

A COMPARISON OF NORMALS AND DIABETICS
ON HEALTH RELATED ATTITUDES
AND INFORMATION LEVELS

by

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ABSTRACT

The degree to which a diabetic's condition is controlled is largely dependent on his own actions. It is, therefore, important that he have a positive attitude towards health care facilities and personnel in order to accept suggested regimens. It is also important that he have an acceptable knowledge regarding diabetes.

This thesis examines the relationship between the screened categories, diabetes and normal, and the four health related attitudes of Perceived Availability of Care, Skepticism of Medicine, Skepticism of Doctors, and Tendency to Utilize Services for Somatic Reasons. It also compares the levels of knowledge of those diagnosed as diabetic and those diagnosed as normal.

The theory of cognitive dissonance was used to hypothesize that there would be a difference between the attitudes of the diagnosed categories. The results indicate that there is no difference between diabetics and nondiabetics for the attitudes tested or for their levels of knowledge of diabetes.

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Chapter 1

INTRODUCTION AND THEORETICAL DEVELOPMENT

The purpose of the present study is to examine the attitudes towards health care, and a number of variables relating to these attitudes, of a selected sample of people who were categorized as diabetic, possible diabetic, or normal, using mass screening techniques.

In the developed countries, acute and communicable diseases have become controlled to the extent that the great majority of deaths now result from chronic diseases. In 1900, tuberculosis, for example, constituted 11.3% of all deaths in the United States, but by 1960, it accounted for only 0.6%. Conversely, diseases of the heart accounted for 8.3% of all deaths in 1900, compared to 38.7% in 1960 (Bright, 1966). Similarly, diabetes was not listed in 1900, but accounted for almost 2% of the deaths in 1960. Since the cause of death for most diabetics is one of the cardiovascular-renal diseases which account for over 55% of all deaths, the prevalence of the disease is a better indication of the extent of the problem. The United States Department of Health, Education and Welfare (HEW 1967:1) listed the number of known diabetics in that country at 2.4 million in 1965, or 11.76 per 1000 with an estimated 1.6 million or 7.84 per 1000 having the disease, but not being aware of it. This gives a total of 4 million or 19.6 persons per 1000 suffering from the disease in the United States. Similar statistics are not available for Canada, but assuming that the Canadian ratios do not differ significantly from those of the United States,

there could be over 257,000 known and over 171,000 unknown diabetics, giving a total of over 429,000 cases, in Canada.

Diabetes is a hereditary disease, with no known cure. It can, however, be controlled, and as more efficient methods are developed, as diabetic children grow up to have children of their own, of whom some will be diabetics, and as the life span increases, the prevalence increases. The success of a diabetic's treatment depends on how well he manages his condition. His physician can explain the disease and its effects, medications, daily testing, personal hygiene and diet, but the responsibility for day-to-day care rests upon the patient himself.

The majority of physicians believe that proper control extends life and minimizes complications which would otherwise prevent normal activities, and insofar as this is true, it is important that there be a good relationship between physician and patient, and that the patient have a positive attitude towards the physician and health services.

Alternatively,

It is not uncommon for a patient to become emotionally disturbed about his diabetes. Such disturbance can show itself in a variety of ways. The patient may refuse to accept the diagnosis, he may simply reject as 'too much trouble' the necessary regimen. He may become depressed and afraid of possible complications like sterility, adverse insulin reactions, amputation, etc. (Public Health Service Publication 506:30).

The extent of reactions such as these is unknown, although it is known that attitudes toward health care vary considerably from person to person. It is the purpose of this thesis to examine certain selected factors which, it has been suggested, are important antecedents of health-related attitudes in individuals.

In this chapter the concept of attitude will be defined, some

of the ways in which attitudes are formed will be examined, and certain theories which explain attitudinal changes will be presented. Specific attitudes toward health care will then be examined with reference to these theories. From this discussion, hypotheses relating the experience of diabetes and attitudes toward health care will be developed. Studies which have a bearing on this discussion will be cited, as they are relevant, rather than segregating them in a separate review of literature. The demographic variables of age, sex, and education, and also the variable "knowledge of disease," will be examined at the same time as they relate to attitudes toward health care.

THE CONCEPT OF ATTITUDE

Freedman et al. (1970:246) have stated that "an attitude is an enduring system that includes a cognitive component, a feeling component and an action tendency." While it is recognized that other authors have used alternative definitions¹, this definition will be used in this paper. The cognitive component contains the opinions or beliefs about the topic in question; connected with these beliefs is an emotional feeling component; and the action tendency is a readiness to respond in a certain way, as suggested by Allport (1935).

A person's knowledge or beliefs concerning the world he lives

¹Previously, Allport (1935:810) defined attitude as a "mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related." Allport's orientation was to behavioral implications, in that attitudes form a mental set to respond in a particular way. Twelve years later, Doob (1947:138) saw attitudes as "an implicit, drive producing response considered socially significant in the individual's society." This included an effective element.

in, its on-going processes, and specific events are formed under the influence of many factors. The influencing variables may be sociological, psychological, or physiological. Beliefs and attitudes are acquired by the individual through the various socializing agencies, such as the family, peer groups, the education system, and the organizations and occupations of which he is a member. Fish (1961:78), for example, showed the pro fluoridation opinions were directly correlated with education--the higher the education, the more favorable the opinions were towards treatment of water. Similarly, we might expect a person's age, or the length of time spent in the "school of hard knocks," to have an effect on his beliefs, knowledge, and predispositions to act. The social structure also shapes opinions. This is readily apparent, for example, in regard to differences between the sexes. The North American male stereotype prescribes a stoical attitude towards pain, with crying and emotional behavior inviting ridicule. "Emotional behavior in response to pain is, however, sanctioned by our society for the female. Zborowski (1952) has shown that cultural patterns influence the way an individual reacts to pain. The study also showed that even if different groups react the same, their attitudes toward pain may be different.

Attitude Change

Attitudes, once formed, are often resistant to change. For example, "In general, campaigns conducted through the mass media are not successful in producing mass changes in attitudes." (Freedman et al., 1970:276). Conversely, specific events can have a pronounced

effect in changing attitudes, especially when related to a person's health. Janis (1958) found that psychological stress induced by operations could change attitudes. That is, persons had different attitudes after operations than they had before. Similarly, Fish (1967) showed that most women had different attitudes towards hospital care after their first delivery than they did prior to being admitted to an obstetric unit for the delivery.

Attitudes seem to move toward a state of internal consistency or balance, i.e., they may be viewed as a system in which a change in one component will result in a corresponding change in one or more of the other components. If two components are incompatible, then we would expect them to change in the direction of compatibility. An example of such incompatibility would be a person who believes in preventive health care but, paradoxically, fears immunization needles. Festinger (1957) has forwarded a theory of cognitive dissonance in an attempt (a) to explain the processes utilized by a person confronted with this type of situation and (b) to predict the outcome. He defines cognitive dissonance as "a motivational state produced by inconsistencies between simultaneously held cognitions, or between a cognition and behavior." (Morgan and King, 1966:765). In the example cited, this inconsistency will normally present a problem, however, only when immunization becomes a salient matter, such as when it is required prior to a visit to a foreign country. We would then expect one of the components to change. The person will find a method of decreasing his anxiety to the point where he will accept the required immunization or, conversely, he will cancel the trip. In either case, consonance will

have been approached, if not reached.

Research on cognitive dissonance has been criticized by various authors, including Chapanis and Chapanis (1964) who conclude that the theory is simplistic, i.e. that it is not "really possible to reduce the essentials of a complex social situation to just two phrases."

Kiesler et al. (1969), in a comprehensive examination of dissonance theory, however, claim that Chapanis and Chapanis mistake simplification in research design for the full theory, and also do not recognize "that one evaluates the usefulness of a theory on such grounds as the amount of data it accounts for" (p.197). Kiesler et al. admit, however, that all relevant clusters of components should be considered, as there may be more than two. In conclusion, they state that "it seems quite clear that one can make straight-forward derivations from dissonance theory, and, furthermore, may do so more readily than from many other theories." (p.236).

Dissonance theory is a consistency theory which is concerned with the consequences when cognitive elements or elements and behaviors are inconsistent with one another. A portion of this thesis is concerned with whether persons screened for diabetes and placed in different diagnostic categories, have attitudes which are consistent or inconsistent with the behaviors required for these different categories.

Attitudes Towards Health Care

The present paper recognizes Chapanis and Chapanis' criticisms of oversimplification, and the subsequent advice of Kiesler et al. (1969) to consider more than two factors in relationships. While

examining the relationships between disease categories and attitudes, an examination will also be made of the effect of the subject's age, sex, education and knowledge of disease which the literature has also shown to affect attitudes towards health care. In addition, the dependent variable, instead of being viewed as one global attitude, is refined by separately analysing the effect of the relevant independent variables on four of six separate health related attitudes empirically isolated by Bice and Kalimo (1971). These are:

1. Perceived Availability of Care (PAC) -- the individual's views regarding the relative ease and convenience with which medical care can be obtained.
2. Skepticism of Medicine (SM) --- the extent of an individual's confidence in medical science as a body of knowledge which can benefit those who are ill.
3. Skepticism of Doctors (SD) -- the amount of confidence in care provided by doctors and their ability to apply existing medical science knowledge.
4. Tendency to Use Services for Somatic Problems (TUSS) -- the intensity of a person's predisposition to visit a doctor for somatic or body related problems.

The present study deals only with somatically related variables and, therefore, a fifth factor, relating to psycho-social problems, is not included. The sixth factor, "Dependency in illness," is omitted because the original questions were not available for the present study. The relevant literature dealing with the four health related attitudes will be reviewed below.

The Experience of Diabetes
and Treatment

The goal of screening for a disease is the detection of those persons among the apparently well who are in fact suffering from the disease in question. That is, screening tests sort out apparently well persons who probably have a disease from those who probably do not. The disease dealt with in this paper is diabetes and the diseased who are sorted out were classified as diabetics.

Wilson and Jungner (1968) point out that studies dealing with screening and chronic diseases emphasize that following detection, "follow up and treatment is vitally important" (p.19). One basic assumption in the development of the hypotheses in this paper, is that the diabetic is receiving treatment.²

As action tendency is one system component of attitude, diagnostic categories having different actions should have different attitudes. The diabetic must visit one or more health care facilities and be exposed to diagnostic and prescribed treatments. It is recognized that those suffering from other chronic diseases will also be exposed to continuing health care. The examination of psycho-social effects in the treatment for diabetes would therefore require controlling for chronic diseases other than diabetes. The nondiabetic, on the other hand, will not initiate any of these experiences or actions.

In the present instance, therefore, diabetics should have different attitudes towards health care than nondiabetics, because of

²The appropriate family physician was notified of the results of all screenees who had abnormal glucose levels. Only 50% of the diabetic or possible diabetic respondents, however, reported that they had been notified.

the different actions required of the diabetic. This basic proposition is tested below in regards to the four specific health related attitudes defined by Bice and Kalimo (1971) which are listed above.

In general, good health is considered a right rather than a privilege in North America. In spite of this, however, there are differences in the degree to which health care is available to individuals. There are obviously differences, for example, in the availability of care due to geographical or physical restrictions in isolated areas. Similarly, there are differences in perceived availability of care, and "if men define situations as real they are real in their consequences" (Thomas, 1923:218). One would expect that those persons receiving treatment for diabetes would perceive health care as available because: (a) they have been exposed to a broad range of health services, and (b) they have been encouraged by persons in the health field to use them. Diabetics, therefore, should tend to perceive treatment as more available than nondiabetics. In a review of the literature dealing with why people fail to seek poliomyelitis vaccination, Rosenstock et al. (1959) found that familiarity with medical facilities led to an increase in the perceived availability of care. It is, therefore, hypothesized that: diabetics will perceive medical care as more available than will nondiabetics.

A person may perceive care as being available to various degrees. Measuring the ease of either real or perceived access to care does not, however, imply anything about the efficacy of that care. Whether "available" or not, one may have varying degrees of faith in its value. This fact can be dealt with in terms of confidence in, or

skepticism of, the general field of medicine, or more specifically, in terms of a belief in the expertise of the physician who represents the medical profession. One would expect, from the theory of cognitive dissonance, that persons receiving treatment for diabetes should tend to be less skeptical of medicine because they have been led to believe that "medical science" has developed what is generally believed to be a successful means of controlling their disease. It is, therefore, hypothesized that: diabetics will tend to be less skeptical of medicine than will those not receiving treatment for diabetes.

While it may be that Banting and Best, or "medical science," has discovered a way to control the diabetic's disease, his contact with medicine is in fact through a specific physician(s). He is their link with the accumulated knowledge. One would expect that subjects receiving treatment for diabetes, therefore, would tend to be less skeptical of doctors because they have typically been led to believe that their doctor's expertise is helping to control their disease and, as one would predict from cognitive dissonance theory, by the very fact of their receiving treatment. It was hypothesized, therefore, that: those suffering from diabetes will tend to be less skeptical of doctors than those who are not.

It would seem reasonable to expect that persons receiving treatment for diabetes would have a heightened readiness to use health services because their experience as a diabetic has: (a) involved the utilization of health care facilities for their own illness, (b) exposed them to other persons utilizing health facilities for diabetes and other illnesses, and (c) exposed them to a wide usage of facilities for

the treatment of other illnesses. They will have been led to believe that these services are useful for treatment and, therefore, they should have a greater tendency to utilize services for somatic illnesses in general, than those who are not suffering from diabetes.

Since diabetes detected by screening is, to a large extent, asymptomatic, it is not recognized as a specific disease by those who are diagnosed as diabetic. Apple (1960) found that if a health problem was hard for a layman to diagnose, subjects had a greater tendency to utilize services than for unambiguous health problems which they considered illnesses. Differences between different illness categories, in their tendency to utilize services, were also found by Mechanic and Volkart (1960). On the basis of the above rationale and literature, it was hypothesized that: diabetics will have a greater tendency to utilize services for somatic reasons than nondiabetics.

DEMOGRAPHIC VARIABLES AND HEALTH CARE

Age

In general, increased age can be thought of as involving a greater number and variety of experiences. This creates a greater probability of encountering events which "can have a very pronounced effect in changing attitudes." (See above p.4). At the same time, however, younger generations are more mobile than their predecessors, and hence, they are subjected to experiences at a far greater rate. In examining the question of whether health related attitudes vary between age groups, Apple (1960) found no differences. Once illness was judged to be present, most people, regardless of their age, thought it

advisable to see a doctor either at once or after a delay. Similarly, Titchener et al. (1956), in a study to determine why patients delay in reporting symptoms, found that, of their 200 subjects, differences in age were not significant.

Conversely, Aitken-Swan and Paterson (1955), in a study to determine the reason for delay in seeking advice in cancer patients, found that the seeking of immediate advice was related to age, rather than to "knowing" or "not knowing", or to intelligence. Those who accepted the fact of their illness, yet delayed in seeking advice until the severity of their symptoms forced some action, were mostly elderly.

The National Health Survey statistics for 1960 showed that the number of physician visits per year increases with age (Ross, 1962). This was true for both males and females, with females having a higher visit history than males. In the low education group, this was very noticeable. The poorly educated male in the 55-64 age bracket averaged 4 visits over a 2-year period, whereas females in the same age and education bracket averaged 6.3 visits. There was very little difference, however, for the college educated. The evidence as to the effect of age on attitudes towards health services is thus, contradictory, and no firm predictions can be made beforehand. The null hypothesis, therefore, is forwarded that: there is no relationship between age and health-related attitudes.

Sex

In most areas of the world, males and females are subjected

to different socializing influences. Sex roles involve different normative prescriptions for males than females and in part, define appropriate attitudes. Playing different roles also often results in exposure to dissimilar situations. At the same time, however, certain attitudes, such as loyalty to one's country, are common to both sexes. Whether or not health related attitudes vary between sexes has been examined by Apple (1960) who, in a study to find when respondents think it advisable to see a doctor, found no significant differences by sex. Once illness was judged to be present, most people regardless of sex, thought it advisable to see a doctor, either at once or after a short delay. Kutner and Gordan (1961), in examining the differences between those reporting cancer symptoms and those not reporting cancer symptoms in regard to delay in seeking medical care, found that there was a significantly larger proportion of females having cancer symptom histories. They were unable to find any differences, however, between males and females in patterns of utilizing services.

In examining delay in seeking advice, Titchener et al. (1956) found that among their 200 subjects, men and women were almost equally represented in both the delay and no delay groups. Similarly, Borsky and Sagen (1959) found practically no differences between the sexes in a study examining willingness to participate in health examinations for survey purposes.

Two exceptions to the absence of differences between males and females in terms of health related attitudes are found in the studies by Ross (1962) and Suchman (1965). Females, except for the college educated in the 55-64 age bracket, had a greater mean number of visits

to doctors than males in the Ross (1962) study. Suchman (1965) found women to be less skeptical of medical care. Furthermore, women were also found to report significantly more chronic conditions and utilize medical services more than men within each age group (21-44, over 44 years).

The literature relating to differences between females and males with regard to health-related attitudes is not consistent. In view of this, no firm prediction can be generated. The null hypothesis to be tested is that: there is no relationship between sex and health related attitudes.

Education

Education exposes a person to information concerning diseases and the progress being made in controlling these by the health profession and its related fields. Since good health is a valued possession in our society, it is to be assumed that those contributing to this good health will tend to be viewed in a positive light. It is postulated, therefore, that the higher educated person, through familiarity, should have a more positive attitude to health care than those who are not.

Suchman (1969) has looked at a number of psycho-social factors in health behavior and attitudes in a series of papers arising out of the Washington Heights Master Sample Survey. One of his findings was that after controlling for income and occupation, the less educated hold more unfavorable attitudes towards professional medicine.

Ross (1962) analyzed National Health Survey data and found that

there was a direct correlation between frequency of physician visits and education of the head of the household. Those with less than nine years of education had a mean of 4.6 visits, while those with some college had a mean of 6.0 visits. When sex and age were controlled, the relationship still held. Although income was not controlled for, it varied independently of education. Higher educated females in all age categories had higher utilization rates and higher educated males in all except the 25-34 age group had a higher tendency to use services.

Kutner and Gordan (1961), in examining delay factors in utilizing health services for cancer, found an inverse relationship between delay and education. That is, increasing education was related to a decline in delay. For those whose education stopped short of university in the cancer group, 42% were in the maximal delay group compared with 11% of the "some college education" population. The negative relationship between education and delay, however, was not very strong for the non-cancer group. Yeracaris (1962), in examining acceptance of tuberculin testing, found a positive correlation between education levels of parents and permission granted for the testing of their children for tuberculosis.

Apple (1960) found that, once the presence of disease was acknowledged, most people, regardless of education, thought it advisable to see a doctor, either at once, or after a short delay. Similarly, in their panel study of public attitudes involving willingness to participate in health examinations for survey purposes, Borsky and Sagen (1959) found that respondents who had first answered "yes" and then changed to "no" to the question asking whether they would undergo a

free health examination were found to have a higher educational background than those who remained consistent. There was no difference between the educational level of the yes and no groups. The inconsistent group was least confident of doctors' abilities to cure diseases and were least satisfied with doctors' concern and manner in patient care. The majority of the literature supports the hypothesis that: education is positively related to health related attitudes.

KNOWLEDGE OF DISEASE

A person's knowledge of disease may be dependent on various factors including education, discussed above, with the resultant level of knowledge varying throughout the population. Familiarity with various aspects of health care may result in positive attitudes if experiences have been favorable, or conversely, familiarity may breed contempt, and so affect attitudes.

Elling et al. (1960) found that those mothers with a high level of understanding of the penicillin being used on their children had a significantly higher clinical utilization rate than those with a low level knowledge. Aitken-Swan and Paterson (1955) found that level of knowledge was positively related to tendency to utilize services in a study of participation of children who had previously had rheumatic fever and were receiving continuing treatment.

Kutner and Gordan (1961) found that tendency to utilize services was differentially related to disease specificity and knowledge of the disease. For those with general medical symptoms of disease, low knowledge concerning cancer was related to a low delay time in utilizing

services. For the population whose symptoms were indicators of cancer, however, those with high knowledge had the shortest delay time. The study found that delay in seeking help for cancer and other failures to seek assistance are associated with lack of knowledge.

Much of the dissatisfaction felt by the people Koos (1954) talked to with respect to their relationship with physicians appeared to be the result of a lack of communication between physicians and patients. Since physicians habitually use medical terminology, knowledge of the meanings of these terms by a patient would obviously facilitate communication. Apple (1960) investigated the effect of various conditions on the decision to classify a state of impaired health as illness, and utilize services, and found no significant differences when respondents were compared on the basis of amount of knowledge about health.

With the exception of Apple's (1960) study, the results suggest that knowledge of disease is positively related to health attitudes. In the present case, this is refined to the hypothesis that: knowledge of diabetes is positively associated with health related attitudes.

SUMMARY

This chapter has examined literature which is relevant to the four health related attitude scales developed by Bice and Kalimo (1971). Also reviewed were studies involving the variables of age, sex, education and knowledge of disease. Based on the relationships between the variables, it was hypothesized that:

1. Diabetics will perceive medical care as more available than

will nondiabetics.

2. Diabetics will tend to be less skeptical of medicine than will those not receiving treatment for diabetes.

3. Those suffering from diabetes will tend to be less skeptical of doctors than those who are not.

4. Diabetics will have a greater tendency to utilize services for somatic reasons than nondiabetics.

In summary, the above predict that diabetics will have more positive attitudes towards health care and health care services than nondiabetics. Additional hypotheses were:

5. There is no relationship between age and health related attitudes.

6. There is no relationship between sex and health related attitudes.

7. Education is positively related to health related attitudes.

8. Knowledge of diabetes is positively associated with health related attitudes.

The methodology involved in the testing of these hypotheses will be described in the following chapter.

Chapter 2

METHODS

The previous chapter reviewed a number of studies dealing with health related attitudes and their relationships to a subject's disease experience, age, sex, education and knowledge of disease. Hypotheses were developed and the relevant literature reviewed.

The logistics involved in obtaining the data and the methods used in testing these hypotheses are described in the present chapter. The information was obtained from a sample of respondents who were tested for tuberculosis and/or diabetes in 1968 and 1969 in the province of Manitoba. Those selected were revisited in 1971 and interviewed to determine a number of psycho-social parameters relating to health care.

THE ORIGINAL HEALTH SCREENING

In 1968 and 1969, the Metabolic Laboratory of the University of Manitoba, in conjunction with the Sanatorium Board of Manitoba, conducted a combined diabetes and tuberculosis detection survey in various, primarily rural areas in Manitoba (Figure 2.1). The 1968 area included the municipalities of Rockwood, Tache, Grey, South Norfolk, Lorne, Montcalm, Rhineland, Stanley, Pembina, Louise, Roblin and Morton in southern Manitoba, the local government district of Pinawa, and the urban area of Transcona, located 20 miles east of Winnipeg. The 1969 area included the municipalities of Portage la Prairie, Lakeview, Shoal Lake, Russell, Shellmouth, Shell River, Hillsburg, Boulton, Dauphin,

Swan River, Minitonas, and the local government districts of Mountain in the constituencies of Roblin and Swan River (Mountain South), Park, and Mountain in the constituency of Swan River (Mountain North). The city of St. Boniface was also included.

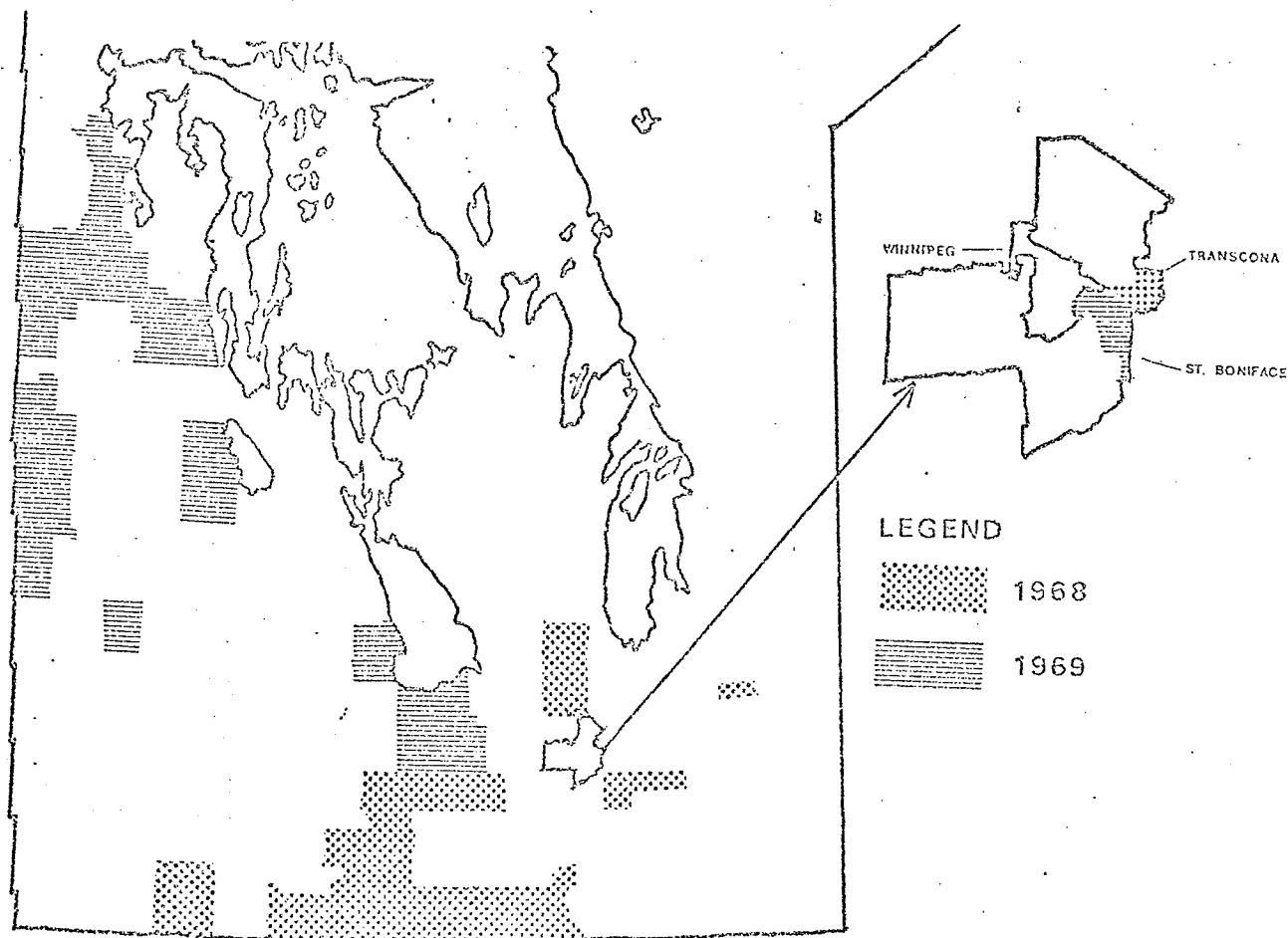


Figure 2.1

Diabetes and Tuberculosis Screening Areas
Province of Manitoba
1968 and 1969

The survey team set up their equipment in each municipality, and tested all the persons who wished to be examined for tuberculosis or diabetes or both. The tuberculin test consisted of a chest X-ray .

and the diabetes test consisted of a thumb prick blood sample. The remainder of this paper will deal only with the diabetes section of the screening.

Those persons who had participated in the diabetes test were informed that they would be notified of the results only if the tests were positive. The samples were analyzed, and subjects whose screening test was positive (blood glucose level > 120 mg./100 ml.) were advised, by mail, to return for follow-up testing which took place within three weeks of the original test. Those attending the second test were then told that their doctors would be notified of the results if the results were positive, and then they were released. The only way a person would find out if he was a diabetic or a possible diabetic, therefore, was to be notified by the physician whose name he had given on the registration card at the original survey. These registration cards which were filled out for each person attending the original clinic defined the population on which this study is based, with the exception of those persons who were less than 20 years of age at the time of the study. This latter category was eliminated due to the fact that glucose test results for persons under 20 have a high variability and, hence, are of questionable reliability. The Metabolic Laboratory categorized subjects whose tests were positive (high blood glucose levels) into either the diabetic class or, if marginal, into the possible diabetic class. Subjects' physicians in both categories were advised of the results. Those persons whose glucose levels were not significantly above normal were classified as normal. For the purpose of this study, however, these subjects will be classified as "normal follow-up"

to distinguish them from those subjects who were classified as "normal" after the original test. The remaining category to be defined includes those persons who tested positive at the original survey, were notified that their "result was somewhat different from the average for your group," but failed to come to the retest when notified by mail that it would be to their advantage to do so. The respondents in this group are identified as "no follow-up." The category assignment appears in Table (2.1).

Table 2.1

Screened Population 1968-1969 by Category and Sex

Respondent Category	1968			1969		
	M	F	Total	M	F	Total
Diabetics	92	96	188	98	79	177
Possible Diabetics	169	178	347	154	145	299
Normal Follow-up	342	221	563	352	185	537
No Follow-up	107	66	173	97	73	170
<u>Normal</u>	<u>6071</u>	<u>7337</u>	<u>13408</u>	<u>6260</u>	<u>7444</u>	<u>13705</u>
<u>Total</u>	<u>6781</u>	<u>7898</u>	<u>14679</u>	<u>6962</u>	<u>7926</u>	<u>14888</u>

THE PRESENT SURVEY

During the summer of 1971 a survey was conducted to evaluate the responses of subjects and doctors to the 1968 and 1969 diabetes detection screening.¹

¹A comprehensive report on the survey is currently being prepared.

Sample

A random stratified sampling technique was used. A number was assigned to each person within a given category, with the exception of the diabetes category, as 100% of this category was to be interviewed.² Of those in the possible diabetes category, 25% were randomly drawn using random number tables (Blalock, 1960:393-396). Of the normal follow-ups, 10% were drawn in a similar manner. Of the no follow-ups, 50% were randomly drawn, and of the normal population, 0.50% were randomly drawn, the latter being for masking purposes to avoid sensitizing communities to the fact that diabetics in their area were being interviewed. Approximately one week prior to a team's entering an area, each one of the selected respondents was sent a letter informing him that he had been selected as an interviewee. Sample sizes for each category are shown in Tables 2.2 and 2.4.

Table 2.2 shows the sample size for 1968 in column 1 and the number of respondents in each category who were interviewed in column 2. There were 149 subjects (28%) in the original sample who could not be interviewed. Of the 149, 54 were replaced and there were 64 diabetics who could not be interviewed or replaced due to the 100% sample in that category. The number of respondents, therefore, by which the adjusted sample was short was 17. The total number of interviews completed was 440. There were 11 questionnaires which were unaccounted for in the final tabulation due to their being lost and/or clerical errors. The total number of respondents used in calculations was 429.

²The proportion to be selected from each category, for the sample, was arrived at through a consensus of the investigators as to the relative importance of knowledge about the different categories.

Table 2.2

1968 INTERVIEWS COMPLETED

Category	Sample	Interviewed ₁	Replaced	Total	Operative Total ₂
Diabetic	189	125	-	125	123
Possible Diabetic	99	76	14	90	90
Normal With Follow-up	70	60	6	66	63
No Follow-up	91	67	14	81	81
Normal	86	58	20	78	72
Total	535	386	54	440	429

¹See Table 2.3 for Sample loss break down.

²Total used for calculations. Difference of 11 is due to loss or damage of questionnaires or data cards.

Table 2.3

1968 SAMPLE LOSSES

Category	Reason for Non-completion				Total
	Deceased	Refused	Not Located ₁	Unable to be Interviewed ₂	
Diabetic	29	4	28	3	64
Possible Diabetic	2	3	15	3	23
Normal With Follow-up	1	0	9	0	10
No Follow-up	7	3	13	1	24
Normal	4	2	22	0	28
Total	43	12	87	7	149

¹14 were located but interviewers and respondents could not establish a mutually agreeable appointment time.

²Due to Physical or Mental reasons.

Table 2.3 lists those respondents from the 1968 area who were not interviewed, by category and cause. The largest group, 29, are those who were diabetic and died within three years of being diagnosed as having the disease. This represents 15% of the diabetics. There were 87, or 16% of the sample, who could not be located.

Tables 2.4 and 2.5 give the equivalent data to the above discussion for the 1969 area. The number from the 1969 sample who could not be interviewed is, however, much smaller, with 85 not being interviewed. Of these, 45 were replaced and 35 were diabetics who could not be replaced, due to the 100% sample. The number of interviews was, therefore, only 5 short of the adjusted maximum. The diabetics in the 1969 area had a mortality figure of 6 or 3% of that category, which is much lower than the 1968 area.

Due to the different categories, and to avoid interviewer effects, a single blind technique was used, in that the interviewers did not know which category the respondent was in. Also, the order in which the categories were listed was random. Each interviewer had a numbered sheet of respondents and a corresponding numbered sheet of replacements. Since 100% of the diabetics were being interviewed, this would have meant that there was no corresponding name on a replacement sheet. To overcome this problem, normal replacements were matched with diabetics. In this way, the interviewer could not determine who were diabetics.

Table 2.4

1969 INTERVIEWS COMPLETED

Category	Sample	Interviewed ₁	Replaced	Total	Operative Total ₂
Diabetic	181	146	-	146	144
Possible Diabetic	79	65	11	76	75
Normal With Follow-up	68	59	7	66	66
No Follow-up	88	73	15	88	80
Normal	80	68	12	80	80
Total	496	411	45	456	445

¹See Table 2.5 for Sample loss break down.

²Total used for calculations. Difference of 11 is due to loss or damage of questionnaires or data cards.

Table 2.5

1969 SAMPLE LOSSES

Category	Reason for Non-completion				
	Deceased	Refused	Not Located ₁	Unable to be Interviewed ₂	Total
Diabetic	6	3	25	1	35
Possible Diabetic	1	4	8	1	14
Normal With Follow-up	1	0	8	0	9
No Follow-up	2	4	9	0	15
Normal	0	2	10	0	12
Total	10	13	60	2	85

¹14 were located but interviewers and respondents could not establish a mutually agreeable appointment time.

²Due to Physical or Mental reasons.

Interviewers

The original interviewers were two male and two female medical students who had completed first year medicine. Due to the multilingual population of the province, it was necessary to insure that interviews could be carried on in more than one language. In this respect, all four could speak English, two could speak English and German, and one spoke English and French.

The students underwent a short training course in interviewing. The Surveys Officer of the Sanatorium Board reviewed problems which they might encounter in the field and the ways of overcoming them. Since 1971 was a Census year in Canada, the Regional Census Office was contacted and the Regional Director placed their training facilities at our disposal. In addition to this, each of our students was paired off with an interviewer and spent one day conducting interviews for a labor survey that was being held simultaneously with the Census.

During the third week it became obvious that difficulties in locating rural residents at home was much greater than originally anticipated. It was decided, therefore, to add two interviewers to the project. Since it was known that the area which was surveyed in 1969 had a high Ukrainian to English ratio, the prime criterion in the hiring of two additional personnel was that one should speak fluent Ukrainian. The Slavic Department of the University of Manitoba, therefore, was contacted and subsequently a male graduate student who spoke fluent Ukrainian, Polish, Russian and English was retained. This fluency in four languages subsequently proved to be an invaluable asset, as an unsuspected number of Polish respondents were encountered. The

final interviewer to be hired was a female Arts graduate who spoke only English.

THE QUESTIONNAIRE

Structure. Coughenour (1965), in an analysis of surveys of rural areas, showed that there is a higher quality and quantity of answers to questionnaires which are structured so that the questions follow a chronological order. For example, questions concerning something that happened in March would be asked before questions concerning something that happened in April which, in turn, would precede questions concerning May for any given year. The format for the questionnaire, therefore, was designed so that the questions started with how the person had first heard about this survey and what they did. Section 2 was concerned with events which happened after the screening--how they heard the results and what they did about a second test (which was for only those with high glucose readings), what they did in the second test and what was the outcome of it. Section 3 was concerned with events following the test, what they had heard about it, whom they heard it from, and, if they were diagnosed as being diabetic, what subsequent treatment they had undergone. Since the original survey had been conducted by the Sanatorium Board of Manitoba, Section 4 was devoted to testing the person's knowledge about tuberculosis. Section 5, on which the main thrust of this paper is focused, tested the respondent's knowledge about diabetes. This was followed by questions relating to health insurance and finally a section which dealt with demographic variables. (See appendix for complete questionnaire.)

Figure 2.2

SECTION V - KNOWLEDGE ABOUT DIABETES

Now some questions about diabetes.

1. a) What kind of symptoms would a person who has diabetes have?
(Record verbatim response)

	score		score
* no answer, don't know	0	increased appetite	4 *
* headaches	0	kidney trouble	*
* dizziness	0	open wounds	2 *
* blurred vision	1	nervousness	0 *
* black outs	0	nausea	0 *
* weakness	2	short of breath	0 *
* overweight	1	poor circulation	2 *
* wants sweets	0	other	0 *

- b) I am going to read you a list of signs and symptoms and I want you to tell me if they are the kind of things a person with diabetes would have (exclude symptoms mentioned in a) above.)

	False	Probably False	Don't Know	Probably True	True	N/A
Code	1	2	3	4	5	9
			Score			
i) Weight loss	—	—	—	3	5	5
ii) Thirsty all the time	—	—	—	3	5	5
iii) Bleeding	5	3	—	—	—	—
iv) Excessive urination	—	—	—	3	5	5
v) Temperature	5	3	—	—	—	—
vi) Diarrhea	5	3	—	—	—	—
vii) Always tired	—	—	—	1	2	2
viii) Skin infections (sores)	—	—	—	1	2	2
ix) Stomach ache	5	3	—	—	—	—

2. a) What do you think causes diabetes? (Record verbatim response)

	score		score
* no answer, don't know	0	a germ	0 *
* poor physical condition	0	psychological	0 *
* trouble with pancreas	5	improper diet	0 *
* insulin deficiency	5	other	0 *
* inability to assimilate sugar	2		

b) I am going to read you a list of things which cause various kinds of illnesses. Can you tell me which of these may be connected with diabetes (exclude causes mentioned in (a) above).

	False 1	Probably False 2	Don't Know 3 score	Probably True 4	True 5	N/A 6
a) Infection	<u>5</u>	<u>3</u>	—	—	—	—
b) Runs in families (type)	—	—	—	<u>3</u>	<u>5</u>	<u>5</u>
c) Being overweight	—	—	—	<u>1</u>	<u>2</u>	<u>2</u>
d) Eating too much sugar	<u>5</u>	<u>3</u>	—	—	—	—
e) Being injured	<u>5</u>	<u>3</u>	—	—	—	—

	code	score
3. a) Can diabetes be cured?		
No	1	5
Yes	2	—
Don't know	3	—
No, controlled	4	5

b) What kind of treatment do doctors give people with diabetes?
(Record verbatim response)

	score		score
Diet -What kind? *			
* no	0	calory regulated	5 *
* sugar regulated	5	yes, not specified	5 *
* fat regulated	5		*
* both regulated	5		*
*			*
Pills - What kind? *			
* none	0	yes, panc.	5 *
* insulin	3	other	0
* yes, not specified			2 *

		score		score	
Shots - What kind?	* none	0	insulin	5	*
	* yes, not specified	2	other	0	*
Other -	* none				*
	* yes(list)				*

Knowledge About Diabetes

Deese and Hulse (1967) have shown that there are two distinct memory processes, recall and recognition. It was, therefore, decided to test both of these factors in measuring the intervening variable of knowledge of diabetes. Figure 2.2 illustrates this section of the questionnaire, and, in questions 1 and 2, part (a) is open-ended to test recall and part (b) is structured to test recognition. Question 3, parts (a) and (b), is open-ended. The categories and scores³ which were subsequently used for coding are flanked by asterisks, and were not present on the questionnaire used by the interviewers.

The symptoms in Figure 2.2, 1(b) and 2(b) which were true, were gleaned from "Learning About Diabetes", which is a programmed course of instruction published by the American Diabetic Association. Those symptoms which were classified as false were determined through discussion with the consulting physician.

Figure 2.3

QUESTIONS GROUPED BY ATTITUDE

Perceived Availability of Care (PAC)

- 38. If you need medical help at night, do you think it is easy to get a doctor to come to your home? (+)
- 40. Would you say you have to go through too much trouble in order to see a doctor? (-)
- 44. When you go to see a doctor, would you say you usually have to wait too long to see him? (-)
- 47. Do you think it is easy for you to go to a doctor during the hours doctors are in their offices? (+)

Skepticism of Medicine (SM)

- 42. Do you believe that if you follow a doctor's advice, you will have less illness in your lifetime? (-)
- 43. Do you often doubt some of the things doctors say they can do? (+)
- 48. Do you believe doctors can prevent most serious diseases? (-)
- 39. Would you say the drugs doctors prescribe are better than home remedies? (-)
- 46. For most kinds of illnesses, do you believe it is the doctors who can help you the most? (-)

Tendency to Utilize Services for Somatic Illnesses (TUSS)

If you had the following, would you (talk to) (visit) (consult) a doctor about them

- 51. A mild headache for a week? (+)
- 53. Dizziness several times in a day? (+)
- 57. Trouble sleeping for a week? (+)
- 58. Being tired for a week for no realy reason? (+)
- 54. Nosebleeds for a day? (+)
- 55. Pains in the chest several times in a day? (+)

Skepticism of Doctors (SD)

41. When you go to a doctor, do you believe you should be given the details of what he is doing to you? (+)
45. Is it best to try out different doctors to find the one who will give you the best care? (+)
49. When you go to a doctor, do you think it is sometimes a good idea to suggest treatments different from those the doctor prescribes? (+)

Figure 4

Attitude Questions in Actual Sequence

We are very interested in how you feel about health and health care. I will read some questions to you. Some people answer YES and others NO. Please tell me which one is your opinion.

	No	Yes	Don't know
38. If you need medical help at night, do you think it is easy to get a doctor to come to your home?	☐	☐	☐
39. Would you say the drugs doctors prescribe are better than home remedies?	☐	☐	☐
40. Would you say you have to go through too much trouble in order to see a doctor?	☐	☐	☐
41. When you go to a doctor, do you believe you should be given the details of what he is doing to you?	☐	☐	☐
42. Do you believe that if you follow a doctor's advice, you will have less illness in your lifetime?	☐	☐	☐
43. Do you often doubt some of the things doctors say they can do?	☐	☐	☐
44. When you go to see a doctor, would you say you usually have to wait too long to see him?	☐	☐	☐
45. Is it best to try out different doctors to find the one who will give you the best care?	☐	☐	☐
46. For most kinds of illnesses, do you believe it is the doctor who can help you the most?	☐	☐	☐
47. Do you think it is easy for you to go to a doctor during the hours doctors are in their offices?	☐	☐	☐
48. Do you believe doctors can prevent most serious diseases?	☐	☐	☐
49. When you go to a doctor, do you think it is sometimes a good idea to suggest treatments different from those the doctor prescribes?	☐	☐	☐
50. When you think you are getting sick, do you find it comforting to talk to someone about it?	☐	☐	☐
If you had the following, would you (talk to) (visit) (consult) a doctor about them ...			
51. a mild headache for a week?	☐	☐	☐
52. constant problems in getting along with people?	☐	☐	☐
53. dizziness several times in a day?	☐	☐	☐
54. nosebleeds for a day?	☐	☐	☐
55. pains in the chest several times in a day?	☐	☐	☐
56. worrying about things most people don't think are too important?	☐	☐	☐
57. trouble sleeping for a week?	☐	☐	☐
58. being tired for a week for no real reason?	☐	☐	☐

Health Related Attitudes

The dependent variables of health related attitudes were measured using the questions on Perceived Availability of Care (PAC), Skepticism of Medicine (SM), Skepticism of Doctors (SD), and Tendency to Utilize Services for Somatic Illnesses (TUSS), which were taken from the World Health Organization International Collaborative Study of Medical Care Utilization. Subsequent to the operational portion of the present study, Bice and Kalimo (1971) published a paper showing the reliability and validity of these questions for twelve locations in seven countries, two being school districts in suburban Vancouver, another being in Grande Prairie, Alberta, and a fourth being in the province of Saskatchewan. The questions were factor analyzed and rotated to a target matrix establishing the four categories (PAC, SD, SM, TUSS) for each area and "a coefficient of concordance of 0.91 across the areas" (p.316) was obtained.⁴

The attitude questions appear in two formats, (Fig. 2.3, 2.4). Figure 2.3 illustrates the questions which measure each specific factor. Figure 2.4 illustrates the way in which they appeared on the questionnaire in order to guard against anticipation and habituation effects.

LOGISTICS

Field Procedures. The survey was to sample both urban and rural areas and, therefore, two pretest areas, one rural and one urban, were selected to safeguard against rural-urban differences in question interpretation and logistical problems. The rural area selected was

the municipality of Stanley, due to its large German ethnic group, as it was desirable to determine at the outset what some of the possible problems with language would be. The urban area selected was Transcona. Necessary changes in the method of operation of the questionnaire were then made.

It was decided to send the personnel into the field in two teams, with one team to a municipality. There were a number of reasons for this. First, it was felt that two persons working as a team but doing individual interviews and then meeting each night to exchange ideas, would result in 1) higher morale and 2) an exchange of ideas which would result in more efficient interviewing. Also, in the event that it would be necessary for the Project Director to contact the field workers from Winnipeg, there was a greater probability of contacting one of a team than a single person in a municipality.

Each interviewer was given a letter which introduced him to the interviewee, which explained that the RCMP and Municipal Officer in their area had been informed, and which stated the telephone number in Winnipeg at which they could contact the principal researcher by a collect call. Appointments were made by phone, or, when this was not possible, the interviewers drove to the person's residence. With one exception, the postmasters were extremely co-operative, and interviewers report that without the postmasters' and municipal secretaries' help it would have been almost impossible to locate many of the subjects. Since this problem had been encountered in the pretest, a question was added to the first page of the questionnaire, asking respondents to name their Township, Range and Section to see if future

health surveys could ask this question and put it beside a screenee's address. Almost without exception, respondents were able to do this, and its inclusion in future surveys would most certainly facilitate any follow-up procedures. The three main languages in Southern Manitoba (the 1968 survey area) are English, German and French. Ukrainian and Russian are spoken by many of those in the northern (1969) part of the province. If, on arrival, it was apparent to the interviewer that satisfactory communication with the respondent could not be made due to language difficulties, one of the other interviewers who spoke the required language would be asked to make a return visit to the respondent to complete the interview the following day. If the subject was not at home, then repeat calls were made until the person was located. If the respondent had moved, an attempt was made to ascertain the new address. Subjects who remained within their same municipality were traced to the new residence. Those who migrated from their original municipality were deleted from the list and replaced. The deceased and those who, for mental or physical reasons, were unable to be interviewed were also replaced.

Interviewing performance for each municipality obeyed a law of diminishing returns. That is, on the first day of interviewing, the interviewers could get between six and eight interviews. Subsequent days, however, produced a lower completion rate, due to the remainder always being the most difficult to contact.

Information processing. Eight persons, none of whom had been involved in the survey, were trained to do content analysis and code

the questionnaire answers. The completed questionnaires were grouped by municipality and each coder was given a specific area. Each coder then selected approximately 30 replies for question 1. The answers were then placed in as many common categories as were required to achieve consensus by the group and codes were assigned to the categories. (See Figure 2.2). This was repeated for the remaining questions on the page. The remaining questionnaires were then coded for the page concerned. Replies which could not be categorized were coded "other" and also copied verbatim onto lists and referenced with the respondent's survey number. If it became apparent that there were sufficient "other" answers of a given type to warrant a new category, this was done, and, by using the reference numbers, the new code was assigned to the applicable question which had been previously coded as "other." This total process was repeated for each page. The assigned codes were written in spaces provided in the right hand margin of each page. When all the questionnaires had been coded, they were then checked for coding errors and given to punch card operators who punched the codes onto IBM cards directly from the questionnaires.

Verifying and a computer program which listed nonallowable codes were used to minimize the number of coding errors. The information on the punch cards was then transferred to magnetic tape for storage to avoid the possibility of cards being damaged and consequently misread.

The knowledge scores were assigned to each category on the basis of a graded scale from 0 to 5, with 5 being awarded to a correct answer. The points assigned to each category were arrived at through

a consensus of opinion in a discussion involving the Professor of Medical Sociology, Faculty of Medicine; the consulting physician for the Manitoba Diabetic Association; the Nursing Director--Diabetic Education Centre, Winnipeg General Hospital, and the writer.

The attitude scores were calculated separately for each attitude. Questions measuring Perceived Availability of Care (PAC) and Tendency to Utilize Services for Somatic Reasons (TUSS) in Figure 2.3, which are marked with a positive sign, and were answered "Yes," were given a score of one. Questions marked with a negative sign and answered with "no" were also given a score of one. Since skepticism is a negative attitude, Yes and No answers in these classes were reversed, in order to be compatible with PAC and TUSS scores. "Don't know" were assigned the mean score for the questions concerned. All other scores were then calculated for each subject, by summing the assigned scores within each dimension.

Partial correlations may be used to locate spurious correlations, to determine the importance of a particular intervening variable, or to uncover a relationship where none appears to exist. Chapanis and Chapanis' (1964) main criticism of past research on attitudes was the lack of such controls in searching for more than a single relationship between two variables. Partial correlations were, therefore, calculated to examine the effects of each of the above variables of age, sex, education and knowledge of diabetes as well as whether or not an abnormal glucose respondent reported being notified, or a respondent reported a chronic disease other than diabetes.

Significance level. One of, if not the major goal of social science, is prediction. Correlations of less than 0.22 explain less than 5% of the variance between two variables, or the extent to which one variable may be predicted from another, and are, therefore, of little predictive or explanatory value. Since significance tests such as the t test are partially a function of sample size, it was decided to entertain only those Pearson product moment correlation coefficients which explained over 5% of the variance. Correlations explaining a smaller amount of variance, are of little or no value, even though they may be recorded as significant.

SUMMARY

This chapter has described mass screenings for diabetes, which categorized subjects as diabetic, possible diabetic or normal in 1968 and 1969. The present study, based on a stratified sample drawn from the screened population, to determine four health related attitudes and knowledge of disease was also described. Data was gathered by means of a structured interview. Scoring of coded answers and subsequent analysis of data by using Pearson product moment correlation coefficients and partial coefficients was described. The following chapter will describe the results derived from these methods.

Chapter 3

RESULTS

Chapter 2 described the procedures involved in selecting a sample from a population which had been screened for diabetes, the processes of interviewing these respondents to obtain health related psycho-social information, and the processing of this information into specified dimensions. In Chapter 1, hypotheses were postulated which will be examined below with reference to the information gathered. Results from the testing of the hypotheses will be followed by a discussion of each outcome in relation to the literature on which that proposition was based.

The first four hypotheses, in general, predicted that diabetics would have more positive attitudes toward health care services than nondiabetics. Specifically, they were stated as:

Hypothesis 1

Diabetics will perceive medical care as more available than will nondiabetics.

Hypothesis 2

Diabetics will tend to be less skeptical of medicine than will those not receiving treatment for diabetes.

Hypothesis 3

Those suffering from diabetes will tend to be less skeptical of doctors than those who are not.

Hypothesis 4

Diabetics will have a greater tendency to utilize services for somatic reasons than nondiabetics.

Table 3.1

Correlation Coefficients,¹ For Screened Category and Health Related Attitudes,² 1968 and 1969

Year	Attitude			
	PAC	SM	SD	TUSS
1968	0.01	-0.00	-0.06	-0.10
1969	-0.07	-0.08	-0.11	0.01

The correlations reported in Table 3.1 fail to support hypotheses 1, 2, 3 or 4. Subsequent partial correlations for the first, second, third and fourth order, controlling for sex, age, knowledge and education failed to have any significant effect, i.e. less than 5% of the variance is explained. Support of hypothesis 1 would have been indicated by negative coefficients greater than 0.22 in the PAC column. Likewise, support of hypothesis 2 would have been indicated by positive correlations greater than 0.22 in the SM column, and negative correlations greater than 0.22 in the SD column would have supported hypothesis 3. The remaining proposition, hypothesis 4, would require negative correlations greater than 0.22 to support the statement that diabetics will have a greater tendency to utilize services for somatic reasons than nondiabetics. The data fail to show any differences in attitudes

¹Pearson product moment correlation coefficient between screened category (treated as a dummy variable: diabetic=1, nondiabetic=2) and each health attitude score.

²PAC - Perceived Availability of Care; SM - Skepticism of Medicine; SD - Skepticism of Doctors; TUSS - Tendency to Utilize Somatic Services.

toward health care services between diabetics and nondiabetics.

Hypotheses 5, 6, and 7 dealt with the relationship between the demographic variables of age, sex, and education, each of which is dealt with separately below.

Hypothesis 5

Hypothesis 5 asserted that: there is no significant relationship between age and health related attitudes.

Table 3.2

Correlation Coefficients, For Age³
and Health Related Attitudes, 1968 and 1969

Year	Attitude			
	PAC	SM	SD	TUSS
1968	0.08	-0.01	0.07	0.16
1969	0.00	0.08	0.17	0.05

The correlations shown in Table 3.2 support the hypothesis. Subsequent partial correlations for the first, second, third and fourth order, controlling for disease category, sex, education and knowledge of diabetes failed to have any significant effect, with all correlations remaining below 0.22.

Hypothesis 6

Hypothesis 6 asserted that: there is no relationship between sex and health related attitudes.

³Age was analyzed by using the census age brackets 20-24, 25-34, 35-44, 45-54, 55-64, 65-69, and 70+ as a 1 to 7 age scale.

Table 3.3

Correlation Coefficients, For Sex⁴
and Health Related Attitudes, 1968 and 1969

Year	Attitude			
	PAC	SM	SD	TUSS
1968	-0.00	-0.07	0.04	-0.09
1969	0.02	-0.03	0.01	0.00

The correlations reported in Table 3.3 supported the hypothesis that there is no relationship between sex and health related attitudes. Subsequent partial correlations for the first, second, third and fourth order, controlling for disease category, age, knowledge of diabetes and education failed to have any significant effect, with all correlations remaining below 0.22.

Hypothesis 7

Hypothesis 7 asserted that: education is positively correlated with health related attitudes.

Table 3.4

Correlation Coefficients, For Education⁵
and Health Related Attitudes, 1968 and 1969

Year	Attitude			
	PAC	SM	SD	TUSS
1968	0.02	-0.10	-0.01	-0.06
1969	0.13	-0.07	0.03	-0.06

The results in Table 3.4 failed to support the hypothesis. Subsequent partial correlations for the first, second, third and fourth

⁴Sex treated as a dummy variable - 1 = male, 2 = female.

⁵Education scale - 0 = none, 8 = completed university.

order, controlling for sex, age, knowledge and disease category failed to have any significant effect, with all correlations remaining below 0.22.

The final hypothesis to be tested examined the relationship between respondents health related attitudes and their knowledge of diabetes symptoms, etiology, and prognosis.

Hypothesis 8

Hypothesis 8 asserted that: knowledge of diabetes is positively correlated with health related attitudes.

Table 3.5

Correlation Coefficients For Knowledge of Diabetes
and Health Related Attitudes, 1968 and 1969

Year	Attitude			
	PAC	SM	SD	TUSS
1968	0.00	-0.02	-0.03	-0.08
1969	0.03	-0.05	0.02	0.05

Table 3.5 correlations failed to support the hypothesis. Subsequent partial correlations for the first, second, third and fourth order, controlling for sex, age, category and education failed to have any significant effect with all correlations remaining below 0.22.

SUMMARY

This chapter presented the results from the testing of the 8 hypotheses developed in Chapter 1. The four screened categories of diabetic, possible diabetic, normal follow-up, and normal, proved to be homogeneous as to the four attitudes of perceived availability

of care, skepticism of medicine, skepticism of doctors, and tendency to utilize services for somatic illnesses. It was also shown that, for the screened population as a whole, there were no differences between the age groups, educational level, or sexes, as to any of the attitudes measured. Similarly, there were no significant relationships between health related attitudes and knowledge of diabetes.

The following chapter will discuss the implications of these findings.

Chapter 4

DISCUSSION

In this chapter the results reported in Chapter 3 will be reviewed from the point of view of their implications for existing theory, and of the methodological procedures employed in generating them. Finally, some suggestions will be made for future research.

The first four hypotheses, in general, postulated that diabetics and possible diabetics will have more favorable attitudes toward health care than nondiabetics for the parameters of perceived availability of care, skepticism of medicine, skepticism of doctors, and tendency to utilize services for somatic reasons. Table 3.1, however, shows no significant difference between the two groups, with correlations being extremely weak.

The attitudes held by an individual are reasonably constant, and a person's actions are usually consistent with those attitudes (Festinger, 1957). When privately-held attitudes and overt behavior do not correspond, cognitive dissonance theory asserts that the person is psychologically uncomfortable, and the resulting tension will cause the person to do something to reduce the dissonance and to achieve greater consistency between the elements involved. Consistency may be achieved either by changing attitudes to be congruent with behavior, or, conversely, by changing one's behavior to be compatible with attitudes.

The hypotheses tested in this research were based on the assumption that the behavior of the diabetic, in terms of seeking medical

care, was different from that of the nondiabetic and, hence, the two groups should have different attitudes. The analysis of results, however, suggests that there is no significant difference between the attitudes of the two groups.

Since both groups had similar attitudes, one question we might pose is, were their actions also similar, so as to correspond with the matching attitudes? The answer may be that both groups were self-initiators for health care, as evidenced by the fact that they both attended the screening and, hence, are in fact a homogeneous population in regard to preventive health care. The seeking of care by the diabetic may be simply a continuation of the behavior norm for the screened population. Since all screened persons' actions were similar, i.e. they attended the screening, it is plausible that all the screened persons' attitudes are similar. This could result in little or no correlation between attitude and illness category.

It was stated above (p.8) that those persons suffering from chronic diseases other than diabetes would also have increased contact with health facilities and personnel. Controlling for chronic disease, however, had no appreciable effect on the results. Similarly, when only those diabetics who reported being notified (p.8) were compared to normals, there was little change in the results. (Records of actual notification were not available.) Both of these findings support the contention of the homogeneity of attitudes in the screened population.

Hypothesis 5

Hypothesis 5 stated that: there is no significant relationship

between age and health related attitudes. The null hypothesis is supported by results shown in Table 3.2. Thus, they support the findings of Apple (1960) and Titchener et al. (1956) who both found that age was not related to health services. They are, however, contrary to the findings of Aitken-Swan and Paterson (1956), who examined delay of cancer patients seeking advice, and found a positive relationship between age and delay in utilizing services.

Hypothesis 6

It was asserted in Hypothesis 6 that: there is no relationship between a person's sex and his health related attitudes. The results found in Table 3.3 support the hypothesis and also Kutner and Gordan (1961), Borsky and Sagen (1959), and Titchener et al. (1956) who found no differences in tendency to utilize services by either sex. The present findings show that there is also homogeneity in the attitudes of perceived availability of care, skepticism of doctors and skepticism of medicine. The results of this study do not, however, support Suchman (1965), who found that females were less skeptical of medical care than males.

Hypothesis 7

Hypothesis 7 asserted that: education is positively related with health related attitudes. Table 3.4 shows no significant correlation between education and any of the health attitude scores and, therefore, the results do not agree with the findings of Suchman (1969), Ross (1962), Kutner and Gordan (1961), Titchener et al. (1956), and Yeracaris (1962). The present results, however, do support Borsky and

Sagen (1959), and Apple (1960). Comparison of Table 3.3 with Kutner and Gordan's (1961) and Suchman's (1969) results is not possible due to their not having published the necessary data. Kutner and Gordan (1961) reported that there was a "slight tendency for education to be negatively related to delay in the case of general medical symptoms" (p.177). The fact that they found negative relationships between education and delay among those respondents having cancer symptoms may be a further indication that studies relating to cancer are not applicable to studies relating to chronic disease. Similarly, Titchener et al. dealt with the problem of delay in seeking surgical care which is also much more traumatic to the individual than circumstances arising slowly or even remaining asymptomatic in the case of those persons suffering from chronic diseases.

Hypothesis 8

Hypothesis 8 stated that: knowledge of diabetes is positively correlated with health related attitudes. The results, shown in Table 3.5, failed to support the hypothesis. These findings do not agree with those of Aitken-Swan and Paterson (1955), Kutner and Gordan (1961) and Elling et al. (1960) described in Chapter 1. One possible explanation for this is that all three papers dealt with diseases which had pronounced symptoms. Aitken-Swan and Paterson studied persons suffering from cancer of the breast, cervix, uterus, skin or mouth--diseases which usually present symptoms which a person can easily recognize as abnormal. Similarly, Kutner and Gordan (1961) studied cancer patients and found that there was a difference in the patients' level of concern

regarding cancer and non-cancer symptoms. Elling et al. (1960) examined correlates of participation in a clinic program for children diagnosed as having had rheumatic fever and who had been treated for rheumatic fever at a hospital. Also, the parents were being subjected to a number of measures to achieve participation, including an intensive educational program.

The present study deals with a chronic disease which may be asymptomatic, and it is possible that diseases of this nature engender different attitudes to health care than diseases which have a more immediate impact. This latter suggestion is also made by Kutner and Gordan (1961).

Limitations

One of the main limitations of this study was the lack of a control group of persons who had not gone to a screening. A matched-pair sample, for instance, would have provided a much more valid measurement of the effect on a person's attitudes when he or she is diagnosed as having a chronic disease. The purpose of the study was, however, primarily to examine diagnostic feedback from the screening processes to the respondent and secondarily, to examine participants' reactions to screening. Time and financial constraints did not allow for the inclusion of nonscreened respondents and hence a comparison between initiators and noninitiators was not possible.

A second limitation of this study was the loss of 30% of the 1968 and 19% of the 1969 diabetic category. Since 100% of this category was being interviewed, there could be no replacements. The

difference between the size of the sample loss for the 2 years is primarily due to a higher mortality in the 1968 area. It is not known whether this is accounted for by the one year difference or by some other reason. As the diabetic category was the most severely affected screened group as to relationships with health care facilities, it may be that the loss of those in the poorest state of health had a considerable effect in neutralizing differences between groups. Losses in the remaining four categories were replaced, and since the replacements were randomly drawn, as was the original sample, there was probably little or no biasing effect for the remaining categories.

While differences in the diseases studied could well lie behind differences between the results found in the present study and those reported elsewhere, it is also possible that the explanation lies in the various ways in which certain of the variables--especially those having to do with health related attitudes--have been measured. In this study, an attempt was made to employ composite indicators of health related attitudes on which some prior research has been conducted (Bice and Kalimo, 1971), and about which something is known with regard to their validity and reliability. It could be that, despite this attempt, these measures are inadequate to the purpose. Equally likely, is the possibility that the measures employed in prior research are wanting.

Suchman (1965), for example, found that females are less skeptical of medical care than males which is contrary to the findings of this report. The difference may be due to problems of measurement. Methodological deficiencies may also account for the differences

between Yeracaris's (1962) results and the present findings. He did not control for income while stratifying his sample by socio-economic districts. Utilization, therefore, may have been related to income rather than education.

Finally, the possibility remains that, however adequate or inadequate the various scales may be, they are simply tapping different dimensions of the attitudinal spectrum, and one could not, therefore, expect the results, reported in this research to build upon those in the literature.

Implication of Results

The findings reported here may have implications for the theory of cognitive dissonance, the methods of testing it, and the practising physician.

The apparent similarity between all categories attending the screening, vis-a-vis the four health related attitudes would, on first inspection seem to be nonsupportive of cognitive dissonance theory. However, a postfacto examination of the theory suggests that there may simply have been insufficient data to test the theory.

Not being able to interview those who did not attend the screening may mean that those who would suffer the most cognitive dissonance were not tested.

When dissonance exists, not only will the person attempt to reduce it, but he will actively attempt to avoid situations and information which would increase the dissonance. (Kiesler p.194).

If this is applied to those who avoided going to the screening or the noninitiators of health care, then the main difference would be between

the noninitiators (avoiders) and the initiators (nonavoiders).

Possible implications for the practising physician relate to both the patient's attitude and knowledge of disease, given that generalizing the results is restricted to (1) a screened population (2) chronic disease, and (3) the four health related attitudes studied. The diabetic is largely dependent on self care for controlling his disease and, therefore, it would seem to follow that the more knowledge he has about his illness the more efficient he will become in controlling it. The fact that there was no difference between diabetics and nondiabetics in knowledge of diabetes should be of concern to those who are responsible for a diabetic's health. The results suggest that it may not just be enough to tell a person that he or she has a disease and expect the patient to become more knowledgeable simply because he has the disease. New methods must be developed to increase the knowledge of those that require it. Nonbook-oriented patients for-instance may need nonbook methods. e.g. Public health nurses with films, if this medium proves to be more effective.

The results also indicate that because a person is dependent on the medical profession for expert advice regarding a known chronic disease does not necessarily mean that the person will have less skepticism of medicine or doctors or a greater tendency to utilize services than those persons who are not suffering from a chronic disease.

Suggestions for Future Research

The findings of this research indicate that there is a commonality in the attitudes of populations screened for diabetes which

is independent of age, sex, education and knowledge of disease, and which mitigates against major changes in the attitudes of those who receive positive diagnosis. From this finding come a number of questions which can only be answered by future research.

Since this study dealt with a screened population which comprised less than one third of the census population, an answer awaits as to what are the attitudes of the majority who are not self-initiators of health care vis-a-vis mass screening.¹

It may be that the nature of the illness studied has played a prominent role in determining the results which were found, as was suggested above. If so, then it would be important to attempt to establish what this role is by means of comparing populations with chronic diseases to populations with acute diseases to determine if differences exist in their health related attitudes. It may also be that the manner in which certain variables in this study have been measured is open to considerable improvement. Future investigators would be well advised to pay special attention to the development of reliable and valid empirical indicators so that the necessary improvements can be made.

¹A project is currently underway to determine why these persons have not attended screenings in southern Manitoba. Interviews have been conducted in 6 of the municipalities surveyed for this paper. Analysis of data will also allow a comparison of attitudes between the initiators and noninitiators.

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APPENDIX

SCREENING TEST EVALUATION PROJECT

UNIVERSITY OF MANITOBA
FACULTY OF MEDICINE
SUMMER - 1971

INTERVIEW SCHEDULE - TEST PARTICIPANTS

(Pre Write Page 1)

MR/MRS/MISS FIRST NAME INITIAL SURNAME

ADDRESS: (If rural, put in section, township, range)

TELEPHONE: _____

SEX: M - 1 ; F - 2

AGE: _____

YEAR SURVEYED: 1968 - 1 ; 1969 - 2

X-RAY NUMBER: _____

MUNICIPAL DISTRICT: _____

SIZE OF TOWN: _____

As the letter we sent you said, we are doing a study of the attitudes of people towards health surveys such as the tuberculosis x-ray and diabetic surveys. We would like to ask you some questions about this type of testing.

INTERVIEWER: _____

Date of interview: _____

Time: Start of interview: _____

Call	Date	Time	End of Interview - Duration
1			
2			
3			
4			

2

SECTION 1 - THE SCREENING TEST

1. How did you first hear about the health survey that you went to in 196 ?

As well as hearing about it from/on above, did you hear about it on:

	No 1	Yes 2	Don't remember 3
Radio?	---	---	---
T.V.?	---	---	---
Newspapers?	---	---	---
Posters?	---	---	---
Canvassers?	---	---	---
Friends or neighbours?	---	---	---
Family?	---	---	---

2. Why did you decide to go to the survey?
3. Did you have signs or symptoms which you were worried about at the time?

___ No
___ Yes

a) What were they?

4. When you went to the survey, what tests did they give you -- i.e. what did they do? (Record verbatim response)

A. Chest X-ray

3

B. Blood Test

C. Breathing Test

D. Questionnaires

E. Other

If not mentioned above, ask;

Do you remember:

	Yes	No	Don't remember	Not applicable
A. Having a chest X-ray	—	—	—	—
B. Having a blood test	—	—	—	—
C. Having a breathing test (describe if necessary)	—	—	—	—
D. Filling out questionnaires	—	—	—	—

5. Do you remember what the tests you had were for? (i.e. what disease?) Record verbatim response.

A. Chest X-ray	Not applicable	1
	Do not know	2
B. Blood Test	Not applicable	1
	Do not know	2
C. Breathing Test	Not applicable	1
	Do not know	2
D. Other		

4

If the respondent does not remember having or know what the tests were for, tell him:

The X-ray was for - Tuberculosis

The blood test was for - Diabetes

The breathing test was - To see how your lungs work

SECTION 11 - AFTER SCREENING

1. After the tests did you hear anything about the results?

No 1

Yes 2

If No, say "Some people were asked to come back for another test. Did this happen to you?"

If answer is still "NO", proceed to Section IV

If YES, ←

a) How were you told? (eg. phone, letter...)

b) Who told/wrote you?

c) What were you told?

d) What was the reason you were asked to return —
i.e., why did they tell you to return?

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e) How worried were you? Would you say you were:

- | | |
|-----------------------|---|
| A. Very worried | 1 |
| B. Slightly worried | 2 |
| C. Not worried at all | 3 |

If 'A' or 'B', what were you worried about?

f) Did you think then that you had anything wrong with you?

- | | |
|-----|------------|
| No | 1 (expand) |
| Yes | 2 |

If YES, what did you think was wrong with you?

2. Did you go back for another test?

- | | |
|-----|---|
| No | 1 |
| Yes | 2 |

If NO,

a) Why didn't you go?

b) Did you ask your doctor about it?

- | | | |
|-------|-----|---|
| _____ | No | 1 |
| _____ | Yes | 2 |
| _____ | | |

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If NO, (cont'd:)

c) Did you ask anyone else about it?

No 1

Yes 2

d) Did you ever get another test from your own doctor or hospital?

No 1

Yes 2

PROCEED TO SECTION ...IV.....

If YES,

a) What did they do in the second test?

b) Did they explain the reason for the tests?

No 1

Yes 2

If YES,

i) What did they say?

ii) Did you understand the explanation?

No 1

Yes 2

iii) Was the explanation reassuring or more worrying?

7

- c) What did they tell you about how the results of the test would be sent to you?

If respondent says "doctor" or other third party, ask:
"Would you have preferred to have heard directly about the second test yourself?"

No 1
Yes 2
Don't know 3

- d) Did you feel worried after this second test?

No
Yes

- e) How long did you feel worried?

SECTION 111 - AFTER REPEAT TEST

1. Did you hear anything further about the second test?

No 1
Yes 2

If "NO",

- a) Did you ask your doctor if he had heard anything about the test?

No 1
Yes 2

- b) Do you ever wonder whether you had something wrong with you?

No 1
Yes 2

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If "NO" cont'd:

- c) Have you ever gone to your doctor to have another test?

No 1

Yes 2

When?

With what result?

SECTION

If "YES".

- a) Who did you hear it from?

- b) What were you told? How were the results explained to you?

If told he had diabetes, possible diabetes or any blood sugar abnormality, ask:

- c) Were you surprised to hear that you had this?

No 1

Yes 2

Don't know 3

- d) Did you know that you had such an abnormality before you heard the result of the test?

No 1

Yes 2

- e) Were you under treatment for this at the time you took the test?

No 1

Yes 2

	9		
f) Did you have any further tests immediately or shortly after?	No 1 Yes 2		
g) Did the doctor give you any treatment then?	No 1 Yes 2		
h) Are you receiving any treatment for this now?	No 1 Yes 2		
i) Has the treatment made you feel better?	No 1 Yes 2		
j) When you heard about the results of the tests, did you recall any signs or symptoms which you had been having but which you had thought were not important?	No 1 Yes 2 Don't know 3		
If respondent was explicitly told that he/she had diabetes: k) Has having diabetes changed your life in any way at all? How? No 1 Yes 2 l) Apart from your family doctor have you seen any other doctor about your diabetes? No 1 Yes 2			
SECTION IV			

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If YES,

i) Were you referred to him by your family doctor?

No 1

Yes 2

ii) Which doctor (General Practitioner, Specialist,
(Hospital Clinic)?

iii) Which doctor presently looks after your illness?

SECTION IV - KNOWLEDGE ABOUT TUBERCULOSIS

I would like to ask you some questions about Tuberculosis.

1. a) What does a person with tuberculosis complain of?
(Record verbatim response)b) I am going to read you a list of signs and symptoms and I
want you to tell me if they are the kind of things a person
with tuberculosis would have (exclude symptoms mentioned
in (1) above).

	False	Probably False	Don't Know	Probably False	True	Not Applicable
i) Weight loss	—	—	—	—	—	—
ii) Coughing	—	—	—	—	—	—
iii) Diarrhea	—	—	—	—	—	—
iv) Blood in sputum	—	—	—	—	—	—
v) Tiredness	—	—	—	—	—	—
vi) Stomach ache	—	—	—	—	—	—
vii) Sweating	—	—	—	—	—	—

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2. What do you think causes tuberculosis? (Record verbatim response)

I am going to read you a list of things which cause various kinds of illnesses. Can you tell me which of these may be connected with tuberculosis? (exclude causes mentioned in (a) above).

	False	Probably False	Don't Know	Probably True	True	Not Applicable
a) a disease a person is born with	—	—	—	—	—	—
b) a germ	—	—	—	—	—	—
c) a result of injury	—	—	—	—	—	—
d) a growth	—	—	—	—	—	—
e) being overweight	—	—	—	—	—	—

3. a) Can tuberculosis be cured?

No 1
Yes 2
Don't Know 3

- b) What do doctors do for people with tuberculosis?
(Record verbatim response)

4. Is there any way you can protect yourself against tuberculosis?

No 1
Yes 2
Don't know 3

If YES, how?

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SECTION V - KNOWLEDGE ABOUT DIABETES

Now some questions about diabetes.

1. a) What kind of symptoms would a person who has diabetes have?
(Record verbatim response)

- b) I am going to read you a list of signs and symptoms and I want you to tell me if they are the kind of things a person with diabetes would have (exclude symptoms mentioned in (1) above).

	False	Probably False	Don't Know	Probably True	True	Not Applicable
i) Weight loss	—	—	—	—	—	—
ii) Thirsty all the time	—	—	—	—	—	—
iii) Bleeding	—	—	—	—	—	—
iv) Excessive Urination	—	—	—	—	—	—
v) Temperature	—	—	—	—	—	—
vi) Diarrhea	—	—	—	—	—	—
vii) Always tired	—	—	—	—	—	—
viii) Skin infections (sores)	—	—	—	—	—	—
ix) Stomach ache	—	—	—	—	—	—

2. a) What do you think causes diabetes? (Record verbatim response)

I am going to read you a list of things which cause various kinds of illnesses. Can you tell me which of these may be connected with diabetes (exclude causes mentioned in (a) above).

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	False	Probably False	Don't Know	Probably True	True	Not Applicable
a) Infection	---	---	---	---	---	---
b) Runs in families (type)	---	---	---	---	---	---
c) Being overweight	---	---	---	---	---	---
d) Eating too much sugar	---	---	---	---	---	---
e) Being injured	---	---	---	---	---	---

3. a) Can diabetes be cured?

No 1

Yes 2

Don't Know 3

b) What kind of treatment do doctors give people with diabetes?
(Record verbatim response)

Diet - What kind?

Pills -- What kind?

Shots - What kind?

Other -

HEALTH SERVICES UTILIZATION

Now I would like to talk about the people you talk with about your health.

1. Within the last year, that is since last....., did you (talk with) (visit) a doctor about your health at any of the following places? This is about your health only.

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	No	Yes	How many times	
			in last year	in last 2 weeks
a) A doctor's (private office) (surgery) (clinic)?	---	---	---	---
b) A hospital outpatient (department) (clinic)?	---	---	---	---
c) Any other clinic?	---	---	---	---
d) A hospital (emergency room) (casualty department) (first aid station)?	---	---	---	---
e) Home?	---	---	---	---
f) Some other place, other than over the telephone?	---	---	---	---
g) Over the telephone, except to make an appointment?	---	---	---	---

2. Was the main reason for the last (talk) (visit):

- a) Because of a sickness, illness or injury
- b) For a certificate other than a prescription
- c) For a check-up
- d) For some other reason

What was the reason?

3. Now could we talk about some other health workers with whom you might have discussed your health? Within the last two weeks, did you (talk with) (consult) (visit) any of the following people about your health?

	No	Yes	How many times?
a) A nurse at a doctor's (Private office) (surgery) (clinic) or a hospital outpatient (department) (clinic)?	---	---	---
b) A nurse at work?	---	---	---
c) An (optometrist or) optician?	---	---	---
d) A (podiatrist) (chiropodist) or foot doctor?	---	---	---

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- e) A (pharmacist) (druggist) (chemist)? ☐ ☐ ☐
- f) A social or welfare worker? ☐ ☐ ☐
- g) (A chiropractor or naturopath)? ☐ ☐ ☐
- h) Did you talk with a minister, priest, or rabbi about your health? ☐ ☐ ☐

4. Do you have any long standing health problem or illness? (i.e. Is there anything about your health that bothers you from time to time?)

☐ No
☐ Yes

5. Could you tell me what it is? (General terms)

6. Does it affect your ability to (do your usual work), (attend school)?

☐ No
☐ Yes
☐ Don't Know

7. Now I would like to talk with you about dental visits. Within the last year, did you (talk with) (visit) a dentist about your teeth, gums, or mouth at any of the following places?

 No Yes How many times?

- a) A dentist's (private office) (surgery) (clinic)? ☐ ☐ ☐
- b) A hospital dental clinic? ☐ ☐ ☐
- c) A work or an industrial clinic? ☐ ☐ ☐
- d) Over the telephone, except to make an appointment? ☐ ☐ ☐

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8. When was the most recent time you (talked with) (visited) a dentist?

- a) within the last 12 months _____
- b) more than 12 months ago, or _____
- c) never? _____

9. Was the main reason for the (talk) (consultation) (visit) because of:

- a) trouble with teeth, gums, or dentures _____
- b) a checkup or to clean your teeth _____
- c) to get a form or certificate other than a prescription, or _____
- d) for some other reason? _____

What was the reason? ← _____

10. Now I would like to talk about your hospital admissions.

Within the last 12 months, were you admitted to a hospital overnight or longer?

☐ No
☒ Yes
 16 How many times?

If YES,

11. How many nights were you there during the past year? _____

12. The most recent admission? _____ nights

13. What was the date of the most recent admission?

 Month Day Year

14. Was the main reason for the most recent admission because of :

- a) a sickness, illness or injury _____
- b) to have a checkup or tests done, _____
- c) or for some other reason _____

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What was the reason?

15. Now about the way in which you usually get your medical care. Is there a particular doctor or doctors you (talk with) (visit) when you need help or want advice about your health?

___ No
___ Yes

If "NO",
Was there a doctor in the past you
visited when you needed help?

___ Yes
___ No

If still NO, go to Question 20....

16. What is the name of the doctor?

Name

Address

City/Town/Village

17. When was the most recent time you were at your doctor's for your own health?

- a) within the last two weeks _____
b) more than two weeks ago but within 12 months _____
c) more than 12 months ago, or _____
d) never? _____

18. How long does it usually take you to get to your doctor from here (home)? Is it:

- a) within 15 minutes _____
b) more than 15 minutes but within half an hour _____
c) more than half an hour but within one hour, or _____
d) more than one hour? _____
e) Don't know _____

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19. When did you most recently have a general medical or physical examination by a doctor when you were not sick? Was it:

- a) within the last two weeks _____
- b) more than two weeks ago but within 12 months _____
- c) more than 12 months ago, or _____
- d) never? _____
- e) Don't know _____

20. Where was this general medical or physical examination given?

- a) at a doctor's (private office) (surgery) (clinic)? _____
- b) at a hospital outpatient (department) (clinic)? _____

21. Was this examination needed for work, school, insurance, a license, or some other reason like that?

____ No
____ Yes

22. When did you last have an immunization or vaccination or injection to prevent sickness or illness? Was it:

- a) within the last two weeks _____
- b) more than two weeks ago but within 12 months _____
- c) more than 12 months ago, or _____
- d) never? _____
- e) Don't know _____

23. Where was this immunization, vaccination, or injection given? ←

- a) at a doctor's (private office) (surgery) (clinic)? _____
- b) at a hospital outpatient (department) (clinic)? _____
- c) a work or an industrial clinic? _____
- d) school? _____
- e) (Don't remember)? _____

24. In some families, one person takes more responsibility for the health of the rest of the family than anyone else. Is this so in your family?

____ No
____ Yes

19

Who would that be? Is it:

- a) yourself
- b) your (husband) (wife)
- c) some other relative, or
- d) someone else?

Now I would like to ask you some questions about medicines.
Yesterday or the day before that, did you take or use any of
 the following medicines, pills, or ointments?

	No	Yes	How many different kinds?	How many different kinds were prescribed by a doctor?
25. Pain relievers, such as aspirin aspirin?	---	---	---	---
26. Cough medicines?	---	---	---	---
27. Any other medicines or remedies for colds?	---	---	---	---
28. Skin ointments or salves?	---	---	---	---
29. Laxatives or any medicines or remedies for your stomach?	---	---	---	---
30. Sleeping pills or medicines?	---	---	---	---
31. Vitamins or tonics?	---	---	---	---
32. Tranquilizers or sedatives?	---	---	---	---
33. Medicines for the heart or blood pressure?	---	---	---	---
34. Medication for diabetes or high blood sugar?	---	---	---	---

35. Within these same two days, that is, yesterday and the day before that, did you take or use any other kinds of medicines, pills, or ointments we have not talked about? ☐ No [Go to Section O] ☐ Yes

36. A. How many different kinds did you take or use? kinds

37. How many different kinds were prescribed or suggested by a doctor? kinds

O

Now here is something a bit different. We are very interested in how you feel about health and health care. I will read some questions to you. Some people answer YES and others NO. Please tell me which one is your opinion.

	No	Yes	Don't know
38. If you need medical help at night, do you think it is easy to get a doctor to come to your home?	☐	☐	☐
39. Would you say the drugs doctors prescribe are better than home remedies?	☐	☐	☐
40. Would you say you have to go through too much trouble in order to see a doctor?	☐	☐	☐
41. When you go to a doctor, do you believe you should be given the details of what he is doing to you?	☐	☐	☐
42. Do you believe that if you follow a doctor's advice, you will have less illness in your lifetime?	☐	☐	☐
43. Do you often doubt some of the things doctors say they can do?	☐	☐	☐
44. When you go to see a doctor, would you say you usually have to wait too long to see him?	☐	☐	☐
45. Is it best to try out different doctors to find the one who will give you the best care?	☐	☐	☐
46. For most kinds of illnesses, do you believe it is the doctor who can help you the most?	☐	☐	☐
47. Do you think it is easy for you to go to a doctor during the hours doctors are in their offices?	☐	☐	☐
48. Do you believe doctors can prevent most serious diseases?	☐	☐	☐
49. When you go to a doctor, do you think it is sometimes a good idea to suggest treatments different from those the doctor prescribes?	☐	☐	☐
50. When you think you are getting sick, do you find it comforting to talk to someone about it?	☐	☐	☐

If you had the following, would you (talk to) (visit) (consult) a doctor about them ...

	No	Yes	Don't know
51. a mild headache for a week?	☐	☐	☐
52. constant problems in getting along with people?	☐	☐	☐
53. dizziness several times in a day?	☐	☐	☐
54. nosebleeds for a day?	☐	☐	☐
55. pains in the chest several times in a day?	☐	☐	☐
56. worrying about things most people don't think are too important?	☐	☐	☐
57. trouble sleeping for a week?	☐	☐	☐
58. being tired for a week for no real reason?	☐	☐	☐

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59. How would you or the others who live here be likely to get to the nearest doctor in an emergency occurring here? Would it be:

- a) by having the doctor come here, or
b) by going to a doctor

If you were to go there, how would you go to the doctor's office in this emergency? Would it be by: (If different for winter code winter - W, summer - S)

- a) walking
b) private car, motorcycle, or truck
c) ambulance
d) bus, taxi, or other public transportation
e) bicycle
f) horse or other animal, or
g) skidoo
h) boat
i) any other means?
j) Don't know

60. About how long would it take to get to the nearest doctor? Would it be: (If different for specific period, code: winter - W, summer - S, night - N, day - D)

- a) within 15 minutes
b) more than 15 minutes but within half an hour
c) more than half an hour but within one hour, or
d) more than one hour?
e) Don't know

61. How long have you had the family doctor you have now?

62. Have you seen a/your doctor more often per year in the last two years than you did in the past, that is, before 1969?

No 1

Yes 2

63. Why?

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64. Do you think other people in this area went to see doctors less in the past, that is, before 1969 than they do now?

No 1
Yes 2

65. Why?

66. Could you tell me some of the things that Medicare pays for?

67. I will now read you a list of health services. Would you tell me which of these Medicare pays for: (exclude services mentioned in question 66 above). Code F, PF, DK, PT, T.

- a) Doctor care in the hospitals
- b) Doctor care in his office
- c) Prescriptions
- d) Hospital bills
- e) Dental care (office)
- f) Vaccination
- g) Optometrist or optician
- h) Chiropractor or naturopath

In 1969, the Manitoba Health Insurance Plan was introduced which pays most hospital and doctor bills.

Before this was introduced:

68. Did you have Manitoba Medical Service (Health Insurance)?

Yes Type H Type HC Type HcX
No (within hospital) (plus outside (plus x-ray
 hospital) tests, labs)
Don't know

What coverage did you have?

How many years did you have it? _____

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69. Did you have the United Health Plan (hospital, semi-private, ambulance)?

Yes ☐

No ☐

How many years did you have it? _____

70. Did you carry any other kind of Health or Medical Insurance?

Yes ☐

No ☐

What kind?

71. Do you have any other kind now?

We have now finished with the main part of the interview. However, we would appreciate your answering a few additional questions.

SECTION - DEMOGRAPHIC AND HOUSEHOLD DATA

1. What is your marital status?

1 Single, never married

2 Married

3 Widowed

4 Divorced

5 Legally separated

2. If married, widowed, divorced or separated:

Have you had any children?

No 1

Yes 2

If YES,

a) How many?

b) What are their ages?

c) How many are living at home with you?

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3. A. If MALE respondent: (If FEMALE respondent, go to "B" or "C")

a) What is your occupation? (Obtain as specific details as possible. If retired, list his main lifetime occupation).

b) For whom do you work?

If farmer,

a) What kind of farm (eg. grain, dairy, mixed...)

b) Number of acres farmed?

c) Owner, Operator or Rented?

d) Do you have a tractor? No 1 HP _____

Year _____ Yes 2 Combine? No 1

B. If FEMALE respondent, single: Yes 2

a) What is your occupation? (Obtain as specific details as possible. If retired, list the main lifetime occupation).

b) For whom do you work?

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C. If FEMALE respondent married, widowed, divorced, separated:

a) What is/was your husband's occupation?

b) For whom does/did he work?

If farmer,

a) What kind of farm?

b) Number of acres farmed?

c) Owner, Operator or Rented?

d) Do you have a tractor? No 1 HP _____
 Year _____ Yes 2 Combine? No 1
 Yes 2

4. How much formal education have you had?

- ___ None
 ___ Elementary (partial)
 ___ Elementary (completed grade 8)
 ___ High school (partial)
 ___ High school (completed grade 12)
 ___ University (partial)
 ___ University (completed)

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5. What is your religion?

- | | |
|---|---|
| ☐ None | ☐ Mennonite |
| ☐ Anglican | ☐ Pentacostal |
| ☐ Baptist | ☐ Presbyterian |
| ☐ Greek Orthodox | ☐ Roman Catholic |
| ☐ Jewish | ☐ Ukrainian Catholic |
| ☐ Lutheran | ☐ United Church |
| ☐ Other _____ | |

6. How long have you lived in this municipality? _____

7. Do you expect to move from here in the next:

- ☐ 1 year?
☐ 5 years?
☐ Ever?
☐ Never?

8. What language do you most often speak at home now?

9. What ethnic or cultural group did you or your ancestors belong to on coming to Canada (eg. British, Dutch, Ukrainian, French...)?

10. Do you belong to any clubs, groups or associations (including church groups)?

No 1
Yes 2

If YES,

a) Which ones?

b) Do you hold any office in any of them?

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c) About how many meetings of these groups do you attend in a month?

11. a) About how far is it from here to Winnipeg?

b) How many times a year do you go to Winnipeg?

c) What are your visits to Winnipeg chiefly for? (shopping, business, etc.)

S

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Time at this point of interview AM
 PM

[If no supplementary questionnaire and no additional interviews]: Thank you for giving us your time and help, we appreciate your assistance very much.

[If there is a supplementary questionnaire, go to it.]

[To be completed after the interview. The following questions refer to the WHO/ICS-MCU Study only.]

1. Length of interview: minutes

2. Was anyone other than the respondent present during any part of the interview? ☐ No [Go to 298]

☐ Yes

3. A. Who was it?

4. Why (was this person) (were these persons) there?

5. Did anyone other than the respondent contribute information? ☐ No

☐ Yes

6. Were there any distractions during the interview? ☐ No [Go to 301]

☐ Yes

7. Were these major distractions? ☐ No

☐ Yes

8. What were they?

9. Record your impressions of the interview.

10. Status of interview:

Completed ☐ [Go to 304]

Broken off ☐

Refused ☐

11. Why?

12. Date interview completed: