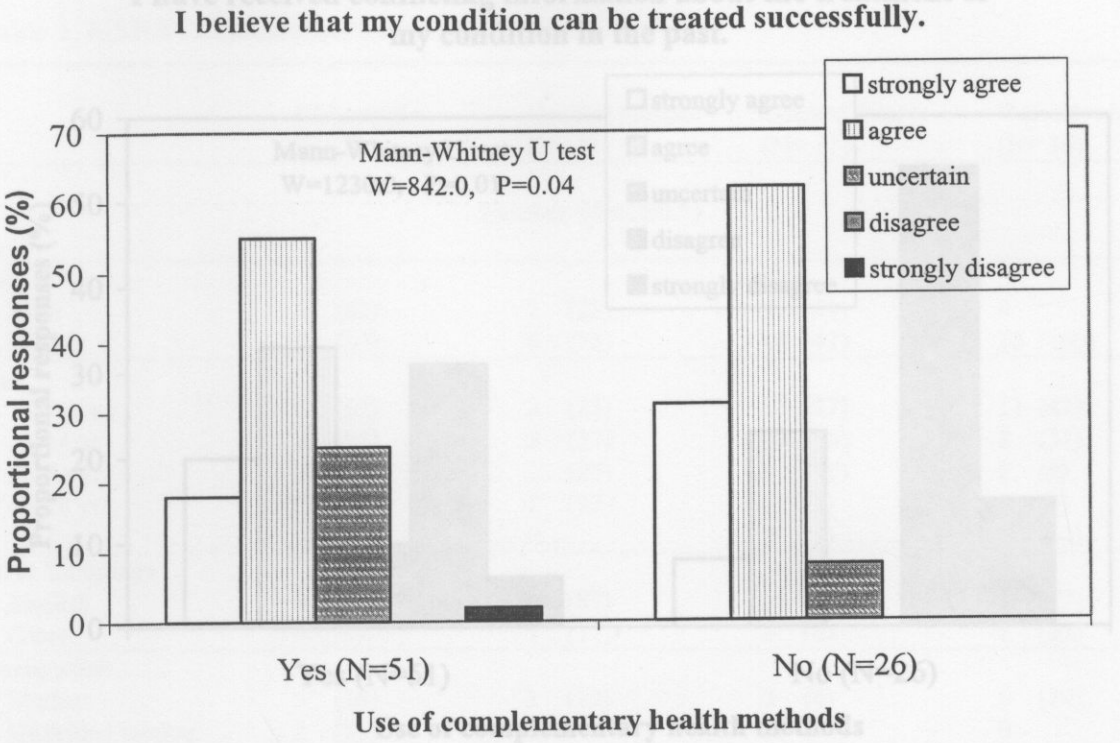

Figure 19. Responses by "Use of CH methods" : "I believe that my condition can be treated successfully".

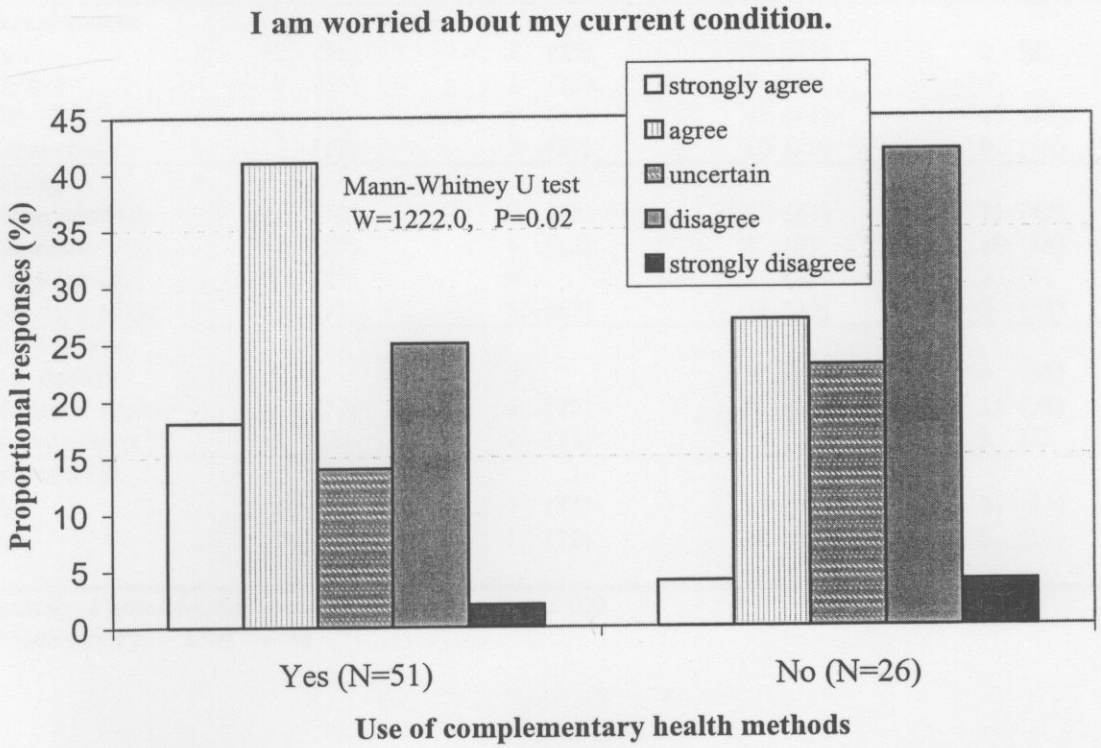

Figure 20. Responses by "Use of CH methods" : "I am worried about my current condition".

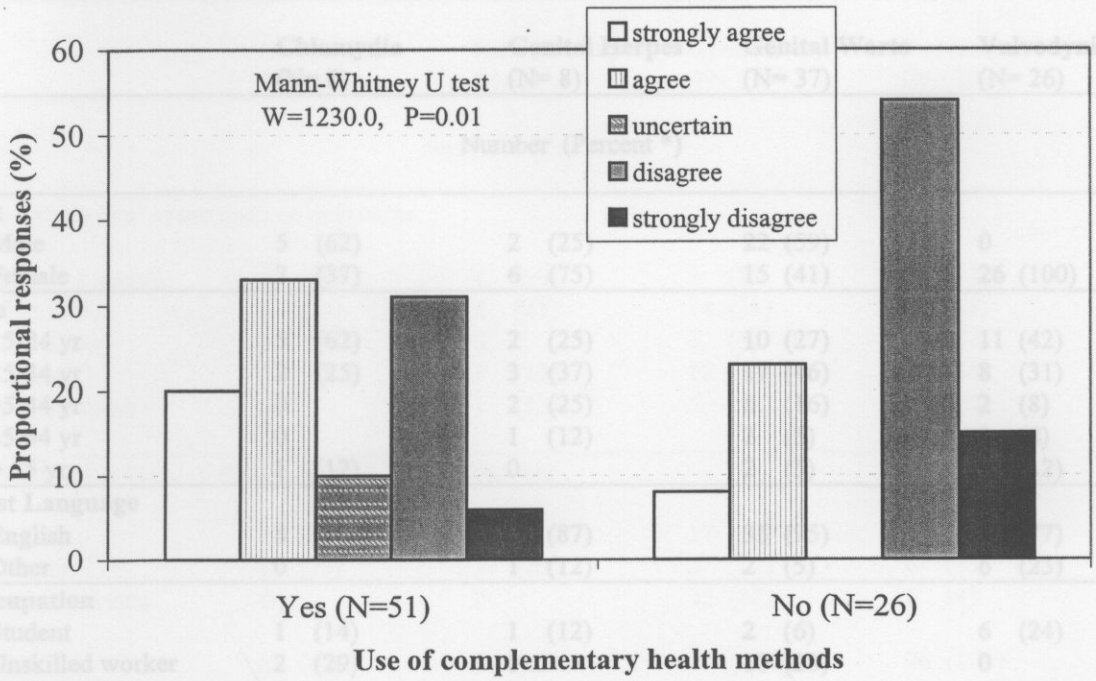

Figure 21. Response by "Use of CH methods": "I have received conflicting information about the treatment of my condition in the past"

Table 1. MSHS - Characteristics of the study population.

	Chlamydia (N= 8)	Genital Herpes (N= 8)	Genital Warts (N= 37)	Vulvodynia (N= 26)
	Number (Percent *)			
Sex				
Male	5 (62)	2 (25)	22 (59)	0
Female	3 (37)	6 (75)	15 (41)	26 (100)
Age				
15-24 yr	5 (62)	2 (25)	10 (27)	11 (42)
25-34 yr	2 (25)	3 (37)	17 (46)	8 (31)
35-44 yr	0	2 (25)	6 (16)	2 (8)
45-54 yr	0	1 (12)	2 (5)	2 (8)
> 55 yr	1 (12)	0	2 (5)	3 (12)
First Language				
English	8 (100)	7 (87)	35 (95)	20 (77)
Other	0	1 (12)	2 (5)	6 (23)
Occupation				
Student	1 (14)	1 (12)	2 (6)	6 (24)
Unskilled worker	2 (29)	0	10 (28)	0
Skilled worker	4 (57)	7 (88)	20 (55)	15 (60)
Unemployed	0	0	4 (11)	4 (16)
Relationship				
Regular partner	4 (50)	7 (87)	24 (65)	23 (88)
Casual partner	4 (50)	1 (12)	8 (22)	1 (4)
No partner in last year	0	0	5 (14)	2 (8)
Referral source				
Self	2 (25)	2 (25)	7 (21)	2 (8)
Partner	2 (25)	1 (12)	3 (9)	0
GP	3 (37)	2 (25)	14 (41)	15 (58)
Other clinic	1 (12)	3 (37)	10 (29)	9 (35)
Smoking				
Never smoked	1 (12)	2 (25)	15 (41)	11 (42)
Ex-smoker	2 (25)	1 (12)	3 (8)	10 (38)
Casual smoker	2 (25)	0	1 (3)	2 (8)
Regular smoker	3 (37)	5 (62)	18 (49)	3 (12)
Alcohol intake				
Non drinker	0	0	3 (9)	9 (35)
Moderate drinker	3 (37)	6 (75)	21 (60)	15 (58)
Heavy drinker **	5 (62)	2 (25)	11 (31)	2 (8)
Previous STD				
No	3 (37)	7 (87)	25 (68)	21 (81)
Yes	5 (62)	1 (12)	12 (32)	5 (19)

* Because of rounding, percentages do not always total 100.
** Alcohol intake > 150g / week

Table 2. MSHS – Health Seeking Behaviour

	Chlamydia (N= 8)	Genital Herpes (N= 8)	Genital Warts (N= 37)	Vulvodynia (N= 26)
	Number (Percent)			
Time since first symptoms or diagnosis				
Less than 1 month	4 (57)	4 (50)	3 (8)	3 (12)
1 –6 months	3 (43)	2 (25)	14 (38)	4 (15)
7-12 months	0	0	3 (8)	3 (12)
1-5 years	0	1 (12)	12 (32)	12 (46)
6 or more years	0	1 (12)	5 (14)	4 (15)
Patients with visits to Manly Sexual Health Service				
1-3 visits	6 (75)	6 (75)	17 (46)	17 (65)
4-10 visits	2 (25)	2 (25)	8 (22)	8 (31)
11 or more visits	0	0	12 (32)	1 (4)
Total	8 (100)	8 (100)	37 (100)	26 (100)
Patients with visits to other doctors				
1-3 visits	2 (25)	5 (62)	16 (43)	5 (19)
4-10 visits	0	0	6 (12)	6 (23)
11 or more visits	0	1 (12)	6 (16)	12 (46)
Total	2 (25)	6 (75)	28 (76)	24 (92)
Patients with visits to complementary health providers				
1-3 visits	0	0	2 (5)	5 (19)
4-10 visits	0	1 (12)	1 (3)	5 (19)
11 or more visits	0	0	0	3 (12)
Total	0	1 (12)	3 (8)	13 (50)

Table 3. MSHS - Visits to other doctors

	Chlamydia (N= 8)	**Genital Herpes** (N= 8)	**Genital Warts** (N= 37)	**Vulvodynia** (N= 26)
	Number (Percent)			
Patients with visits to other doctors	2 (25)	6 (75)	28 (76)	24 (92)
Types of doctors visited				
GP	2 (25)	3 (37)	18 (49)	23 (88)
Gynaecologist	0	0	2 (5)	13 (50)
Dermatologist	0	0	0	2 (8)
Family Planning	0	1 (12)	1 (3)	1 (4)
Other STD-clinic	0	2 (25)	10 (27)	3 (12)
Psychiatrist	0	0	0	3 (12)

Table 4. MSHS - Visits to complementary health (CH) providers

	Chlamydia (N= 8)	**Genital Herpes** (N= 8)	**Genital Warts** (N= 37)	**Vulvodynia** (N= 26)
	Number (Percent)			
Patients with visits to CH providers	0	1 (12)	3 (8)	13 (50)
Types of CH providers visited				
Naturopath	0	0	0	8 (31)
Homeopath	0	1 (12)	0	3 (12)
Acupuncturist	0	0	1 (3)	3 (12)
Chinese herbalist	0	1 (12)	2 (5)	1 (4)
Counsellor *	0	0	1 (3)	5 (19)

* outside Manly Sexual Health Service

Table 5 MSHS - Use of complementary health (CH) products

	Chlamydia (N= 8)	Genital Herpes (N= 8)	Genital Warts (N= 37)	Vulvodynia (N= 26)
	Number (Percent)			
Patients with use of at least one CH product	3 (37)	3 (37)	4 (11)	20 (77)
Types of CH products used				
Skin care products	0	2 (29)	0	7 (27)
Antiseptic products	1 (12)	0	0	3 (12)
Anaesthetic creams	0	0	0	3 (12)
Pain killers	0	1 (12)	0	5 (19)
Nutritional supplements	1 (12)	2 (25)	0	8 (31)
Herbal products	1 (12)	1 (12)	1 (3)	7 (27)
Chinese medicine	0	1 (12)	1 (3)	2 (8)
Other	1 (12)	1 (12)	4 (11)	7 (27)

Other: Homeopathic remedies, yogurt, oat meal water, homemade salve, haemorrhoid cream, antimycotic cream, "general wart kill", steroid cream.

Table 6. MSHS - Use of complementary health (CH) methods.

	Chlamydia (N= 8)	Genital Herpes (N= 8)	Genital Warts (N= 37)	Vulvodynia (N= 25)
	Number (Percent)			
Patients with use of at least one CH method	1 (12)	8 (100)	21 (57)	22 (88)
Types of CH methods used				
General healthy diet	1 (12)	4 (50)	11 (30)	15 (60)
Specific diet	0	1 (12)	0	3 (12)
Reduced alcohol	1 (12)	2 (25)	3 (8)	2 (8)
Reduced smoking	1 (12)	1 (12)	6 (12)	2 (8)
Relaxation techniques	0	1 (12)	1 (3)	3 (12)
Massage	0	0	2 (5)	3 (12)
Local ice-packs	0	0	0	4 (16)
Salt water baths	0	2 (25)	12 (32)	7 (28)
Cotton underwear	0	5 (62)	9 (24)	21 (84)
Loose clothing	0	4 (50)	7 (19)	19 (76)
Exercise	1 (12)	1 (12)	4 (11)	5 (20)
Other	0	1 (12)	2 (5)	3 (12)

Other: blow-drying the area with hair-dryer after showering, safe sex.

Table 7. MSHS - Sources of information

	Chlamydia (N= 8)	**Genital Herpes** (N= 8)	**Genital Warts** (N= 37)	**Vulvodynia** (N= 25)
	Number (Percent)			
Manly Sexual Health Service	8 (100)	7 (87)	31 (84)	25 (100)
Other health provider	0	1 (12)	9 (24)	5 (20)
Friends or family	0	1 (12)	1 (3)	0
Pamphlet	0	1 (12)	3 (8)	1 (4)
Magazines or books	0	1 (12)	2 (5)	2 (8)
Internet	1 (12)	1 (12)	3 (8)	0

Table 8. MSHS – Comparison between "Genital Warts" and "Vulvodynia" group.

	Genital Warts (N= 37)	**Vulvodynia** (N= 26)			
	Number (Percent)		Difference*	95% CI**	P-value ***
Visits to other doctors	28 (76)	24 (92)	17	0 - 34	0.1
Visits to CH providers	3 (8)	13 (50)	42	21 - 63	< 0.001
Use of CH products	4 (11)	20 (77)	66	47 - 85	< 0.001
Use of CH methods	21 (57)	22 (88)	31	11 - 52	0.01

* Difference in proportions (%)
** 95% CI for Difference
*** P- value derived from Fisher's Exact Test

Table 9. MSHS – Comparison between "Genital Warts" and "Vulvodynia" group (Subanalysis of female patients)

	Genital Warts (N= 15)	**Vulvodynia** (N= 26)			
	Number (Percent)		Difference*	95% CI**	P-value ***
Visits to other doctors	13 (87)	24 (92)	6	(-26) - 14	0.6
Visits to CH providers	2 (13)	13 (50)	37	11 - 62	0.02
Use of CH products	3 (20)	20 (77)	57	31 - 83	<0.001
Use of CH methods	11 (73)	22 (88)	15	(-40) - 11	0.4

* Difference in proportions (%)
** 95% CI for Difference
*** P- value derived from Fisher's Exact Test

Table 10. MSHS - Health seeking behaviour and patient characteristics

	Visits to other doctors		Visits to CH providers		Use of CH products		Use of CH methods	
	Yes (N= 60)	No (N=19)	Yes (N=17)	No (N=62)	Yes (N=30)	No (N=49)	Yes (N=50)	No (N=26)
	Number (Percent *)							
Sex								
Male	17 (28)	12 (63)	1 (9)	28 (45)	2 (7)	27 (55)	12 (23)	17 (65)
Female	43 (72)	7 (37)	16 (94)	34 (55)	28 (93)	22 (45)	40 (77)	9 (35)
P-value**	P=0.01		P<0.001		P<0.001		P<0.001	
Age								
15-24 yr	22 (37)	6 (32)	6 (35)	22 (35)	11 (37)	17 (35)	18 (35)	10 (38)
25-34 yr	23 (38)	7 (37)	6 (35)	24 (39)	10 (33)	20 (41)	19 (37)	11 (42)
35-44 yr	8 (13)	2 (11)	3 (18)	7 (11)	3 (10)	7 (14)	7 (13)	3 (12)
45-54 yr	3 (5)	2 (11)	1 (6)	4 (6)	1 (3)	4 (8)	4 (8)	1 (4)
> 55 yr	4 (7)	2 (11)	1 (6)	5 (8)	5 (17)	1 (2)	4 (8)	1 (4)
P-value**	P=0.9		P=1		P=0.2		P=0.9	
First Language								
English	52 (87)	18 (95)	15 (88)	55 (89)	24 (80)	46 (94)	48 (92)	22 (85)
Other	8 (13)	1 (5)	2 (12)	7 (11)	6 (20)	3 (6)	4 (8)	4 (15)
P-value**	P=0.7		P=1		P=0.08		P=0.4	
Occupation								
Student	9 (15)	1 (6)	3 (18)	7 (12)	4 (14)	6 (13)	8 (16)	2 (8)
Unskilled worker	9 (15)	3 (18)	0	12 (20)	4 (14)	8 (17)	6 (12)	6 (24)
Skilled worker	35 (60)	11 (65)	10 (59)	36 (61)	18 (62)	28 (60)	31 (62)	15 (60)
Unemployed	6 (10)	2 (12)	4 (24)	4 (7)	3 (10)	5 (11)	5 (10)	2 (8)
P-value**	P=0.8		P=0.05		P=1		P=0.5	
Smoking								
Non Smoker	38 (63)	7 (37)	12 (71)	33 (53)	22 (73)	23 (47)	35 (67)	9 (35)
Smoker	22 (37)	12 (63)	5 (29)	29 (47)	8 (27)	26 (53)	17 (33)	17 (65)
P-value**	P=0.06		P=0.3		P=0.03		P<0.001	
Alcohol Intake								
Non drinker	12 (20)	0	7 (41)	5 (8)	7 (23)	5 (11)	12 (24)	0
Moderate drinker	34 (58)	11 (61)	9 (53)	36 (60)	16 (53)	29 (62)	31 (62)	13 (50)
Heavy drinker	13 (22)	7 (39)	1 (6)	19 (32)	7 (23)	13 (28)	7 (14)	13 (50)
P-value**	P=0.07		P<0.001		P=0.4		P<0.001	
Previous STD								
No	44 (73)	12 (63)	13 (76)	43 (69)	22 (73)	34 (69)	39 (75)	16 (62)
Yes	16 (27)	7 (37)	4 (24)	19 (31)	8 (27)	15 (31)	13 (25)	10 (38)
P-value**	P=0.4		P=0.8		P=0.8		P=0.3	

*Because of rounding, percentages do not always total 100.
** P- values derived from Fisher's Exact Test

Table 11. LRC - Characteristics of the study population.

	Genital Warts (N= 9)	
	Number	(Percent *)
Sex		
Male	7	(78)
Female	2	(22)
Age		
15-24 yr	4	(44)
25-34 yr	4	(44)
35-44 yr	1	(11)
First Language		
English	5	(55)
Other	4	(45)
Occupation		
Student	2	(22)
Unskilled worker	1	(11)
Highly skilled worker	1	(11)
Skilled worker	3	(33)
Unemployed	1	(22)
Relationship		
Regular partner	6	(66)
Casual partner	3	(33)
No partner in last year	0	
Referral source		
Self	4	(44)
Partner	2	(22)
GP	2	(22)
Other	1	(11)
Smoking		
Never smoked	4	(44)
Ex-smoker	1	(11)
Casual smoker	2	(22)
Regular smoker	2	(22)
Alcohol intake		
Non drinker	0	
Moderate drinker	9	(100)
Heavy drinker **	0	
Previous STD		
No	6	(66)
Yes	3	(33)

* Because of rounding, percentages do not always total 100.
** Alcohol intake > 150g / week

Table 12. LRC - Patients' perceptions of their condition and treatment.

Patient Responses (%)	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
I know enough about the treatment of my condition.	44	56	0	0	0
I can influence the cure / control of my symptoms.	11	78	11	0	0
I would like to have more involvement in the selection of my treatment.	0	33	22	33	11
I believe that my condition can be treated successfully.	44	44	11	0	0
A healthy lifestyle will help in the treatment of my condition.	67	22	11	0	0
I am worried about my current condition.	0	56	22	22	0
Treatment for my condition is very time consuming.	0	33	22	44	0
I have received conflicting information about the treatment of my condition in the past.	0	2	11	33	33
Information about the treatment of my condition is still very confusing or unsatisfying.	0	0	11	44	44

Table 13. LRC - Health Seeking Behaviour

	Genital Warts (N= 9)
	Number (Percent)
Time since first symptoms or diagnosis	
Less than 1 month	2 (25)
1 –6 months	4 (50)
7-12 months	0
1-5 years	2 (25)
6 or more years	0
Patients with visits to LRC	
1-3 visits	3 (33)
4-10 visits	6 (67)
11 or more visits	0
Total	9 (100)
Patients with visits to other doctors	
1-3 visits	6 (67)
4-10 visits	1 (11)
11 or more visits	0
Total	7 (78)
Patients with visits to CH providers	
1-3 visits	0
4-10 visits	0
11 or more visits	0
Total	0

Table 14. LRC – Visits to other doctors

	Genital Warts (N= 9)
Patients with visits to other doctors	7 (78)
Types of doctors visited	
GP	4 (44)
Gynaecologist	1 (11)
Family Planning	1 (11)
Other	1 (11)

Table 15. LRC – Use of CH methods

	Genital Warts (N= 9)
Patients with use of at least one CH method	2 (22)
Types of CH methods used	
General healthy diet	1 (11)
Salt water baths	2 (22)

Table 16. LRC – Sources of information

	Genital Warts (N= 9)
	Number (Percent)
Livingstone Road Clinic	9 (100)
Other health provider	3 (33)
Pamphlet	1 (11)
Other	1 (11)

4. DISCUSSION

This study explored how patients of Sexual Health services participate in their treatment and manage their Sexual Health. Health seeking behaviour was defined in a comprehensive way and included both conventional and unconventional therapies and also practitioner based and self applied therapies. A strict distinction between conventional and unconventional therapies was avoided, since the use of many complementary health methods, such as warm salt water baths, are frequently recommended by Sexual Health physicians. On the other hand, treatment for some conditions includes such "unconventional" modalities as acupuncture.

The study found that the majority of Manly Sexual Health Service attendees used the service not exclusively, but also accessed other therapies. Sixty-seven percent of all participants had applied complementary health methods, 38% had used health products and 22% had visited complementary health providers. Users of complementary therapies were significantly more likely to be female, non-smoker and have a low alcohol consumption than non-users.

The health seeking behaviour of four groups, patients with chlamydia infection, genital herpes, genital warts and vulvodynia, was compared. The results of two groups (chlamydia infection and genital herpes) were displayed descriptively only due to small sample size. The differences between the other two groups (genital warts and vulvodynia) were statistically analysed.

The statistical analysis revealed two major differences between the two patient groups. Patients with vulvodynia used more complementary therapies than patients suffering from genital warts. Patients with vulvodynia were also more worried about their condition, less confident about their treatment and had received more conflicting information than patients with genital warts.

These differences are suspected to be due to the different natures of the diseases. Genital warts are a well known and studied condition, where as vulvodynia and its treatment are still poorly understood. Ongoing symptoms and lack of information causes vulvodynia patients to try a wide range of potential remedies. However, the differences in health seeking behaviour between the two groups are also influenced by the fact that the patients from the "vulvodynia" group were all females and showed a higher concern for their health (non smoking and low alcohol consumption) than patients from the "genital wart" group.

The study also examined the relationship between patients' perceptions and their health seeking behaviour for the study population as a whole. After controlling for sex, smoking and alcohol consumption, there was a significant association between "being worried about the condition" and visits to complementary health providers. There was also an association between "receiving conflicting information" and higher utilisation of health services and products. This finding indicates that uncertainty about treatment causes patients to approach different health providers, but could also mean that conflicting information results from the variety of health providers consulted.

This study tried to identify patient groups who are likely to access complementary health services and products. Patients were asked to indicate what action they had taken for the treatment of four specific genital conditions. The questions on health seeking behaviour were phrased "for your current or a related condition" and aimed to include the whole pathological spectrum of the disease, but to distinguish from other non-related health conditions. All study participants were current patients at Sexual Health clinics. To avoid under-reporting of complementary health utilisation, a confidential, self-administered questionnaire was used. All questions were asked in a non-judgmental way and the "answer tick-lists" comprised a wide range of options including an "other" category. Previous studies showed that patients with STDs commonly self treat with antibiotics before presenting to a clinic [27,33,34]. This questionnaire did not specifically ask for the use of antibiotic agents, since it was

aimed at patients who are currently treated at the clinic. Several participants may have had prescriptions for antibiotics and distinction between self- and prescribed-treatment was thought to be unreliable.

The study design, a cohort analysis, was appropriate for these research questions, but posed several difficulties for the completion of the study. Comparisons between the four patient cohorts were limited by the unequal sample sizes and the statistical analysis was confined to the "genital warts" and "vulvodynia" cohort. Both conditions are characterised by long standing genital symptoms, but only one is regarded as a sexually transmitted disease. The fact that the "vulvodynia" cohort comprised women only, where as the patients in the "genital wart" group belonged to both sexes, also limits the comparison between the two groups.

Patients were surveyed at different stages of their diseases and the time since the first symptoms differed within and between patient groups. This time period may influence patients' perceptions of their condition and also the number of health actions taken. However, this time period also reflects the different natures of the diseases and this variable was regarded as an intervening factor.

None of the patients asked to complete the questionnaire declined to do so. Not all eligible patients who presented during the study period were asked to participate and selection bias may have occurred. However, an analysis of non-participants showed, that they did not differ significantly from participants in terms of sex, age, smoking or alcohol intake. Manly Sexual Health Service is specialised in the treatment of refractory genital warts and it is possible that this patient group is not representative of other patients with genital warts. The results from the three other patient groups, however, are likely to be generalisable for other STD clinics. The finding, that female patients who worry about their condition are likely to use complementary therapies, is also likely to be true for other patient populations as well.

Patients with genital symptoms commonly take active measures in the treatment of their conditions. Previous STD clinic based studies found that 56 % of symptomatic women [27] and 10 % of symptomatic men [33] had used self administered therapies prior to their clinic attendance. Women with chronic vaginal symptoms were shown to have an even higher utilisation rate of over-the-counter medication [28]. In this study the use of complementary health products ranged from 11% in the "genital wart" group to 77% in the "vulvodynia" group. Users of complementary and alternative medicine have been previously described as likely to be female, well educated and health conscious [8,9,13,14]. This trend was confirmed by the results of this study, where non-smoking women with low alcohol consumption showed the highest utilisation rates of complementary health services and products. Use of CAM has also been associated with chronic health problems[17] and psychological distress[16]. In this study, patients with vulvodynia, a chronic condition where treatment is not well defined, were most likely to use complementary therapies. Patients' perceptions of their condition and level of concern was also found to strongly influence health seeking behaviour.

5. CONCLUSION

This study showed that a significant percentage of Sexual Health patients use non-prescribed complementary therapies. Uncertainty and worry about treatment creates the desire to leave no potential remedy untried and to search for diverse treatment options. A wide range of health products are available to patients, some of which are helpful and some others are potentially harmful. Vulvodynia patients, for example, are likely to benefit from acupuncture treatment[65] or electromyographic biofeedback[63], where as the unsupervised use of antimycotic creams will worsen their condition[28]. Most patients do not discuss their utilisation of complementary therapies with their doctors, especially not on their own initiative[23], but seek information from other sources. Doctors at Manly Sexual Health Service routinely ask and inform their patients about the use of such therapies, and most health products and methods used by the study population were deemed appropriate. This indicates, that the patients' desire for a more holistic treatment can be successfully addressed and acknowledged in "conventional" Sexual Health clinics. Open discussion and information on complementary therapies help patients to make informed decisions, to avoid drug interactions and other complications, and ultimately lead to better patient care.

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CENTRAL SYDNEY AREA SEXUAL HEALTH SERVICE

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RESEARCH STUDY INTO HEALTH SEEKING BEHAVIOR

INFORMATION FOR PARTICIPANTS

You are invited to take part in a research study about health seeking behaviour and treatment satisfaction of patients at sexual health clinics. The aim of the study is to find out how you personally manage your sexual health. We are interested in finding out where and how you access medical help and what you think about the different available treatment options. In addition, we are interested in finding out how satisfied you have been with the care that you have received and if you would like more information on treatment and management of your condition.

The study is being conducted by Dr. Gerda Trutnovsky and Dr. Catherine O' Connor, Director of Central Sydney Area Sexual Health Services.

If you agree to participate, we will ask you to complete a short questionnaire and deposit it in a drop-in-box at the reception desk during your current visit at this clinic. This should take approximately 5 to 10 minutes of your time. In addition, one of the above researchers will need to have access to your medical record, to collect additional information on your medical history.

All aspects of the study, including results, will be strictly confidential and only the investigators named above will have access to information on participants. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

Participation in this study is entirely voluntary: you are in no way obliged to participate and – if you do participate – you can withdraw at any time. Whatever your decision, please be assured that it will not affect your medical treatment or your relationship with medical staff.

When you have read this information, your treating doctor or nurse will discuss it with you further and answer any questions you may have. If you would like to know more at any stage, please feel free to contact Dr. Catherine O' Connor, Director of Central Sydney Area Sexual Health Services, on 02 9560 3057. This information sheet is for you to keep.

This study has been approved by the Ethics Review Committee (RPAH Zone) of the Central Sydney Area Health Service. Any person with concerns or complaints about the conduct of a research study can contact the Secretary on 02 9515 6766.

CENTRAL SYDNEY AREA SEXUAL HEALTH SERVICE

QUESTIONNAIRE

We are interested in clients' thoughts about their management and treatment and their experience with health care providers outside this clinic. We would be grateful, if you would give approximately 10 mins of your time to answer the following questions. This will help us to gain a better understanding of patients' needs and will help us to improve our service.

Please answer the questions based on the condition you are currently being treated for.

ALL INFORMATION GIVEN BY YOU IS CONFIDENTIAL.

1. Clinic Number: .....

2. What condition are you currently treated for ?

O Chlamydia	O Genital Herpes	O Vulvodynia
O Gonorrhea	O Genital Warts	O Candidiasis
O Trichomonas	O Bacterial Vaginosis	O NSU
O other:		

3. When did you first notice symptoms or get diagnosed with your current condition?

O less than 1 week ago	O 1-2 months ago	O 1-2 years ago
O 1-2 weeks ago	O 3-6 months ago	O 3-5 years ago
O 3-4 weeks ago	O 7-12 months ago	O 6 or more years ago

Please rate how much you agree with the following statements:

4. I know enough about the treatment of my condition.

strongly agree	agree	uncertain	disagree	strongly disagree
O	O	O	O	O

5. I can influence the cure / control of my symptoms.

strongly agree	agree	uncertain	disagree	strongly disagree
O	O	O	O	O

7. I would like to have more involvement in the selection of my treatment.

strongly agree	agree	uncertain	disagree	strongly disagree
O	O	O	O	O

8. I believe that my condition can be treated successfully.

strongly agree	agree	uncertain	disagree	strongly disagree
O	O	O	O	O

9. A healthy lifestyle will help in the treatment of my condition.

strongly agree	agree	uncertain	disagree	strongly disagree
O	O	O	O	O

10. I am worried about my current condition.

strongly agree	agree	uncertain	disagree	strongly disagree
O	O	O	O	O

11. Treatment for my condition is very time consuming.

strongly agree	agree	uncertain	disagree	strongly disagree
O	O	O	O	O

12. I have received conflicting information about the treatment of my condition <u>in the past</u>.

strongly agree	agree	uncertain	disagree	strongly disagree
O	O	O	O	O

13. Information about the treatment of my condition is still very confusing or unsatisfying.

strongly agree	agree	uncertain	disagree	strongly disagree
O	O	O	O	O

Please tick as many responses as apply to you.

14. Have you visited any other doctor for your current or a related condition?

O yes O no

If yes, which one(s)?

O my GP
O Gynaecologist
O Dermatologist
O Family Planning
O Psychiatrist
O other: .....

How many visits have you made?

O 1-3 visits O 4-10 visits O 11 or more visits

15. Have you visited any other health provider for your current or a related condition?

O yes O no

If yes, which one(s)?

O naturopath
O homeopath
O acupuncturist
O counsellor (outside this clinic)
O chiropractor
O other: .....

How many visits have you made ?

O 1-3 visits O 4-10 visits O 11 or more visits

16. Have you used any non-prescription drugs / health products for your current or a related condition?

O yes O no

If yes, which one(s)?

O skin care products (e.g. sorbolene,.)
O antiseptic products (e.g. tea tree oil,..)
O vitamins, nutritional supplements,..
O herbal products (e.g. echinacea,..)

O anaesthetic creams (e.g. xylocaine,..)
O pain killers (e.g. paracetamol,..)
O chinese medicine
O other: .....

Please tick as many responses as apply to you.

17. Have you tried any of the following methods to manage your current or a related condition?

O yes O no

If yes, which one(s)?

O general healthy diet
O specific diet

O reduced alcohol consumption
O reduced smoking

O relaxation techniques
O massage

O local application of ice-packs
O warm salt water baths

O cotton underwear
O loose clothing

O exercise
O other: .....

18. Where did you receive information about the treatment of your current condition?

O this Sexual Health Service
O other doctor / health provider

O friends or family
O self help group

O pamphlet
O magazines, books,..

O other: .....
O none

19. Do you have any other comments, thoughts or suggestions about the treatment and management of your condition ?

.....
.....
.....
.....
.....

Thank you for your participation.