THE UNIVERSITY OF MANITOBA

REMEDIAL HEALTH COUNSELLING FOR PATIENTS REPEATEDLY INFECTED WITH VENEREAL DISEASE: AN INTERVENTIVE APPROACH

By

Rune S. Lundin

A thesis presented to the Faculty of Graduate Studies in partial fulfillment of the requirement for the Degree Master of Arts.

DEPARTMENT OF PSYCHOLOGY

WINNIPEG, MANITOBA

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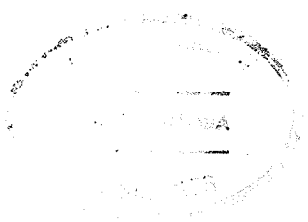

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Abstract

An alarming increase in venereal disease has taken place in Canada, and elsewhere, over the last 20 years. This increase has occurred despite the fact that V.D. infections responds quickly and painlessly to antibiotic treatments and that massive public information campaigns have been waged to educate the public as to its mode of transmission and prophylaxis.

The present research is based on a previous study by the writer, which indicated that a large proportion of venereal infections in a Winnipeg clinic could be traced to a relatively small group of patients who became repeatedly infected and often infected others, despite exposure to conventional educational efforts. A further finding was that this group was drawn predominantly from the lowest socio-economic strata. From these results, it was conjectured that special techniques of persuasion would be needed to reach this population. Specifically, it was hypothesized that the incidence of V.D. infection in a repeat V.D. group could be reduced using a counselling technique that combined a personal relationship with relevant information as to V.D. protection.

Five groups of 20 repeat V.D. patients were selected from the charts of patients currently being treated at a large metropolitan hospital. Two of these groups were provided with counselling by the investigator, and three groups served as controls. They were provided with either a) a selection of conventional literature regarding venereal diseases, or b) informed that their medical records would be checked after

one year, or c) not contacted at all.

Comparing the respective groups' V.D. records after one year it was found that those receiving counselling had significantly fewer V.D. infections, both in terms of a pre and post comparison of within the counselled groups, and a between group comparison of those receiving counselling and those not receiving counselling. This change was still significant after a two year period.

Various hypotheses were put forward to explain these findings with suggestions as to how the research design could be improved and replicated with other V.D. populations.

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INTRODUCTION

Venereal disease (VD) has become a critical social and medical problem in recent years. Over the last decade venereal infections have reached epidemic proportions and are currently listed as having a frequency second only to the common cold (Health and Welfare, Canada, 1977).

The assumption that venereal disease would be eradicated by antibiotic therapy has not been realized. In fact, there has been an annual increase of 12% since 1957 (Iaquinta, 1976). The failure of the biomedical approach has led to a search for alternate approaches to this health problem.

In the early seventies a number of social scientists began studies of VD patients in the hope of discovering underlying social and behavioral aspects of venereal infections. Most of these studies agree that the greatest proportion of venereal infections occur in young, unmarried individuals of low socio economic status with multiple sexual contacts. It has further been established that the life style and geographic commonality of certain groups of VD patients often lead to the development of loosely defined clusters of individuals which form reservoirs of venereal infections causing repeated infections within the group.

The so called "core area" or "inner city" in Winnipeg has been identified, in a previous study (Lundin, Wright, and Scatliff, 1977) as having a relatively large population of patients with a history of repeated venereal infections.

The repeater is seen as an important subject for study as it has been found that this minority contributes to the annual statistics on incidence of VD by having nearly half (47%) of all venereal infections reported by public VD clinics.

Among the more important findings of the previous study of the repeater patient was that despite his many venereal infections, the repeater is not familiar with the etiology, symptoms, and preventive techniques of venereal diseases. In addition, it was found that the repeater is poorly motivated to change his habits to prevent infection. The life style of the repeater and his low socio-economic status provide little opportunity for development of self motivation.

Preliminary Statement of the Research Project

The present study was initiated to explore the possibility of influencing the sexual behavior of the repeater patient using an interpersonal approach. It was predicted that, since the repeater appears unable to benefit from the currently available educational material on VD, orally presented information on VD combined with a personal relationship between a health counsellor and the patient could reduce the prevalence of new infections in the repeater. Increased expectations of personal efficacy (defined by Bandura (1977) as the conviction that one can successfully execute the behavior to produce a desired outcome) was assumed to result from the personal relationship with a health counsellor who during the course of counselling would provide reinforcement for self-efficacy.

Two different forms of counselling were employed: individual counselling and group counselling.

The general hypothesis directing the investigation was that patients involved in remedial counselling would demonstrate a significant reduction in venereal infections during the year following the study as compared to the rate of infection in the same sample during the year prior to the study.

The present investigation is seen as one approach to solve the venereal disease problem.

REVIEW OF LITERATURE

By way of introducing a rather broad spectrum of research on venereal disease (VD), the following organizational approach was used. The first section provides an overview of the medical aspects of venereal disease, including definitions, treatment and incidence. A second section reviews sociological aspects of venereal disease, including a description of socio-demographic characteristics of the population at risk, theories of social change and theories of change in sexual behavior believed to be related to an increased incidence of VD. The third section deals with psychological aspects of the patient with venereal infection including personality characteristics and other psychological variables found in VD clinic populations. The last section deals with the patient with repeated venereal infections, the focus of the present study. Although the previous sections do not specifically single out repeatedly infected individuals, the findings relating social and demographic characteristics of VD clinic populations in general can be assumed to generalize at least to some extent to the background of the study sample in the present investigation.

MEDICAL ASPECTS OF VENEREAL DISEASE

Preliminary Definition of Venereal Disease

For the purpose of the present review, venereal disease (VD) will be defined as a generic name for a group of communicable diseases acquired chiefly by sexual intercourse with an infected person. The venereal diseases have been ungallantly named after Venus, the goddess of love, because of their mode of transmission. The alternative designation, sexually transmitted diseases (STD), has now been adopted by the World Health Organization (World Health Organization 1975). There are a number of ailments included in this category as follows: Gonorrhea, Syphilis, Chancroid, Lyphogranuloma venerum, Granuloma iguinale, Non-gonococcal urethritis, Trichomoniasis, Herpes genetalis and Cytomegalovirus infection (for detailed description of these disorders see appendix).

Treatment of Venereal Diseases

Gonorrhea and syphilis along with most of the other venereal infections have traditionally been treated with penicillin. Currently, the recommended dosage is 4.8 million units of the antibiotic, whereas a few years ago, the dosage was 200,000 units. The need for increasingly larger dosages of penicillin results from the increasing prevalence of a penicillin-resistant mutant strain of gonococcal bacteria. This strain has, over time, rendered treatment with penicillin ineffective. It has been suggested (Culliton, 1976) that

the increase in incidence of venereal infections in recent years can, at least partly, be said to reflect occurrence of infection in the treated individual due to insufficient dosage of penicillin. Presently, another antibiotic, spectinomysin, is used in treating the penicillin-resistant strain of gonococci. However, this treatment poses economic and biological problems. The drug is at present under patent and cannot be manufactured or sold under its generic name; thus a cure previously costing 50 cents for penicillin, now costs $4 for spectinomysin. Secondly, the present strain of gonococci may some day render itself resistant to spectinomysin, establishing the need for yet another antibiotic to which the strain will again become resistant in time (Culliton, 1976). The increasing cost of treatment places an urgent need upon the development of a vaccine for VD. Unfortunately, venereal diseases are still awaiting their Jonas Salk. The failure of antibiotics to eradicate, or even restrain the increasing incidence of venereal infection leads to a consideration of alternative approaches to venereal disease control.

Incidence of Venereal Disease

Since World War II, the incidence of venereal disease has followed a definite pattern; a decrease in the number of reported cases from 1948 to 1957, followed by a sharp climb. The trends observed in the statistics for the province of Manitoba reflect national and international trends (see figure 1).

In the United States, the incidence of gonorrhea doubled from 193,468 reported cases in 1941 to 363,014 cases in 1948. Following this rapid rise, the number of cases declined to 216,476 in 1957. However, since 1957 the incidence of gonorrhea has increased at the rate of approximately 12% per annum. In 1973, 800,000 cases of gonorrhea were reported. Since only a minor proportion of venereal infections are reported to health authorities, the actual number of infections cannot be known but has been estimated (Iaquinta, 1976) to be as high as 2.5 million in the United States in any given year.

In Canada, the incidence of gonorrhea has followed a similar trend. From a low of 80 cases per 100,000 population in 1960, the rate has climbed progressively to an all time high of over 400 cases per 100,000 population in 1977. This represents over 50,000 cases of gonococcal infection, an increase of 6.4% over the 47,680 cases reported in 1974 (a rate of 212.4) Health and Welfare, Canada 1977).

The province of Manitoba's rates for 1977 were 4,803 cases of gonorrhea and 696 cases of syphilis (Department of Health and Social Development, 1977). The reported rate for Manitoba for 1977 was the highest rate for North America that year. This may reflect a more systematic case finding effort and reporting rather than a true regional difference in terms of per capita prevalence.

VENEREAL DISEASES: REPORTED CASES BY TYPE
IN MANITOBA 1942 TO 1977

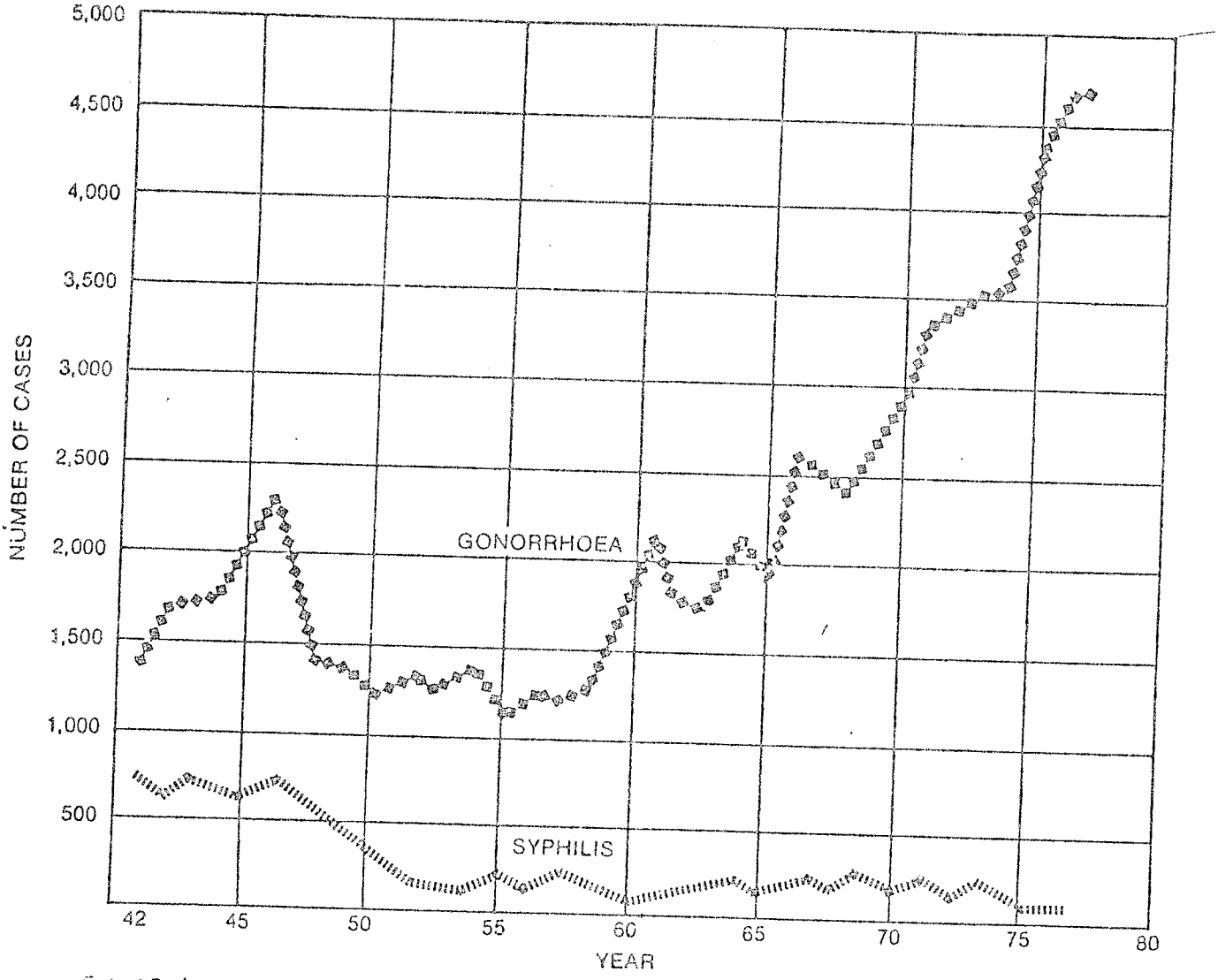


FIGURE 1.

Peak incidence years since records have been kept are:
Gonorrhoea 1977—4,803 cases
Syphilis 1942—696 cases

SOCIOLOGICAL ASPECTS OF VENEREAL DISEASE

Socio-Demographic Characteristics of VD Clinic Populations

Remedial programs aiming to reduce incidence rates of venereal disease are, for economical and practical reasons, directed toward populations in which venereal infections are most prevalent. Age has been found to be an important variable. For example, Johns, Sutton and Webster (1975) found that about half of the cases reported in the United States each year occur among persons who are younger than 25 years of age. Of an estimated two million people treated for VD in the United States, approximately 200,000 were teenagers.

In general, research findings agree that the majority of venereal infections occur before the age of thirty (Hart, 1974; Heywood and Bacon, 1975; Babu et al., 1976; Pemberton and McCann, 1972; Verhagen and Gemert, 1972).

Sex differences have been noted with respect to peak incidence in that the majority of cases in females occur in a lower age range than that for males (14-19 for females versus 18-24 for males). Cross-cultural comparisons have demonstrated only minor differences in age range for peak incidence. However, some of the reported surveys were done on age restricted populations such as army personnel (e.g. Hart, 1974), and University students (Babu et al., 1976). Nevertheless, a survey of hospital VD clinic data indicates that approximately 85% of all patients treated were under thirty years of age.

Marital Status

Pemberton et al. (1972) found that men attending VD clinics were more likely than women to be single and less likely to be widowed, divorced or separated. The high proportion of women who were married as compared with the men is explained by the fact that many of the married women were brought to the clinic as secondary contacts by husbands who had been infected from a casual extra-marital contact. For men the most frequent places for meeting contacts were the public house and the dance hall. For women, the most frequently mentioned meeting place was the dance hall. Seventy-one percent of the men and twenty-nine percent of the women said they had consumed alcohol prior to intercourse. Heywood and Bacon (1975), in a survey of 3,045 males at the Hull clinic for VD in England, found the highest proportion of gonorrhea in the separated/divorced category. Approximately 16% of all male patients with gonorrhea were classified as separated or divorced. In contrast, the lowest proportion of gonorrhea were diagnosed among married patients.

Najem (1975) sought to define the demographic characteristics of high risk groups in Tennessee through a gonorrhea screening program. Of primary interest among patients diagnosed as having gonorrhea was the finding that among White patients the highest percentage of positive cultures was found in those whose marital status was separated and the lowest in married persons. Among the Blacks, the highest percentage of positive cultures was found in single persons and

the lowest in widows.

Drusin et al (1974) studied the incidence of venereal infection in a university population. They found that those respondents who were separated or divorced were at high risk. However, the number of students in this category was extremely small. They also found a tenfold increase in the incidence of venereal disease when respondents who were never married were compared to those who were married.

These findings evidence a general agreement that high incidence of venereal disease correlates with marital status in that most cases occur among the unmarried, the divorced, and the separated.

Socio-Economic Status

The relative incidence of gonorrhea versus non-gonococcal urethritis (NGU) has been found to vary among social class lines (Pemberton, McCann and coworkers, 1972) and Heywood and Bacon, 1975). It was found that manual workers (blue collar workers) had higher incidence rates of gonorrhea with low incidence of NGU.

In contrast, white collar workers had higher rates of NGU than gonorrhea. No report was made with respect to some selectivity among kinds of venereal infection among upper income patients.

Hart (1973), studying the social determinants of VD in Viet Nam, concluded that amount of education was one of the most important factors affecting the incidence of venereal

disease. He found that the incidence of VD was approximately twice as high among soldiers with limited secondary education than among soldiers with higher education. Smithurst and Armstrong (1975) studied the social background of women attending a VD clinic in Australia. They found that the highest proportion of patients with sexually transmitted diseases (44%) came from homes where the father was an unskilled worker and approximately 17% of the patients' fathers were in managerial and professional jobs. Approximately 60% of the patients were in unskilled occupations. With regard to education, 39% of the VD patients had grade eight or less, 50% had attained sub-junior level and 11% had higher education. However, results obtained from VD clinic populations cannot be generalized to the VD population as a whole, i.e. are not representative of all people who contract venereal disease. Rather, they are representing people who attend public clinics, not necessarily by preference, but for economic reasons. Therefore, the better educated, and presumably more affluent patient is more likely to seek treatment from physicians in private practice.

In contrast to the results mentioned above, Verhagen and Gemert (1972) found that clinic patients with venereal infection did not differ from clinic patients with other medical problems with respect to social status, as determined by educational level and occupational role. Similarly, Drusin, Magagna, Katsuhiko, and Ley (1974) in their study of venereal disease in university populations, found no significant correlation between father's education and annual family income

and the occurrence of venereal disease. Lundin et al (1977) found that both repeatedly infected patients and non-repeaters came from the same social class level (level V, Hollingshead and Redlich, Two factor Index of Social Position, 1958) but that the social level of the non-repeaters was somewhat higher (low paying jobs) than was the social level of the repeater VD patient (primarily Social Welfare recipients).

The finding that patients seeking treatment at public VD clinics tend to come from lower socio-economic strata does not mean that people from other socio-economic levels never get venereal disease. Instead, they are more likely to consult physicians in private practice where their treatment might not be reported.

Ethnicity/Race

Najem (1974) sought to define the demographic characteristics of high risk groups through a screening program for gonorrhea among females in Tennessee. He found that the incidence of gonorrhea among Black VD patients was about four times as high as that among White VD patients (17% for Blacks versus 4.6% for Whites). In a similar study, Darrow (1976) examined the records of 5,000 patients examined for venereal disease in California. He found significant differences in the distribution of venereal infections for three ethnic groups, Blacks, Chicanos, and Whites. The results indicated that half of the Blacks (50.7%) one third of the Chicanos (35.1%), and one fourth of the Whites (25.3%) had VD. Linear regression analysis of 99 sociobehavioral variables showed

that ethnicity, gender and number of sexual partners were the best predictors of diagnoses among all clinic patients. Venereal disease was directly associated with the number of sexual partners identified by clinic patients within each of the ethnic groups, but black men and women had the highest proportion of infections and the lowest number of sexual partners. Although whites had the lowest rate of venereal infections and tended to name more sexual partners, the number of different sexual partners named by the patients was not statistically significant for the total sample. Black men were less likely to report to VD clinics with genitourinary symptoms and were more likely to delay longer than Chicano or White men. The author concludes that if venereal infection really is more prevalent in Blacks than Whites, patterns of health behavior may help explain these differences. Blacks may be (1) less likely to enter formal systems of medical care for check-ups; (2) less likely to detect symptoms themselves; (3) more likely to delay before seeking treatment; (4) more likely to rely on self treatment; (5) less likely to comply with prescribed course of therapy; and (6) less likely to refer all of their sexual partners to medical attention.

Ethnic variations were also found by Caloenescu and his coworkers (1973). They investigated incidence of gonorrhea, trichimoniasis, and candidiasis in a selected group of juvenile delinquent girls in Montreal. The results from this group were compared with hospital cases of similar age groups. They noted that the incidence of gonorrhea was almost twice as high in the English speaking group (10.5%) as compared to the

French speaking group (5.4%); the incidence of trichimoniasis was similar for both groups, and candidiasis was found more frequently in the French speaking girls. It would appear from these findings that the microorganisms responsible for the various disorders exhibit ethnic preferences. Another possible explanation is that English infect English and French infect French i.e. sexual contacts are related to preference for one's own ethnic group.

To summarize, many studies concerned with the socio-economic aspects of individuals reporting for treatment at VD clinics have found that venereal infection is more prevalent among individuals from lower socio-economic strata. It should be recognized that the findings may be misleading as individuals from the upper and middle classes are likely to seek the help of a private physician, who may or may not report his cases of venereal infection to health authorities. In the United States, private physicians treat approximately 80% of the cases of venereal disease and report only about 19% of these cases (Drusin et al., 1974). Similarly, results of studies which show a significantly higher incidence of venereal infection among blacks than among whites may also be questioned on the grounds of differences in socio-economic status.

The importance of racial and/or ethnic differences and disease specificity is of concern in the present investigation since more than half (67%) of the subjects were non-whites (Indians and Metis) and would be expected to show ethnic variation.

Theories of Social Change

The high incidence of venereal infection in certain segments of a population has been seen as resulting from societal change (Mead, 1976). It is argued that social change affecting the population is most readily observed in the youth belonging to lower socio-economic strata of the population, and among minority groups (Mead, 1976; Darrow, 1975).

A common denominator among psycho-social theories favouring the social change hypothesis has been the identification of factors considered important in explaining the rise of VD. A World Health Organization Committee appointed to look into the VD problem in 1965, reported eight societal factors believed to be related to the increase in venereal infections. These included a general ignorance of the diseases, a decrease in religious faith, the emancipation of women, lack of home discipline, failure of fear as a deterrent force, an emphasis on sexuality in the communication media, earlier physical development, and a misinterpretation of psychological teaching presumably leading to more permissiveness. Mead (1976) updates the list to include the factors of; "a more transient society, a general increase in affluence, more certain methods of contraception, and the popularity of contraceptive methods which do not guard against disease transmission.

Mead hypothesized that a major societal change which began in the 50's and accelerated in the 60's had directly affected individual behavior. She argues that prior to World War II an individual had a sense of purpose, a sense of be-

longing; values that he worked with were clearer than they are today and more concrete. A person's sense of belonging of a generation ago was strengthened by a membership in a group, a neighborhood, or a community. Today, the individual feels alienated, a stranger in a crowd manipulated more by external forces than by a sense of relationship. Technological change and advancement has been rapid within the past few years, and with it must come social maladjustment. The complexities of social adjustment have led to feelings, not only of alienation, but to disenchantment and resentment. It is in this state of confusion that one finds special social problems: venereal disease, delinquency, drug abuse, violence, apathy and social upheaval. Thus, Mead argues, the problem of pandemic diseases is but a symptom of a greater social ill.

The theory that social change is responsible for the increase in venereal infections has not been emperically verified. Should, however, supportive evidence be obtained, then programs designed to improve health conditions would need to include the teaching of coping skills. Such tasks appear formidable and costly and would probably be directed toward high risk groups only. The lack of self-efficacy observed in studies of Manitoba's VD population would seem to support Mead's notion that todays' individual "sees himself as being manipulated by external forces".

Following a slightly different line of reasoning, Darrow (1975) hypothesized that the amount of venereal disease in a society is inversely related to social constraints placed upon people. He argued that in wartime state controls of patterns

of interpersonal behavior is regarded as permissable, whereas in peacetime environment, freedom of expression tends to dominate. Thus, programs designed to prevent and control venereal disease will be less effective in times of social permissiveness. The decline in VD from 1948 to 1957 can, therefore, be attributed to increased controls over interpersonal behavior and the increased incidence in cases from 1957 to 1975 can be attributed to relaxed controls over interpersonal behavior. However, the social control hypothesis has not been supported by subsequent findings. For example, it was found that, in the United States, the number of cases of gonorrhea doubled from 193,468 cases in 1941 to 363,014 cases in 1948, the time period which encompassed World War II. If, as hypothesized, wartime made it easier for the state to control interpersonal or social behavior patterns, then incidence rates should not have doubled between 1941 and 1948. Further, relaxation of social controls following the end of World War II, should have led to an increase in the incidence of venereal infections, and this was not found.

It can further be argued that current government efforts to prevent and control venereal diseases have been intensified during the last decade and is currently at a level above that of the post war years. Presumably, more people are better informed about VD today than at any previous time period. This, however, does not preclude the possibility that certain segments of the population are unable to benefit from the existing preventive programs. It is this speculation that led to the present research study.

Theories of Change in Sexual Behavior

A theory, often referred to as the theory of the three P's (Darrow, 1975), states that permissiveness, promiscuity, and the "pill" are the major factors contributing to the current epidemic of venereal disease. Adherents to this theory profess that people are more sexually permissive now than they were a generation ago; they are less punitive and less stringent in their moral views. The present generation has also been provided with oral contraceptives (the pill) which prevents pregnancies but encourages the transmission of venereal infection. Attempts to test the validity of the three P's hypothesis (Babu, Marwah, and Singh, 1976; Darrow, 1975; Drusin, Magagna, Kalsuhiko and Ley, 1974; Hart, 1973; Juhlin and Wallin, 1972; Linken and Weiner, 1970; Smithurst and Armstrong, 1975, and Verhagen and Gemert, 1972) have shown that none of the three postulates of the theory can be accepted without reservations. The following is a brief review of the studies cited.

Permissiveness

Darrow (1975) compared trends in permissive attitudes among young men and women in United States. He found that although permissiveness seems to be growing, especially among young people, national morbidity data did not reflect a universal trend in terms of a constantly growing incidence in venereal disease.

In contrast, Babu et al., (1976) found a definite posi-

tive correlation between social acceptance of polygami in India by the family and the occurrence of venereal disease among university students of such families.

Similarly, Smithurst and Armstrong (1975), in a study of social background and attitudes of 171 female VD patients and their parents, found that 65% of their sample's parents believed that pre-marital sexual relations were an accepted form of behavior, and 36% of the subjects in their study believed that sexual relations with a casual partner was socially acceptable. However, these findings gives no indication of temporal changes in social attitudes since comparable data from earlier years have not been collected.

Using a slightly different criterion variable, that of age level at which sexual intercourse begins as an indicator of social permissiveness, Drusin and his coworkers (1974) in a survey of 15,563 university students, found that the highest incidence of venereal disease occurred in individuals who began sexual intercourse at age 15 or earlier, contrasted with non-infected students whose mean age at first intercourse was 19 years of age. This would seem to indicate a relationship between the amount of exposure to sexual contact and venereal disease rather than social permissiveness per se.

Although only suggestive, research data on social permissiveness appear to support the notion that a relationship exist between incidence rates of VD and increased permissiveness. However, causality cannot be inferred from correlation and the possibility exist that other social conditions and changes may have given rise to an increase in both permissiveness and incidence of venereal infections.

Promiscuity

Incidence of venereal infection appear to be related to promiscuity under certain conditions, for example in the case of "less sophisticated prostitutes" (Hart, 1973) and also in younger prostitutes (Verhagen et al, 1972). Other investigators have observed a positive correlation between fequency of infection and number of sexual partners (Drusin et al, 1974; Hart, 1973; Juhlin and Wallin, 1972).

The only notable exception to this trend was reported by Darrow (1975). Testing the hypothesis that a relationship existed between the number of sexual partners named in a month by venereal disease patients and the incidence of venereal disease he found that as the number of patients attending the public VD clinic increased the number of sexual partners reported by the patients decreased. Darrow's findings, although seemingly contradictory to those reported earlier, may reflect differences in methodology or may suggest that repeater patients tend to be present in the study sample, i.e., reflect not more partners but more infections among a cluster of repeatedly infected individuals. It could also be argued that in a relatively small clinic patient population the proportion of repeated infections may appear inflated whereas as the size of the clinic population grows the number of repeaters will be diluted with the result that more and more single partner patients reduce the number of contacts while increasing the number of reported venereal infections.

One interesting observation can be made with reference to number of sexual partners and amount of venereal infections

in the differences between males and females. Linken and Weiner (1970) studied patients attending clinics for venereal diseases in England and found that males were more promiscuous than females, 84% of the males having intercourse with more than one partner over six months while 51% of the females had intercourse with more than one partner for the same period. From these findings one might falsely conclude that males have more venereal infections than females, this however has not been found in VD clinic populations.

Juhlin and Wallin (1972) studied clinic patients in Sweden and found that individuals with venereal disease had many more sexual contacts than those without VD infections. They also noted that more than three partners per month over a thirty day period was more common in men than women. Few women had more than three partners during the thirty day period.

The largest percentage of men with multiple sexual contacts were found in the 16-20 year age range in a recent study by Verhagen et al., (1972). Verhagen and his associates also found that one third of female patients with gonorrhea admitted multiple sexual contact compared to one eight of female patients with nil-diagnosis. Additional data from the Verhagen studies show that extra-marital intercourse with one partner was most frequent in the 16-20 age range. Women above the age of 20 could be divided into promiscuous unmarried (usually prostitutes) and the married of whom 10 percent admitted extra-marital intercourse. Females labelled promiscuous tended to be less well educated than average and were often unemployed.

Contraceptives (the pill)

Juhlin et al., (1972) found that the number of partners per year and the frequency of intercourse was significantly higher in a group using the birth control pill than in a group using other means of contraception. A post-hoc analysis indicated that intercourse had increased in frequency after the use of the contraceptive pill was begun.

The hypothesis that people who rely on condoms to prevent pregnancy are at lower risk of acquiring gonorrhea and syphilis than people who rely on alternative methods was tested by Darrow (1976). He found that women with gonorrhea relied upon condoms to prevent pregnancy to the same extent (2.3%) as women who were not infected (2.1%). These findings suggest that despite increase in frequency of intercourse in connection with the use of the contraceptive pill, no appreciable differences were found with respect to venereal infections. However, the contraceptive pill has been found to have side effects. One such side effect is that the vaginal content changes from an acid to an alkaline base making the site more vulnerable to fungal growth and genital warts, both of which are included under the designation STD (sexually transmitted diseases). An increase in these disorders has been noted in recent years (Dept. of Health and Welfare, Canada, 1977).

Changes in Adolescent Behavior

Stern and McKenzie (1975) and Mahan (1973) have focused on changes in adolescent behavior to explain the increased

incidence of venereal infections. Stern et al., contend that adolescence is a period of rapid and often chaotic change. Such changes take place in the social and cultural as well as in the anatomical and physiological spheres. They argue that in this period of change, the adolescent must integrate physiological changes (changing hormonal patterns and the appearance of secondary sexual characteristics) with the psychological task of self-identity which includes defining the adult sexual being. Early childhood development is largely a function of self exploration, while the development of adult sexual identity in adolescence encourages functional exploration on an inter-personal level. The self-centered immature nature of such exploration often leads to multiple superficial physical contacts leaving the sexually active adolescent at high risk for venereal diseases. The private nature of his medical concerns, along with a health care system which is only beginning to recognize the rights of the minor vis-a-vis consents and confidentiality, do not encourage early consultation for venereal infection.

Similarly, Mahan (1973) attributes the increase of venereal infections in adolescents to: 1) ignorance and fear breed a secrecy in adolescents which causes many not to seek treatment; 2) the adolescent homosexual male is an increasing reservoir of sexually transmitted diseases; in many cases a mistrust of the medical profession keeps many homosexuals from adequate treatment and follow-up; and 3) the fact that a large proportion of women (80% in some studies) have no symptoms with acute gonorrhea creates obvious problems in

epidemiology and treatment.

Although many of these considerations may be true, no empirical evidence can be cited to support them. Reported studies in this area are conspicuous by their absence in the literature.

PSYCHOLOGICAL ASPECTS OF THE PATIENT WITH VENEREAL INFECTION

Personality Characteristics

Explanations for the contracting of venereal infections have often been sought in personality characteristics. The assumption underlying such explanations is that the occurrence of venereal infections is but one of many indicators of social maladjustment.

The methodology commonly employed to obtain personality measures of individuals with venereal infection is to administer a personality inventory to new patients reporting to a VD clinic for treatment or to specific groups of individuals referred for psychiatric assessment by a VD clinic or to groups of VD patients volunteering participation in research.

The Eysenk Personality Inventory (Eysenk and Eysenk, 1959) is the most widely used inventory. Researchers have, however, developed their own inventories to meet specific needs of a particular study, for example, The General Health Questionnaire (Pedder and Goldberg, 1970). Others have adopted and elaborated on items chosen from several standard tests to form their own assessment scale, such as the Warsaw Scale of

Neuroses (Kelsus, 1973) or the present author's adoptation of Lindgren's (1969) Measurement of Social Motives and Attitudes (Lundin et al., 1977).

Extroversion-Introversion and Sex Differences

Wells (1970) explored the personalities of patients attending a clinic for venereal diseases using Eysenk's Personality Inventory (EPI). He found that male patients differed from the normal population in that they tended to be significantly more extroverted. On the other hand, the female VD patients were more introverted and significantly more neurotic than the normal population. In a similar study, Hart (1973) administered the EPI to a random sample of soldiers in the Vietnam war. The findings provided further support for the findings of Wells cited above in that increased extroversion was found to be associated with venereal infection in males. In addition it was found that higher alcohol intake, less education, lower age, and greater number of military and civil offences tended to be associated with higher incidence of venereal infections. Hart (1973) further noted a general tendency for similar trends in neuroticism, although it was not as marked on all parameters as that found by Wells (1970). The inference from these findings would suggest that higher scores in the extroversion-neuroticism quadrant can be expected in males with venereal infection.

In a study by Wells (1972) it was found that females and homosexuals score higher on the introversion dimension than

does the normal population. Wells and Schofield (1972) found that homosexual male VD clinic patients were less extroverted and somewhat more neurotic than hetero-sexual male VD patients. However, both homosexual and heterosexual male VD patients were significantly more neurotic than the general population. The authors maintain that these results serve to demonstrate once again that patients attending special VD clinics show a clear tendency to emotional instability. Wells hypothesized that psychoticism might also tend to be somewhat higher in VD clinic patients compared with controls obtained from a non-clinic population, especially in the case of highly promiscuous (multiple sexual contact) women. He argued that a woman must break more completely with social conventions and expectations than a man if she is to act promiscuously and that this would manifest itself in a high level of psychoticism. A significant finding in the Wells et al study was that female patients tended to deviate from the normal to such degree that their scores approximated those of in-patient psychotics on the psychoticism dimension and that of clinical neurotics on the neuroticism dimension.

In contrast to the above findings, Kelsus (1973) examined behavioral aspects of male and female patients suffering from venereal disease in Poland. He administered the Warsaw Scale of Neurosis (Kelsus, 1973) to a group of former VD patients chosen at random from electoral rolls. He found that this group of VD patients did not differ significantly from a control group in their neurotic tendencies.

Similarly, Pedder and Goldberg (1970) assessed the incid-

ence of psychiatric disturbance in consecutive new patients attending a clinic for venereal diseases in England, using the General Health Questionnaire (Pedder and Goldberg, 1970).

The authors found that approximately 30% of their questionnaire respondents were psychiatric cases; a figure which is similar to that found in general practice and in out-patient departments. Thus, they concluded that psychiatric disturbance was no more common in patients with venereal disease who attended the clinic than it was in the group as a whole. Likewise, Mayou (1975) examined the incidence of psychological morbidity in patients newly attending a clinic for venereal diseases in London, England. He found that approximately 20% of the patients had previously been seen for psychiatric problems. Of these approximately 45% showed overt psychological disturbance of anxiety and/or depression. He also found that there were no significant differences in mean age, mean psychiatric score, history of past psychological problems, previous illness or recent life events between those individuals who were and those who were not diagnosed as suffering from venereal infection. In both groups, psychological symptoms were of a similar mixed neurotic nature. The findings are, however, difficult to interpret as there is some question whether patients attending a special VD clinic (albeit not found to be infected) constitute a proper control group. Differences in the interpretation of findings derived from personality measures of VD clinic patients appear to be more related to what kind of control group is used than to "true" differences in the sample versus the general population. For

example, in the studies that found support for the notion of higher extroversion-neuroticism in male VD patients, the general populations norms for the test (EPI) were used, whereas studies that found no differences between VD patients and other hospital clinic patients did not employ general population norms. Further, differences in methodology may help to explain differences in results, for example, Mayou (1975) did not use the EPI, instead the patients were given a semi-structured interview with standardized mental state assessment.

From the foregoing it would appear that studies which have used the Eysenk's Personality Inventory to assess the incidence of neurotic and psychotic disturbance have found that patients attending clinics for venereal disease differ markedly from the normal population in that they tend to be more neurotic (Wells, 1970; Hart, 1973; Wells et al, 1972). However, studies in which other assessment inventories have been used such as the Warsaw Scale of Neurosis (Kelsus, 1973), have found no differences in neurotic scores of patients attending clinics for VD and normal controls. Thus, it would appear that the differences in results are a function of the type of assessment scale used. The EPI may be more sensitive in picking up neurotic and psychotic disturbances than other personality inventories. Finally, studies which have found a positive correlation between patients attending a clinic for venereal diseases and neurotic disturbance are based on the psychological testing of persons who were voluntarily seeking treatment at the clinics. A sample of this

sort has excluded those persons who have sought medical treatment from physicians in private practice and may be merely reflecting the psychological status of individuals frequenting public clinics because of economic necessity (Schatz and Ebrami, 1972). Much of the research carried out on the incidence of gonorrhea has indicated that VD patients, more often than controls, had poor social background, low education, and unskilled occupations. It has further been found that this group of patients showed signs of social maladjustment such as juvenile deliquency, alcohol or drug problems and psychiatric disorders.

Stark-Romanus (1973) maintained that such findings were not valid for VD patients in general since they were based on a small sample of people in large cities treated at special VD clinics, and many of the conclusions were based on conditions prevailing in the years 1964, 1965 and 1966. She maintained that there exist three types of VD patients. The first type consists of the young patient mentioned above with multiple problems, whereof venereal infections are only one manifestation of social maladjustment. Stark-Romanus argues that this is probably the largest group of VD patients and that the members of this group have a tendency to repeated infections and that they form a reservoir of infections which spreads rapidly within the group and occasionally to other members of society.

The second type of VD patients consists of young patients who are sexually active, but not otherwise maladjusted. The third and remaining proportion of VD patients have normal,

stable personalities and come from all walks of life. This group is typified by the VD patient who is married or lives in a stable relationship, but who has occasional sexual contacts with other partners. The patient will be infected in this way and may then infect the regular partner.

STUDIES OF A REPEATER POPULATION IN MANITOBA

Characteristics of the Patient with Repeated Venereal Infections

The present author began preliminary studies of VD patients by conducting a pilot investigation at a clinic for venereal diseases in Winnipeg. It was found that approximately 35% of the VD clinic population were repeaters i.e. had histories of repeated infections. Earlier studies defined 'Repeaters' as patients who, over a period of 6-10 years, had experienced a number of venereal infections. This definition differs from that used in the present study where a minimum of 6 infections over a 2 year period was used as criterion. It was further found that nearly one half (47%) of the annual case load at the clinic were repeated infections. Additional findings shows that repeat patients live in circumscribed areas of the city and that his interpersonal relationships are casual and of limited duration.

A second study (Lundin et al, 1977) investigated psychosocial and behavioral characteristics in order to better understand the repeater and his life situation, and to provide a rationale for testing new approaches to social intervention. The findings of the second study can be summarized as follows: the repeater is of low socio-economic status; has an average education of six and one half years of schooling; is more likely to live on public welfare than being employed. Alcohol abuse, poor family and home environment and neglect of personal welfare leave the repeater with little opportunity for

a positive feedback from his immediate environment. Despite his history of repeated venereal infections, the repeater was found to be unaware of preventive methods with respect to venereal disease. Finally, it was found that the repeater rarely follows medical regimen with respect to abstinence from sexual contact while under treatment. This is crucial in terms of intervention since treatment with antibiotics quickly removes the symptoms of the disease while leaving the patient capable of transmitting the infection to an uninfected partner. Variables believed to be related to the increase in VD (as cited in the literature) were compared to the information obtained from the Manitoba repeater population. The repeater population was found to have certain characteristics in common with those found in other studies, but were also found to differ. For example, support for a positive relationship between early sexual experience and incidence rates of VD (Drusin et al, 1974) was found among repeater patients in Manitoba (mean age at first intercourse was 14.6 years of age). Promiscuity (numerous sexual partners) was found to correlate positively with frequency of venereal infection in the repeater. However, the correlation was lower than that reported by (Juhlin et al, 1972). The mean number of sexual partners reported by the repeaters were three per month. Male repeaters were more promiscuous than female repeaters, a finding which supports similar data from other VD clinic populations (e.g. Linken and Weiner, 1970).

With respect to psychological variables the repeat patient was found to have higher scores in both the neuroticism and the psychoticism dimension than a control group of non-infected patients. These findings support the findings of Wells (1970) and Pedder and Goldberg (1970) in their studies of VD clinic populations. In addition, the repeater was found to have higher incidence of suicide attempts, alcohol abuse, and more police involvement than had hospital patients in general.

Generally, the repeater population consists of patients with multiple problems which appear to be a manifestation of a general social maladjustment. This notion is further supported by the finding that 82% of the repeaters studied reported family relationships disrupted by death, imprisonment, divorce, separation, cruelty, neglect, and alcoholism. Similar findings were reported by Smithurst et al., (1975) in a study of VD clinic populations. Dart (1973) and Armstrong et al., (1975) have also reported stressful home backgrounds in repeater populations.

The establishment of a socio-psychological rationale for the occurrence of repeated infections in certain individuals, (although valuable in its own right) would have limited utility in an applied sense. Therefore, the present study wanted to go one step further and use the obtained information in effecting a behavior change, a procedure which would help to (a) test the validity of the acquired knowledge and (b) make a social contribution.

The repeater is seen as being unable to change his be-

havior because he lacks the motivation and the knowledge to do so. Therefore, the present study involved an attempt to test the hypothesis that the occurrence of venereal infections can be reduced by providing personal counselling for the repeater.

SUMMARY AND STATEMENT OF HYPOTHESES

The social and medical problem of venereal disease has increased in the last two decades. Efforts at coming to grips with the venereal disease problem has been focused on practically every aspect of venereal infections. Records of incidence rates are presently kept current in most countries. The hope of eradicating VD by the use of antibiotics has not been fulfilled. Populations at high risk of contracting VD have been identified by numerous workers and various factors believed to be contributing to recent increases and continued spread of venereal disease have been offered. Social scientists have made attempts at understanding behavioral and social aspects of venereal disease, deriving hypotheses and theories which attempt to explain the underlying conditions responsible for the spread of venereal infections. Studies of life styles and frequently infected individuals indicate that the occurrence of venereal infections is only one of the symptoms among many other indicators of social maladjustment.

Of primary interest in the present investigation is the author's focus on patients with long histories of repeatedly occurring venereal infections. The repeater has been described as suffering from a variety of medical and social problems. The repeated pattern of venereal infections appeared to reflect a way of life rather than a specific health problem. These findings suggest that the conventional health educational efforts do not reach the repeater patient who, therefore, may need a different preventive approach.

Assuming that repeat VD behavior can be attributed to a lack of knowledge regarding the causation of venereal disease plus a lack of motivation with respect to appropriate social behavior, the following hypotheses were made:

1. That repeat VD patients who experienced remedial VD counselling in a socially supporting environment would have fewer venereal infections than a matched control group, who had no such counselling.
2. The study further predicted that VD patients seen on an individual basis would show a significantly greater improvement than would patients involved in group counselling.

CHAPTER II

METHOD

Selection of Subjects

The charts of one hundred sixty-eight active patients repeatedly infected with venereal disease were provided by the Department of Public Health, Venereal Disease Control. Criterion for inclusion in the study was a minimum of six venereal infections over the last two years (July, 1974-July, 1976). This being a more stringent criterion than that used in earlier studies where the only requirement was that the subject had a record of more than 3 infections in their medical history. From these, one hundred charts were selected at random and arranged in five equal piles of twenty charts. No adjustments were made regarding age or sex distribution. Each set of twenty charts was assigned at random to one of the following five groups:

a) Individual counselling

b) Group counselling

c) Literature on VD only

d) Informed controls

e) Not informed controls

Patients selected for the various groups were approached by the investigator and asked to volunteer for the study. Twelve patients preferred not to volunteer, three from group a, two from group b, four from group c, and three from group d.

An additional twelve subjects were randomly selected from the remaining sixty-eight charts to replace the lost subjects. The medical charts of the twelve subjects who did not want to volunteer were put aside for separate analysis.

Twenty of the original forty counselling subjects did not complete the counselling program. Of these, three subjects did not attend any of the sessions, and seventeen attended irregularly. The drop-outs were seen as forming two groups; those who attended from one to three sessions, and those who attended from three to five sessions. The groups were named "early drop-outs" (N = 10) and "late drop-outs" (N = 7). This division among drop-outs allowed for a separate retrospective analysis (the drop-outs were not included in the analysis of main effects for the counselling groups).

Sample Characteristics

Eighty percent of the repeaters in the present study were diagnosed as having gonorrhea, twelve percent had syphilis, five percent had herpes genetalis and three percent had NGU (non-gonococcal urethritis). Seventy-six percent had been treated with penicillin, twenty-six percent with spectinomysin and four percent with other antibiotics. Seventy-two percent of the females were asymptomatic and fourteen percent of the males were asymptomatic. Eighty-two percent of the study sample had been treated for more than eight separate venereal infections during the last two years (1975-1976), and eighteen percent had been treated for more than six infections

annually in the same time period. Frequency of venereal infections did not differ appreciably with race. The average number of VD infections in native Canadians were 7.5 per year versus subjects of caucasian extraction, 7.1 infections per year. Nor was the number of VD infections different among age groups during the measurement year. This is not surprising when considering that the age band was relatively narrow (range = 18-26) and that criterion for selection restricted the sample to individuals with six or more infections.

MORBIDITY DATA AND TYPE OF TREATMENT

(percent of total study sample)

	MORBIDITY				TREATMENT		
	Gonorrhea	Syphilis	Herpes G.	NGU.	Penicillin	Spectinomysin	Other
Males N = 44	44%	8%	0%	1%	33%	15%	3%
Females N = 36	34%	6%	5%	2%	43%	11%	1%

Table A

SYMPTOM VISIBILITY AND RATE OF INFECTION

(percent of total study sample)

	SYMPTOM VISIBILITY		ANNUAL RATES OF VENEREAL INFECTION	
	Symptomatic	Asymptomatic	Six infections/Yr.	More than six/Yr.
Males N = 44	43%	7%	46%	10%
Females N = 36	14%	36%	36%	8%

Table B

The mean age for the study sample was 24.5 years. It will be recalled that the majority of venereal infections in the VD population occurs in the 18-24 age group. However, it should be recognized that the criterion for inclusion in the present study was that the subjects had a history of repeated infection. Therefore, the mean age of the repeaters in the present sample does not necessarily represent their peak incidence years.

The married-to-single ratio in the present study sample was 35% married and 65% single, widowed, divorced or separated. As was also found in the Pemberton et al, (1972) study reported earlier, the present male subjects were more likely than females to be single and less likely to be widowed, divorced, or separated. As was also found in the cited Pemberton study sample, the hotel beverage room was the most common meeting place for sexual contacts.

As has been found by many other workers, (e.g. Pemberton et al, 1972; Hart, 1973; Smithurst et al, 1975) socio-economic status among VD clinic patients tend to be low. The present study sample is no exception to that rule, invariably falling into level five in the five level stratification index of Hollingshead and Redlich (1959). Educational status was similarly low with a mean of 6.5 years of schooling.

It will be recalled that incidence of venereal infection has been found to be more prevalent among certain racial and ethnic groups (e.g. Blacks, Najem, 1974, and in Spanish surname Americans, Darrow, 1976). The present study sample included 67% native population (Indians and Metis), and is normal for the clinic population in which the study took place.

AGE, EDUCATION AND MARITAL STATUS

IN EXPERIMENTAL SUBJECTS AND CONTROLS

Subject Group	Males	Females	Mean Age	Education	Married	Single	Native
Group a Indiv. counsel.	7	5	24.5	6.21 yrs.	4 (33%)	8 (66%)	3 (25%)
Group b Group counsel.	4	4	22.8	6.70 yrs.	2 (25%)	6 (75%)	3 (37.5%)
Group c VD Literature	11	9	23.8	6.50	6 (30%)	14 (70%)	9 (45%)
Group d Inf. controls	12	8	23.4	6.23	7 (35%)	13 (65%)	14 (70%)
Group e Uninf. controls	10	10	23.5	6.24	8 (40%)	12 (60%)	13 (65%)

Table C.

Objectives of Counselling

It will be recalled that the repeater's life situation places him at a social disadvantage. It was further noted that the repeater lacks the personal resources needed to protect himself from venereal infections; that he seldom complies with therapeutic regimen, and that he is inconsistent in his commitment to others. This inconsistency is also evident in his failure to report regularly for his hospital appointments. Therefore, a high attrition rate was expected in the present study. To overcome this problem and to offer an incentive to attend the counselling sessions the subjects in the counselling groups were paid a sum of six dollars per session for their participation. The control groups were not paid. Non-payment of controls may introduce a bias. In the hope of reducing the effects of this potentially confounding variable, the experimental subjects were told that they were paid for completing test questionnaires and not for being involved in counselling.

It has been suggested (Slutchuk, 1976)* that the treating physician often faces time restrictions which tend to limit the interaction with each patient to diagnostic tests and the administration of antibiotics. Thus he is forced to regard his patient as a case rather than as a person.

Based on the foregoing considerations, the strategy employed in counselling the repeater included giving basic information on venereal diseases in addition to teaching the patient preventive techniques. Particular emphasis was placed upon the need to follow medical regimen. The importance of a

* Personal communication, 1976.

personal relationship was tested by encouraging the patients to talk freely about themselves during the initial sessions. The counselling sessions were based on the premise that psychological procedures, whatever their form, serve as means of creating and strengthening expectations of personal efficacy. This approach is based on Bandura's (1976b, 1977) view that self-motivation involves standards for evaluating performance. The aim of the counselling was to induce outcome expectancy in the repeater, i.e. the expectation that a given behavior will lead to certain outcomes. Bandura (1977) distinguishes between outcome expectancy and efficacy expectation. The latter refers to the conviction that one can successfully execute the behavior required to produce the outcome. In view of the repeater's life-history and social position, the repeater's self-efficacy was considered less than adequate to ensure a reduction of future venereal infections. Therefore, in situations where the patient would voice doubt as to whether he was capable of effecting a change the subject would be aided by suggestions offered by the investigator and reassured of his ability. Simple tests of knowledge (See appendix) were administered and immediate feedback was given in order to strengthen self-efficacy. The tests actually served two purposes: one to ensure the subject of a certain degree of mastery, the second purpose was to justify the payment for participation, lest the subjects would assume that they were being paid for having contracted venereal disease.

Procedure with counselling and control groups

Counselling groups:

Group A) Five females and seven males met with the investigator on an individual basis for a one-hour session each week for a total of six sessions. The subjects were asked to talk about their home-life, friends, pastime activities and jobs. They were also asked to express opinions about health related issues. In addition, the subjects were given information on venereal diseases and preventive methods. Particular emphasis was placed on the need to adhere to medical regimen while under treatment. To build confidence in the subjects' ability to change their behavior a simple test of knowledge was given at the end of each session (see appendix-B).

Group B) Four males and four females participated in group sessions moderated by the investigator. The group met once every two weeks for a two-hour session for a total of six hours. Hence the time spent in counselling was essentially the same for both counselling groups (A and B). Apart from the duration of each session the subjects in the group condition were exposed to essentially the same material and issues as in group 'A' but dealt with them in group discussion. Efforts to schedule group 'A' and 'B' with equal frequency was not feasible for technical reasons. Therefore, differences between group 'A' and 'B', if any, should receive a cautious interpretation. However, the objective of the study was to assess counselling per se with only a secondary interest in kinds of counselling, frequency, or duration of counselling

sessions. The counselling took place in a private room adjacent to the intake clinic in a general hospital setting.

Group C) Eleven males and nine females were given literature on venereal diseases. The material consisted of a series of pamphlets published by the Department of Health (Health and Welfare Canada, 1976). The pamphlets were handed to the subjects and they were instructed to read the material. The investigator did not attempt to check on whether this material was actually read by the subjects.

Group D) Twelve males and eight females served as "informed controls." They were informed that their medical records would be reviewed after a period of one year.

Group E) Ten males and ten females were drawn at random from the repeater files and served as naive controls. These subjects were not informed that their medical records would be reviewed and never actually met with the investigator.

The rationale for having an informed versus naive control group was based on the argument that the knowledge that one's medical record is under observation might create a desire to seek medical attention elsewhere so as to appear less frequently infected. This possibility would certainly hold for the counselled subjects. Therefore, a discrepancy in the number of venereal infections between the two control groups (D and E) would suggest that differences obtained between counselled subjects and controls may be accounted for by demand characteristics in the subjects rather than to counselling itself.

The Dependent Variable

The measure of counselling outcome was the difference between the number of venereal infections during the year prior to the study and the number of venereal infections in the year following the study. The pre-counselling data were obtained by tabulating the incidence rate (number of VD infections) for each subject in the study sample over a twelve month period which ended about three months prior to beginning counselling. Similarly, post-counselling data (number of VD infections) were collected for a twelve month period starting about three months after completing the counselling sessions. In order to facilitate group comparison means were obtained for each group on the pre- and post-counselling measure.

Statistical Treatment of Data

Counselling groups: Data obtained on the pre- and post-counselling frequency of venereal infections (within subject design) were tested for significance using the Chi square with Yates correction (Yates, 1934). In addition, the combined counselling groups (A and B) were compared with the combined control groups (C, D, E) (between group design), and again, significance was tested using the chi square statistic. The data before the counselling period and those after the counselling period were analysed separately.

Individual versus group counselling: A comparison (Chi square) was made between group 'A' and group 'B' (i.e. individual vs. group counselling) to determine whether differing

treatment approaches would result in different incidence rates.

Controls: Separate comparisons (Chi square) were made between the informed and not informed controls (groups D and E) to determine whether knowing that one's medical chart would be reviewed would have an effect on subsequent rates of venereal infection.

Non-volunteers: A further comparison was made with respect to rate of venereal infection in the subjects who preferred not to volunteer. The non-volunteers were compared with the not-informed (naive) controls.

Drop-outs: A separate analysis was made for the subjects who terminated treatment. They were divided into (1) patients who participated in one to two sessions only (early drop-outs), and (2) patients who participated in from three to five sessions (late drop-outs). The incidence rate of venereal infection among the drop-outs were correlated with the number of sessions for early and late drop-outs using simple multiple regression analysis (r^2).

Since some independent variables could not be controlled when the subjects were selected, and because the groups were not completely independent, the more stringent analysis of covariance (ANCOVA) was employed to the data to further check on the validity of the levels of statistical significance obtained by the Chi square. The result section will report both set of statistics.

CHAPTER III

Results

The two counselling groups (A and B) were found to have significantly fewer venereal infections in the year following counselling (mean = 1.90 infections per year) than they had in the year prior to counselling (4.20 infections per year). Tests for statistical significance indicated that the observed before-versus-after difference was significant, $\chi^2_1 = 5.54$, $P < 0.05$ (F (1/94) = 5.513, $P < 0.02$). These findings support hypothesis 1. The combined counselling groups (A + B) had a lower mean incidence of VD infections than the combined control groups during the post-counselling period ($\chi^2_1 = 13.220$, $P > 0.001$, and F (4/94) = 12.339, $P < 0.001$). Hypothesis 1 is thus supported by within-subject comparison and also by between-subject comparison.

Individual versus group counselling: Comparing the post-counselling incidence rates of the subjects involved in individual counselling with the subjects involved in group counselling resulted in a small but discernable difference in the mean number of venereal infections. For group 'A' (individual counselling) the mean number of infections was 1.61 and for group 'B' (group counselling) the mean number of infections was 2.19. The difference was not statistically significant, hence failed to support hypothesis 2 which predicted that group 'A' would show a significantly greater improvement than would group 'B'.

Controls: No significant differences were found between pre and post measures of venereal infections in the group of subjects who were instructed to read literature on venereal diseases. Pre-treatment rate for the literature group (group C) was 4.11 infections and post-treatment rate was 4.12 venereal infections. No significant differences were found between the informed controls (group D) and the not-informed controls (group E). Informed controls had a mean of 4.12 infections and not-informed controls had a mean of 4.11 venereal infections in the post-counselling year.

TABLE 1.

MEAN PRE-AND POST-COUNSELLING PERIOD VENEREAL INFECTIONS IN COUNSELLED AND NOT COUNSELLED REPEATER VD PATIENTS

		Mean number of venereal infections	
		Pre-Counselling Period	Post-Counselling Period
EXPERIMENTAL SUBJECTS	Group 'a' Individual Counselling	4.12	1.61*
	Group 'b' Group Counselling	4.20	2.19*
CONTROLS	Group 'c' Literature Controls	4.11	4.24
	Group 'd' Informed Controls	4.10	4.12
	Group 'e' Uninformed Controls	4.13	4.11

* = Statistically significant beyond $P < 0.05$

DEMOGRAPHIC DATA, ETHNICITY, AND NUMBER OF VD INFECTIONS OF SUBJECTS SELECTED FOR INDIVIDUAL AND GROUP COUNSELLING (number of sessions attended includes early and late drop-outs).

BJECT	SEX	AGE	MARITAL STATUS[1/]	ETHNICITY*	TYPE OF COUNSELLING	SESSIONS ATTENDED	VD INFECTIONS PRE	VD INFECTIONS POST
1	M	26	Single	White	Ind.	6	3	1
2	F	29	Single	White	Ind.	6	6	2
3	F	28	Single	Native	Grp.	6	7	3
4	M	26	Married	Native	Grp.	0	5	4
5	F	22	Single	White	Grp.	6	3	1
6	F	22	Single	Native	Ind.	4	4	2
7	M	31	Married	White	Grp.	0	3	4
8	M	25	Married	White	Ind.	6	7	0
9	F	24	Married	Native	Grp.	1	4	3
0	M	24	Single	White	Ind.	6	6	3
1	F	20	Single	Native	Ind.	6	4	4
2	F	21	Single	Native	Grp.	0	3	3
3	F	18	Single	White	Grp.	2	4	4
4	F	24	Married	White	Ind.	6	4	1
5	M	32	Married	White	Grp.	6	6	3
6	M	24	Married	Native	Grp.	2	5	4
7	M	25	Married	Native	Grp.	3	3	2
8	F	20	Single	Native	Grp.	6	3	2
9	M	34	Single	Native	Grp.	2	7	5
0	M	23	Single	White	Ind.	5	5	2
1	F	25	Single	Native	Ind.	1	4	4
2	F	18	Single	Native	Grp.	6	2	0
3	M	19	Single	Native	Ind.	2	3	3
4	M	25	Married	White	Grp.	6	4	0
5	M	22	Single	White	Ind.	6	8	3
6	M	29	Single	White	Ind.	6	5	2
7	M	20	Single	White	Grp.	1	3	4
8	F	30	Married	Native	Grp.	5	4	0
9	M	22	Married	Native	Ind.	2	4	3
0	M	25	Single	White	Grp.	6	3	2
1	M	22	Married	Native	Ind.	6	5	3
2	F	24	Single	White	Ind.	6	5	2
3	F	25	Single	Native	Ind.	4	6	3
4	M	23	Single	White	Grp.	6	6	3
5	F	26	Married	Native	Grp.	1	5	4
6	M	31	Single	Native	Ind.	4	4	2
7	F	24	Single	Native	Ind.	6	3	2
8	M	24	Single	White	Ind.	6	3	0
9	M	20	Single	Native	Grp.	1	5	4
0	M	25	Single	Native	Ind.	5	4	2

/ Married includes "common law", single includes separated/divorced.

"Native" Can. Indian and Metis, "White" denotes Can. European orig.

SD: 1.72 .31

There was no obvious degree of skewness in the data. It should be noted that although level of significance was set at .05 for each comparison, the obtained true P values were reported as found.

Data on Non-Volunteers and Drop-Outs

The average number of VD infections in the subjects who preferred not to volunteer (3.69) was not significantly different from the incidence rates in the naive controls (4.11) for the same post-counselling period. This finding suggests that patients who declined participation did not differ from participants with respect to morbidity or sexual behavior.

Mean number of post-treatment venereal infections in the experimental subjects who terminated after two counselling sessions (early drop-outs) was 3.72 infections whereas subjects who participated in between three to five counselling sessions (late drop-outs) had an average of 2.80 venereal infections in the year following counselling. Simple regression analysis (correlation) between the number of sessions attended and subsequent rates of post-counselling venereal infections showed an inverse relationship between number of sessions attended and subsequent infection rates, ($r^2 = -0.58$, $P < 0.05$).

TABLE 2.

MEAN NUMBER OF PRE- AND POST-COUNSELLING VENEREAL INFECTIONS IN SUBJECTS WHO TERMINATED THE TREATMENT SESSIONS EARLY AND LATE. ALSO COMPARABLE DATA ON SUBJECTS WHO DECLINED PARTICIPATION.

		Mean number of venereal infections	
		Pre-Counselling	Post-Counselling
Drop-Outs and Non-Volunteers	Early Drop-Outs	4.31	3.72
	Late Drop-Outs	4.19	2.80
	Non-Volunteers	4.00	3.69

No ethnic variation was observed with respect to number of pre or post counselling venereal infection in the sample.

Persistence of treatment effect

A tabulation of venereal infections in the counselling groups (A and B) was made after two years following completion of the counselling program. This was done to assess long term effects of counselling. The mean incidence rate of VD for the experimental groups during the second year was slightly higher (2.3 infections) than that in the first year (1.90) but was still significantly lower than that of a randomly selected control group (3.75). The incidence rate obtained from the experimental groups in the second year was based on the rates for sixteen of the original twenty subjects as four of the patients were no longer residing in Winnipeg.

DISCUSSION

The search for a non-chemical solution to the problem of reducing the incidence of venereal infection has led to the identification of demographic, social, and behavioral factors in the VD population. Information about such factors provide a basis for preventive programs, and for improved contact tracing methods. Most social and psychologically oriented studies documented in the literature have concerned themselves with describing the characteristics of populations seen in public VD clinics. Primarily the focus

has been on personality characteristics, socio-economic status, social circumstances and believed to be related to incidence of venereal disease. The present study went one step further by employing and evaluating one possible approach to active intervention. Patients with histories of repeated venereal infections were used as subjects for several reasons: a) the repeater population contributes to the case load in public VD clinics to a greater degree than any other type of VD patient (35-50% of the annual reported case load in Manitoba); b) the social, economical, demographic and psychological characteristics of the repeater population have been found to represent an amplification of similar characteristics in the general VD population (see review of literature); and c) the non-repeater VD patient appear to be able to benefit from existing educational programs or material, whereas the repeater population does not, and hence requires a different prophylactic approach.

Although the results obtained in the present study appear to support the hypothesis that remedial health counselling can be helpful in reducing the incidence of venereal infection in the repeater patient, the results are not viewed as an unequivocal demonstration of counselling effectiveness. Certain methodological weaknesses in the study suggest a cautious interpretation of the results. For example, the counselled subjects received a payment of six dollars per session for their participation whereas controls did not receive any remuneration. This introduces the possibility that the observed reduction of venereal infection in the paid subjects

is a result of remuneration rather than counselling. A paid control group would have eliminated this problem, but was beyond the resources available for the study.

Following the argument that remedial counselling appears to have some merit as a therapeutic approach, it is not clear from the findings what aspect of the counselling was effective. It could be a) the supportive relationship in the form of 'getting to know' the patient and expressing some interest in the patient's life situation; or b) verbal (orally) presented information about VD prevention; or c) a combination of increased self-efficacy and confidence along with increased knowledge of VD and its prevention; or d) some unknown factor.

Although individual counselling appears to be slightly more effective than group counselling the difference was not statistically significant. This finding suggests that differences in duration of sessions (i.e. one vs. two hour) are not likely to have biased the results in favour of one approach over the other, since there is (to the author's knowledge) no documented evidence for a one hour versus two hour therapeutic effectiveness. Secondly, and perhaps more important, is the finding that group counselling (a less costly approach) can be utilized.

Difference between early and late drop-outs would seem to suggest that the longer a subject stayed in the experimental condition the more likely that he would have fewer subsequent VD infections. However, this may not be a result of counselling (the main effect) but rather of degree of motivation,

such that the more motivated subjects would remain longer in counselling and would also strive harder to avoid reinfection. It could also be argued that only repeater patients who are motivated are likely to benefit from remedial counselling. It should further be noted that the counselled groups had fewer natives than had the control groups. The majority of subjects who declined participation (8 of 12) were natives. Similarly, 16 of the 20 drop-outs were natives. It is not clear whether this was due to lack of motivation, a distrust of white society in general, or some other factor. It should be acknowledged that differences in ethnic distribution between the counselled subjects and controls may have influenced the results of the study in favour of the hypothesis. It is therefore recognized that the results can only be generalized to patients who are willing to participate in a treatment program and further, are willing to complete the full treatment program. In the present study, twelve of the approached subjects preferred not to participate and fifty percent of the experimental subjects (Group A and B) did not complete the full treatment program. It would still seem reasonable to assume that if at least half of the repeater population can be reached with an interventive program leading to a decrease in VD incidence rates for the participating patients, then such a program would have merit.

An interesting finding was that the group instructed to read literature on venereal disease had slightly more venereal infections (not statistically significant) than had the naive controls. This finding suggests that merely providing litera-

ture to VD repeaters will not reduce their rates of future infections. The reason may be the low educational level of the repeater whose average educational background consists of about six years of schooling with a range of from two to nine years. Though the VD literature, for the most part, is written in plain English, it is, nevertheless, beyond the reading skills of adults with grade 2 or grade 3 education. It is possible that an oral presentation of the material may have a greater impact on the repeater patient.

CONCLUSION

The present findings would suggest that health and personal counselling can be effective in reducing the incidence of repeat VD infections in a group of patients drawn from the lower socio-economic strata of society. It should be acknowledged however, that there is an attrition rate of approximately 50% with respect to the group under study, i.e. roughly half of the subjects are likely not to remain in counselling for a period of six sessions, individual or group. The fact that the drop-outs had a somewhat lower (statistically nonsignificant) reduction in VD infections relative to the control group, would indicate that their non-inclusion has not unfairly biased the results in favour of the hypothesis, i.e. they were not particularly "bad" offenders with respect to venereal infections as compared to the controls.

What attributed to the decrease of VD infections for the treatment group is uncertain. A possible clue to a

critical contributing factor may be found in the fact that the patients seen individually experience somewhat fewer infections than did those seen as a group. It is, therefore, possible that the relationship with the investigator was at least contributory to this decrease.

Suggestions for Future Research

The encouraging results of the present study appear to support the prediction that remedial counselling can be helpful in reducing venereal infections in the repeater. However, an unequivocal acceptance of the results is premature in the light of methodological shortcomings. Therefore, the study needs to be replicated using a more sophisticated design. For example, it is not clear from the present findings, to what extent the investigator's personality or behavior during the counselling sessions interacted with or influenced the results. It should be noted that the present investigator was not a trained therapist but did adhere to a preset schedule of events. Therefore, the methodology used should be equally effective if employed by a nurse or other health worker. A replication of the study would therefore need to involve a group of health workers instructed in the methods used in the present study. Further, if payment for participation is offered to patients being counselled, then a paid control group is needed. The criterion variable (numbers of VD infections) would be blind scored and rank ordered so that the identities of patients observed to have experienced a

significant reduction in venereal infections could be matched with both experimental subjects and controls. This procedure could either provide additional support for the present findings or point to the need for an alternate hypothesis. A replication would further require equal ethnic representation in counselling and control groups. This can be accomplished by balancing the control groups, once the counselling groups have been randomly selected.

If belief in effectiveness of counselling is favoured then continued research might shed some light upon other problems encountered in the present study. For example, it was not clear from the present findings what aspect of the counselling was effective in changing the patterns of infection in the repeater patient. A future study could be done by stematically manipulating different aspects of the counselling procedure, by comparing groups exposed to different levels of counselling or by varying the duration of counselling.

Another study could look at different methods of presenting information on venereal diseases. For example, the use of films or tape recorded material versus a personal presentation analogous to that in the present investigation. Two sets of measurements would be needed; the first measurement would focus on how much of the material is retained by the patient. This can be achieved by some form of feedback test. The second measurement would evaluate the degree to which the patient would actually utilize the information for preventive purposes in a real life situation. To obtain data

for analysis on this measure would be more complicated methodologically and would necessarily take into account individual differences, motivational aspects and social background.

Finally, it is suggested that the subjects who participated in the present study be followed longitudinally by an annual review of their medical charts, at least for the next three years. This would give additional information regarding persistence of the treatment effect. Should the results be encouraging, i.e. should the treatment effect be persistent over time then further studies will be needed to test various methods for motivating the repeater patient to participate in a preventive program and to stay with the program until its completion.

APPENDIX A

Each subject was given a careful description of symptoms most commonly associated with: Gonorrhea, Syphilis, Herpes Genetalis, Non-Gonococcal Urethritis and Genital Warts. Information about the various disorders, their spread and treatment was discussed. Whenever possible, information contained in pamphlets published by the Department of Health was used. In addition, the following information was given:

a) 1. Identification of the cause of V.D.

2. Identification of the main means of transmission.

3. An indication of whether or not V.D. germs can live outside the human body.

4. Instruction in the use of male rubber contraceptives (condoms).

5. An indication whether or not vaccines for prevention is available.

6. An understanding of what the treatment involves and why it is necessary to follow medical regimen with respect to ingestion of alcohol and other drugs while being treated with antibiotics.

7. An understanding of why most women do not get symptoms and thus must rely on their male partners to notify them of their infection.

8. A clarification of the increase of cases of asymptomatic males.

9. Understand that a person never develops immunity and can always contract V.D. again after he/she has been cured.

10. A discussion of the most common effects of untreated gonorrhea and syphilis.

11. The importance of reporting contact persons.

b) Two films were shown: V.D. - The hidden epidemic and Half a Million Teenagers, (both films were made available by Manitoba Health and Social Development).

STANDARD SEQUENCE OF COUNSELLING SESSIONS IN TERMS OF CONTENT

Session 1. Informal conversation. Subjects were encouraged to talk about themselves in terms of significant events in their lifes, their home situation(past and present), significant others, their current life situation and their personal experiences concerning venereal infections. The final twenty minutes of the session was devoted to administration of the test questionaire (appendix B) with immediate feedback of the results (the pre-test measure).

Session 2. Discussion based on questionaire items and a genereal introduction to venereal diseases involving a description of the more common disorders, their mode of transmission and method of treatment. An attempt was made to relate the descriptions as they would apply to each subject personally, as an individual, and in relation to the subjects immediate environment.

Session 3. An in depth coverage of point 1 to 6 (p.62). Remaining counselling time devoted to counselling the subjects in matters of sexual hygiene and methods of contraception.

Session 4. A review of the material covered in point 6 to 9 (p62), plus showing the film "VD-The hidden Epidemic". A discussion of issues raised in the film followed the showing. Remaining time was used to discuss special concerns of each subject (any topic).

Session 5. Desimination of information covered under point 9 to 11 (incl.) plus selected topics from the VD literature (appendix B).

Session 6. Film showing of the movie "Half a million Teenagers", followed by discussion of the film. The final twenty minutes of the session was devoted to a readministration of the test questionaire used in session 1, giving immediate feedback of results. The subjects were thanked for their participation and told that they would be informed of the results of the study when the data had been analysed.

Supplement: Each subject was offered coffee or a soft drink at each session.

SAMPLE FROM V.D. LITERATURE

Why worry about V.D.?

In spite of the fact that doctors can cure V.D. with penicillin and other drugs, there has been an increase in the number of people suffering from V.D., especially gonorrhea. For the most part, the increase is among young people. More than 50 per cent of the persons reported as gonorrhea cases in recent years are between 15 and 25 years of age. Another 18 per cent are 25 to 30.

Although V.D. causes severe or fatal complications in only a small proportion of cases, it does cause a great deal of illness which could be completely prevented. Therefore, it is important that everyone know the facts.

How do you get V.D.?

Venereal diseases are caught from infected persons. Both syphilis and gonorrhea are spread by sexual intercourse between persons of the opposite sex, and also between persons of the same sex.

V.D. germs soon die away from the warm moist protection of the body. Contrary to popular belief, they are not spread by contact with contaminated toilet seats and door-knobs, or by shaking hands, handling money, etc. lifting and straining have nothing to do with getting these diseases.

The body does not build up an immunity to V.D. as it does to measles. A person can be infected over and over again, and

one can have both gonorrhea and syphilis at the same time. There are no vaccines against V.D. but scientists are investigating the possibilities.

Contraceptive devices are designed to prevent pregnancy, and no reliance can be placed on any of them as a means of preventing V.D. The only type which offers any protection at all is the condom, or 'safe', worn by the male. This might help prevent the man getting germs from an infected partner, and might also help prevent an infected man passing germs to a non-infected partner.

What are the signs and symptoms of syphilis?

The first stage of syphilis shows up as a sore which appears between 10 and 90 days after intercourse with an infected person. It appears at the place where the germs entered the body, usually on or around the sexual organs. This sore is called a chancre and may be so small that it does unnoticed, especially in women where it may be hidden internally. It is usually in the form of a small painless ulcer which is full of syphilis germs. Hence, the disease is easily spread to other persons who come into intimate contact at this stage of infection. It lasts from several days to several weeks and then, even without treatment, disappears. Unfortunately, this does not mean that the trouble has ended. The germs are still increasing in number and spreading throughout the body by way of the blood stream.

The second stage usually appears three to six weeks later when the chancre may or may not have disappeared. Signs and

symptoms at this stage often imitate those of many other diseases and consist of such things as generalized skin rash which often includes the palms of the hands and soles of the feet; sore throat; fever; sores in the mouth; headache; bone pain and patchy loss of hair. During this stage, the disease is very easily spread by sexual intercourse, or by kissing if mouth sores happen to be present. Like the chancre of the first stage, these signs and symptoms will disappear in time, even without any treatment. For many years the disease may appear to have been cured spontaneously and this is called the hidden or latent stage. Although there are no visible effects, the germs may continue to attack the important organs of the body--brain, eyes, heart, liver, bones, kidneys. The only way to detect syphilis at this stage is by blood tests.

Finally, the third or last stage of syphilis will show up in about a third of untreated cases as a heart attack, paralysis, blindness, or mental illness. This may occur 20 years or more after the first stage of the infection.

The tragedy of syphilis strikes hardest in the home when babies are the innocent victims of parental infection. Congenital (to be born with) syphilis occurs when a pregnant mother suffering from the disease passes the germs to her unborn child. This can result in the baby being born dead or deformed. The best way to avoid such a tragedy is for every expectant mother to have a routine blood test as early as possible in pregnancy. Proper treatment, given in time, cures her of the infection and ensures the birth of a child free from syphilis.

If syphilis is suspected, a person should consult a qualified medical doctor at once. Only after a physical examination and necessary laboratory tests can a diagnosis of syphilis be made.

What are the signs and symptoms of gonorrhea?

Symptoms in men usually appear from two to five days after sexual intercourse with an infected partner. There will be pain and burning during urination. Later, a discharge of pus may appear from the penis. If untreated, the germs may spread to cause inflammation and abcesses in surrounding tissues. If the exposure has been rectal, there may be pain on passing stools which may show streaks of blood and pus. Genital-mouth exposure may result in sore throat.

Women may have similar pain and discharge but many do not notice anything unusual. Consequently, they become silent carriers and can continue to spread the disease for months, not realizing they are infected. In a small percentage, the infection will spread internally to the reproductive organs and cause serious complications.

Sterility may be the end result of infection in both men and women. Another complication which may occur in both sexes is arthritis. This condition can cause permanent crippling of the joints.

A pregnant woman suffering from gonorrhea can infect the eyes of her baby at the time of delivery. If untreated, the eyes become red, inflamed, and discharge pus. The condition can lead to permanent blindness.

Can V.D. be cured?

Both syphilis and gonorrhea can be cured. If you suspect that you have been infected, consult your doctor immediately. Free treatment clinics are also maintained in many cities throughout Canada. Names and personal information remain strictly confidential. To obtain information on the location and hours of operation of these clinics, telephone the local public health department in your area.

Treatment kills V.D. germs but permanent damage done to body tissues can never be repaired. Therefore, treatment should be started as early as possible.

Self-treatment with pills, salves or ointment is useless and dangerous. Avoid unqualified persons who advertise themselves as treatment experts.

Can the spread of V.D. be stopped?

Individual treatment is important but every infected person has caught the disease from another infected person, and perhaps even passed it on to someone else. It is therefore vital that each infected person give the names of all sexual contacts to his or her doctor. Contacts may then be found and offered the benefit of examination and treatment if necessary. This is the only way to prevent the further spread of V.D.

How does a person react when asked for the names of his or her sexual contacts? Naturally one may feel strongly against revealing such personal information. However, a common sense decision can easily be made bearing in mind a few simple facts:

- V.D. can seriously affect health;

- the spread of V.D. cannot be stopped unless all infected contacts are found and treated;
- treatment and contact tracing are carried out in strictest confidence.

Obviously, a V.D. patient will do his or her sexual contacts a favour by helping the doctor and health department find them and arrange for examination and treatment. Unless there is such cooperation, the incidence of V.D. will continue to increase in the years to come and will cause needless suffering for many thousands of people.

APPENDIX B

Questionnaire

Questions About Syphilis and Gonorrhea

1. Which of the following causes venereal disease?

   A. Injury
   B. Body strain
   C. Germs
   D. Dirt

2. Syphilis and gonorrhea are:

   A. On the increase today
   B. On the decrease today
   C. About the same today as ten years ago

3. Which of the following is more likely to cause insanity?

   A. Gonorrhea
   B. Syphilis
   C. Both have the same likelihood

4. Could a person who had a chancre (the first sign of syphilis) pass syphilis to other persons without realizing that the chancre was there or that he or she was infected?

   A. Yes
   B. No
   C. Not likely
   D. Not if the person kept himself clean

5. How might a person be infected with syphilis or gonorrhea?

   A. Being bitten by an insect
   B. Picking it up from a door handle or drinking fountain
   C. Through sexual contact
   D. Picking it up from a public toilet

6. Which of the following persons often have the first signs of syphilis hidden deep inside the body where they are most likely to be overlooked?

   A. Women
   B. Men
   C. One as likely as the other

7. Can persons have syphilis and gonorrhea at the same time?

   A. Yes
   B. No
   C. Only males can
   D. Only females can

8. Which of the following applies to syphilis and gonorrhea?

   A. Two different diseases
   B. Two names for the same disease
   C. Two stages of the same disease

9. In which of the following infected persons would you expect to have symptoms of gonorrhea where they would be most likely to be noticed?

   A. Men
   B. Women
   C. One as likely as the other

10. Against which of the following do we now have a vaccine?

   A. Syphilis
   B. Gonorrhea
   C. Both syphilis and gonorrhea
   D. Neither syphilis nor gonorrhea

11. Which of the following is the best cure for syphilis?

   A. A balanced diet
   B. Regularity
   C. Antibiotics
   D. Sunlight, fresh air, and rest

12. If the seminal duct of a man is blocked by scar tissue from a gonorrhea infection so the sperm cannot pass out, which of the following would the person become?

   A. Blind
   B. Arthritic
   C. Sterile
   D. Insane

13. Once you have had syphilis, can you catch it again?

   A. Yes
   B. No
   C. Only males can
   D. Only females can

14. The signs of gonorrhea in men usually appear in:

   A. 3-5 days
   B. 2-14 days
   C. 21 days

15. If a chancre appears between 10 and 90 days after the spirochete first entered the body, where might it be on the body?

A. Around the sex organs only
B. On the mucous membrane only
C. Almost anywhere
D. Where the organism enters the body

16. If a woman became sterile from gonorrhea because her egg passage was blocked by scar tissue, where would this be most likely to happen?

A. In her fallopian tubes
B. In her uterus
C. In her vagina

17. The signs and symptoms of syphilis:

A. Often look like those of other diseases
B. Cannot be mistaken for anything else
C. Are usually painful
D. Are always on the sex organs

18. Drops of medicine are put in the eyes of newborn babies to protect them against blindness from:

A. Syphilis
B. Gonorrhea
C. Either syphilis or gonorrhea
D. Neither syphilis nor gonorrhea

19. If a person had sexual contact with someone who might have had syphilis, which of the following would be the way to be most sure he hadn't become infected?

A. A blood test by a physician
B. Watching carefully for a sore, rash, or other signs
C. A physical examination by a physician and a blood test
D. An x-ray examination

20. If a syphilitic chancre goes away by itself without treatment, the person:

A. Does not need any treatment
B. Has recovered, just as he would from measles.
C. Still needs treatment for syphilis
D. Usually develops gonorrhea later

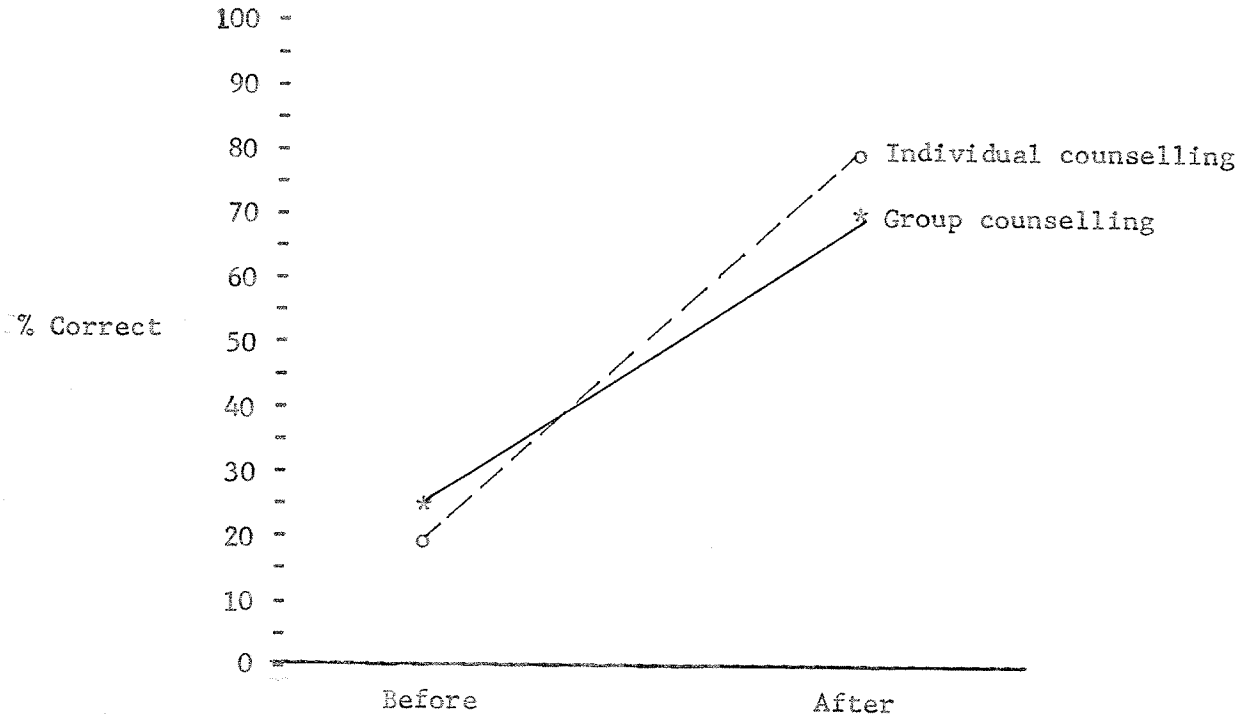
ANSWER SHEET TO QUESTIONS ABOUT SYPHILIS AND GONORRHEA

1. C
2. A
3. B
4. A
5. C
6. A
7. A
8. A
9. A
10. D
11. C
12. C
13. A
14. B
15. D
16. A
17. A
18. B
19. C
20. C

MEAN PRE- AND POST-COUNSELLING SCORES ON VD QUESTIONAIRE FOR SUBJECTS IN INDIVIDUAL AND GROUP COUNSELLING

TPE OF COUNSELLING	N	MEAN SCORE PRE-COUNS.	RANGE	SD.	MEAN SCORE POST-COUNS.	RANGE	SD.
Individual	12	4	0-6	2.3	16	11-20	3.2
Group	8	5	0-7	2.0	14	9-17	2.8

GAIN SCORES EXPRESSED AS PERCENT OF TOTAL NUMBER CORRECT (before and after counselling)



APPENDIX C

Glossary

Asymptomatic	showing or causing no symptoms.
Candidiasis	infection with the fungus of the genus 'candid'. It is usually a superficial infection of the moist cutaneous areas of the body; it most commonly involves the skin, oral mucous membranes, respiratory tract and vagina.
Condom	a sheath or cover for the penis, worn during coitus to prevent impregnation or infection.
Cytomegalo-virus Infection	infection caused by one of a group of highly post-specific herpesviruses that infect man, monkeys, or rodents, with the production of unique large cells bearing intranuclear inclusions.
Diaphragm	a contraceptive device of molded rubber or other soft plastic material, fitted over the cervix to prevent entrance of sperm.
Endocarditis	inflammation of the endothelial lining membrane of the heart and the connective tissue bed in which it lies.
Epidemiology	the study of the relationships of the various factors determining the frequency and distribution of diseases in a human community.
Gonococcal Urethritis	inflammation of the urethra (the membrancous canal conveying urine from the bladder to the exterior of the body) caused by gonococcal infection.

Gonorrhea	infection due to 'Neisseria gonorrhea' transmitted venereally in most cases. It is marked in males by urethritis with pain and purulent discharge but is commonly asymptomatic in females. Bacteremia (the presence of bacteria in the blood) occurs in both sexes, resulting in cutaneous lesions, arthritis, and, in rare instances, meningitis and endocarditis.
Herpes Genitalis	an inflammatory skin disease of the genitalia characterized by the formation of small vesicles in clusters; the disease is caused by the herpesvirus type 2. In women, the vesicular stage may give rise to painful ulcerations and may be accompanied by neurological symptoms.
Meningitis	inflammation of the three membranes that envelope the brain and the spinal cord.
Microorganisms	a minute living organism, usually microscopic. Those of medical interest are bacterial, viruses, molds, yeasts and protozoa.
Morbidity	the condition of being diseased or morbid.
Neurosis	an emotional disorder due to unresolved conflicts, anxiety being its chief characteristic. The anxiety may be expressed directly or indirectly, as by conversion, displacement, etc. In contrast to psychosis, neurosis does not involve gross distortions of external reality or disorganization of the personality.
Non-specific Urethritis	inflammation of the urethra, the membrancous canal conveying urine from the bladder to the exterior of the body.

Oral Contraception	a hormone compound taken orally in order to block ovulation and prevent the occurrence of pregnancy.
Pathogen	any disease-producing microorganism or material
Prophylaxis	the prevention of disease; preventive treatment.
Psychogenesis	the development of the mind.
Psychosis	a general term for any major mental disorder of organic and/or emotional origin characterized by derangement of the personality and loss of contact with reality, often with delusions, hallucinations or illusions.

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