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## The Ethnological Use of a Health Questionnaire<sup>1</sup>

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*Introduction:* In the summer of 1962 the population of Grand Portage Chippewa Indian Reservation was brought under review to determine the possible utility of the Cornell Medical Index Health Questionnaire (CMI) in the examination of psychosocial patterns. The use of the questionnaire was part of an investigation of the cultural concepts of health and disease in Grand Portage community. The CMI, therefore, was administered in the context of an ethnological study, and it should be considered in this inquiry as an instrument for studying the socio-cultural dimensions of disease rather than as a method of gathering traditional epidemiological data.

This paper considers some of the findings and problems which arose during the use of a health questionnaire in Grand Portage reservation. The discussion may be divided into two sections: (1) a description of the instrument, some ethnological applications of the CMI from the literature, Grand Portage as an ethnological unit, results and comments; and (2) the CMI as a general concept of western culture, cross-cultural limitations to its use, and possible cross-cultural applications.

*Description of the Cornell Medical Index:* The CMI is a standardized medical history consisting of 195 questions in simple language which are answered by *Yes or No*. There are 144 items covering twelve organic systems and 51 items in six areas of mood and feeling, such as depression and anxiety. Sociological information obtained from the heading of the questionnaire included the respondent's age, sex, marital status, education, and occupation.

The accuracy and medical usefulness of responses to each of the questions as well as the accuracy and completeness of the diagnostic appraisals which are possible with the CMI were pretested successfully by the authors of the questionnaire. For example, in one New York study the CMI revealed the body system in which disease was subsequently proved in 94% of the cases, and physicians who analyzed the questionnaire identified 87% of the *specific* diseases. The CMI is statistically more reliable for the typical western physician than the usual informal, standardized medical history (Brodman *et al.*, Manual 1956:4, 5). The attention of the physician is focused on individual organ systems or on patterns of emotional disturbance by the distribution of *Yes* responses throughout either section. It should be remembered that the questionnaire collects data only on symptoms which the respondent perceives or wishes to acknowledge; asymptomatic diseases can be diagnosed only by physical and laboratory examinations. The chief value of a medical

history such as the CMI is that the completed questionnaire calls attention to organ systems that need careful diagnostic evaluation and/or to possible emotional disorder.

*Ethnological Applications of the CMI Reported in the Literature:* Cassel and Tyroler (1961:28-31) used the questionnaire to study a small southern community which was undergoing industrialization. They found a higher number of symptoms in workers who had recently moved into the town from rural areas than in second-generation workers whose fathers had preceded them in the industry. The authors postulated that the greater cultural incongruity experienced by the first generation workers led to more stress and resulted in higher scores in the CMI.

In an American military study, Sidney Croog found significantly higher CMI scores, that is, more symptoms, in the Jewish and Italian ethnic groups than among the Irish, British, and German soldiers (1961:66).

Scotch and Geiger emphasized the importance of integrating disease data with other social or cultural factors in order to discover possible intervening variables. Among the Zulu they found that the young people who believed in sorcery had higher total scores and higher psychological scores on the CMI than young people who did not hold this belief. There were higher psychological scores in all males as well as in urban residents of both sexes. The authors warned that a reporting of symptoms by a population and the meaning of those symptoms to that population are two very different things. The Scotch and Geiger study was the main stimulus for using the CMI at Grand Portage (1961:1,6,7,11).

Norman Chance's study of an Eskimo village revealed that a large majority of questions which related to the various organ systems were conceptually understandable to the Eskimo. However, he found that cultural factors influenced judgments pertaining to degree of impairment, to responses dealing with anxiety symptoms, and to those questions related to the decision-making process (1962:416).

Writers of the above papers all stated or implied that the CMI protocols must be interpreted within the cultural matrix from which they are taken, and that the CMI symptom responses cannot be interpreted literally as evidence of specific diseases.

*Grand Portage as an Ethnological Unit:* Grand Portage is the sixty-four square mile forested tip of northeastern Minnesota. "Tourism" is assuming great importance in this part of the Arrowhead Country. Grand Portage takes its name from the famous portage trail which connects the northwest fur areas with Lake Superior. The once-



flourishing trade revolving around fur, fish, and lumber has died out.

In the Grand Portage settlement of 220 people English is the community language, although Ojibwa is still spoken by a few of the residents and is often the family language. Surnames of members of the band are predominantly French reflecting the early marriages with voyageurs and fur traders.

The residents work irregularly as unskilled laborers. Their small average income from seasonal work is supplemented slightly by hunting, fishing, and trapping, and many depend on government subsidies.

The settlement may be typed as a "remnant group". As compared with its neighboring white community of Grand Marais, Grand Portage carries an old-fashioned rural White culture, has a few Indian traits, and represents a depressed social status (Witthoft 1961:74,75). It is relatively acculturated in its health practices and has adopted superficially a Christian religious orientation. There is still some evidence of aboriginal ideas in medicine and religion. Half the adults drink heavily and there is no significant planning or co-operative activity on a community wide basis. In this study Grand Portage is considered as a sample of the acculturated United States Chippewa Indian population whose traditional Chippewa culture has deteriorated under the conditions of the reservation (Hickerson 1962:88-90).

*Results and Comments:* (Cf. Note 2.) Of the 97 adult residents, six were absent during the summer's study, one was a deaf-mute, and ten refused to complete the CMI. This gives a response rate of 80 out of a possible 90, or 89%. It should be noted that the residents completed the questionnaires on an individual, voluntary basis and not as part of an institutional survey. Such conditions may have important effects on the answers to the CMI questions. The prime motivation for co-operation was based on the relationship with the anthropologist and on the assurance that their responses would be anonymous in the reports. A statistically reliable sample for a questionnaire of this type was obtained because the investigator lived in the village in a participant-observer role. (Babchuk 1962). In order to interpret the results of the paper more accurately and to use the data for comparison, it is important to understand that the method used in this research project is phenomenological. By a technique of "impression management" (Berreman 1962:11,12), one consciously attempts to see events through the eyes of the residents and to understand health attitudes within the total cultural setting.

The number of *Yes* responses ranged from 0 to 92 for the 195 questions. The median score for Grand Portagers was 25.5. Men scored 20.5, women 35.5. The CMI authors consider more than 25 *Yes* answers on the total questionnaire to be an indication of possible serious disorder. The median number of *Yes* responses on the 51 psychological questions was 4.0 for men, 7.5 for women, and 5.5 for the total group.

The significantly higher total scores of women over men in this relatively acculturated community is similar

to findings in several United States urban studies. As in the United States studies where the objectively observed disease rates for men and women are equal, the higher total CMI scores for Grand Portage women probably represents a similar tendency to "over-complain", rather than an actual difference in disease rate.

A medically significant emotional disturbance is suspected when there are more than 30 *Yes* responses in the total CMI or more than 3 *Yes* responses in the psychological section. The relatively high average score of 29.8 *Yeses* for Grand Portage residents may be an effect of social and personal disorganization in a culturally disadvantaged group. If the aboriginal belief system persists to any significant extent, one would expect a high CMI score because of the traditional concern of the Chippewa about illness. A comparison with data taken from the CMI instruction manual is shown below (Manual:13):

TABLE I

Sample	Per Cent of Individuals with 30 or More <i>Yes</i> Responses
Veteran's Administration Psychiatric Out Patients New York Hospital	76
Neurotic Patients Grand Portage Sample New York Hospital	61
General Patients New York	45
Ostensibly Healthy New York Hospital	36
Employee "Normals"	21
	4

*Comparison of CMI Findings with other Ethnographic Data:* With the assistance of several informants, certain information was organized quantitatively for trial comparisons with CMI scores in an effort to find some intervening variables. Each individual was given a rating in the following categories: amount of alcohol consumption, social adaptation, and socioeconomic status. Forty-two of the eighty CMI respondents were heavy or compulsive drinkers and thirty-eight drank moderate amounts of alcohol or less. The social adaptation scale is a two-level rank-order placement of the individuals according to their ability to adapt to the environment. Field observations and informant data permitted a similar ranking of the respondents into upper and lower socioeconomic categories. Correlation of these variables and the median age with median total scores and psychological scores on the CMI are shown in the following two-by-two tables:

The general conclusions from the comparisons of CMI score with certain ethnographic evidence is that the Grand Portage people respond to a disease concept questionnaire in a manner which is independent of age, drinking habits, socio economic status and their ability to adapt socially to their environment. Although women have significantly higher total CMI and psychological scores, no correlation with sex is found in a breakdown of the above ethnographic information.



TABLE II. Correlation With Total CMI Median Scores

N = 80 Variable	Less than 25.5 Yeses	More than 25.5 Yeses
Below median age	23	17
Above median age	17	23
Light drinking	18	20
Heavy drinking	22	20
Upper socio-economic	21	19
Lower socio-economic	19	21
Upper social adaptation	22	18
Lower social adaptation	18	22

TABLE III. Correlations With Psychological Median Scores

N = 80 Variable	Less than 5.5 Yeses	More than 5.5 Yeses
Below median age	19	21
Above median age	20	20
Light drinking	19	19
Heavy drinking	20	22
Upper socio-economic	20	20
Lower socio-economic	19	21
Upper social adaptation	20	20
Lower social adaptation	19	21

*CMI as a General Concept:* There are important theoretical questions concerning the validity of the CMI as an ethnological instrument in the study of a single culture and concerning its use for making cross-cultural comparisons of health attitudes. The basic assumption for the use of the CMI as an ethnological instrument rather than as a public health or epidemiological device is that diseases are conceptualized processes rather than absolutes. It is well-documented throughout medical literature that cultural concepts and attitudes are important in the generation of and reaction to biological disease processes. Ackerknecht has written: "Only in the abstract are disease and its treatment purely biological processes. Actually such facts as whether a person gets sick at all, what kind of disease he acquires, and what kind of treatment he receives, depends largely upon social factors. I have been particularly impressed . . . by the degree to which even the notion of disease itself depends rather on the decision of society than on objective facts" (1947:135-145). Separate items in the CMI questionnaire are expressions of abstract concepts. The whole instrument is a general concept and stems from the particular culture which created it. From the holistic point of view it is apparent that individuals or groups who complete the questionnaire are responding to a product shaped by basic American postulates as well as by the classification system of western medical science.

*Cross-cultural Limitations* The above description of the CMI as a western concept introduces some qualifications and a certain amount of caution when it is applied directly to a cross-cultural comparison of diseases:

- (1) two cultures may have diseases present of a different type and severity, but these differences may be cancelled by various attitudes toward the diseases in question. The questionnaire may there-

fore mismeasure the biological process as well as the reaction to it.

- (2) similarly, a disease state in one culture may be identical with that found by objective clinical assessment in another culture, however, the response on the questionnaire may be exaggerated in one setting, in terms of a western interpretation, and it may be minimized in another culture to the point of non-existence.
- (3) a typical western symptom or health idea may not exist at all in a culture. This would obviously lead to a confused answer which may be unwittingly interpreted as a neurotic response by a western interpreter.
- (4) assessment of points 1, 2, and 3 is possible only by a phenomenological participant-as-observer approach in the field.
- (5) certain disease states or ideas may exist in a culture which are not included or even conceived of in a western classification of disease, or a disease state may exist which is not conceptualized nor included in that culture's repertoire of diseases.
- (6) a particular symptom may be present but an accurate measure may not be possible because a linguistic or cultural irrelevance may lead to a misinterpretation or rejection of the question.
- (7) a large distortion may be produced on the completed questionnaire by the techniques of the administrator or by the motivations of the respondent.

*Cross-cultural Applications* Although the CMI is not reliable cross-culturally as an instrument which measures disease, a quantitative technique for uncovering clues to cultural attitudes about disease was devised. An analysis of parts of the CMI in terms of percentages of the total response eliminates some of the problems associated with evaluating the significance of an absolute number of *Yes responses*. For example, on the groups of questions related to fatigability, the Grand Portagers had a mean of .12 *Yeses* per person per item as compared to a mean of .15 *Yeses* per person per question on the whole index. A group of Nebraska patients studied by Arnhoff (1956:263-268) had a mean response of .40 *Yeses* per person per question in the fatigability section as compared to a mean response of .20 for the entire questionnaire. Use of this type of quantitative procedure clearly permits one to infer that the Grand Portage people relegate fatigue as a problem to a relatively low position as compared to the Nebraska patients. A cultural trait can be inferred from this technique without reference to other ethnographic data.

*Conclusion:* It was possible then by using the Cornell Medical Health Index Questionnaire to obtain some results which were helpful towards an understanding of health and disease attitudes at Grand Portage. Primarily, however, the investigation contributed to a theoretic formulation related to limitations and possible applications of a type of questionnaire which is based on western cultural concepts. A non-anthropological, non-phenom-



enological application of the instrument cross-culturally assumes that the definitions of disease and concepts and attitudes related to them are pan-humanly uniform.

#### NOTES

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<sup>2</sup>Complete information on the individual protocols and additional analytical tables may be found in an unpublished master's thesis: "The Ethnological Use of the Cornell Medical Index in an Ojibwa Indian Reservation Community" which is on file in the University of Minnesota Library.

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