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LABELING THE ALCOHOLIC: SOME PREDISPOSING FACTORS AND TREATMENT CONSEQUENCES

by
John Lewis Ford

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Social Work and Sociology)
in The University of Michigan
1976

Doctoral Committee:

Assistant Professor Steven T. Bossert, Co-Chairman
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DEDICATION

This is dedicated to my parents, John and Eugenia Ford, not only for their encouragement of my education, but especially for their imparting to me the belief that the most important goals in life are love and happiness.

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I am very grateful to Steven Bossert, Margaret Clay, Irwin Epstein, Wolfgang Grichting, and Albert Hermalin for their guidance while serving on my Dissertation Committee. My Co-Chairmen, Professors Bossert and Epstein, managed to strike a helpful balance between thought-provoking criticism and encouragement while advising me on this topic. Dr. Clay was extremely helpful in allowing me to use some of the data from one of her research projects and in getting me started on this topic. Ozzie Edwards also provided some helpful comments on several early drafts. I would also like to thank Nita Jager for editing and Jane Huling for typing this manuscript. Tom Smeads was a great help with some of the computer programming. I am especially grateful to my wife, Hilary, for her help, understanding and patience during the preparation of this study.

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CHAPTER I

INTRODUCTION

Overview

The purpose of the present study is to explore and describe how and to what extent certain characteristics of patients at a general hospital predispose them to a formal (written) diagnosis of alcoholism and to different treatment patterns. The patients studied are all potential participants in a group therapy program. These characteristics are alcoholic symptoms, age, sex, race, residence, marital status, insurance status, occupational status, the year of the first visit to the hospital, and the source of recorded information about the patient during the hospital intake interview. The question of whether physicians' professional orientations predispose these patients to a diagnosis of alcoholism and to different treatment patterns is also explored.

The lack of standardization in diagnosing alcoholics is fostered and maintained by the problem of defining alcoholism and the traditional roles of care-giving

institutions (like the general hospital) vis-a-vis the alcoholic. In the remainder of this chapter, both of these issues are briefly discussed.

Defining Alcoholism

At present, there is no precise, widely accepted definition of alcoholism[1] or of the alcoholic. In his review of the literature on the definition and etiology of alcoholism, Lipscomb[2] notes that various disciplines have focused on biochemistry,[3] learning theory,[4]

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[1]For a brief discussion of problems involved in defining alcoholism, see: J. Cross, Guide to Community Control of Alcoholism (New York: American Public Health Association, 1968), pp. 47-51. For a survey which demonstrates the lack of consensus about definitions of alcoholism, see: Wilma Knox, "Attitudes of Psychiatrists and Psychologists about Alcoholism," American Journal of Psychiatry 127, No. 12 (June 1971): 1175-79.

[2]Wendell Lipscomb, "Using an Epidemiologic Approach in Teaching about Alcoholism," American Public Health Association Project on Teaching about Alcoholism in Schools of Public Health, March 1968, p. 3.

[3]W. W. Westerfield and M. P. Schulman, "Some Biochemical Aspects of the Alcohol Problem," Quarterly Journal of Studies on Alcohol 20 (1959): 439-51; Roger J. Williams, "The Genetotropic Concept: Nutritional Deficiencies and Alcoholism," Annals of the New York Academy of Sciences 57 (1954): 794-811; Roger J. Williams, "Biochemical Individuality and Cellular Nutrition: Prime Factors in Alcoholism," Quarterly Journal of Studies on Alcohol 20 (1959): 452-62.

[4]J. J. Conger, "Reinforcement Theory and the Dynamics of Alcoholism," Quarterly Journal of Studies on

personality variables,[1] and social factors.[2] According to Pittman and Snyder, experts in such disciplines use three major themes in their definitions.

> They view the alcoholic in terms of the consequences of drinking for himself or for others--that is, the social, economic, and physical effects of indulgence in alcoholic beverages; the nature of his drinking behavior--that is, characterizations of frequency, time of day, presence of companions, and amount

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Alcohol 17 (1956): 296-305; E. Kepner, "Application of Learning Theory to the Etiology and Treatment of Alcoholism," Quarterly Journal of Studies on Alcohol 25 (1964): 279-91; R. J. Kingham, "Alcoholism and the Reinforcement Theory of Learning," Quarterly Journal of Studies on Alcohol 19 (1958): 320-30.

[1]"Clinical Study of Personality Correlates of Remission from Active Alcoholism," Quarterly Journal of Studies on Alcohol 20 (1959): 520-28; E. M. Jellinek, The Disease Concept of Alcoholism (New Haven, Connecticut: Hillhouse Press, 1960); S. Machover and F. S. Puzzo, "Clinical Investigation of the Alcoholic Personality," Quarterly Journal of Studies on Alcohol 20 (1959): 505-20; S. Machover, F. S. Puzzo, K. Machover, and F. Plumeau, "An Objective Study of Homosexuality in Alcoholism," Quarterly Journal of Studies on Alcohol 20 (1959): 528-43; Leonard Syme, "Personality Characteristics and the Alcoholic, A Critique of Current Studies," Quarterly Journal of Studies on Alcohol 18 (1957): 288-302; H. A. Witkin, S. A. Karp, and D. R. Goodenough, "Dependence in Alcoholics," Quarterly Journal of Studies on Alcohol 20 (1959): 493-504.

[2]H. A. Mulford, "Drinking and Deviant Behavior, U.S.A.," Quarterly Journal of Studies on Alcohol 25 (1964): 634-50; H. A. Mulford, "Measuring Public Acceptance of the Alcoholic as a Sick Person," Quarterly Journal of Studies on Alcohol 25 (1964): 314-23; David Pittman and Charles Snyder, eds., Society, Culture and Drinking Patterns (New York: John Wiley and Sons, Inc., 1962).

> ingested; and his response to alcohol--that is, the physiological and psychological reactions to the ingestion of alcoholic beverages.[1]

The following definition currently considered most authoritative[2] by the federal government's National Clearinghouse for Mental Health Information was proposed in 1958 by Mark Keller of the Center for Alcohol Studies at Rutgers University.

> Alcoholism is a chronic disease or disorder of behavior, characterized by repeated drinking of alcoholic beverages to an extent that exceeds customary dietary use or ordinary compliance with the social drinking customs of the community, and which interferes with the drinker's health, inter-personal relations or economic functioning.[3]

This definition accomplishes several things that others do not. For example, it takes into account all three themes identified by Pittman and Snyder; it recognizes

---

[1] Pittman and Snyder, eds., Society, Culture and Drinking Patterns, p. 309.

[2] National Institute of Mental Health, Public Information Branch, Alcohol and Alcoholism, Public Health Service Publication No. 1640, p. 6; this definition is very similar to that of the World Health Organization cited in World Health Organization Expert Committee on Mental Health, Alcoholism Subcommittee, World Health Organization Technical Report Series No. 48, August 1952; this definition is criticized by J. R. Seeley, "The World Health Organization Definition of Alcoholism," Quarterly Journal of Studies on Alcohol 20 (1959): 245-54.

[3] Mark Keller, "Understanding Alcoholism," Annals of the American Academy of Political and Social Science 315, supplement (1958): 1.

alcohol is, among other things, a food (in the sense that it is a source of calories and is often served with meals) that may have a valid dietary use depending on values which vary from community to community; and it suggests a distinction, which may also vary by social context, between acceptable social drinking and pathological social drinking. Although these features make the Keller definition somewhat more comprehensive and discriminating than others, it is rather difficult to use since valid and reliable indices to measure the "interference with the drinker's health, interpersonal relations or economic functioning" are not widely available or accepted.[1] Therefore, there is little agreement at what point "interference" due to excessive drinking occurs.[2]

Another definition, cited by Hoff, advances the chronic disease notion somewhat further by emphasizing three characteristics of alcoholism. First is loss of control over drinking alcohol. This is a key symptom with two manifestations: either the alcoholic is unable to refrain from drinking and/or he is unable to stop once started. Second, alcoholism causes physiological, psychological, domestic,

---

[1]For an operational definition of alcoholism, see: William McCord and Joan McCord, Origins of Alcoholism (Stanford: Stanford University Press, 1960), pp. 10-11.

[2]Lipscomb, "An Epidemiologic Approach in Teaching about Alcoholism," p. 1.

economic or social problems. Third, the alcoholic relies on alcohol as a solution to his problems.[1] So, in this sense, alcoholism implies a self-defeating cycle of behavior.[2]

Keller[3] and Krimmel feel this interpretation of "loss of control" overstates the case somewhat. According to Krimmel,

> Loss of control means the alcoholic has lost the ability to choose when and where he will get drunk and what will happen to him when he does drink. It does not mean he will get drunk every time he takes a drink and sometimes he will stop after one or two. On other occasions, the first drink will trigger a binge lasting for days or weeks.[4]

This "loss of control" concept has fostered a school of thought that contends that nonaddictive excessive drinking is neither alcoholism nor a disease.[5] Some of the

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[1]Ebbe Curtis Hoff, "The Etiology of Alcoholism," Quarterly Journal of Studies on Alcoholism 57, supplement 1 (1961).

[2]Mabel A. Elliott, Social Disorganization (New York, 1961), pp. 196-7.

[3]Mark Keller, "On the Loss of Control Phenomenon in Alcoholism," British Journal of Addictions 67 (1972): 153-166.

[4]Herman Krimmel, Alcoholism: Challenge for Social Work Education (New York Council on Social Work Education, 1971), p. 32.

[5]Jellinek, Disease Concept of Alcoholism, pp. 133-149.

proponents of this school argue that application of the disease label to nonaddicted excessive drinkers is quite inappropriate because of the implications of the label. This position is explored further in chapter 2. Using the notion of the "sick role" formulated by Parsons,[1] they contend that in the case of a legitimate disease the affected individual is not held responsible for his condition, the behavior associated with it,[2] or the concomitant problems in the family system that result from the condition. However, as Roman asserts,

> ...if the disease label is applied to behavior or to a condition which can in fact be ceased or reversed through an individual's assertion of self-control, and if the behavior in question is rewarding in its own right, then an excuse for the

---

[1]Talcott Parsons, The Social System (New York: The Free Press, 1951), pp. 428-79; Gordon, Role Theory and Illness (New Haven, Conn.: College and University Press, 1966).

[2]In 1966, two United States Circuit Courts of Appeal ruled chronic alcoholics cannot receive penalties for public drunkenness. In one instance, the court overturned the public drunkenness conviction of a North Carolina man and ruled that it is unconstitutional to punish an individual for acts he cannot control - Driver v. Hinnant, 243 F. Supp. 95 (E.D. No. Car., 1965), rev. 356 F. 2d 761 (C.A. 4, 1966); in the other instance, the court ruled that chronic alcoholism is not a crime and that proof of his condition is a defense against a drunkenness charge on the grounds that the defendant has lost the power of self-control in the use of alcohol; Easter v. District of Columbia (D.C. App., 1966) 209 A 2d 625; rev. 361 F 2d 50 (C.A. D.C., 1966).

> continuation of the behavior is provided through the disease concepts removal of personal responsibility for the condition.[1]

Another school of thought takes the position that alcoholism is a disease whether or not it is considered an addictive disorder. The Criteria Committee of the National Council on Alcoholism as well as such groups as the American College of Physicians, the American Medical Association, and the American Psychiatric Association are all in agreement that alcoholism should be considered a disease,[2] and they cite the definition of disease proposed by Dorland.

> A definite morbid process having a characteristic train of symptoms; it may effect the whole body or any of its parts, and its etiology, pathology, and prognosis may be known or unknown.[3]

Another school of thought takes the position that the drinking behavior of the nonaddicted excessive drinker (and perhaps even the addicted alcoholic) is a <u>symptom</u> of some underlying psychological or social problem for which

---

[1]Paul Roman, "The Impact of Alcoholism on the Family: A Sociological View," in <u>Health and the Family: A Medical-Sociological Analysis</u>, ed. Charles Crawford (New York: MacMillan Co., 1971), p. 220.

[2]Criteria Committee of the National Council on Alcoholism, "Criteria for the Diagnosis of Alcoholism," <u>American Journal of Psychiatry</u> 129 (August 1972): 2.

[3]<u>Dorland's Illustrated Medical Dictionary</u>, 24th ed. (Philadelphia, Pa.: W. B. Saunders Co., 1965), p. 428.

intoxication provides temporary relief.[1]

It is not within the scope of this thesis to resolve the real or apparent differences between these and other schools. As Keller states, "the definition of alcoholism has long been marked by uncertainty, conflict, and ambiguity."[2] This is reflected in the 1941 Bowman and Jellinek[3] collection of definitions and in Marconi's[4] more recent historical review of the concept of alcoholism. The crucial point stressed by Marvin Block is that such diversity of opinion contributes to the confusion in the minds of the public, professional care givers, and others directly or indirectly affected by alcohol problems about what

---

[1]E. M. Jellinek, "Phases of Alcohol Addiction," in Pittman and Snyder, eds., Society, Culture and Drinking Patterns, p. 357.

[2]Mark Keller, "The Definition of Alcoholism and the Estimation of Its Prevalence," in Pittman and Snyder, eds., Society, Culture and Drinking Patterns, p. 310.

[3]Karl Bowman and E. M. Jellinek, "Alcohol Addiction and Its Treatment," Quarterly Journal of Studies on Alcohol 2 (1941): 98-176.

[4]Juan Marconi, "The Concept of Alcoholism," Quarterly Journal of Studies on Alcohol 20 (1959): 704-26.

alcoholism is, and how it should be handled.[1] This has been demonstrated convincingly by Sterne and Pittman[2] and by Knox[3] in two studies that have examined social agencies' and health experts' conceptions of the alcoholic, the nature of alcoholism, and its etiology.

According to Selzer, this confusion leads to problems in the diagnosis and treatment of alcoholism. The confusion is compounded when alcoholics (as they often do) skillfully disguise their dependence on alcohol. Their denial of the condition may be supported or encouraged by physicians who minimize the importance of the problem by ascribing the symptoms to other causes.[4] Sometimes this is done because of technical difficulties in recognizing alcoholism or intoxication[5] and sometimes because a social

---

[1]Marvin Block, Alcohol and Alcoholism: Drinking and Dependence (Belmont: Wadsworth Publishing Company, 1970), p. 37.

[2]Muriel Sterne and David Pittman, "Concepts of Alcoholism Among Community Agency Personnel," paper presented at the Midwest Sociological Society, St. Louis, Missouri, April 1960.

[3]Knox, American Journal of Psychiatry 127.

[4]M. L. Selzer, "Problems Encountered in the Treatment of Alcoholism," University of Michigan Medical Center Journal 33 (1967): 58-63.

[5]A. A. Marinacci and C. B. Courville, "Alcohol Intoxication as a Misleading Element in Convulsive Episodes

bias interferes. For example, physicians may fail to diagnose alcoholism in alcoholics who are employed, members of intact families, and respectable looking because they don't fit the popular misconception of alcoholics as typically "Skid Row" types.[1]

The foregoing discussion has highlighted the need for a definition of alcoholism which can be used for the purposes of conceptualization, diagnosis, and treatment. In the present study, the following definition proposed by Lipscomb will be used.

> Alcoholism is a behavioral syndrome of unknown etiology, usually associated with intemperate drinking, which at some point in its development

---

and Unconscious States: Value of the EEG in Clarification of the Diagnosis," Electroencephalographic Clinical Neurophysiology 10 (1958): 360; E. Muller and R. B. Mirzaian, "Neurological Aspects of Hidden Alcoholism," Medizinische Welt (Stuttgart, Germany, 1964): 1097-102; F. Schleyer, "Differential Diagnosis of Cranial Trauma and Alcohol Effects: Results of Statistical Investigation," Monatsschrift Fuer Unfallheilkunde und Versicherungsmedizin 59 (Leipzig, 1956): 97-104; I. M. Zhukovitskii, "Errors in the Diagnosis of Alcohol Intoxication," Klinicheskaia Meditsina 40 (Moscow, 1962): 100-3; S. L. Levitin, "Differential Diagnosis of Diseases and Injuries in Persons in Intoxicated Conditions," Sovetskaia Meditsina 21, 3 (Moscow, 1957): 116-20.

[1]P. O'Hollaren and W. M. Wellman, "Hidden Alcoholics: Medical Implications of Uncovered Addiction," California Medicine 89 (1958): 129-31.

> is characterized by measurably increased risks of certain types of social and clinical morbidity and/or mortality.[1]

Several features of this definition deserve mention. First, like Keller's, it takes into account all three themes--"consequences of drinking," "drinking behavior," and "response to alcohol"--that Pittman and Snyder have identified as the ones most commonly used in the alcoholism literature. Second, this definition, unlike Keller's, emphasizes the developmental nature of alcoholism. This is particularly relevant to the present study. Third, the Lipscomb definition does not explicitly use the notions of dietary and social drinking customs (as the definition proposed by Keller does) to make the distinction between alcoholic and nonalcoholic drinking behavior. Instead, Lipscomb uses the concept of risk to make this distinction. That is, alcoholics have a greater risk "of certain types of social and clinical morbidity and/or mortality." This risk concept seems more suitable for the purposes of this study than Keller's notion of "interference due to excessive drinking" because it lends itself to measurement more adequately. (See Appendix A for a description of the measurement of alcoholic symptom levels used in the

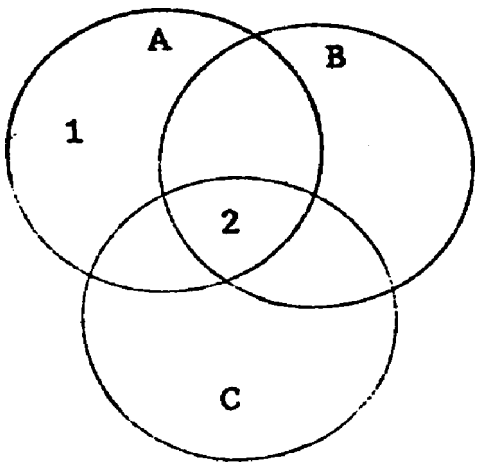
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[1]Lipscomb, "An Epidemiologic Approach in Teaching About Alcoholism," p. 3.

present study.)

This risk concept can be distinguished from the broader social criteria an individual may use when he applies the label "alcoholic" to another individual. That is, <u>being</u> an alcoholic entails an increased risk of exhibiting certain physical and mental symptoms. Such symptoms and/or extraneous characteristics (such as the drinker's sex, race, and occupational or insurance status) may predispose an individual to the alcoholic label. In the present study, considerable attention is given to identifying the extraneous characteristics that predispose patients to being labeled alcoholic by physicians in a general hospital. Diagramatically, this might be expressed as follows:

Figure 1. A Conceptual Distinction Between Patient Groups



A-Patients who have medical symptoms indicating alcoholism

B-Patients who have extraneous characteristics that predispose them to being given an alcoholic label

C-Those who are actually labeled alcoholics

That is, the analysis of data in the present study emphasizes the distinction between those patients represented by area 1 and those in area 2.

The Role of General Hospitals Vis-a-Vis the Alcoholic

In the United States, general hospitals traditionally have been reluctant to admit alcoholic patients for treatment, especially those who are intoxicated at the time of admission and those suffering from pain due to excessive alcohol intake.[1] Most of those that do accept patients for the treatment of alcoholism, relegate such patients to a lower priority (e.g., making them wait long periods to obtain inadequate services) than other patients suffering from less stigmatized disorders.[2] Many hospitals that reject patients for the treatment of alcoholism, will accept those with such physical pathologies resulting from alcoholism, as cirrhosis of the liver,

---

[1]Glasscote, Treatment of Alcoholism: A Study of Programs and Problems, p. 20.

[2]T. Plaut, Alcohol Problems: A Report to the Nation (New York: Cooperative Commission on the Study of Alcoholism, 1968), p. 20; The Christopher Smithers Foundation Inc., Guidelines for Admission of Alcoholics to Hospitals (New York: The Christopher Smithers Foundation Inc., 1968), p. 10.

polyneuritis, and gastrointestinal lesions.[1] Sometimes diagnoses like these are used rather than labeling the condition as alcoholism. A rationale for avoiding the use of this label is considered in chapter 2. However, according to the American Hospital Association's Advisory Committee on the Hospital Care of the Alcoholic,

> Admission of acute alcoholic patients under the guise of some other diagnosis...is a disservice to the patient, the hospital, and to society because it
> - Serves to perpetuate the misconception that alcoholism is not an illness;
> - Fortifies the patient's tendency to deny or rationalize his excessive drinking and does nothing to help him or his family face his real problem;
> - May result in inappropriate treatment or unfortunate delays in initiating emergency procedures because hospital personnel are unaware of the patient's alcoholism and are unprepared for the complications that arise from it; and,
> - Makes it difficult to gather reliable data on the extent of the problem of alcoholism.
>
> If all hospitals adopted a straightforward policy on admitting persons with a frank diagnosis of alcoholism, none of them would have to worry about being singled out as a "drunk tank" as some now seem to fear they would be.[2]

Whatever the diagnosis used to admit the alcoholic patient, attempts are seldom made by treatment personnel in

---

[1]Sidney Cahn, The Treatment of Alcoholism: An Evaluative Study (New York: Oxford University Press, 1970), p. 179.

[2]American Hospital Association, Who Cares About an Alcoholism Program in the General Hospital (Chicago: 1972), p. 9.

general hospitals to change the problematic drinking behavior or to provide adequate follow-up care after the acute, life-threatening condition has passed.[1]

Several interrelated factors have fostered and maintained these inadequacies. According to Schwartz, the shortage of alcoholism-treatment facilities and trained personnel; the lack of consensus about what alcoholism is, and how, where, and by whom it should be treated; the social and attitudinal distance between alcoholic patients and the hospitals' professional care givers; the unsubstantiated belief by hospital administrators and staff that alcoholic patients do not usually pay their bills; and the fear that their behavior is likely to disrupt the hospital,[2] have all contributed to the inadequacies of

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[1]Plaut, Alcohol Problems, A Report to the Nation, p. 20.

[2]Such beliefs have been partially discounted by several writers such as: R. C. Bates, "The Treatment of Alcoholism in a General Hospital," Michigan Medicine (June 1966): 445-9; M. Beck et al, A Study on the Non-segregated Hospitalization of Alcoholic Patients in a General Hospital, Monograph Series No. 7 (Chicago: American Hospital Association, 1959), p. 29; The Christopher Smithers Foundation, Inc., Guidelines for Admission of Alcoholics to Hospitals, p. 5.

care for the alcoholic in general hospitals.[1] As these factors are perceived by law enforcement and social agencies, their reluctance to refer alcoholics to such institutions for treatment is increased.[2]

Many writers[3] contend that the general hospital could be ideally suited for acute, intermediate, and long-term care of alcoholics because of the varied services, facilities, and personnel most of them possess. According to Catanzaro, a general-hospital-based alcoholism program could be a uniquely efficient and effective community case-finding and treatment resource, likely to be more economical than the duplicated services, facilities, and personnel that currently exist in the array of separate

---

[1]Michael M. Schwartz, A Systems Approach to the Design of a Comprehensive General-Hospital-Oriented Alcoholic Treatment Program, Masters Thesis (New York: The City University of New York, June 1972), pp. 18-19.

[2]Cahn, Treatment of Alcoholism, p. 179.

[3]M. E. Chafetz and H. W. Demone, Alcoholism and Society (New York: Oxford University Press, 1962); J. Guerin, New York City Alcoholism Study - A Program Analysis (New York Health Services Administration, January 1971), p. 34; W. Wilson et al, "An Alcoholism Program Tailored to Community Needs," Hospital and Community Psychiatry, vol. 21 (1970): 405; W. E. Barton, "Deficits in the Treatment of Alcoholism and Recommendations for Correction," American Journal of Psychiatry, vol. 124, 12 (June 1968): 103.

agencies in many communities.[1]

The increasing acceptance of alcoholics for treatment in general hospitals has been influenced by several factors such as the 1956 decision of the American Medical Association House of Delegates that

> ...alcoholic symptomatology and complications which occur in many personality disorders come within the scope of medical practice...there should be adequate facilities available as part of a hospital program for care of alcoholics...hospital staffs should be urged to accept these patients for treatment.[2]

This position has been supported by the American Psychiatric Association, the American Public Health Association, and the American Hospital Association.[3]

If increasing numbers of this country's estimated nine million alcohol abusers and alcoholics[4] are to be

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[1]R. J. Catanzaro, Alcoholism (Springfield: Charles C. Thomas, 1968).

[2]Plaut, Alcohol Problems: A Report to the Nation, pp. 193-98.

[3]Glasscote, The Treatment of Alcoholism: A Study of Programs and Problems, p. 1.

[4]First Special Report to the United States Congress on Alcohol and Health, DHEW Publication No. (HSM) 72-9099 (Washington, D.C., 1971), p. VI. It is important to note, this document describes alcohol as "the most abused drug in the United States. The extent of problems related to alcohol abuse and alcoholism is increasing and has reached major proportions."

treated in general hospitals as a matter of national social policy and individual institutional policy,[1] the question should be raised as to whether factors (such as insurance and occupational status) extraneous to alcoholism will influence its diagnosis and treatment in a general hospital; and, if so, what the nature and extent of this influence are.

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[1]Since 1970, the Joint Commission on Accreditation of Hospitals has been requiring hospitals to have a written plan for the treatment and/or referral of alcoholic patients. See Joint Commission on Accreditation of Hospitals, Accreditation Manual for Hospitals (Chicago: The Joint Commission on Accreditation of Hospitals, 1970), p. 25.

CHAPTER II

REVIEW OF THE LITERATURE

Theoretical Framework

The present study is primarily concerned with whether patient groups with symptoms of alcoholism are labeled alcoholic, and not with whether they should be. However, it is important to briefly consider some perspectives on deviance which encompass both of these concerns, because a sociological argument against the position which advocates the use of the alcoholic label (p. 15 in Chapter 1) should be presented.

Alcoholism can be considered as a form of deviant behavior because alcoholics, by each definition presented in Chapter 1, are individuals whose drinking behavior in some sense interferes with their performance of the social roles with which they are normally charged. Alcoholism as deviance implies violation of drinking norms to an extent that disrupts the individual, those in contact with the individual, or society. According to Cahalan, it should also be recognized that what is "deviant drinking" to the majority of people, may be socially approved within

subgroups in which the behavior is frequently practiced.[1]

Some contemporary sociologists have begun the development of several new perspectives on deviant behavior. Instead of the traditional focus on the who, what, where, when, and why of rule breaking as a synonym for deviance, these contemporary thinkers base their approach on a distinction between deviance and rule breaking. According to Becker, who created this distinction, the former refers only to persons who have been labeled as deviants while the latter refers to persons who violate social rules. It has been demonstrated that these two groups are not necessarily the same. Several studies based on self-reports indicate that people who engage in various kinds of deviant behavior, but who have not been identified as doing so, are different in certain respects from those who have been so identified correctly or incorrectly.[2] For

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[1]Don Cahalan, Problem Drinkers (San Francisco: Jossey-Bass Inc., 1970), p. 79.

[2]Harvey Marshall, "Hidden Deviance and the Labeling Approach: The Case for Drinking and Driving," Social Problems 19 (Spring 1972): 541-53; Lamar Empey and Maynard Erickson, "Hidden Deviance and Social Status," Social Forces, vol. 44 (June 1966): 546-54; Martin Gold, "Undetected Delinquent Behavior," Journal of Research in Crime and Delinquency, vol. 3 (January 1966): 27-46; F. Ivan Nye and James Short, "Socio-Economic Status and Delinquent Behavior," American Journal of Sociology, vol. 63 (January 1968): 381-89; Marvin Wolfgang, Patterns in Criminal Homicide (Philadelphia: Philadelphia University of Pennsylvania Press, 1958).

example, one group of employees identified by their employer as alcoholics may include the following subgroups: those who admit it and actually are, those who admit it and actually are not, those who do not admit it and actually are, and those who do not admit it and actually are not. Another group of employees (with completely different members), unidentified by the same employers as alcoholics, may also include these four subgroups.

Becker's distinction between deviates and rule breakers has led some sociologists to speculate about the process by which some individuals are selected from the rule-breaking population and labeled "deviant," and others are not. For example, the difference between the groups mentioned above may be that the first group consists of upper-echelon employees who are better able to avoid the surveillance of employers while the second group consists of lower-echelon workers who are not able to avoid surveillance. From this perspective, acquisition of the label is considered problematic[1] because, as Becker has stated, "deviance is <u>not</u> a quality of the act a person commits, but rather a consequence of the application by others of rules and sanctions..."[2] Considered in this light,

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[1]Marshall, <u>Social Problems</u>, p. 541.

[2]Howard Becker, <u>Outsiders: Studies in the Sociology of Deviance</u> (Glencoe, Ill.: London Free Press, 1963), p. 9.

> ...the (labeling) process may be said to be deviance-producing in that by labeling the individual, it may organize the responses of the community toward him as a stereotyped deviant. Whereas those around him might never have attained any consensus about his behavior before, each responding to him according to his individual relationship, public labeling establishes a common focus for uniform community responses which carve out a role for him. This lay process of retrospective selection of evidence confirming the label is similar to the process in some official agencies of building up a case history or dossier observed by Goffman: it is not a process by which evidence disconfirming the label is sought out and weighed against the confirming of the label, but rather one by which the confirming evidence alone is recorded.[1]

This suggests that the prevention of intervention by mandated labelers, such as professional care givers, could have favorable consequences for the alcoholic. Lowe has referred to this as the "benign neglect" hypothesis.[2] If pushed to its logical extreme, this suggests that if society ignores alcoholism, its prevalence will decrease. Alcoholism is considered to have come as a result of the drinker being pushed outside the "normal," social drinking community by the labeling of the very people who are trying to help him.

The foregoing theory of the effect of labeling has been challenged by Thorsell and Klemki who contend that

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[1]Eliot Friedson, "Disability as Social Deviance," in Sociology and Rehabilitation, ed. Marvin Sussman (Washington: American Sociological Association, 1965), pp. 85-6.

[2]George Lowe, "Race and the Treatment of Alcoholism in a Southern State," Social Problems 20 (Fall 1972): 249.

labeling may deter further deviance in some primary groups by creating pressures on deviates to conform to group norms.[1] However, Tittle argues that it is not clear whether, or under what conditions, labeling deters deviance, creates more deviance, or is irrelevant to further deviance.[2] He presents two reasons for this. First, what constitutes labeling is vague in the sense that it may involve "all diverse societal definitions of, and responses to behavior."[3] Furthermore,

> If one moves directly to measurement of collective definitions, he is forced to assess public opinion with respect to each individual case studied. This is a practical impossibility since there are no meaningful guidelines in labeling theory about the limits which define an audience. What constitutes a public for a given deviant act or potential deviant person is presently unknown.[4]

Second, the quality and quantity of the empirical research based on the foregoing theory of the effect of labeling has not been sufficient to enable straightforward descriptions, explanations, or predictions of the effects

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[1]Bernard Thorsell and Lloyd Klemki, "The Labeling Process: Reinforcement or Deterrent," Law and Society Review 6 (1972): 393.

[2]Charles R. Tittle, "Deterrents or Labeling?" Social Forces 53 (March 1975): 399-410.

[3]Edwin Schur, Labeling Deviant Behavior: Its Sociological Implications (New York: Harper & Row, 1971).

[4]Tittle, "Deterrents or Labeling?" p. 401.

of labeling on the future conduct of labelees.

In the present study, an attempt is made to deal with Tittle's first point. Physicians' recorded diagnoses are considered to be labels, although neither the diagnosis of alcoholism nor any other diagnoses are assumed to be negative classifications as some labeling theorists might. The prescribed treatment is considered to be the physician's reaction to the label. Thus, the present task is (1) to explore how and why labeling occurs, and (2) to describe a particular consequence of a specific label. However, in contrast to most contemporary research based on labeling theory, Tittle's second point is not addressed in the present study. That is, no attempt is made to answer the question of whether labeling creates or deters deviance by empirically assessing treatment outcomes or by establishing the effects of labeling on the drinking behavior of the labelees.

In the present study, it is assumed that a client career develops as a consequence of the acquisition of a particular diagnostic label. (A client career is defined as a client's pathway through a specific human-service organization, reflecting a chronology of dates and contacts with agency personnel.) This concept is often used in the literature on human-service organizations. For example,

Goffman's[1] description of mental patient careers, Roth's[2] study of tuberculosis patients, and Cicourel and Kitsuse's[3] analysis of high school students' careers all address themselves to a fundamental question which Hasenfeld offers: "How do organizational characteristics and exigencies, both internal and external, come to determine and constrain the fate of clients' careers above and beyond the particular and idiosyncratic needs or attributes of the clients?"[4] The professional orientations of the organization's mandated labelers are examples of such organizational characteristics. In the present study, attention is given to the extent to which physicians' professional orientations are related to their diagnostic and treatment decisions. Specialists and general practitioners are presumed to have different professional

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[1]Erving Goffman, Assylums: Essays on the Social Situations of Mental Patients and Other Inmates (New York: Doubleday and Co., 1961).

[2]Julius Roth, Timetables (Indianapolis: Bobbs-Merrill, 1963).

[3]Aaron Cicourel and John Kitsuse, The Educational Decision-Makers (Indianapolis: Bobbs-Merrill, 1963).

[4]Yeheskel Hasenfeld, "People Processing Organizations and Client Careers: A Study of Four Anti-Poverty Organizations" (Ph.D. dissertation, University of Michigan, 1970), p. 1.

orientations resulting from different kinds and amounts of training. One question that will be considered in this study is whether specialists, perhaps because of their advanced medical training, are more likely to recognize and record a formal diagnosis of alcoholism than general practitioners. The customary preference of physicians for a particular location for the treatment of their alcoholic patients is another dimension of their professional orientations. The hospital used in the present study, unlike others in the area, fosters and maintains a relatively formal ideology encouraging the diagnosis and treatment of alcoholism. So, another question to be considered in this study is whether those physicians who prefer the study site are more likely to recognize and record a formal diagnosis of alcoholism than those who prefer some other facility for treatment of their alcoholic patients.[1]

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[1]On their first visit to Hurley Hospital, about 55 percent of the total patient population was diagnosed by a physician with a preference other than Hurley Hospital. In spite of this other preference, they may have used Hurley Hospital for the treatment of these patients because this was more convenient for the patient or the physician, or other locations may have been financially or geographically inaccessible, or other locations may have been unacceptable to the patient, or the patient may have had an emergency which prevented the use of other facilities, or the patient may have had a medical condition other than alcoholism for which Hurley Hospital was preferred by the physician as a treatment location.

Criteria Used for Labeling

Conceivably, any client characteristic or behaviors perceived by agency personnel can become criterion for labeling.[1] The present study seeks to determine the extent to which patients are predisposed to certain diagnostic decisions by such extraneous personal characteristics as their sex, race, insurance coverage, or occupational status. A major focal point of the present study is the identification of criteria used for labeling potential group therapy program participants in a general hospital. For this purpose, a distinction between primary, secondary, and extraneous characteristics, similar to one proposed by Lefton[2] will be used. In this study, primary characteristics are alcoholic symptom levels. According to hospital policy, these characteristics are considered to be sufficient grounds for admission to the hospital and for making a diagnostic decision. Secondary characteristics refer to properties of patients (such as age or previous illnesses)

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[1]Louis Ferman and Roger Manela, "The Processing of Manpower Agency Clients." Memorandum prepared for the WIN Region V Conference on Research Utilization (September, 1972): 11 (mimeographed).

[2]Mark Lefton, "Client Characteristics and Structural Outcomes Toward the Specification of Linkages," in Organizations and Clients' Essays in the Sociology of Service, eds. William Rosengren and Mark Lefton (Columbus: Charles Merrill Publishers, 1970), p. 24.

that exacerbate the primary condition and/or limit treatment options. Extraneous characteristics of patients are those that may elicit biases in the labeler and, thereby, influence the diagnostic decisions. Characteristics such as race, sex, and occupational, marital, or insurance status may influence diagnostic decisions because of the labeler's cultural traditions, psychological predisposition, or lack of familiarity with primary characteristics.

Symptoms of Alcoholism

The Criteria Committee of the National Council on Alcoholism has recently established the first authoritative set of criteria for the diagnosis of alcoholism and delineate their goals as follows:

> Diagnostic criteria may serve several purposes. They may be used to ascertain the nature of a disease from a cluster of symptoms. This was not the main goal of the committee. They may be used to promote early detection and provide uniform nomenclature, both objects of this endeavor. Criteria may be used to prevent overdiagnosis. This is important because of the psychological, financial, legal, and therapeutic implications in a diagnosis of alcoholism for the life of the patient. Criteria may be set for treatment purposes. Beyond indicating that a need for treatment exists, the committee believes that any indication of different modalities of treatment, except in broad terms, is beyond the scope of its

> mandate. Criteria may be set for prognosis: at present the prognosis for alcoholism is obscure.[1]

The committee groups symptoms into the following categories: physiological, clinical, behavioral, psychological, and attitudinal. Physiological symptoms include:

> ...(1) dependence as manifested by a withdrawal syndrome when the intake of alcohol is interrupted or decreased without substitution of other sedation. ...(2) evidence of tolerance to the effects of alcohol. (There may be a decrease in previously high levels of tolerance late in the course.)... the behavioral effects of a given amount of alcohol vary greatly between alcoholic and nonalcoholic subjects.[2]

According to the committee, clinical symptoms include several "alcohol-associated illnesses"[3] that are generally brought on by the alcoholic's erratic eating habits and which typically produce protein and multiple vitamin deficiencies.[4] They also include the hepatic, neurological, and circulatory alcohol-associated illnesses that are caused directly by the harmful effects of the intake of excessive quantities of alcohol over the course of several

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[1]Criteria Committee, National Council on Alcoholism, "Criteria for the Diagnosis of Alcoholism," American Journal of Psychiatry 129 (August 1972): 2.

[2]Ibid., p. 4.

[3]Ibid.

[4]Aspects of Alcoholism 2 (Philadelphia: Lipencott Company, 1966), p. 10.

years rather than by nutritional deficits.

The committee also identifies various behavioral, psychological, and attitudinal symptoms that manifest themselves in vocational, social, and physical impairments. As one author has noted:

> Excessive, uncontrolled drinking does not leave the patient's psyche unshaken. The physician can expect to see personality and behavior patterns ranging from the mildly unusual to the wildly bizarre. Since alcohol is a drug that affects the central nervous system in a manner similar to that of a general anesthetic, it depresses higher inhibitory control mechanisms, thus releases inhibitions, and affects reasoning, judgment, memory and control.[1]

Physical examinations, patients' histories, and analysis of laboratory tests are some of the methods and techniques used by diagnosticians to recognize these symptoms. It is not within the scope of this thesis to describe these methods or techniques.

In a study of the attitudes of physicians at Massachusetts General Hospital, Blane, Overton, and Chafetz found that the physicians focus primarily on organic symptoms and physical problems and that psychosocial conditions, such as alcoholism, are not given as much consideration.[2]

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[1] Ibid., p. 11.

[2] I. Wolf, M. E. Chafetz, H. T. Blane, and M. J. Hill, "Social Factors in the Diagnosis of Alcoholism II: Attitudes of Physicians," Quarterly Journal of Studies on Alcoholism 26 (1965): 72-9.

Thus, they conclude that physicians do not generally view the alcoholic as a person with an illness with medical, psychological, and social concomitants. What typically occurs is that a diagnosis of a particular physical or systemic disorder is given for a person who also happens to be an alcoholic.

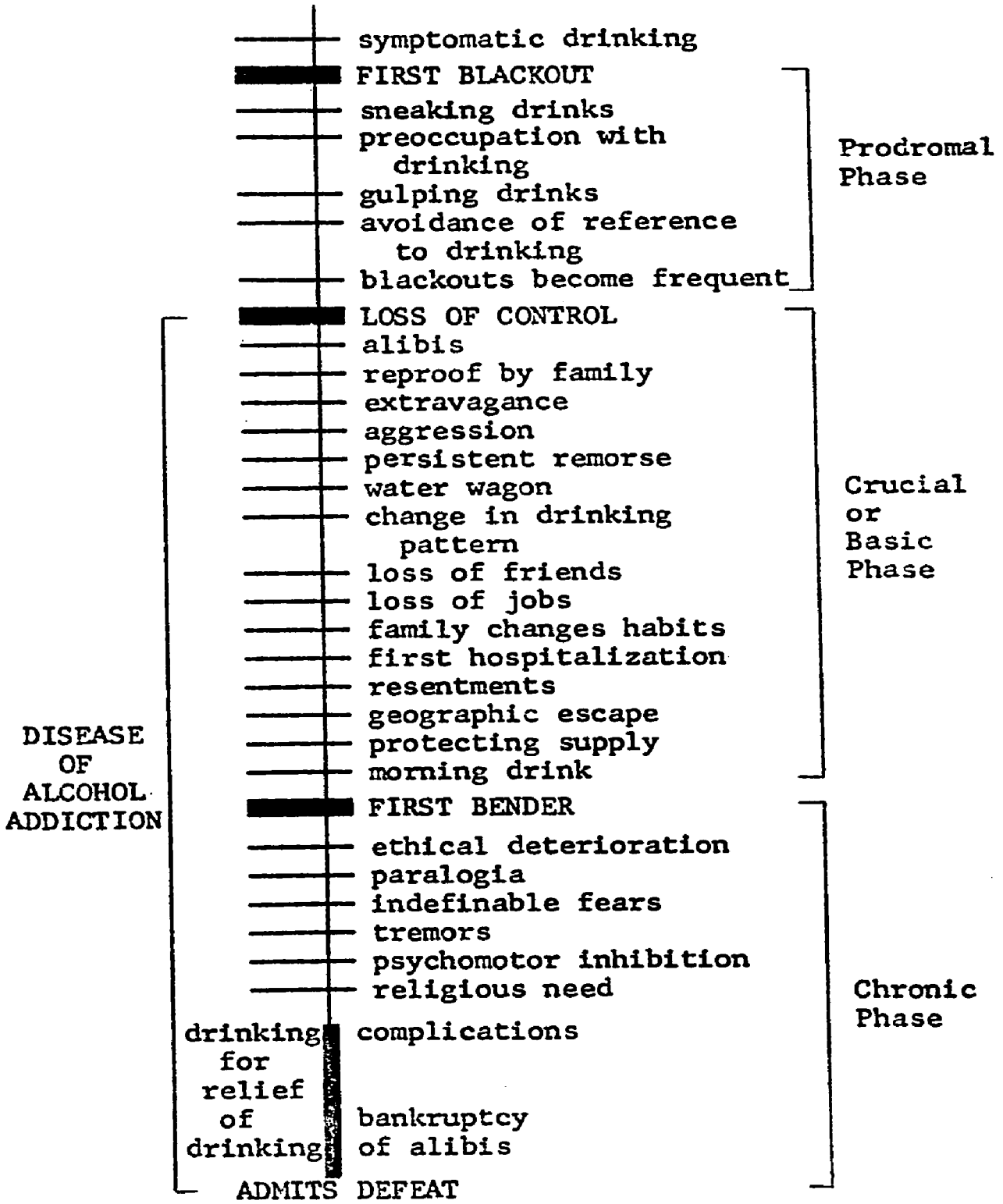
In addition to identifying categories of symptoms, the committee also concerned itself with the order in which symptoms may or may not occur. Twelve of the thirteen committee members contend that alcoholism progresses through phases and stages over the course of the individual's drinking history.[1] Such phases and stages were first reported in the literature by E. M. Jellinek in 1946.[2] In spite of the methodological problems that Jellinek and others recognize, the committee seems to accept the basic outline of the Jellinek construct. According to this construct, a typical drinking history of an "average" alcoholic might be represented diagramatically as shown in Figure 2.

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[1]Criteria Committee, American Journal on Psychiatry 129, p. 3.

[2]E. M. Jellinek, "Phases in the Drinking History of Alcoholics: Analysis of a Survey Conducted by the Official Organ of Alcoholics Anonymous," Quarterly Journal of Studies on Alcohol 7 (1946): 1-88.

Figure 2. The Phases of Alcoholism[1]



[1]Max Hayman, Alcoholism: Mechanism and Management (Springfield: Charles C. Thomas, 1966), p. 97.

Jellinek points out that

> ...not all symptoms shown in the diagram occur necessarily in all addicts, nor do they occur in every addict in the same sequence...the sequences of the symptoms within the phases are characteristic, however, of the great majority of alcohol addicts and represent what may be called the average trend.[1]

Age and Symptoms

It is important to note that Jellinek computed the mean onset ages of nine of the above-mentioned symptoms for a sample of Alcoholic Anonymous members. However, there was such wide variation in these means, they had little individual value. When Trice and Wahl tried "to determine whether symptom data can be analyzed in such a way that clustering and individual variations would be more adequately revealed,"[2] they found (by use of the statistical method of rank comparisons), among other things, that

> There is apparently more clustering of symptoms than has been previously assumed. Rather than a steady progression from individual symptom to individual symptom, the present findings strongly suggest that

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[1]E. M. Jellinek, "Phases of Alcohol Addiction," in Society, Culture and Drinking Patterns, eds. David Pittman and Charles Snyder (New York: John Wiley & Sons, 1962), p. 359.

[2]Harrison Trice and Richard Wahl, "A Rank Order Analysis of the Symptoms of Alcoholism," in Society, Culture and Drinking Patterns, eds. Pittman and Snyder (New York: John Wiley & Sons, 1962), p. 370.

> alcoholism is a process of transition from one cluster of symptoms that occur in close conjunction with each other to a new cluster...Also, if the concept of a disease process in alcoholism is valid, only the earliest or the most advanced stages of the process are reliably indicated by the symptom studies herein.[1]

That is, the standard error of the mean onset ages for the intermediate symptoms was too large to be meaningful.

Both the Jellinek and the Trice and Wahl data are relevant to the present study because both studies demonstrate a simple but important point: as alcoholics become older, their alcoholic symptoms become more easily recognizable. Perhaps this is part of the reason why it is unusual for a young person to be labeled "alcoholic." Of course, there are other reasons. As Lipscomb explains, in our culture, young people generally pass through a period of character formation or relative powerlessness and concomitant irresponsibility. Consequently, excessive drinking among youth is often passed off as "normal adolescent rebellion," or "a transitory stage in the development toward adulthood."[2]

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[1] Ibid., p. 381.

[2] Wendell Lipscomb, "Alcoholism - A Labeling Concept," paper presented at the California Department of Rehabilitation Conference on Alcohol Education and Prevention, Sacremento, California, June 1970, p. 6.

The Skid Row Myth

A study of a public clinic conducted by Schmidt, Smart, and Moss in 1967 demonstrates a higher frequency of the diagnosis of acute and chronic alcoholic psychosis among lower-class patients. These researchers also found nonpsychiatric medical diagnosis more prevalent among higher-class patients, presumably because higher-class patients were more frequently referred to the clinic by private physicians who were more perceptive of such disorders than the nonphysicians in public institutions who typically referred lower-class patients to the clinic.[1]

The Schmidt, Smart, and Moss study showed no specific class differences among the total alcoholic patient sample in recommendations for admission to inpatient services, for admission to a general hospital, or for outside medical attention. But there were class differences in the frequency of recommendations for "talking" therapies vs. drug therapies, with lower-class patients receiving more of the latter. According to Schmidt, Smart, and Moss,

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[1] W. Schmidt, R. Smart, and M. Moss, "Social Class and Treatment of Alcoholism," Brookside Monograph of the Addiction Research Foundation 7 (Toronto: University of Toronto Press, 1968), p. 86.

"recommended treatments failed to follow established diagnosis, but did follow definite social class lines."[1]

Blane, Overton, and Chafetz found, in their Massachusetts General Hospital study that male alcoholic patients were more likely to receive a diagnosis of alcoholism if they were poorly clothed, unshaven, separated from their family, unemployed, or in trouble with the police. Those who were less likely to receive the correct diagnosis of alcoholism were well groomed, living with their spouses, employed, without police records, and holders of health insurance coverage.[2] Their findings seem to support their hypothesis that alcoholics not diagnosed as such show a lower incidence of social characteristics associated with the stereotype of the Skid Row alcoholic derelict.

According to Mann, the biggest myth about alcoholism is

> ...that the Skid Row derelict is the alcoholic, and if someone has a job, a home, and a family, he can't

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[1] W. Schmidt, R. Smart, and M. Moss, "Social Class and the Treatment of Alcoholism," Brookside Monograph of the Addiction Research Foundation 7 (Toronto: University of Toronto Press, 1968), p. 87.

[2] H. T. Blane, W. F. Overton, and M. E. Chafetz, "Social Factors in the Diagnosis of Alcoholism I Characteristics of the Patient," Quarterly Journal of Studies on Alcohol 24 (1963): 640.

> be one. This comforting belief means to most of those who hold it, that 'it can't be me, or mine,' since it is confined to Skid Row areas.[1]

Mann suggests that professionals and the public continue to subscribe to this myth mainly because alcoholism on Skid Row is in the open and can be seen by all, whereas higher-class alcoholics are more concealed by their environments.[2] However, several studies have shown that such appearances are misleading. There is considerable evidence indicating that most excessive drinkers are not Skid Row inhabitants.[3] According to the National Opinion Research Center of the University of Chicago, only about 3 percent of all alcoholics live on Skid Row.[4]

The crucial point is that the Skid Row Myth is partly responsible for the fact that opportunities for early detection of alcoholism are frequently missed in hospitals

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[1]Marty Mann, Marty Mann Answers Your Questions About Drinking and Alcoholism (New York: Holt Rinehart & Winston, 1970), p. 17.

[2]Ibid., p. 59.

[3]R. Gordon Bell, "The Role of Alcohol in Community Life," Community Factors in Alcohol Education (Montpelier, Vermont, 1962).

[4]Marvin A. Block, Alcoholism: Its Facets and Phases (New York: The John Day Co., 1962), p. 133.

and other health care settings. Blane and others point out that

> ...until physician attitudes and knowledge about alcoholism undergo change, many alcoholics and pre-alcoholics will not receive treatment until the disease is so far advanced that treatment becomes highly complicated, therapeutic goals limited, and necessary resources extremely limited and expensive.[1]

Summary

There is a lack of consensus about what alcoholism is and how it should be handled. Because of this and the social stigma attached to alcoholism, physicians tend to formally label alcoholic and prealcoholic patients whose characteristics resemble those of Skid Row inhabitants as alcoholics. However, alcoholic and prealcoholic patients with higher social standing tend not to be labeled alcoholic as frequently. Both diagnosis and treatment involve the use of extraneous criteria that labelers may use. The present study will explore (1) the extent to which extraneous patient characteristics influence the risk of being labeled alcoholic, (2) the treatment consequences of the label, and (3) the relationship of the diagnosticians' professional orientation to the diagnosis and treatment of

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[1]Blane, Overton, and Chafetz, Quarterly Journal of Studies on Alcohol 24, p. 659.

alcoholic and prealcoholic patients. This study is carried out in a rather unusual general hospital setting in the hope that some of the implications of the alcoholic label, for the patient, the physician, the hospital, and the community will be clarified.

CHAPTER III

METHODOLOGY

The Setting

In 1960 the city of Flint, Michigan, was the largest population center (196,940) in Genessee County (374,313).[1] According to the estimates in table 3.1, between 1956 and 1963, the rate of increase in the number of alcoholics seems to have been greater in the city (about 62 percent) and the county (about 70 percent) than in the state. These differences may be partially explained by different patterns of migration, in and out, by alcoholics; real changes in individual drinking habits; or differences among the three areas in the reliability and validity of the data on which these estimates are based.

There may have been seven times as many male alcoholics as female alcoholics in all three locations in both years. Several theories suggest these findings may

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[1]U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, Vol. 1, Part 24 (Washington, D.C.: U.S. Government Printing Office, 1963), p. 24-16.

TABLE 3.1

ESTIMATED[1] NUMBER OF ALCOHOLICS BY SEX IN THE CITY OF FLINT, GENESSEE COUNTY, AND THE STATE OF MICHIGAN FOR 1956 AND 1963

YEAR		FLINT		GENESSEE COUNTY		STATE OF MICHIGAN
1956	(12.5/87.5)[2]	4,800[3]	(14.3/85.7)	6,300[3]	(14.4/85.6)	187,400[3]
1963	(15.4/84.6)	7,800[4]	(15.9/84.1)	10,700[4]	(15.5/84.5)	224,300[4]

[1]Estimates are based on E. M. Jellineck's original formula: $A = \frac{PD}{K} R$ where A represents the estimated number of chronic and non-chronic alcoholics, P represents a constant percentage of individuals who die of cirrhosis because of alcoholism (62.8 percent for males and 21.6 percent for females), D represents the number of reported deaths from cirrhosis in a given year, K represents a constant percentage (69 percent) of all chronic alcoholics who die of cirrhosis, and R represents a presumed ratio (4 to 1) of all alcoholics to chronic alcoholics in a given place and form. For a discussion of how the constants, P, K and R were derived, see Norman Jolliffee and E. M. Jellineck, "Vitamin Deficiencies and Liver Cirrhosis in Alcoholics, Part VII: Cirrhosis of the Liver," Quarterly Journal of Studies on Alcohol 2 (1941): 544-583.

[2]Numbers in parentheses represent the percentage of the total that were females and males respectively.

[3]The "D" statistics for these estimates are in Michigan Department of Health, Michigan Health Statistics: Annual Statistical Report, 1955-1956 (Lansing: Division of Disease Control, Records and Statistics, Michigan Department of Health, 1956), p. 102 and p. 126.

[4]The "D" statistics for these estimates are in Michigan Department of Health, Michigan Health Statistics: Annual Statistical Report, 1963 (Lansing: Statistical Methods Section, Michigan Department of Health, 1963), p. 31 and p. 60.

reflect differences in society's role expectations for men and women and sex differences in the social-psychological functions served by drinking.[1]

Hurley Hospital is in the city of Flint. Since 1936 this private, general hospital has routinely admitted alcoholics in addition to patients with various other hospital health care needs. In 1956 a formal alcoholism program was inaugurated when the Group Therapy Unit was established to plan, develop, and provide treatment services to supplement the medical management of hospitalized alcoholics.[2] In 1957, the Unit became the Department of Group Therapy administratively controlled by the hospital director and under the clinical supervision of the medical director. As a result, increasing numbers of the hospital's staff became aware of the program.

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[1]For example, see David McClelland, The Drinking Man, William McCord and Joan McCord, Origins of Alcoholism, V.L. Lindbeck, "The Woman Alcoholic, A Review of the Literature." The International Journal of the Addictions. Vol. 3 (2): pp. 567-580, Edith Lisansky. "Alcoholism in Women: Social and Psychological Concomitants. I. Social History Data." Quarterly Journal of Studies on Alcohol. Vol. 18: pp. 586-662. Dec. 1957, and M. Schuckit. "The Alcoholic Woman: A Literature Review." Psychiatry in Medicine. Vol. 3(1): pp. 37-43. Jan., 1972.

[2]William L. Keaton, "The Hurley Plan: Medical Management of Alcoholics--A Dynamic Treatment Modality," a paper presented at the Eighth Annual West Virginia School on Alcohol and Drug Abuse Studies, June 22, 1972, p. 5.

This hospital's policy on alcoholism is unique in several respects. First, alcoholism is operationally defined as a "chronic and progressive disease" with recognizeable symptoms.[1] Education and training opportunities are readily available at the hospital to aid patient and staff recognition of these symptoms in their early stage of development.[2] Second, the diagnosis, treatment, and rehabilitation of alcoholics is considered to be a medical responsibility with physicians playing the major role.[3] A 1968 survey of the Genesee County Medical Society showed that 43 percent of all local physicians who responded and 100 percent of the local responding physicians who use Hurley Hospital regularly for the treatment of their alcoholic patients, accept this responsibility.[4] Third, the provision of services (such as radiological, technical, educational, nursing, social, dietary, therapeutic, and administrative), facilities (such as technical equipment, hospital beds, wards, and other physical equipment), and

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[1]Keaton, p. 2.

[2]Ibid., p. 20.

[3]Ibid., p. 2.

[4]Ibid., p. 3.

personnel (for the diagnosis and treatment of alcoholics) is considered to be the responsibility of the hospital.[1]

Until 1961, alcoholics admitted to this 716-bed hospital could only be housed on the psychiatric ward. Since then, changes in formal and informal hospital policies and practices have made it possible for alcoholics to be housed on any of the hospital wards which best meets a patient's needs.[2]

Study Design

In chapter 4, relationships between certain secondary and extraneous patient characteristics (age, sex, race, occupational status, marital status, and hospital insurance status) and primary patient characteristics (alcoholic symptom levels) are described. The extent to which secondary and extraneous characteristics are related to a diagnosis of alcoholism is also described. (See figure 3.)

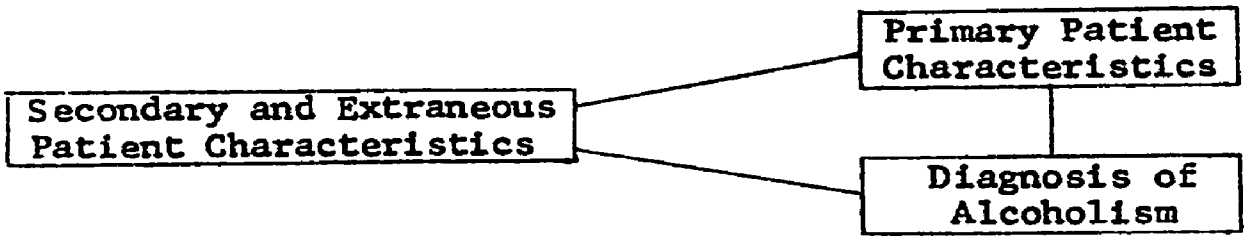
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[1]Keaton, pp. 4-5.

[2]Ibid., p. 7.

Figure 3

Variations in Primary Patient Characteristics in the Likelihood of an Alcoholic Diagnosis on the First Hospital Visit

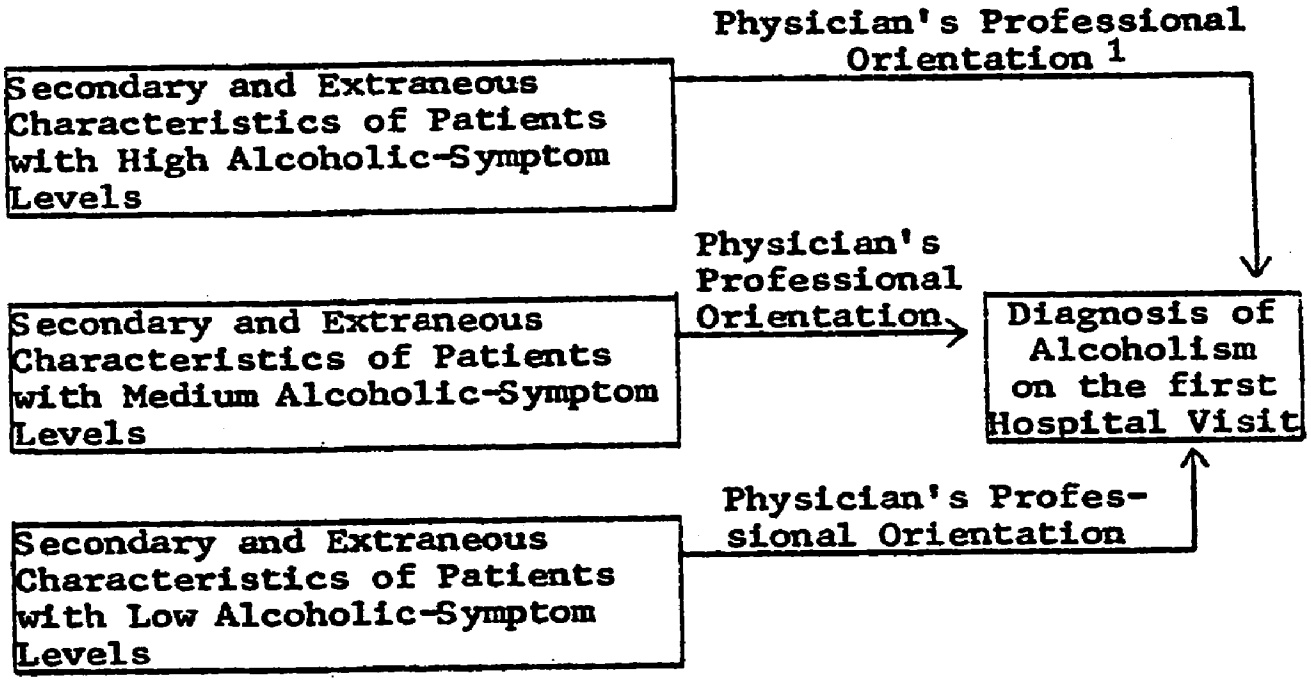


In chapter 5, the extent to which secondary and extraneous characteristics predispose patients to an alcoholism label is described by holding alcoholic symptom levels constant. The variation in diagnostic patterns according to differences in the professional orientations of physicians is also described by holding recorded alcoholic symptom levels constant. (See figure 4.)

Labeling theory, discussed in chapter 2, suggests several propositions about patients' careers in the hospital. First, physicians use some criteria for the diagnosis of alcoholism. Second, these criteria may be influenced, to some extent, by extraneous patient characteristics. Third, these criteria are used to distinguish a diagnosis of alcoholism from some other diagnosis on the first visit to the hospital. Fourth, patients who are diagnosed alcoholics are generally given a different pattern of

Figure 4

Characteristics and Orientations Which Predispose Patients to Being Labeled Alcoholic on the First Hospital Visit



treatment from that given to patients who are not diagnosed alcoholics. Fifth, a similar process of diagnosis and treatment occurs on subsequent patient visits to the hospital.

In chapter 5, a discriminant analysis is used to compare patients' first, second, and third visits to the

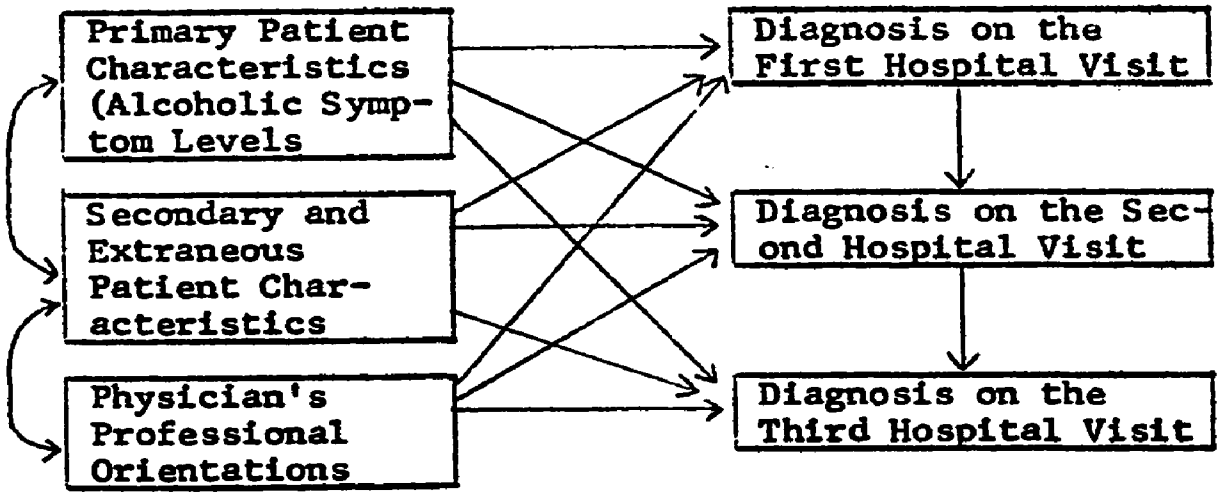
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[1]This dimension distinguishes between specialist and general practitioner. Also, this dimension distinguishes between those who prefer the hospital study site for the treatment of their alcoholic patients and those who prefer some other location.

hospital in order to determine temporal changes in the magnitude of the relationships represented in figure 4. Although some patients visited the hospital only once, others visited as many as forty times during the study period.[1] This discriminant analysis involves presentation of a model for predicting the diagnosis of alcoholism on successive visits to the hospital. (See figure 5.)

Figure 5

Characteristics and Orientations Which Predispose Patients to Being Labeled Alcoholic on the First Three Hospital Visits

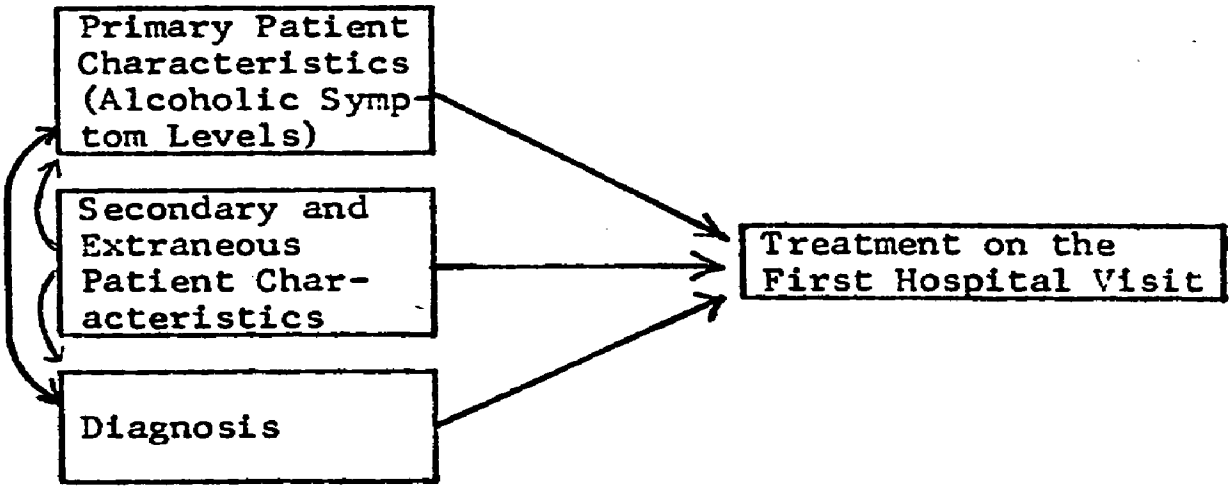


[1]See Appendix B, table 8.2. On each successive visit, certain patient characteristics, like age, change for all patients. Other characteristics, like insurance status, marital status, employment status, or symptom level, may change for some and not for others. Some characteristics, like race and sex, do not change.

In chapter 6, the central question is the extent to which patients' primary and secondary and extraneous characteristics predispose them to different treatment patterns. (See figure 6.)

Figure 6

Diagnostic and Other Characteristics Which Predispose Patients to Different Kinds of Treatment on the First Hospital Visit

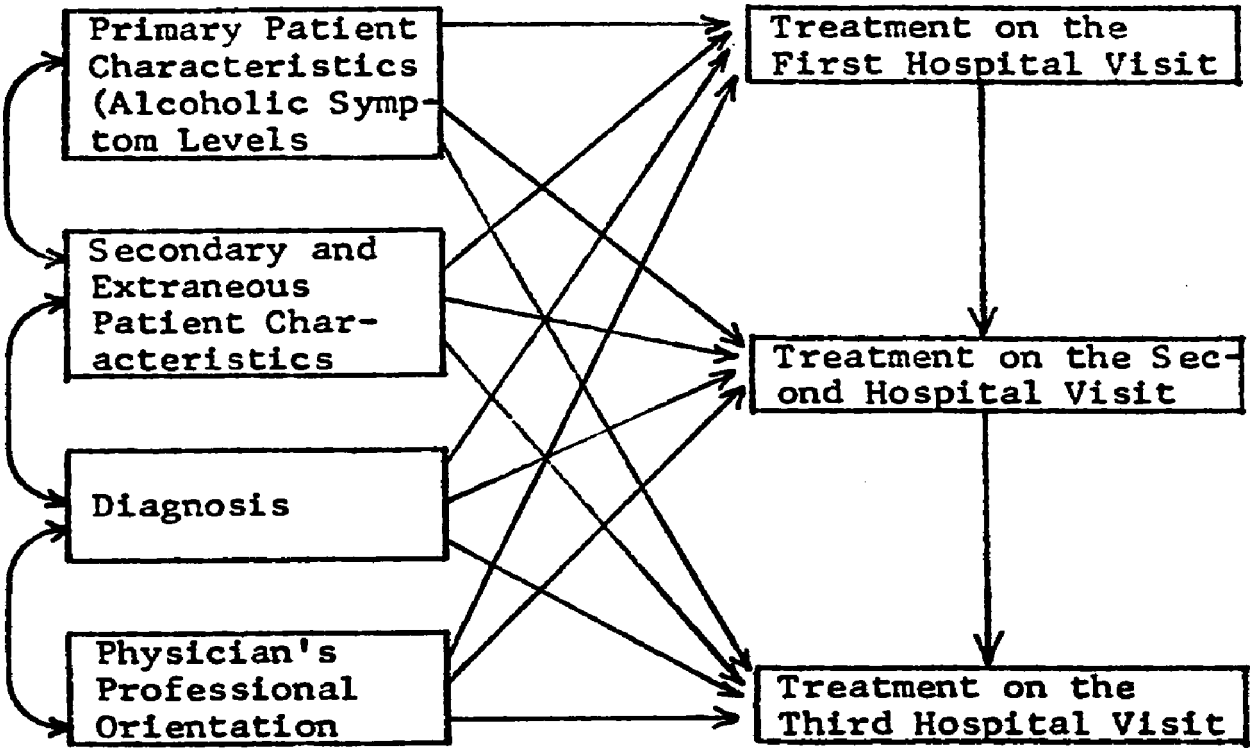


A discriminant analysis is also used in chapter 6 to compare patients' first, second, and third hospital visits in order to determine temporal changes in the magnitude of the relationships represented in figure 6 while taking into account the relationship between the physicians' professional orientation and treatment patterns.

This involves presentation of a model for predicting the kind of treatment to which patients are referred on successive visits to the hospital. (See figure 7.)

Figure 7

Characteristics and Orientations Which Predispose Patients to Different Kinds of Treatment on the First Three Hospital Visits



The units of analysis are the first, second, and third hospital visit for each patient. These units seem to be most appropriate for the purpose of the present study for several reasons. First, these units serve as

a control for the effects of different amounts of patient experience with the hospital's diagnostic process. This process might be influenced by the accumulation of information (whether primary, secondary, or extraneous) about the patient. For example, after several hospitalizations, the patient may establish a reputation among hospital staff as an alcoholic or as a nonalcoholic. This may directly or indirectly influence the physician's diagnosis. Also, after several visits to the hospital, a pattern of alcoholic symptoms may become increasingly clear from the medical records of repeated physical examinations, laboratory tests, and patient histories. This could directly influence the diagnosis. Second, the dependent variable in this study is the physician's diagnostic decision. The only appropriate units of analysis that correspond to these decisions are the separate hospital visits since values of the major independent variables--symptoms, age, occupation, insurance status--may change on subsequent visits. No more than three visits are examined because the number of patients having more visits was considered too small for analysis to be statistically meaningful.

The physician's professional orientation and all of these patient characteristics, except alcoholic symptoms, are pseudoindependent variables in the sense

that Campbell and Fiske[1] and Horn[2] discuss them. As Wanberg and Horn put it, "they do not provide a strong inference of cause...but they give indications of where causal relationships might be expected to be found."[3] The purpose of using them in the present study is to provide a descriptive framework for identifying potential participants in the group therapy process who were differentially predisposed to being labeled alcoholic and with different treatment patterns.

Data Collection Procedures

The data for the present study comes from a larger research project,[4] begun in 1965 under the direction of Margaret Clay. The objectives of the larger

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[1]D. T. Campbell and D. W. Fiske, "Convenient and Discriminant Validation by the Multitrait-Multimethod Matrix," Psychological Bulletin, vol. 56 (1959): 81-105.

[2]John L. Horn, Concepts of Methods of Correlational Analysis (New York: Holt, Rinehart & Winston, 1973), Chapter 1.

[3]Kenneth W. Wanberg and John L. Horn, "Alcoholism Syndromes Related to Sociological Classifications," The International Journal of Addictions, vol. 8 (1973): 99-120.

[4]The larger project was funded by the Michigan Department of Public Health Alcoholism Program and two private foundations in Flint.

project were to evaluate the effectiveness of the Hurley Hospital alcoholism program, to identify aspects of the program important to patient recovery that would be useful for staff training and development, and to develop an evaluative model for other alcoholism treatment resources in Michigan.[1]

Patient histories and other data for medical records are routinely collected by the hospital's admitting personnel at the time of admission or before the patient is discharged. Pertinent information recorded on patients' charts by physicians, nurses, and other hospital staff members is also compiled and added to these records during each hospital stay. This chronology of patient contacts with the hospital staff also includes significant life events experienced by the patient outside the hospital. The records for each admission contain the physician's diagnosis; patient's chief complaint; medications; whether group therapy was prescribed; special characteristics of the illness; patient's drinking pattern; current marital, occupational and insurance status; the length of stay; discharge date and circumstances; and

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[1]Margaret L. Clay, "Historical Background of the Chronological Study of Chronic Alcoholics," in Lyle D. Filkins, et al., Alcohol Abuse and Traffic Safety: A Study of Fatalities, DWI Offenders, Alcoholics, and Court-Related Treatment Approaches, Ann Arbor, 1970, pp. 286-87.

other comments.

For the purposes of the Clay study, these records were collected, abstracted, and coded for computer analysis by an on-site team of nurses, aides, and coders who were familiar with hospital procedures.

In addition to the medical record data on the patients, the present study uses information from the 1968 Survey of the Genesee County Medical Society.[1] Each physician who responded to the survey and who was responsible for the care of any patient in the study population was identified. These physicians' medical specialties and their preferences for a location for the treatment of their alcoholic patients were ascertained from the survey. These data were then merged with the patients' medical record data, indicating the specialty and preference of the physician who cared for each patient on each subsequent hospital visit.

Instruments used for the collection of the medical records data and the physicians survey data are shown in Appendix C.

The Study Population

The subjects of the present study constitute

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[1]James H. Dunn and Margaret L. Clay, "Physicians Look at a General Hospital Alcoholism Service," Quarterly Journal of Studies on Alcohol 32 (1971): 162-67.

a population of Hurley Hospital patients who were defined as potential participants in the hospital's group therapy program (for the prevention and treatment of alcoholism) by the program director. Each of these patients had at least one admission (not necessarily alcohol related) to the hospital between June 15, 1956 and January 1, 1964. Several comments about these parameters should be made.

First, these subjects became hospital patients without satisfying any special admission criteria. That is, like most other patients at the hospital, the study subjects were admitted under the supervision of their attending physicians, either through the emergency department or the admitting office. Like many other patients, the study subjects in need of hospitalization who did not have their own personal physicians were generally admitted by hospital staff physicians through the emergency department.[1] Second, after the study subjects were admitted to the hospital and identified as having drinking problems by relatives, friends, associates, hospital staff, or representatives of institutions outside the hospital (such as law enforcement or social welfare agencies), their names were collected and recorded as potential group

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[1]Keaton, "The Hurley Plan: Medical Management of Alcoholics--A Dynamic Treatment Modality," p. 7.

therapy program participants by the program director as part of a standard operating procedure for case finding within the hospital. Third, these patients may have been identified on their first visit to the hospital, or on subsequent visits. However, the present study makes use of data from their medical records starting with their first visit. Fourth, only patients whose first visit to the hospital was between June 15, 1956 and January 1, 1964, were included in the study because the former date marks the beginning of the group therapy program (when official recording of potential program participants' names from all available sources was initiated). The latter was chosen by Dr. Clay as the most appropriate cutoff date for data collection preceding the design of her study in the spring of 1965.

Assumptions and Limitations of the Present Study

The study population may not be representative of all potential program participants outside the hospital since the hospital tends to restrict admission when the availability of beds is low. In that situation, the most severely ill patients (regardless of diagnosis) are generally given admission priority. Consequently, when beds were in short supply during the years covered by the study,

the population was influenced by excluding potential program participants who could be treated on an outpatient basis or elsewhere outside the hospital.[1]

The study population may not be representative of all potential program participants who had at least one hospital visit between June 30, 1956, and January 1, 1964, since the population consists of those who were known by the program director. This is important to bear in mind because patients who were thus known were more likely to be formally diagnosed as alcoholics, especially if they were identified by the diagnostician, than potential program participants who were not known by the program director.

The designation of this study population has several implications for interpretation of the data. First, there is no larger population about which inferences can be made; second, there is no sampling error involved; and third, tests of statistical significance are inappropriate.

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[1]Lyle D. Filkins, et. al., Alcohol Abuse and Traffic Safety: A Study of Fatalities, DWI Offenders, Alcoholics, and Court-Related Treatment Approaches, Final Report submitted by the Highway Safety Research Institute, The University of Michigan, Ann Arbor, to the U.S. Department of Transportation, National Highway Safety Bureau, Washington, D.C., on June 26, 1970, p. 98.

Medical record data has several limitations, which Rosenblatt et al summarize by saying,

> ...because medical records are not primarily research tools...the usefulness of these records for reflecting characteristics found in patient life style, work history, marital problems, etc., is questionable. Although physicians often record sidelights about the patient's social situation not directly related to the condition being treated, they may not ask medically irrelevant social questions of each patient and they may not record the answers often needed for research purposes.[1]

On the other hand, these are the only records of the variables under study that exist. So this is the best available information on these variables.

It should also be noted that the data on the diagnosing physicians do not identify them except as diagnosticians with designated professional orientations. The issue of their previous experience in diagnosing the patients in the study population will not be considered in describing the physicians' characteristics at the time of the patients' diagnoses.

An additional limitation of the present study is that it does not take into account the hospital staff's attitudes and socialization experiences regarding alcoholism in order to determine whether diagnostic and treatment

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[1]Ibid., p. 99.

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An additional limitation of the present study is that it does not take into account the hospital staff's attitudes and socialization experiences regarding alcoholism in order to determine whether diagnostic and treatment

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[1]Ibid., p. 99.

patterns vary according to differences in these factors.[1]

Another important question is the extent to which the diagnostic label is influenced by the patient's referral source and/or labels previously assigned to the patient by family, peers, employers, or other care-giving professionals. This question is not addressed because the necessary data are not available.

Operational Definition of Terms Used in the Present Study

Alcoholism	A behavioral syndrome of unknown etiology, usually associated with intemperate drinking, which at some point in its development is characterized by measurably increased risks of certain types of social and clinical and social morbidity and/or mortality. (See Appendix A for a description of the measurement of alcoholic symptom levels that operationally define alcoholism.)

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[1]The potential relevance of these factors is shown in several studies. See for example, R. M. Gray, et al, "Physician's Authoritarianism and the Treatment of Alcoholics," Quarterly Journal of Studies on Alcoholism 30 (1969): 981-83; Wilma J. Knox, "Attitudes of Psychiatrists and Psychologists Toward Alcoholism," American Journal of Psychiatry 127 (June 1971): 111-15; J. H. Mendelson, et al, "Physician's Attitudes Toward Alcoholic Patients," Archives of General Psychiatry 11 (October 1964): 392-99; Muriel Sterne and David Pittman, "The Concept of Motivation: A Source of Institutional and Professional Blockage in the Treatment of Alcoholics," Quarterly Journal of Studies on Alcoholism 26 (March 1965): 41-57; and I. Wolf et al, "Social Factors in the Diagnosis of Alcoholism," Quarterly Journal of Studies on Alcoholism 26 (March 1965): 72-79.

Diagnosis	A shorthand label recorded by a physician in a patient's medical record indicating the nature of the patient's problem, illness or disease.
Alcoholic Diagnosis	A diagnosis that includes any of the following labels: "alcoholism," "alcoholic psychosis," "alcohol addiction," "alcoholic polyneuropathy," "Korsakoff's psychosis," "Wernicke's encephalopathy," and "alcohol amblyopia."
Patient Characteristics	The traits identified in or derived from the patients' medical records such as: age, sex, race, insurance, occupational category, marital status, and symptom level.
Symptom Levels	An ordinal measure of the amount of symptomatic evidence in the patient's medical record that makes a diagnosis of alcoholism justified. (High = definitely justified; medium = probably justified; low = possibly justified.) (See Appendix A.)
Primary Patient Characteristics	Symptom levels, the most valid criteria for the diagnosis of alcoholism.
Secondary Patient Characteristics	The patient's age, although not the most valid criterion for the diagnosis and treatment of alcoholism (a characteristic that is directly relevant to the interpretation of primary characteristics).
Extraneous Patient Characteristics	The patient's sex, race, insurance status, occupational status, and marital status (invalid criteria for the diagnosis and treatment of alcoholism that are not directly relevant to the interpretation of primary patient characteristics).

Insurance Status	A statement in the medical record indicating the patient has coverage for the payment of certain hospital bills by an officially recognized private carrier (Blue Cross, or any other licensed commercial insurance carrier).
Occupational Status	A category of employment (white collar, blue collar, umemployed) held by the patient at the time of each hospital admission, as identified in the patients' medical records.
Professional Orientation	Responses to a 1968 survey of the Genessee County Medical Society indicating (1) the physicians' specialties and (2) how they usually handle their alcoholic patients.
Treatment	Indicates one of the following four categories of service provided in the hospital as recorded in the patients' medical records: (1) routine alcoholic medication and group therapy; (2) routine alcoholic medication only; (3) group therapy only; and (4) neither.
Routine Alcoholic Medication	A special combination of chloral-hydrate (a sedative hypnotic) and pyrodoxine (vitamins and minerals) used for some patients in the acute stage of alcoholism.
Group Therapy	A small group of alcoholics who meet regularly with a leader (an alcoholism counselor) to discuss their problems in order to reach various kinds of individual treatment goals (e.g., changes in drinking behavior, improved family relationships, and improved job performance).

Analysis Procedures

Analyses of contingency tables are used to explore and describe the relationships represented in figures 3, 4, and 6. It seems reasonable to consider the relationship between independent variables and the dependent variables separately since the intercorrelation of the independent variables, shown in table 3.2 is relatively low (less that .26 except for the intercorrelation between the physician's treatment location preference and the physician's training).[1]

In chapter 6, diagnostic differences in patient and physician characteristics are described in terms of a linear function (i.e., a weighted sum) of the set of variables that will discriminate between diagnostic groups better than any other function. Changes in these functions on the first three patient visits to the hospital are also described.

The "best discrimination" means that the ratio of the between-groups sum-of-squares of this linear function to its within-groups sum-of-squares has a larger value than the corresponding ratio for any other linear function

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[1]It should be noted that during the study period, the automotive industry in Flint was expanding. Since this was the major source of employment, the study population seems to reflect the City's high concentration of blue collar

TABLE 3.2

PEARSON PRODUCT-MOMENT CORRELATIONS AND CODE VALUES[1] OF INDEPENDENT VARIABLES FOR THE TOTAL POPULATION

Variables	Variable Number 1	2	3	4	5	6	7	8	9	10	11	12
1. Patient's sex	1.00 / Male (1), Female (2)											
2. Year of patient's first visit to the hospital	.03	1.00 / 56-59 (1), 60-63 (2)										
3. Patient's residence	.02	.12	1.00 / Flint (1), elsewhere (2)									
4. Patient's insurance status	-.03	.04	.04	1.00 / Insured (1), Uninsured (2)								
5. Patient's age	-.02	.00	.09	.03	1.00 / 18-39 (1), Over 40 (2)							
6. Patient's marital status	-.05	-.02	-.08	-.26	-.03	1.00 / Married (1), Unmarried (2)						
7. Source of information recorded on patient	.02	.00	.03	-.09	.01	-.05	1.00 / Patient (1), Spouse (2), Other (3)					
8. Patient's race	-.05	-.01	-.19	.01	-.13	.03	-.05	1.00 / White (1), Black (2)				
9. Patient's symptom level	.03	-.19	-.15	.02	-.10	.04	-.06	.07	1.00 / High (1), Medium (2), Low (3), None (4)			
10. Patient's occupation	.03	-.07	-.10	-.24	-.10	.26	.05	.03	.06	1.00 / W Collar (1), B Collar (2), Unemployed (3)		
11. Physicians treatment location preference	-.06	-.07	.01	-.02	.06	.00	.01	-.07	.02	-.02	1.00 / Hurley (1), Elsewhere (2)	
12. Physician's training	-.01	.00	.09	-.13	.10	.03	-.06	-.11	-.18	-.02	.51	1.00 / GP (1), Specialist (2)

[1]Code values are in parentheses

for the same variables. The procedure for determining this function is known as discriminant analysis, first proposed by R. A. Fisher in 1936.[1] This procedure is described in Appendix D.

Once a discriminant function for differentiating between diagnostic groups has been found for a random sample of half the patients, this function is used to predict the diagnosis for each patient in the other half of the patient population. These predicted diagnoses are compared with actual diagnoses in order to determine the amount of observed diagnostic variance explained by the discriminant function. The same split-half method is used to determine the amount of variance explained between treatment groups.

For purposes of the present study, Automatic Interaction Detector (A.I.D.) analysis was also considered. However, A.I.D. models were not used because they explain a smaller proportion of the variance in the dependent

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workers. The fact that black workers held many of these positions may account for the correlation between race and occupation.

[1]Ronald A. Fisher, "The Use of Multiple Measurements in Taxonomic Problems," Annals of Eugenics 7 (September 1936): 179-88.

variables than discriminant models.[1] Since statistical assumptions were not violated, discriminant analysis was used in the present study.[2]

In chapters 4 and 5, the lambda statistic (λ) is used to measure the relationship between independent and dependent variables.

$$\lambda = \frac{p(\text{error } A_j \text{unknown}) - p(\text{error } A_j \text{known})}{p(\text{error } A_j \text{unknown})}$$

According to Hays,

> This...index of predictive association...shows the proportional reduction in the probability of error afforded by specifying A_j. If the information about the A category does not reduce the probability of error at all, the index is zero, and one can say that there is no predictive association. On the other hand, if the index is 1.00, no error is made given the A_j classification, and there is complete predictive association.[3]

The Lambda statistic was chosen because it is a

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[1]A.I.D. models explain only about a third of the variance in diagnosis and treatment.

[2]David Knoke, "Log-Linear and Regression Models," Sociological Methods and Research 3 (May 1975): 422. For a discussion of these statistical assumptions see pp. 422-423. See also Arthur Goldberger, "Special Problems in Linear Regression," Econometric Theory (New York: John Wiley & Sons, 1964), pp. 192-201.

[3]William L. Hays, Statistics (New York: Holt, Rinehart and Winston, Inc., 1963), p. 608.

measure of predictive association which can be easily interpreted. That is, it indicates just how much the relationship found implies about real predictions, and how much one variable actually tells us about the other. Furthermore,

> Virtually any statistical relation will show up as highly significant given a sufficient sample size, but it takes a relation of considerable strength to enhance our ability to predict in real, uncontrolled, situations. It can happen that even though a chi-square test is significant, the predictors behavior is not changed one whit by this new information. The lambda measure shows how one is led to predict differentially, in the light of the relationship.[1]

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[1] Ibid., p. 610.

CHAPTER IV

DIAGNOSTIC PATTERNS AND ALCOHOLIC SYMPTOM LEVELS IN THE PATIENT POPULATION

The Diagnosis

> The subject of medical diagnosis is so broad and the opportunity for differences of opinion so great that one can only approach it with great humility....In the broadest sense, medical diagnosis encompasses the entire art and science of medicine. It deals with concepts of diseases, the similarities and diversities of diseases, and all the relationships among them, whether structural, physiological, biochemical, psychological, or ecological. In a narrower sense, diagnosis may be defined as the art, science, or act of recognizing disease from signs, symptoms, or laboratory data.... Diagnosis is not only an act or mental process, but it is also the decision reached.[1]

This act or mental process is set into motion when each patient's history is routinely taken by the admitting staff on admission to Hurley Hospital. Soon afterward, a physician generally gives the patient a physical examination and orders any laboratory tests

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[1]John A. Jacquez, ed., The Diagnostic Process, The Proceedings of a Conference Sponsored by the Biomedical Data Processing Training Program of the University of Michigan (Ann Arbor: Malboy Lithographing, Inc., 1964): 8.

deemed necessary. Analysis of all this information leads the physician to a diagnostic decision which is based on some combination of concrete scientific information and the physician's discretionary authority, experience, and intuitive hunches.

Alcoholic Symptom Levels

Lipscomb's definition of alcoholism, cited in chapter 1, emphasizes the notion that alcoholism should be defined in terms of certain measurable symptoms. The Criteria Committee of the National Council on Alcoholism has identified, grouped, and weighted such symptoms according to the relative importance for determining the presence of alcoholism (see appendix A). These weights reflect the fact that there is no single clinical, physiological, behavioral, psychological, or attitudinal pattern in alcoholism. As Krimmel put it,

> Some [alcoholics] drink to the point of intoxication every day although they may show varying degrees of dependence on alcohol... some alcoholics...never get really drunk but neither are they ever completely sober. They rate the label 'alcoholic' because they cannot function to their potential in that condition.[1]

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[1]Herman Krimmel, Alcoholism: Challenge for Social Work Education (New York: Council on Social Work Education, 1971), p. 27.

When more than two or three symptoms of abnormal drinking present themselves together, the diagnosis of alcoholism seems valid. This makes recognition of the advanced alcoholic straightforward since some combination of symptoms indicating the alcoholism is always present. However, recognition of alcoholism in its early stages is less straightforward since there may be fewer and less recognizable symptoms.

Diagnostic and Symptom Patterns

According to tables 4.1 and 4.2, the following patient characteristics are associated with being labeled alcoholic and with higher alcoholic symptom levels: first visit to the hospital occurring between 1958 and 1960 or between 1962 and 1963; information being supplied by someone other than the patient or the patient's spouse during the hospital intake interview; residence outside metropolitan Flint; being older; and being white. Although the probability of a diagnosis of alcoholism did not differ appreciably according to occupational status, patients with higher occupational status were somewhat more likely to have higher symptom levels than those with lower occupational status. There were virtually no differences in labeling risk or symptom levels between males and females, married patients and unmarried

TABLE 4.1

CHARACTERISTICS OF THE PATIENT POPULATION
BY PERCENT DIAGNOSED ALCOHOLIC

Characteristic	Percent of Patients Diagnosed Alcoholic	Base For Percent
Year of First Hospital Visit		
1956	23.4	77
1957	45.3	106
1958	59.0	105
1959	58.6	111
1960	58.5	147
1961	46.3	95
1962	59.6	141
1963	67.9	162
Percent of Total	54.8	944
Source of Information Recorded on the Patient		
patient	55.1	559
spouse	52.7	220
other relatives	62.1	132
	55.5	911
Residence		
within Metropolitan Flint	48.7	649
outside Metropolitan Flint	66.5	248
	53.6	897
Age at Admission		
18-39 years of age	50.0	420
40 years of age and older	58.6	524
	54.8	944

TABLE 4.1 - Continued

Characteristic	Percent of Patients Diagnosed Alcoholic	Base For Percent
Sex		
Female	54.4	160
Male	54.8	784
	54.8	944
Race		
Black	32.0	97
White	57.2	843
	54.8	940
Marital Status		
Married	54.1	612
Not Married (single, widowed, separated, divorced)	57.4	305
	55.2	917
Source of Payment for Expenses Incurred in Hospital		
third party coverage	57.9	228
no third party coverage	53.8	716
	54.8	944
Occupational Category		
White Collar	59.0	83
Blue Collar	52.2	605
Unemployed (including retired and students)	66.7	85
	53.2	773

TABLE 4.2

DISTRIBUTION OF SYMPTOM LEVELS BY PATIENT CHARACTERISTICS

Characteristic	Patient Symptom Levels				Base for Percent
	Percent with High	Medium	Low	None Recorded	(N=100%)
Year of First Hospital Visit					
1956	15.6	15.6	26.0	42.9	77
1957	27.4	15.1	34.0	23.6	106
1958	52.4	13.3	15.2	19.0	105
1959	55.0	9.9	28.8	6.3	111
1960	44.2	17.7	19.7	18.4	147
1961	40.0	14.7	27.4	17.9	95
1962	51.1	13.5	17.7	17.7	141
1963	56.2	15.4	14.8	13.6	162
Percent of Total	44.8	14.5	22.0	18.6	944
Source of Information Recorded on the Patient					
Patient	45.1	12.9	24.7	17.4	559
Spouse	42.7	17.3	17.7	22.3	220
Other relatives	53.0	18.2	18.2	10.6	132
	45.7	14.7	22.1	17.6	911

TABLE 4.2 - Continued

Characteristic	Patient Symptom Levels				Base for Percent
	Percent with High	Medium	Low	None Recorded	(N=100%)
Residence					
Within Metropolitan Flint	38.4	15.6	25.6	20.5	649
Outside Metropolitan Flint	57.7	11.7	14.9	15.7	248
Percent of Total	43.7	14.5	22.7	18.9	897
Age at Admission					
18-39 years of age	37.9	16.4	26.2	19.5	420
40 years of age and older	50.4	13.0	18.7	17.9	524
	44.8	14.5	22.0	18.6	944
Sex					
Female	41.3	15.0	23.1	20.6	160
Male	45.5	14.4	21.8	18.2	784
	44.8	14.5	22.0	18.6	944
Race					
Black	30.8	21.6	32.0	19.6	97
White	46.6	13.8	21.0	18.6	843
	44.8	14.5	22.0	18.6	940

TABLE 4.2 - Continued

Characteristic	Patient Symptom Levels				Base for Percent
	Percent with High	Medium	Low	None Recorded	(N=100%)
Marital Status					
Married	46.6	14.9	21.9	16.7	612
Not Married (single, widowed, separated, divorced)	43.6	14.1	23.0	19.3	305
Percent of Total	45.6	14.6	22.2	17.6	917
Source of Payment for Expenses Incurred in Hospital					
Third Party Coverage	47.4	15.8	15.8	21.1	228
No Third Party Coverage	44.0	14.1	24.0	17.9	716
	44.8	14.5	22.0	18.6	944
Occupational Category					
White Collar	60.2	6.0	19.3	14.5	83
Blue Collar	41.7	14.9	24.3	19.2	605
Unemployed (including housewives, retired and students)	44.4	11.1	22.2	22.2	85
	43.9	13.8	23.7	18.7	773

patients, and patients with and without thrid-party insurance coverage.

Patients whose first visit to the hospital was in 1956 were most likely to have no recorded symptoms. Those whose first visit was in 1959 were least likely to have no recorded symptoms.

The Relationship between Patient Characteristics and Symptom Levels

The data in table 4.1 will be given further consideration in chapter 5. The findings in table 4.2 leave several questions unanswered. The following are some examples of those relevant to this closed study population which are in need of further research.

1. Patients who visited the hospital later in the study period were more likely to have higher symptom levels. Was this because the hospital's reputation for helping alcoholics was more likely to attract patients with higher symptom levels each year after the group therapy program had been established? Or, was the proportion of patients who first visited the hospital with high symptom levels really about the same during the study period with the apparent difference reflecting an increasing motivation or ability among physicians to recognize and record higher symptom levels? Perhaps this

was the result of the group therapy program's casefinding procedure or other activities that stressed the importance of alcoholism as a medical problem.

2. Symptom levels were more likely to be higher for patients whose relatives (other than their spouses) were the source of recorded information during the hospital intake interview. Was it more difficult for patients or spouses to report higher symptom levels (perhaps because this would have been damaging to their self-concept) than it was for other relatives to do so? Or was it common for patients with higher symptom levels to be too intoxicated to give accurate information for the medical record during the intake interview?

3. White patients tended to have higher symptom levels than black patients. Are higher symptom levels harder to perceive in black patients for some biological, psychological, or social reasons? Or are black patients with high symptom levels more likely to experience admission barriers at the hospital that tends to exclude them from the study population?

4. Patients who live outside metropolitan Flint were more likely to have higher symptom levels. Are these higher symptom levels important factors motivating patients to travel greater distances (or for physicians to recommend their trip)? Or do physicians spend more

time with patients from outside the metropolitan area because their hospital visits are more likely to be scheduled than local emergencies or drop-ins, and thereby have more opportunity to discover and record higher symptom levels?

5. Older patients were more likely to have higher symptom levels. Is it because alcoholism tends to take several years to develop? Or do physicians tend to discount higher symptom levels in younger patients because they assume they are just problems associated with emotional immaturity?

6. Higher symptom levels were more likely among white-collar patients. Do physicians spend more time with white-collar patients perhaps because of less social distance? Does this allow for more communication and greater opportunities to disclose higher symptom levels among white-collar patients than among blue-collar or unemployed patients? Or, is white-collar work an important factor in the etiology of alcoholism? Or are the lower-status occupational groups more likely to experience barriers to admission to the hospital that tend to exclude them from the hospital population?

None of these hypotheses seem necessarily incompatible with the others. In a sense, they raise two more

fundamental questions: To what extent do symptom levels actually vary according to differences in patient characteristics? To what extent do patient and physician characteristics have a different effect on what symptom levels are perceived and recorded? For purposes of the present study the former interpretation of the symptom data was assumed to be more valid. More research is needed to determine whether this assumption was justified.

CHAPTER V

CHARACTERISTICS THAT PREDISPOSE PATIENTS TO BEING LABELED ALCOHOLIC

Background Information

Identifying symptoms is an integral part of the process that leads to a diagnostic decision. However, data presented in this chapter raise a question about the degree of discrepancy between symptoms of alcoholism and the diagnosis of alcoholism recorded in patients' medical records.

This discrepancy may occur for two kinds of reasons: those that have to do with problems in the diagnostic process, and those that are inherent in the recording of medical record data. The latter has been discussed in chapter 3 with regard to the assumptions and limitations of the data. The former deserves attention at this point because these problems of obtaining and analyzing symptom data are at the heart of issues raised by labeling theory.

In a general hospital setting, physicians routinely ask screening questions in taking patients' histories in order to get some general idea of the cause of a patient's

chief complaints, which may not be directly related to drinking problems. Sometimes when the patient's answers to these questions indicate the possibility of alcoholism, several of the indications are entered in the medical record. If these questions are not followed up with more alcoholism-specific questions and more definitive procedures for the diagnosis of alcoholism, a formal diagnosis of alcoholism might be overlooked and not recorded. This would result in a discrepancy between diagnosis and symptoms.

Such a discrepancy might also occur because physicians are usually selective in their emphases on physical examinations and in their choices of laboratory tests, in order to conserve time and reduce costs. The patient may be examined and tested to determine the cause of his or her chief complaint. Again alcoholic symptoms might appear in the medical record, without a corresponding diagnosis.

Another problem is that sometimes it is difficult to decide between one diagnosis and another. If there are a few symptoms identified and recorded indicating alcoholism, and many symptoms of some other disorder, the physician might record only the other diagnosis.

Alcoholism has been classified as an official disease category under Section 303 in the Diagnostic and

Statistical Manual of Mental Disorders.[1] Some physicians may feel the psychiatric connotation of the diagnosis and/or the possible stigma associated with it, make it unsuitable to use in certain circumstances, regardless of recorded symptoms.

Primary Characteristics that Predispose Patients to Different Labeling Risks

A central question to be addressed in this chapter is what are the secondary and extraneous patient characteristics of the population who are actually labeled alcoholic, when symptomatology is held constant? Before addressing this question, the extent to which symptom levels predispose patients to the alcoholic label will be described.

According to the data in table 5.1, patients with recorded alcoholic symptoms (at high, medium, and low levels) are 24.7 percent (that is, 59.4 percent minus 34.7 percent) more likely to be diagnosed alcoholics than patients without recorded symptoms. Within the former group, there is a direct relationship between symptom levels and the percentages that are diagnosed alcoholics. However, the proportion of patients without any recorded

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[1]The Committee on Nomenclature and Statistics of the American Psychiatric Association, eds., Diagnostic and Statistical Manual of Mental Disorders 2nd ed. (Washington, D.C.: American Psychiatric Association, 1968), p. 45.

TABLE 5.1

PATIENTS' SYMPTOM LEVELS BY PERCENT DIAGNOSED ALCOHOLIC

Symptom Level	Percent Diagnosed Alcoholic	Base for Percent (N=100%)
High	81.3	423
Medium	45.3	137
Low	24.0	208
None Recorded	34.7	176
Percent of Total	54.8	944

symptoms who were diagnosed alcoholics is larger than the proportion of low-symptom-level patients diagnosed alcoholic. It is difficult to explain why so many labeled alcoholic patients are without recorded alcoholic symptoms. At least two explanations seem plausible. The method of coding may have resulted in misclassification of some symptoms in the "none recorded" category. (See Appendix A.) Alternatively, one might assume that in as many as 6 percent of the total patient population (34.7 percent of 176 = 6 percent of the population), physicians recognized alcoholic symptoms that they did not record, perhaps because of time pressures, or because of an oversight, or because of a belief that recording alcoholic symptoms was

superfluous given the recorded diagnosis of alcoholism.

Secondary and Extraneous Characteristics that Predispose Patients to Being Labeled Alcoholic

According to table 5.1, a discrepancy does seem to exist between symptom levels and diagnostic patterns. For example, 18.7 percent of the patients with high symptom levels were given a diagnosis other than alcoholism.

The first column of table 5.2 shows that when symptom levels are held constant, the magnitude of this discrepancy does not vary appreciably according to the year of the first visit to the hospital, or the patient's age, sex, marital status, or insurance status. However, among patients with high symptom levels, those residing outside of Flint, those whose spouses were the source of information during the intake interview, and those with higher occupational status do seem predisposed to being labeled alcoholic.

Among those with medium symptom levels, patients who live outside Flint and white patients are similarly predisposed. Patients with low symptom levels were also predisposed to a greater risk of being labeled alcoholic if their first visit to the hospital was before 1960, if they were older, white, unmarried, or in a lower occupational status. Among patients with no recorded symptom

TABLE 5.2

PERCENT DIAGNOSED ALCOHOLIC BY SYMPTOM LEVEL AND OTHER PATIENT CHARACTERISTICS

Patient Characteristics	Symptom Level: High Percent	Base for High	Medium Percent	Base for Medium	Low Percent	Base for Low	None Recorded Percent	Base for None Recorded
Year of First Hospital Visit								
1956-1959	80.3	157	43.4	53	15.4	104	32.9	85
1960-1963	82.0	266	46.4	84	32.7	104	36.3	91
Total	81.3	423	45.3	137	24.0	208	34.7	176
Source of Information Recorded on the Patient								
Patient	83.3	252	45.8	72	25.4	138	30.9	97
Spouse	76.6	94	42.1	38	17.9	39	42.9	49
Other	82.9	70	45.8	24	20.8	24	57.1	14
Total	81.7	416	44.8	134	23.4	201	36.9	160
Residence								
Within Metropolitan Flint	78.7	249	37.6	101	24.1	166	31.6	133
Outside Metropolitan Flint	84.6	143	65.5	29	24.3	37	41.0	39
Total	80.9	392	43.8	130	24.1	203	33.7	172
Age								
18-39 Years of Age	81.1	264	44.1	68	28.6	98	35.1	94
40 Years of Age and Older	80.5	159	46.4	69	20.0	110	34.1	82
Total	81.3	423	45.3	137	24.0	203	34.7	176
Sex								
Female	80.3	66	50.0	24	27.0	37	36.4	33
Male	81.5	357	44.2	113	23.4	171	34.3	143
Total	81.3	423	45.3	137	24.0	208	34.7	176
Race								
Black	76.7	30	23.8	21	12.9	31	15.8	19
White	81.7	393	49.1	116	26.0	177	36.9	157
Total	81.3	423	45.3	137	24.0	208	34.7	176

TABLE 5.2 - Continued

Patient Characteristics	Symptom Level: Base for High	Percent	Base for Medium	Percent	Base for Low	Percent	None Recorded	Base for Percent
Marital Status								
Married	82.8	285	40.7	91	20.1	134	30.4	102
Unmarried	78.2	133	53.5	43	30.0	70	45.8	59
Total	81.3	418	44.8	134	23.5	204	36.0	161
Insurance Status								
Insured	80.6	108	47.2	36	25.0	36	39.6	48
Uninsured	81.6	315	44.6	101	23.8	172	32.8	128
Total	81.3	423	45.3	137	24.0	208	34.7	176
Occupational Status								
White Collar	86.0	50	40.0	5	6.3	16	25.0	12
Blue Collar	80.6	252	43.3	90	23.1	147	34.5	116
Unemployed	68.4	38	50.0	12	41.2	17	50.0	18
Total	80.0	340	43.9	107	23.3	180	35.6	146

levels there was a greater risk of being labeled alcoholic if the source of information was other than the patient, if they live outside of Flint, if they were white, unmarried, insured or in a lower occupational status.

It is difficult to interpret the meaning of these data since different characteristics predispose patients to being labeled alcoholic at different symptom levels and since race seems to be the only

consistent predisposing factor, if indeed it is at the high symptom level. These findings will be given more consideration in chapter 7.

The Effect of the Physician's Professional Orientation on Being Labeled

Only three physicians in the study population diagnosed more than three patients each. Dr. A, a general practitioner with a preference for a hospital other than Hurley, diagnosed 35 patients. Dr. B, a general practitioner with a Hurley preference diagnosed 30 patients. Dr. C, a specialist with a preference for a hospital other than Hurley, diagnosed 29 patients.

When alcoholic symptom levels were held constant, none of these physicians had a proclivity either for assigning a diagnosis of alcoholism or a diagnosis other than alcoholism. The diagnostic patterns for patients seen by each of these physicians were about the same as those for patients seen by other physicians. So the predisposition for being given an alcoholic label did not vary appreciably according to whether the patient was diagnosed by Dr. A, Dr. B, or Dr. C.

TABLE 5.3

PERCENT DIAGNOSED ALCOHOLIC BY SUMPTOM LEVEL AND PHYSICIAN'S PROFESSIONAL ORIENTATION

Physician's Professional Orientation	Symptom Level: High Percent	Base for High	Medium Percent	Base for Medium	Low Percent	Base for Low	None Recorded Percent	Base for None Recorded
Training								
General Practitioner	81.0	79	36.8	38	23.9	67	26.1	46
Specialist	86.1	237	49.0	49	21.2	66	50.8	65
Total	84.8	316	43.7	87	22.6	133	40.5	111
Treatment Location Preference								
Hurley	82.5	160	43.1	51	21.5	79	40.0	60
Elsewhere	80.6	263	46.5	86	25.6	129	31.9	116
Total	81.3	423	45.3	137	24.0	208	34.7	176

According to table 5.3, patients with medium symptom levels and those with no recorded symptoms were somewhat more likely to be diagnosed as alcoholics when they were diagnosed by specialists. Otherwise, diagnostic patterns did not vary appreciably according to differences in either the physicians' training or their treatment location preference, when only patient symptom levels were held constant.

However, according to table 5.4, when symptom levels and the year of the patients' first visits to

TABLE 5.4

PERCENT DIAGNOSED ALCOHOLIC BY SYMPTOM LEVEL, PHYSICIAN'S PROFESSIONAL ORIENTATION AND YEAR OF FIRST VISIT[1]

Physician's Professional Orientation	Symptom Level: High Base	High Percent	Medium Base	Medium Percent	Low Base	Low Percent	None Recorded Base	None Recorded Percent
Treatment Location Preference								
Hurley	64.1 (88.4)	39 (121)	31.6 (50.0)	19 (32)	12.8 (30.0)	39 (40)	22.2 (54.5)	27 (33)
Elsewhere	85.6 (76.6)	118 (145)	50.0 (44.2)	34 (52)	16.9 (34.4)	65 (64)	37.9 (25.9)	58 (58)
Training								
General Practitioner	53.3 (87.5)	15 (64)	28.6 (41.7)	14 (24)	12.9 (33.3)	31 (36)	20.8 (31.8)	24 (22)
Specialist	86.0 (86.1)	93 (144)	47.4 (50.0)	19 (30)	16.1 (25.7)	31 (35)	50.0 (51.5)	32 (33)

[1]Data without parentheses are for patients whose first hospital visit was from 1956-1959. Data in parentheses are for patients whose first hospital visit was from 1960-1963.

the hospital are held constant, physicians with a Hurley preference were less likely than those with some other preference to diagnose patients whose first hospital visits were before 1960 as alcoholics. This group of physicians with a Hurley preference was more likely to label patients with high symptom levels as alcoholics if their first visits to the hospital were

later in the study period.

Patients with high symptom levels whose first visits to the hospital came before 1960 were more likely to be labeled alcoholics by specialists than by general practitioners. This pattern is inconsistent for patients whose first visits were later in the study period. Specialists were equally likely to label patients with high symptom levels as alcoholic before and after 1960. However, general practitioners were more likely to use this label after 1960.

Discriminating between Diagnostic Groups on the First Three Hospital Visits

The question of whether secondary and extraneous patient characteristics predispose patients to being labeled alcoholics or not can also be explored from the patient-career perspective by describing the relative importance of these characteristics and symptom levels in determining the diagnoses on their first three hospital visits.

Discriminant analysis will be used for this description to establish diagnostic group differences in terms of a linear combination (for each hospital visit) of patient and physician variables. This combination is a weighted sum. According to

Tatsuoka,

> ...the weights are analogous to the partial regression weights in a multiple regression equation, so each weight represents the relative importance of that variable with the effects of the other variables 'partialled out...' Examining the pattern of weights gives us a much more accurate account of the nature of group differences in terms of a given set of variables than does looking at each variable separately with no regard for their inter-relations and partly overlapping information.[1]

This approach differs from the analysis of contingency tables in the preceding section where secondary and extraneous patient characteristics and dimensions of the physician's professional orientation were considered separately, while symptom levels were held constant. There is a difference in the interpretation of that data and the discriminant analysis that follows. The former described the probability of a diagnosis of alcoholism (or a diagnosis other than alcoholism) for different patient groups; the latter describes how much each patient and physician characteristic contributes, and in which direction, to the differentiation between those diagnosed and those not diagnosed alcoholics.

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[1]Maurice M. Tatsuoka, Discriminant Analysis: The Study of Group Differences, Selected Topics in Advanced Statistics No. 6 (Champaign, 1970), p. 4.

Looking at those scaled vectors in table 5.5 whose absolute values on the first visit are no less than about one-half the largest weight[1] (1.56 for race), we see that the factors that contribute most in the positive direction are race, recorded symptoms, and insurance status. The one that contributes the most in the negative direction is the physicians' training.

"Positive direction" refers to the direction descriptive of the group with the higher mean score on this linear combination, which in this case is the group with a diagnosis other than alcoholism. The mean for this group was found to be 1.51. The "negative direction" is more descriptive of the diagnosed alcoholic group, whose mean score on the linear combination is 1.19. Thus, the most highly distinguishing attributes of patients with a diagnosis other than alcoholism on the first visit to the hospital were their tendencies to be black, uninsured, and with lower symptom levels recorded in their medical records.[2] On the other hand, the labeled alcoholics tend to be those who were diagnosed by specialists.[2] With the

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[1]The relative magnitude of these weights is considered to be ordinal. In order to give a coherent and comprehensible interpretation of the weights, Tatsuoka suggests using this criterion. See Tatsuoka, pp. 53-54.

[2]These attributes represent the highest code values for the respective variables.

TABLE 5.5

SCALED VECTORS FOR DISTINGUISHING BETWEEN PATIENTS WITH AND WITHOUT A RECORDED DIAGNOSIS OF ALCOHOLISM ON THE FIRST THREE VISITS TO THE HOSPITAL[1]

Predictor Variables	First Visit	Second Visit	Third Visit
Diagnostic Characteristics			
Prior Diagnosis	*	.42	.30
Time Since Prior Diagnosis	*	.02	**
Primary Characteristic			
Symptom Level	.53	.82	.60
Secondary Characteristic			
Age	-.10	.03	.15
Extraneous Characteristics			
Sex	.14	.16	.21
Race	.56	.42	.38
Marital Status	-.07	-.14	**
Insurance Status	.30	-.21	.26
Employment Status	.13	.13	.52
Year of First Hospital Visit	-.11	-.10	-.03
Source of Information	-.09	-.05	-.14
Residence	-.13	-.08	-.19
Physician's Professional Orientation			
Training	-.45	-.15	-.11
Treatment Location Preference	.15	-.05	-.20

[1]These functions were generated only on complete cases. Cases in which the patient had no recorded symptoms were not treated as missing data unless there was missing data on some other variable for the patient.

* inapplicable

** weights for these variables were below the minimum criterion for inclusion in the discriminant function.

exception of the vector for insurance status for patients with a total of two visits, this overall vector pattern remains the same, when the total number of patient visits to the hospital is held constant. (See Appendix E, table 8.3.)

Patients without a diagnosis of alcoholism on their second visit to the hospital tended to be black, to have lower recorded symptoms (on the second visit), and to be without a diagnosis of alcoholism on the first visit.[1] With the exceptions of the vectors for employment status for patients with 4-9 visits and for physician's training for patients with 10-42 visits, the overall vector pattern remains the same, when the number of patient visits is held constant. (See Appendix E, table 8.4.)

The most highly distinguishing attributes of patients with a diagnosis other than alcoholism on the third visit to the hospital were that they tended to be black, to have lower recorded symptoms, to be unemployed (on the third visit), and to be without a diagnosis of alcoholism on the second visit. The overall vector pattern remains the same, when the number of patient visits is held constant. (See Appendix E, table 8.5.)

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[1]These attributes represent the highest code values for the respective variables.

On the first visit, the fact that the patient is black is more useful for predicting a diagnosis other than alcoholism than the fact that the patient had a relatively low symptom level when all other predictor variables were held constant. This pattern was reversed on the second and thrid visits.[1] This relative increase in the importance of recorded symptoms, might suggest that the diagnosis tends to be based more on directly relevant criteria, and less on extraneous criteria on subsequent visits to the hospital. However, this interpretation may be misleading for at least three reasons. First, some of the influence of the patients' attributes (especially the influence of race and the physicians' training) on the first (visit) diagnosis, is "carried over" to the second (visit) diagnosis. The relative importance of prior diagnosis is an indicator of this. Second, some of the change in the patterns of the vectors on subsequent visits is a result of changes in the covariances between the predictor variables and the diagnosis of alcoholism. Third, certain differences on successive hospital visits may be responsible for these changes in the vector pattern. For example, the average

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[1]It is not appropriate to compare the absolute values of the vectors between visits, since the vectors for each visit represent a different discriminant function.

patient profile, or the average physician profile might be quite different on subsequent visits. Since it is not within the scope of the present study to explore the extent to which these three issues are related to the differentiation of diagnostic groups on successive visits, analytic explanations about the reasons for change in the vector pattern on successive visits are not presented. However, the descriptive interpretations of the vectors for each visit considered separately are useful for establishing the relative importance of various characteristics for predisposing patients to an alcoholic label while other characteristics are held constant.

Predicting Diagnoses on the First Three Hospital Visits

According to Tatsuoka,

> Discriminant analysis is useful in...classification problems...Here the purpose is to classify an individual as a member of one of several groups on the basis of his similarity with current members of the groups. Essentially, the idea is to examine the distance of the individual's point from the centroid of each group, and to classify him in that group to whose centroid his point is closest.[1]

Patients' diagnoses were predicted using this

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[1]Tatsuoka, Discriminant Analysis: The Study of Group Differences, p. 56.

approach. That is, discriminant analyses of one-half the patient population on the first three hospital visits yielded the scaled vectors in table 5.5. These vectors were used in a discriminant function for each visit to predict each patient's diagnosis in the other half of the population. If the patient's discriminant score was above 1.35 (the midpoint between the centroids for the two diagnostic groups), a diagnosis other than alcoholism was predicted for the patient. If the patient's discriminant score was below 1.35, a diagnosis of alcoholism was predicted.

The accuracy of the three discriminant functions in predicting diagnosis on patient samples is summarized in table 5.6. The function for the first visit predicted 70.1 percent of the sample patients' diagnoses accurately. The largest proportion of these was for alcoholic diagnoses. The function for the second visit predicted 68.2 percent of the sample patients' diagnoses accurately. Almost equal proportions of these were for alcoholic and nonalcoholic diagnoses. The function for the third visit was 65.4 percent accurate. The largest proportion of these were for diagnoses other than alcoholism. This decreasing accuracy in predicting the diagnosis of alcoholism can probably be explained by differences in each of the

TABLE 5.6

DIAGNOSTIC CLASSIFICATION PERFORMANCE USING THREE DISCRIMINANT FUNCTIONS ON PATIENTS FIRST THREE HOSPITAL VISITS

		Percent of Total Sample With Predicted Diagnosis	
Hospital Visit	Observed Diagnosis	Alcoholism	Other
First (N=323)	Alcoholism	45.8	10.0
	Other	19.8	24.3
Second (N=222)	Alcoholism	33.4	11.7
	Other	20.1	34.8
Third (N=157)	Alcoholism	29.5	11.3
	Other	22.8	36.4

discriminant functions that yield more important information on successive visits about distinguishing attributes of patients with a diagnosis other than alcoholism. That is, three variables (race, symptoms, and insurance status) contributed most in the positive direction on the first visit, as compared to four on the third (symptoms, employment status, race, and prior diagnosis). Also, one variable (physicians' training) contributed most in the negative direction (useful for predicting a diagnosis of alcoholism) on the first visit, as compared to relatively small contributions on the second and third. (See Appendix E, table 8.6, for the amount of diagnostic variance explained on successive visits when the total number of patient visits was held constant.)

Summary

The analysis of contingency tables demonstrated that higher symptom levels generally predispose patients to being labeled alcoholic. When only symptom levels are held constant, higher occupational status was found to be a predisposing factor for an alcoholic label among patients with higher symptom levels. Lower occupational status, or being older white, or being unmarried, or visiting the hospital for the first time later in the study period were predisposing characteristics for an alcoholic label among patients with lower symptom levels. Being diagnosed by a specialist or by a physician with a preference other than Hurley Hospital were predisposing factors among patients whose first visit to the hospital was earlier in the study period. Being diagnosed by physicians with a preference for Hurley Hospital as a treatment location was found to be a predisposing factor among patients with high symptom levels who first visited the hospital later in the study period.

The discriminant analysis of the first visit to the hospital demonstrated that when patient and physician characteristics were considered together and each one was held constant, being black, having lower symptom levels, and being uninsured were the most important predisposing

characteristics for a diagnosis other than alcoholism. Being diagnosed by a specialist was the most important characteristic for predisposing patients to a diagnosis of alcoholism. However, the relative importance of being diagnosed by a specialist decreased on successive visits. The relative importance of lower symptom levels for predisposing patients to a diagnosis other than alcoholism increased on successive visits. This observation plus the finding that each diagnosis other than alcoholism was an important predisposing characteristic for subsequent diagnoses other than alcoholism, help explain why the accuracy in predicting diagnoses other than alcoholism increased on successive hospital visits.

CHAPTER VI

TREATMENT CONSEQUENCES OF THE ALCOHOLIC LABEL

Categories of Treatment

The central question to be addressed in this chapter is, what are the primary, secondary, and extraneous characteristics that are associated with different prescriptions for treatment. Before addressing this question, the nature and purposes of two categories of treatment are briefly discussed.

It is not within the scope of the present study to consider the wide range of treatment patients received for medical, surgical, and psychiatric disorders other than or in addition to alcoholism. Although only two categories of treatment are to be given special attention, it should be pointed out that other kinds were administered in most cases. For example, many patients were admitted to the hospital for the treatment of lacerations or fractures suffered in accidents that may or may not have been directly related to alcoholism. However, treatment for this, or any other kind of problem that was not

obviously given for alcoholism will not be considered.

Although patients in the study population were given other kinds of treatment, their medical records show that "Routine Alcoholic Medication" (RAM) and group therapy (GT) were among the most frequently used. RAM is for treatment of the acute alcoholic episode. GT is for treatment aimed at changing the drinking behavior itself, which may lead to such episodes. (In the present study, RAMGT is used to designate the combination of treatments. RAM and GT can be prescribed alone, however.) The former is essentially a medical problem that might involve sobering up or detoxifying the patient, or the management of alcoholic coma, delirium tremens, hallucinosis, seizures, convulsions, or tremors. Hospitalization is sometimes required because such episodes can be extremely serious life-threatening conditions. According to Mann, in the treatment of the alcoholic episode:

> Both sedatives and tranquilizers are used and often massive doses of vitamins. Initial medical treatments are numerous and very similar...In treatment of the acute phase there is no question as to the value of both sedatives and tranquilizers. In treatment of the alcoholism itself, however, there is a big question as to the advisability of using either sedatives or tranquilizers since so many alcoholics are prone to addiction and are apt to use the drugs as a substitute for drinking, with even worse results.[1]

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[1]Mann, Marty Mann Answers Your Questions About Drinking and Alcoholism, pp. 18-40.

Essentially treatment for changing the drinking behavior itself involves helping the patient understand the nature of the illness and how to live without alcohol (or how to reduce the level and frequency of consumption) in a world where it is so easily available. About 29 percent of the diagnosed alcoholic patients in the study population were given RAM on their first visit to the hospital. One might infer from its chemical composition that this medication was generally used for the treatment of the acute alcoholic episode. The medication consists of a combination of chloral hydrate and pyridoxine. According to Block, chloral hydrate, used for many years in the treatment of alcoholism, "has a good sedative and hypnotic effect, but...is one of the drugs which causes the patient to become habituated. The only advantage of this drug is that it makes the patient sleepy."[1]

Pyridoxine is administered for vitamin B_6 deficiency. According to the Merck Manual of Diagnosis and Therapy, "vitamin B_6 is so abundant in foods that a primary, spontaneously occurring deficiency has rarely been recognized, except in infants fed highly artificial

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[1]Marvin A. Block, Alcoholism: Its Facets and Phases (New York: John Day, 1962), p. 97.

formulas and in chronic alcoholism."[1]

Forty-nine percent of the patients in the study population were referred to the hospital's group therapy program. According to the director of the program:

> All patients in the group therapy program are referred by their attending physicians. Referrals usually appear as written orders on the patients' charts. Even though a physician may prescribe group therapy for his patient, there are no mandatory regulations compelling him to attend and participate in the program...Patients usually start attending the sessions on the first or second day after admission to the hospital and continue in attendance until they are discharged.[2]

The program uses a didactic approach to group therapy which exemplifies Blum and Blum's statement that alcoholics

> ...must learn that <u>something</u> is wrong with their way of life, <u>what</u> that something is, and <u>how</u> they can change it. A didactic therapy group can serve to acquaint the alcoholic patient with the nature and management of his disorders, including social and vocational problems; it can serve to orient him to the facilities of the community and its change agencies and to the respective roles of patient and change-agent in the treatment process.[3]

Thus, while RAM is an appropriate treatment

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[1]Charles Lyght, ed., <u>The Merck Manual of Diagnosis and Therapy</u>, 10th ed. (Rahway, New Jersey: Merck and Company, 1961), p. 267.

[2]Keaton, "The Hurley Plan: Medical Management of Alcoholics - A Dynamic Treatment Modality," pp. 8-9.

[3]Eva M. Blum and Richard H. Blum, <u>Alcoholism: Modern Psychological Approaches to Treatment</u> (San Francisco: Jossey-Bass Inc., 1972), p. 143.

primarily for the acute alcoholic phase, a referral to the hospital's group therapy program might be appropriate for certain prealcoholics, as well as those in later phases.

Diagnostic and Primary Characteristics Associated with RAMGT Prescriptions

According to table 6.1, higher symptom levels are associated with RAMGT prescriptions more frequently than RAM. For those with high symptom levels, RAMGT was ordered more than twice as often as RAM. For those with low symptom levels, the opposite pattern was found. Other treatment was ordered for only 4 percent of those with high symptom levels as compared to almost a third of those with low symptom levels. RAM was the most frequent treatment for those without recorded symptoms.

Labeled alcoholic patients had RAMGT prescribed more than twice as often as RAM. Those without a diagnosis of alcoholism were almost three times more likely to be given RAM than RAMGT. About 29 percent of the latter group received neither treatment as compared to about 1 percent of the former group. This treatment pattern, which logically appears to reflect patient need, is about the same for patients with recorded symptoms.

TABLE 6.1

SYMPTOM LEVELS AND DIAGNOSIS BY TREATMENT

Symptom Levels and Diagnosis	Treatment				Base for Percent
Percent with	RAMGT	RAM	GT	Neither	(N=100%)
Symptom Levels					
High	67.6	23.9	4.5	4.0	423
Medium	29.2	46.7	11.7	12.4	137
Low	19.7	40.9	6.7	32.7	208
None Recorded	22.2	56.3	4.5	17.0	176
Percent of Total	43.0	37.0	6.0	14.0	944
Diagnosis**					
Alcoholism	65.0	28.4	5.2	1.4	517
Other than alcoholism (or none)	16.4	47.3	7.0	29.3	427
	43.0	37.0	6.0	14.0	944
Recorded Symptoms***					
Diagnosis of alcoholism	68.2	25.0	5.3	1.5	456
Diagnosis other than alcoholism	17.9	43.6	8.0	30.4	312
	47.8	32.5	6.4	13.3	768
No Recorded Symptoms*					
Diagnosis of alcoholism	41.0	54.1	4.9	0.0	61
Diagnosis other than alcoholism	12.2	57.4	4.3	26.1	115
	22.2	56.2	4.5	17.0	176

* Indicates small error reduction (Lambda $\leq$ .09)
** Indicates moderate error reduction (Lambda = .10-.19)
*** Indicates large error reduction (Lambda $\geq$ .20)

However, this pattern is different for patients without recorded symptoms. These patients, in both diagnostic groups, were given RAM more frequently than RAMGT. This suggests that treatment patterns for patients without recorded symptoms do not seem to be in accord with patient needs because the majority of those diagnosed alcoholics were given somatic therapy for detoxification without treatment aimed at changing their drinking behavior.

Secondary and Extraneous Patient Characteristics Associated with RAMGT Prescriptions

According to table 6.2, between the years 1956 and 1959, the proportion of the patient population entering the hospital for the first time who were given RAMGT increased from 13.0 percent to 52.3 percent. From 1959 to 1963, this proportion first decreased to 41.1 percent, then increased to 54.9 percent. The proportion of patients given RAM fluctuated downward from 62.2 percent in 1956 to 27.2 percent in 1963. The proportion of patients given group therapy alone was quite small between 1956 and 1959. However, this rose to 11.7 percent by 1963. The proportion of patients given neither treatment fluctuates downward from 18.2 percent in 1956 to

TABLE 6.2

CHARACTERISTICS OF THE PATIENT POPULATION
BY TREATMENT PRESCRIPTION

Characteristic	Percent with	Treatment RAMGT	RAM	GT	Neither	Base for Percent (N=100%)
Year of First Hospital Visit						
1956		13.0	66.2	2.6	18.2	77
1957		27.4	49.1	2.8	20.8	106
1958		37.1	49.5	1.9	11.4	105
1959		52.3	32.4	0.9	14.4	111
1960		47.6	27.9	5.4	19.0	147
1961		41.1	30.5	9.5	18.9	95
1962		51.1	31.2	9.2	8.5	141
1963		54.9	27.2	11.7	6.2	162
	Total	43.0	37.0	6.0	14.0	944
Source of Information Recorded on Patient						
Patient		44.9	33.1	7.0	15.0	559
Spouse		40.0	40.9	4.1	15.0	220
Other		40.9	41.7	6.1	11.4	132
	Total	43.1	36.2	6.1	14.5	911

TABLE 6.2 - Continued

Characteristic	Percent with	Treatment RAMGT	RAM	GT	Neither	Base for Percent (N=100%)
Residence						
Within Metropolitan Flint		37.1	40.7	5.1	17.1	649
Outside Metropolitan Flint		54.4	29.4	8.1	8.1	248
	Total	41.9	37.6	5.9	14.6	897
Age at Admission						
18-39 years of age		35.5	45.0	5.5	14.0	420
40 years of age and older		49.0	30.5	6.5	13.9	524
	Total	43.0	37.0	6.0	14.0	944
Sex						
Female		46.3	36.3	5.0	12.5	151
Male		42.3	37.1	6.3	14.3	793
	Total	43.0	37.0	6.0	14.0	944
Race						
Black		24.8	47.5	6.9	20.8	101
White		45.2	35.7	5.9	13.2	843
	Total	43.0	37.0	6.0	14.0	944

TABLE 6.2 - Continued

Characteristic		Treatment				Base for Percent
	Percent with	RAMGT	RAM	GT	Neither	(N=100%)
Marital Status						
Married		43.8	34.5	6.0	15.7	612
Not Married (single, separated, widowed, divorced)		41.0	41.3	6.2	11.5	305
	Total	42.9	36.8	6.1	14.3	917
Source of Payment for Expenses Incurred in Hospital						
Third party coverage		43.0	46.9	3.9	6.1	228
No third party coverage		43.0	33.8	6.7	16.5	716
	Total	43.0	37.0	6.0	14.0	944
Occupational Category						
White Collar		50.6	25.3	9.6	14.5	83
Blue Collar		40.8	36.5	5.8	16.9	605
Unemployed (including housewives, retired and students)		31.8	50.6	9.4	8.2	85
	Total	40.9	36.9	6.6	15.7	773

6.2 percent in 1963. From 1956 to 1958 the most frequently used treatment of these patients was RAM. From 1959 to 1963, the most frequently used treatment was RAMGT.

According to the hospital's medical records, RAM (used primarily for detoxification) had been one of the most frequently used treatments for known alcoholics prior to 1956. Therefore, these changes in treatment patterns reflect an increasing likelihood that patients would be labeled alcoholics, the establishment and expansion of the group therapy program to accommodate more referrals of labeled alcoholics, and a change in the financing of the group therapy program. Between 1956 and 1960, up to 50 percent of the operating costs for the program were paid by the Michigan State Board of Alcoholism. Between 1961 and 1963 these costs were financed totally through patient charges. This is important because it seems to represent the diffusion of a treatment ideology among hospital staff members that encouraged changes in the patients' drinking behavior as well as more traditional somatic treatment for the purpose of detoxification.

There was very little variation in treatment patterns where patients are grouped by the source of recorded information. This might have been expected since dogmatic

patterns for these three patient groups (shown in chapter 5, table 5.2) were about the same when symptom levels were held constant.

The patient's residence made a considerable difference in the kind of treatment given. Those who lived in metropolitan Flint were equally likely to be given RAMGT and RAM. Patients who lived outside Flint were given RAMGT twice as often as they were given RAM. For Flint metropolitan residents 17 percent were given neither treatment. Only half of that proportion of nonresidents were given neither treatment. These differences seem to reflect the finding (shown in chapter 5, table 5.2) that non-Flint residents were generally more likely than Flint residents to be diagnosed alcoholic.

Treatment patterns also varied according to the age of the patients. Younger patients were more likely to get RAM, while older patients were more likely to get RAMGT. This finding is somewhat inconsistent with diagnostic patterns (described in chapter 5, table 5.2) that indicate that younger and older patients were almost equally likely to be labeled alcoholic when symptom levels were held constant.

There was virtually no difference in treatment patterns according to the patient's sex. However, there

was a considerable difference between black and white patients in the kind of treatment given. Black patients were more likely to get RAM. Almost half of the black patients received RAM. Only about one-fourth received RAMGT. More than one-fifth were given neither treatment. About one-half of the white patients were given RAMGT. Approximately one-third were given RAM. Only 13 percent were given neither treatment. The risk of being labeled alcoholic was shown to be greater for white patients than for black patients. These treatment patterns may reflect a customary opinion among physicians that RAMGT is a more appropriate prescription for a diagnosed alcoholic patient than any of the other three alternatives.

Married patients were more likely to get RAMGT than RAM. Those who were unmarried got RAM as frequently as RAMGT. This finding does not seem to be consistent with diagnostic patterns for the two groups. That is, the risk of being labeled alcoholic is about the same for married and unmarried patients with high symptom levels, and slightly greater for those who are unmarried with medium and low symptom levels.

Patients with hospital insurance were given RAM and RAMGT equally. Those without insurance were given RAMGT more than RAM. Uninsured patients were more likely to

get neither treatment than insured patients. This finding does not seem consistent with diagnostic patterns either, since the risk of an alcoholic label was found to be about the same for insured and uninsured patients when symptom levels were held constant. It is important to point out, however, that since no insurance policies available during the study years covered the direct costs of group therapy, there was no financial incentive for physicians to prescribe or for the hospital administration to encourage RAMGT any more for insured patients than for uninsured patients.

White-collar patients were given RAMGT twice as frequently as RAM. Blue-collar patients were given RAM and RAMGT in almost equal proportions. Unemployed patients who were given RAM far outnumbered those who were given RAMGT. These differences are partially in accord with diagnostic patterns (shown in chapter 5, table 5.2). Although a direct relationship was found between labeling risk and occupational status among patients with high symptom levels, the opposite was found among those with medium and low symptom levels.

Profiles Associated with RAMGT Prescriptions

By holding patient profiles constant, certain

differences in the relationship between diagnoses and treatment patterns can be shown. According to table 6.3, older white females who were labeled alcoholics were given prescriptions for RAMGT more than RAM. This treatment pattern is reversed for those with some other diagnosis.

The diagnosis of alcoholism similarly increases the likelihood of an RAMGT prescription for each of the other patient groups. However, although the direction is the same, the magnitude of the relationship differs according to the patient group. That is, the reduction in error in predicting treatment patterns from knowledge about the patients' diagnoses was relatively large for older and younger, white females, moderate for both groups of white males, and relatively small for black males. To put it another way, older, white females who were diagnosed alcoholic were given RAMGT prescriptions most often. This was the case for about three-fourths of them. Only about half of the black male patients with this diagnosis were given RAMGT prescriptions.

Discriminating between Treatment Groups on the First Three Hospital Visits

The question of whether secondary and extraneous patient characteristics are associated with RAMGT

TABLE 6.3

DIAGNOSIS BY PATIENT GROUP BY TREATMENT PROCESS

Diagnosis by Patient Groups	Treatment				Base for Percent
Percent with	RAMGT	RAM	GT	Other	(N=100%)
Older White Female's Diagnosis* **					
Alcoholism	75.5	18.4	2.0	4.1	49
Other than Alcoholism	21.9	46.9	9.4	21.9	32
Total	54.3	29.6	4.9	11.1	81
Younger White Female's Diagnosis* **					
Alcoholism	66.7	30.3	3.0	0.0	33
Other than Alcoholism	8.6	62.9	5.7	22.9	35
Total	36.8	47.1	4.4	11.8	68
Older White Male's Diagnosis**					
Alcoholism	69.5	23.0	5.4	2.1	239
Other than Alcoholism	19.2	39.5	8.4	32.9	167
Total	48.8	29.8	6.7	14.8	406
Younger White Male's Diagnosis**					
Alcoholism	55.9	37.9	6.2	0.0	161
Other than Alcoholism	18.9	49.6	4.7	26.8	127
Total	39.6	49.6	5.6	11.8	284
Black Male's Diagnosis*					
Alcoholism	53.3	40.0	6.7	0.0	30
Other than Alcoholism	6.7	56.7	6.7	30.0	60
Total	22.2	51.1	6.7	20.0	90

* Lambda ≦ .09 ** Lambda = .10-.19 *** Lambda ≧ .20

prescriptions can also be explored from the patient career perspective by means of discriminant analysis. This analysis measures the relative importance of these characteristics, the diagnosis, and symptom levels, for discriminating between treatment patterns on the first three hospital visits.

According to table 6.4, symptom level and present diagnosis are the factors that contribute most in the positive direction to the differentiation between patients given RAMGT and those given RAM on the first visit. The contributions of those variables that predict in the negative direction are relatively unimportant.[1]

Positive direction refers to the direction descriptive of the group with the higher mean score on this linear combination, which in this case is the group for whom RAM was prescribed. The mean for this group was found to be 1.53. The negative direction is more descriptive of the group for whom RAMGT was prescribed. The mean for this group was 1.18. Thus, the most highly distinguishing attributes of patients given an RAM prescription on the first visit to the hospital are

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[1]Only those scaled vectors whose absolute values are no less than about one-half the largest weight are considered important.

TABLE 6.4

SCALED VECTORS FOR DISCRIMINATING BETWEEN TREATMENT GROUPS GIVEN RAMGT INSTEAD OF RAM ON THE FIRST, SECOND AND THIRD VISITS TO THE HOSPITAL[1]

Predictor Variables	Scaled Vectors		
	First Visit	Second Visit	Third Visit
Diagnostic Characteristics			
Present Diagnosis	.73	.92	.86
Prior Diagnosis	*	.77	.85
Time Since Prior Diagnosis	*	.00	.00
Primary Characteristic			
Symptom Level	.53	.12	.35
Secondary Characteristics			
Age	-.12	-.20	-.08
Prior Treatment	*	-.18	-.25
Extraneous Characteristics			
Sex	-.04	.06	.00
Race	.23	-.04	-.15
Marital Status	.00	-.11	-.13
Insurance Status	-.09	-.25	-.13
Employment Status	.25	.04	-.19
Year of First Hospital Visit	-.19	-.18	-.16
Source of Information	-.07	-.09	-.08
Residence	-.18	-.20	-.14
Physician's Professional Orientation			
Training	-.22	-.07	.11
Treatment Location Preference	.03	-.11	-.13

[1]These functions were generated only on complete cases. Cases in which the patient had no recorded symptoms were not treated as missing data unless there was missing data on some other variable for the patient.

* Inapplicable

TABLE 6.4

SCALED VECTORS FOR DISCRIMINATING BETWEEN TREATMENT GROUPS GIVEN RAMGT INSTEAD OF RAM ON THE FIRST, SECOND AND THIRD VISITS TO THE HOSPITAL[1]

Predictor Variables	Scaled Vectors		
	First Visit	Second Visit	Third Visit
Diagnostic Characteristics			
Present Diagnosis	.73	.92	.86
Prior Diagnosis	*	.77	.85
Time Since Prior Diagnosis	*	.00	.00
Primary Characteristic			
Symptom Level	.53	.12	.35
Secondary Characteristics			
Age	-.12	-.20	-.08
Prior Treatment	*	-.18	-.25
Extraneous Characteristics			
Sex	-.04	.06	.00
Race	.23	-.04	-.15
Marital Status	.00	-.11	-.13
Insurance Status	-.09	-.25	-.13
Employment Status	.25	.04	-.19
Year of First Hospital Visit	-.19	-.18	-.16
Source of Information	-.07	-.09	-.08
Residence	-.18	-.20	-.14
Physician's Professional Orientation			
Training	-.22	-.07	.11
Treatment Location Preference	.03	-.11	-.13

[1]These functions were generated only on complete cases. Cases in which the patient had no recorded symptoms were not treated as missing data unless there was missing data on some other variable for the patient.

* Inapplicable

their tendencies to have lower symptom levels and diagnoses other than alcoholism. Except for the vector for symptom level for patients with 10-42 visits, this overall vector pattern remains the same, when the total number of patient visits to the hospital is held constant. (See Appendix F, table 8.7.)

The most highly distinguishing attributes of patients given RAM on the second and third visits were their tendencies to have a present and prior diagnosis other than alcoholism. However, none of the patient or physician characteristics were as important in predisposing patients to being given RAMGT on the second and third visits. Except for the vector for year of the first visit for patients with three visits on the third visit, this overall vector pattern remains the same when the total number of visits is held constant. (See Appendix F, table 8.8 and 8.9.)

According to table 6.4, prior treatment contributed relatively little to the discrimination between treatments on the second and third visits, probably because this variable merely measures the kinds of treatments given and not the effectiveness or outcomes of each kind of prior treatment. Information on whether (or how much) previous treatments helped in changing each patient's

drinking behavior was not routinely available to the physicians. Information on how patients responded to RAM on previous visits was routinely available to them. However, this latter type of information was measured by symptom levels.

Predicting Treatment on the First Three Hospital Visits

In order to simplify the discussion in this section and the preceding section, patients who were given GT or other treatment were excluded from the discriminant analysis and treated as missing data.

The discriminant analysis of one-half of the remaining patient population on the first three hospital visits yielded the scaled vectors in table 6.4. These vectors were used in a discriminant function for each visit to predict whether each patient in the other half of the population would have RAMGT or RAM prescribed. If the patient's discriminant score was above 1.35 (the midpoint between the centroids for the two treatment groups), RAM was predicted for the patient. If the patient's discriminant score was below 1.35, RAMGT was predicted. The accuracy of the three discriminant functions in these treatments on patient samples is summarized in table 6.5.

The function for the first visit predicted 76.0

TABLE 6.5

TREATMENT CLASSIFICATION PERFORMANCE
USING THREE DISCRIMINANT FUNCTIONS
ON PATIENTS FIRST THREE HOSPITAL VISITS

Hospital Visit	Observed Treatment	Percent of Sample* with Expected Treatment	
		RAMGT	RAM
First (N=306)	RAMGT	49.5	10.4
	RAM	13.6	26.5
Second (N=172)	RAMGT	46.8	8.1
	RAM	10.7	34.3
Third (N=130)	RAMGT	39.6	7.3
	RAM	7.7	45.4

* This sample does not include observed and expected "GT" and "neither" treatment.

percent of the sample patients' treatments accurately. The function for the second visit predicted 81.1 percent of the sample patients' treatments accurately. The function for the third visit was 85.0 percent accurate. (See Appendix F, table 8.10 for the amount of treatment variance explained on successive visits when the total number of patient visits was held constant.)

Summary

The analysis of contingency tables shows that being labeled alcoholic generally increases the likelihood of

patients having RAMGT prescribed. Those not labeled alcoholic were generally given the RAM prescription. The relationship between diagnosis and treatment patterns was strongest for white female patients, less strong for white male patients, and least strong for black male patients. Treatment patterns vary according to differences in the year of patients' first visits to the hospital, the source of recorded information on the patient, and the patient's residence, age, and race, probably because all of these covary with the patients' diagnoses. Three extraneous patient characteristics, being married, or uninsured, or having a higher occupational status, were associated with RAMGT prescriptions more frequently than might have been expected from the diagnostic patterns for these groups. However, the importance of this was somewhat diminished by the discriminant analysis that shows that when patient and physician characteristics are considered together and each one is held constant, none of the secondary or extraneous patient characteristics makes important contributions to distinguishing between the two treatment groups. Diagnoses other than alcoholism on all three visits, and a prior diagnosis other than alcoholism on the second and third visits were the most important characteristics

distinguishing those who had RAM prescribed. The discriminant function explains about three-quarters of the variance between RAM and RAMGT prescriptions on the first hospital visit. Slightly more of this variance is explained by the functions on each successive visit. The implications of these and earlier findings will be addressed in chapter 7.

CHAPTER VII

SUMMARY AND CONCLUSIONS

Diagnostic Labeling

The findings in chapter 5 showed that physicians generally recognized the diagnostic significance of alcoholic symptom levels by recording a diagnosis of alcoholism more frequently for patients with higher symptom levels. However, about one-fifth of the study population with high alcoholic symptom levels did not have a diagnosis of alcoholism recorded in their hospital records. Such discrepancies may reflect methodological limitations in the data collection or coding procedure. However, if these findings are valid, they may suggest that the hospital should continue providing an educational program for physicians practicing at the hospital to improve their skills in diagnosing alcoholism. This should involve periodic case conferences, lectures, seminars, or demonstrations. It is to be hoped that such a program also would encourage use of the hospital's library references on the diagnosis of alcoholism. Alcoholism training opportunities outside the hospital should also be readily available to

physicians who practice at the hospital.

The findings in chapter 5 also showed that about one-third of the patients without recorded symptoms were diagnosed alcoholic. Assuming there were some objective bases for these diagnoses, some description of symptomatology should be recorded to aid in the patient's future diagnosis and treatment, especially since a different physician might be involved later. These observations suggest that a mechanism to encourage more accurate and complete recording of alcoholic symptoms and diagnoses should be designed and implemented. Periodic audits conducted on a sample of medical records is one mechanism that might be used to identify examples of incomplete recording, and, perhaps, the physicians most frequently responsible. Information from such audits should not be used punitively. Instead, it should be used by physicians at the hospital for educational purposes.

The findings in chapter 5 seem consistent with the labeling theory perspective that suggests that the general hospital, like all human service organizations, tends to use diagnostic labels that are in accord with its needs, goals, perceived responsibilities, and commonly used technologies.[1] Whether or not the organization uses the

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[1]Ferman and Manela, "The Processing of Manpower Agency Clients," p. 3.

diagnosis of alcoholism may be dependent on such factors as the number of alcoholics it serves and its formal and informal policies on the use of resources (space, facilities, services, technologies, personnel) for the admission, diagnosis, and treatment of alcoholics. For example, in a hospital that is reluctant to admit alcoholics and provides limited resources for them, a formal diagnosis of alcoholism is less likely to be given to the alcoholic client than an alternate diagnosis like cirrhosis of the liver. In a different hospital, with more ambitious goals for the treatment of alcoholics, a patient presenting the same problem might be diagnosed as an alcoholic. The present study site resembles the latter example more than the former. Hurley Hospital's goals for the treatment of alcoholism have become more ambitious in recent years.[1] Therefore, the finding that patients whose first hospital visits were later in the study period were more likely to receive the alcoholic label than those who visited earlier, seems consistent with the labeling perspective.

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[1]Although the hospital has routinely admitted alcoholics since 1936 (primarily for detoxification and for treatment of medical conditions not necessarily related to alcoholism), it was not until 1956 that a program was established to help alcoholics change their drinking

A second implication of the findings for labeling theory is that knowledge of the labelors' characteristics may be useful in understanding why certain patients were labeled alcoholic. For example, when patient symptom levels and all other patient and physician characteristics were held constant, being diagnosed by a specialist was found to be the most important attribute distinguishing labeled alcoholics. When only symptom levels were held constant, patients whose first visits to the hospital were earlier in the study period were predisposed to being given an alcoholic label if they were diagnosed by specialists. Perhaps the specialists' additional training was responsible for their greater recognition of the diagnostic significance of alcoholic symptoms, whereas it took longer for general practitioners to acquire the necessary knowledge and experience for acute perception.

Also, when symptom levels were held constant, patients whose first visit to the hospital was earlier in the study period, were predisposed to a diagnosis of alcoholism when diagnosed by physicians with a preference other than Hurley Hospital for the treatment of their alcoholic patients. Later in the study period, being diagnosed by a physician with a Hurley preference

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behavior. Each year since then, the number of participants in the program has increased fairly consistently.

predisposed patients with high symptom levels to an alcoholic label. Perhaps early in the study years, physicians who were more likely to use the alcoholic label, developed or maintained a preference for another location because they felt that the Hurley Hospital's group therapy program was not yet established well enough to meet their alcoholic patients' needs. Later in the study years, physicians who were more likely to use the alcoholic label, might have developed a preference for Hurley, because, by then, they felt the program was sufficiently established to meet their alcoholic patients' needs. This changing program perception hypothesis is not incompatible with the training-knowledge diffusion hypothesis suggested earlier.

The findings of the present study and these hypotheses seem consistent with the labeling theory perspective that suggests that labelers may use organizationally standardized operating procedure (e.g., written rules) or their own discretionary authority or some combination of both for making decisions on how to label a client. In either case, the decision is based on some criteria the labeler considers valid and/or reliable.[1]

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[1]Ferman and Manela, "The Processing of Manpower Agency Clients," p. 10.

Several studies have demonstrated this. For example, Belknap[1] found, in his study of a state mental hospital, that there was a considerable difference between the standardized operating procedure used by the professional staff for labeling clients and the discretionary labeling procedure used by ward attendants who actually had the greatest influence on client careers in the hospital. Sarri found a similar disparity in these two labeling procedures in her study of juvenile correctional institutions.[2] More research is needed to increase our understanding of the relationship between various characteristics of society's mandated labelers and patients' acquisition of alcoholic labels.[3]

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[1]Ivan Belknap, Human Problems of a State Mental Hospital (New York: McGraw-Hill, 1956), Chapter 3.

[2]Rosemary Sarri, "Organizational Patterns and Client Perspectives in Juvenile Correctional Institutions: A Comparative Study" (Ph.D. dissertation, University of Michigan, 1962).

[3]The potential relevance of these factors is shown in several studies. See for example, R. M. Gray, et. al., "Physician's Authoritarianism and the Treatment of Alcoholics," Quarterly Journal of Studies on Alcoholism 30 (1969): 981-3; Wilma J. Knox, "Attitudes of Psychiatrists and Psychologists Toward Alcoholism," American Journal of Psychiatry 127 (June 1971): 111-15; J. H. Mendelson, et. al., "Physician's Attitudes Toward Alcoholic Patients," Archives of General Psychiatry 11 (October 1964): 392-99; Muriel Sterne and David Pittman,

In this study setting, where hospital policy was presumably supportive of the diagnosis and treatment of alcoholism, extraneous characteristics predisposed some patients to a relatively low risk of being labeled alcoholic. That is, on the first visit to the hospital, when symptom levels and all other patient and physician characteristics were held constant, being black and being uninsured were the most important characteristics distinguishing patients with a diagnosis other than alcoholism.

These findings raise several questions in need of further research. For example, black patients or uninsured patients may be more likely to arrive at the hospital with more medical problems other than or in addition to alcoholism. If so, do these other problems tend to divert the physician's attention away from the diagnostic significance of alcoholic symptoms among these patients? To what extent is this responsible for omissions of recorded diagnoses of alcoholism among black and uninsured patients with high symptom levels? Does the

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"The Concept of Motivation: A Source of Institutional and Professional Blockage in the Treatment of Alcoholics," Quarterly Journal of Studies on Alcoholism 26 (March 1965): 41-57; and I. Wolf et al, "Social Factors in the Diagnosis of Alcoholism," Quarterly Journal of Studies on Alcoholism 26 (March 1965): 72-79.

prevalence of such omissions vary according to differences in physician characteristics (e.g., feelings of responsibility for the diagnosis and treatment of alcoholism, personal drinking patterns, or personal or professional experience with other alcoholics)?

An alternative sequence of hypotheses could be posited to explain the racial differences in diagnostic patterns when symptom levels and all other patient and physician characteristics are held constant. For example, physicians' attitudes may lead them to assume that higher symptom levels represent more "customary" (less alcoholic, according to the Keller definition of alcoholism cited in chapter 1, p. 5) drinking patterns for black patients than for white patients. That is, some physicians may stereotype blacks as generally heavier drinkers than whites because of different cultural sanctions about drinking behavior. Perhaps this perception led them to give the alcoholic label to black patients with high symptom levels less frequently. The prevalence of these kinds of perceptions might be expected to vary according to differences in physician characteristics (e.g., age, race, place of birth, and experience in working with black alcoholic patients). More research is needed to test these and other hypotheses that might increase our

understanding of why extraneous characteristics predispose patients to different risks of being labeled alcoholic.

This topic seems important since labeling theory suggests that a client may begin to see him or herself in a certain way as a consequence of acquiring a particular label.[1] That is, acquisition of the alcoholic label may lead the client to alter his self-image and define himself as a person with a drinking problem in need of help to change his drinking behavior. This label may also lead some clients to adopt a self-image of a problem drinker who cannot be helped and cannot help himself. Some alcoholic clients may even deny the fact that this label validly defines their drinking behavior (typically because this label is not ego-syntonic and because an unwanted change in the drinking behavior is indicated). Since the client's perception of the label, and the effect of this perception on his self-image may have important implications for his motivation for treatment, the findings of this study raise the question of whether patients with alcoholic symptoms who are not labeled alcoholic are more or less motivated for treatment (to

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[1]Ferman and Manela, "The Processing of Manpower Agency Clients," pp. 3-4.

change their drinking behavior) than those with alcoholic symptoms who are so labeled.

Treatment Consequences of the Alcoholic Label

Patients generally had different careers in the hospital depending on whether or not they were labeled alcoholics. When all other patient and physician characteristics were held constant, being labeled alcoholics generally increased patients' chances for RAMGT prescriptions. Since the probability of being labeled alcoholics was found to be lower for black and uninsured patients, when symptom levels were held constant, it follows that these two groups were less likely to be given RAMGT in accordance with their symptom levels than white patients or insured patients. However, among patients who <u>were</u> labeled alcoholic, black male patients were less likely than white male or female patients to be given RAMGT prescriptions.

Several alternative explanations for this finding are in need of further research. White patients may have simply been more able to afford RAMGT than black patients. Or, for example, white patients, especially white females, who were diagnosed alcoholic, may have been given RAMGT most consistently because their physicians may have been

more likely to perceive pressure or encouragement for this treatment from these patients or their significant others. Perhaps the physician's perceptions of pressure or encouragement for RAMGT were least likely to occur when making treatment decisions for black male patients who were diagnosed alcoholics. An alternative explanation may be that physicians believed that white patients were more likely than black patients to benefit from RAMGT, especially if the former patient group was considered more likely to have motivation and verbal skills necessary for a talking therapy aimed at changing their drinking behavior. Another alternative explanation may be that for black patients, physicians were more likely to prefer and make referrals to agencies or individuals outside the hospital for treatment aimed at changing their drinking behavior. Lowe and Hodges also found racial differences in the treatment disposition of deviant drinkers in their comparison of commitment and incarceration rates in the Atlanta area. They concluded that local community agencies disproportionately channeled whites to treatment at the Georgian Clinic and blacks to prison.[1] Other studies suggest additional reasons for

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[1]George Lowe and H. Eugene Hodges, "Race and the Treatment of Alcoholism in a Southern State," Social Problems 20 (Fall, 1972): 240-252.

the variation in treatment patterns according to race. For example, Sinnott and Hanford found that psychiatric patients who were liked by their attending physicians were more likely to be chosen for psychotherapy than patients who were not as well liked.[1] Hollingshead and Redlich[2] and Brill and Storrow[3] found that physicians tend to have difficulty communicating with patients from dissimilar backgrounds and consequently show less affinity for such patients than for those from similar backgrounds.

None of these explanations, even if supported, would have clear practice implications without valid and reliable evaluative information on what patient groups benefit most (and at what cost) from different kinds of treatment for alcoholism. This kind of information is needed to determine the efficiency and effectiveness of both treatment for detoxification and for treatment aimed at changing the patient's drinking behavior. Such

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[1]Robert E. Sinnett and Dana B. Hanford, "The Effects of Patients' Relationship with Peers and Staff on their Psychiatric Treatment Programs," Journal of Abnormal and Social Psychology 3 (1962): 340-44.

[2]August B. Hollingshead and Frederick C. Redlich, "Social Stratification and Psychiatric Disorders," American Sociological Review 18 (1953): 163-66.

[3]Norman Brill and Hugh Storrow, "Social Class and Psychiatric Treatment," Archives of General Psychiatry 3 (1960): 340-44.

information will also be relevant to the traditional labeling theorists' concern about whether the process of labeling patients as alcoholics at this hospital ultimately has an effect on increasing or decreasing their drinking behavior. It is to be hoped that this issue and the questions and implications raised in this chapter have been considered since the data for this study was collected in 1964.

Conclusion

The findings of the present study suggest that the processes by which persons come to be labeled alcoholics are contingent upon the interpretations of their behaviors by others. The treatment consequences of having this label also vary according to the interpretation of differences within and between patient subgroups.

To put it another way, diagnosticians in general hospitals, like diagnosticians in all other human-service organizations, use diagnostic labels as a shorthand nomenclature for classifying clients according to certain characteristics. The organization's staff uses these labels to specify client problems and to indicate what services the client needs and what referral decisions are to be made. For example, although the label "alcoholic"

may arouse certain moral judgments depending on the labelor's attitudes about alcoholism, this label also indicates certain judgments about the client's drinking behavior and its physiological, attitudinal, and psychological concomitants. The alcoholic label also suggests a range of organizational responses (e.g., types of therapy) that might be recommended and/or provided.

The larger implications of these data are that a sociological theory of deviance should at least implicitly account for the variety and range of interpretations of any form of behavior held by persons, groups, and agencies. The increasing differentiation of groups, institutions, and subcultures in modern society fosters and maintains a changing range of interpretations of, and reactions to, drinking behavior as well as other forms of behavior. Consequently, it is difficult, if not impossible, to definitively define alcoholism using a set of diagnostic criteria that will, in fact, be uniformly recognized and consistently applied by more than a segment of the total population of professional diagnosticians. Because of this difficulty, it is not only the fact that individuals engage in drinking behaviors in excess of some theoretically posited expectations that is significant for understanding why such behaviors may or may not

be labeled alcoholic. A sociological theory of deviant drinking must take into account the interactions and processes that not only define drinking behaviors as deviant, but also stimulate the application of various treatments by individuals, groups, or agencies.

> For in modern society, the socially significant differentiation of deviants from the nondeviant population is increasingly contingent upon circumstances of situation, place, social and personal biography, and the bureaucratically organized activities of agencies...[1]

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[1]John I. Kitsuse, "Societal Reaction to Deviant Behavior: Problems of Theory and Method," in The Mental Patient: Studies in the Sociology of Deviance, eds. Stephen Spitzer and Norman Denzin (New York: McGraw-Hill, 1968), p. 51.

APPENDIX A

THE MEASUREMENT OF ALCOHOLIC SYMPTOM LEVELS

In order to measure alcoholic symptom levels, all recorded symptoms on each hospital visit were weighted for their diagnostic significance. These levels are intended to differentiate degrees of biological, behavioral, psychological, and attitudinal dependence on alcohol. Following Lipscomb's definition of alcoholism (cited on p. 13) these levels are intended to differentiate the risks of certain clinical and social morbidity among some hypothetical alcoholic population.

Since patients could have more than one recorded symptom, the alcoholic symptom level for each patient is the total weight for each visit. A high symptom level is a total weight of 3 or more. This indicates definite (necessary and sufficient) evidence of alcoholism. A medium symptom level is a total weight of 2. This indicates probable evidence of alcoholism. Low is a total weight of 1. This indicates possible evidence. No recorded symptoms is a total weight of 0. This indicates the patient had no alcoholic symptoms, or that the

TABLE 8.1

CRITERIA FOR THE DIAGNOSIS OF ALCOHOLISM[a]

Criterion	Weight	Criterion	Weight
Physiological dependence as manifested by evidence of a withdrawal syndrome when the intake of alcohol is interrupted or decreased without substitution of other sedation	3	Drinking despite strong medical contraindication known to patient	3
Evidence of tolerance to the effects of alcohol. (There may be a decrease in previously high levels of tolerance late in the development of alcoholism.)	3	Drinking despite strong, identified social contraindication (job loss for intoxication, marriage disruption because of drinking, arrest for intoxication, driving while intoxicated)	3
Alcoholic hepatitis	3	Recognized susceptibility to other addictions	1
Alcoholic cerebellar degeneration	3	Convulsive symptoms (not recognized as evidence of physiological dependence on alcohol)	0
Hyperactivity, fatigue, or anxiety	0	Pregnancy problems	0
		Respiratory (non-allergy) problems	0

TABLE 8.1 - Continued

Criterion	Weight	Criterion	Weight
Hallucinations, delusions (not recognized as evidence of physiological dependence on alcohol)	0	Allergy and skin problems	0
Sleep disturbance	0	Lymph, endocrine imbalance	0
Problems in balance, coordination, or consciousness (not recognized as evidence of physiological dependence on alcohol)	0	Bleeding from organs (except menstrual)	0
Non-convulsive neural symptoms	0	Diabetes and related symptoms	0
Liver and related problems	1	Mental or emotional problems (not recognized as a cause or effect of alcoholism)	0
Accidental trauma (including auto)	0	Poor hygiene or physical appearance or condition	0
Violent trauma (aggressive)	0	Surgery, other symptoms, and miscellaneous	0
Back or related trouble	0	Gut and rectal problems	0
Heart trouble	0	Appetite (regulatory) problems	0
		Dental problems	0

TABLE 8.1 - Continued

Criterion	Weight	Criterion	Weight
Blood and circulation problems	0	Congenital problems	0

[a]These weights are a modification of criteria proposed by a Committee of medical experts representing the National Council on Alcoholism. For a description of the original criteria see Criteria Committee, National Council on Alcoholism, "Criteria for the Diagnosis of Alcoholism," The American Journal of Psychiatry 129 (August 1972): 127-135.

APPENDIX A - Continued

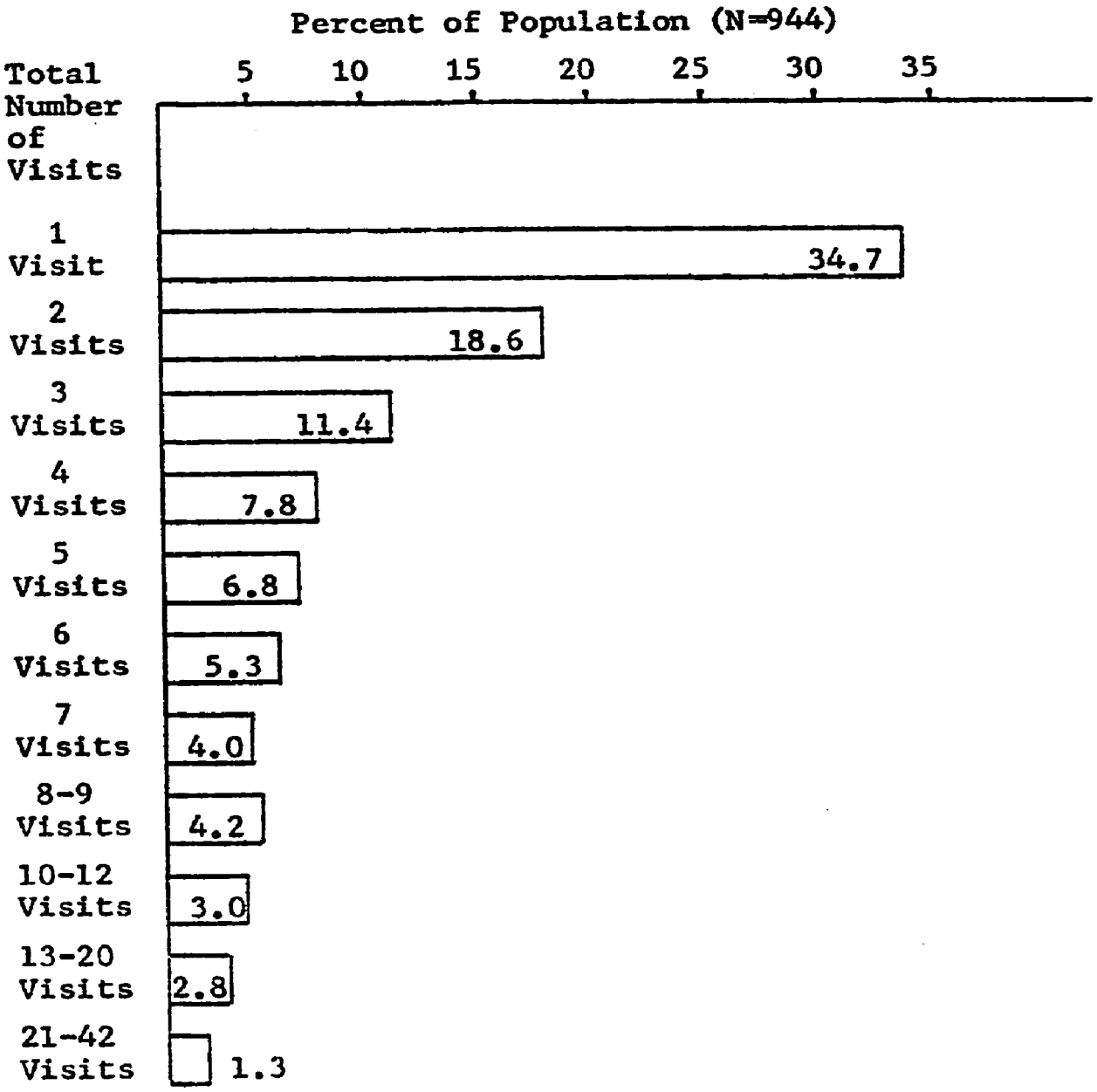
physician did not record the alcoholic symptoms the patient had, perhaps because of an oversight. Symptom levels from low to high can also be thought of as high, higher and highest risks of alcoholism.

It was not possible to determine the reliability of the symptom levels for each patient since they were generally recorded by only one person at one point in time during each hospital visit.

APPENDIX B

TABLE 8.2

PERCENT OF PATIENT POPULATION BY TOTAL NUMBER OF HOSPITAL VISITS FROM 1956 TO 1963



APPENDIX C_1

ADMITTING SLIP DATA - COLLECTING SHEET

(1)Case_____(2)Name_____(3)Address_____(4)Sex____(5)Race_____

Admission Number	Admission Date	Doctor	Age	Marital Status	Preliminary Diagnosis	Insurance Co.	Source of Info. and Relation	Occupation

APPENDIX C_2

MEDICAL RECORD DATA - COLLECTING SHEET

(1)Case_____(2)Name_____(3)Address_____

Admission Number	Admission Date	Doctor	Final Diagnosis	Chief Complaint (symptoms)	Physician's Impression (symptoms)	Medication Record	Group Therapy Prescribed

APPENDIX D

The discriminant analysis procedure has been summarized by Tiedeman and Bryan as follows:

Given n varities, X_1, X_2,..., X_n representing measurements on G groups of persons, there being N_g (g=1,2,...,G) persons within group g. An individual score, for example that of the p^{th} person in group g on measurement j, would then be X_{pgj}....Consider a linear function

$$Y=v_1X_1 + v_2X_2 + \ldots + v_nX_n \qquad (1)$$

an individual value being Y_{pg}. The problem is to determine the coefficients v_1, v_2,..., v_n so that the ratio of the among-groups sum-of-squares to the within-groups sum-of- squares is maximized....To carry out the process of maximization, we express the sums-of-squares as quadratic forms in the test variates and then apply the ordinary techniques of differential calculus. The manipulation is greatly simplified by use of matrix algebra. Accordingly we introduce the symmetrical matrices,

$$A = \left\| a_{ij} \right\| ,$$

$$a_{ij} = \sum_g N_g \bar{X}_{gi} \bar{X}_{gj} = a_{ji} \quad (i,j=1, 2,\ldots,n)$$

$$W = \left\| w_{ij} \right\| ,$$

$$w_{ij} = \sum_{pg} (X_{pgi} - \bar{X}_{gi})(X_{pgj} - \bar{X}_{gj}) = w_{ji}$$

and the column vector $v = \left\| v_j \right\|$. Then the two sums-of-squares become, respectively;

$$v'Av \text{ and } v'wv$$

APPENDIX D - Continued

Since, $$\lambda = \frac{v'Av}{v'wv} \qquad (2)$$

....A large value of λ indicates that groups are divergent while individuals within the group are relatively homogeneous....

Upon setting the partial derivatives of λ with respect to $v_1, v_2, \ldots v_n$ equal to zero, we arrive at the matrix equation

$$(v'Wv)Av-(v'Av)wv = 0 \qquad (3)$$

Now dividing through by v'wv and collecting terms, we get $$(A - \lambda W)v = 0 \qquad (4)$$

and this simplifies to

$$(W^{-1}A - \lambda I)v_1 = 0 \qquad (5)$$

where I is the unit matrix....[1]

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[1]David V. Tiedeman and Joseph G. Bryan, "Prediction of College Field of Concentration," Harvard Educational Review 24 (Spring 1954): 127-28. Two computer programs for discriminant analysis were used in the present study: one is part of The Statistical Package for the Social Sciences (SPSS), the other is part of The Statistical Analysis System (SAS). The Tiedeman and Bryan summary is an accurate reflection of the algorithms used by these two computer programs.

For a more complete description of discriminant analysis see W. W. Cooley and P. R. Lohnes, Multivariate Data Analysis (New York: Wiley, 1971); M. M. Tatsuoka, Discriminant Analysis: The Study of Group Differences. Selected topics in Advanced Statistics, an Elementary Approach, No. 6 (Champaign, Ill.: Institute for Personality and Ability Testing, 1970); and J. Van de Geer, Introduction to Multivariate Analysis for the Social Sciences (San Francisco: Freeman, 1971). For a discussion of the historical development and applications of discriminant analysis see Tatsuoka and Tiedeman, "Discriminant Analysis," Review of Educational Research 24 (December 1954): 402-420.

APPENDIX D - Continued

For each positive value (i=1,2,...,r) there is a unique vector (unique up to an arbitrary proportionality constant) which satisfies equation (5) above.[1] Before these vectors can be meaningfully interpreted as weights for predictor variables, they must be normalized to unity.[2] This is because these vectors are raw score weights which are influenced by the different standard deviations of the predictor variables and therefore do not accurately reflect the relative importance of each variable in discriminating between the groups.[3]

According to Tatsuoka, we may normalize the linear combination in equation (1) above by defining a new set of weights:

$$v_i' = v_i \sqrt{\sum_{j=1}^{p} v_j^2}$$

The resulting linear combination

$$Y' = v_1'X_1 + v_2'X_2 + \ldots + v_p'X_p$$

is geometrically (in the abstract sense when $p > 3$) represented by the same axis as the original $Y = \sum v_i X_i$ and its scale has the same unit as that on the $X_1, X_2, \ldots, X_p$ axes.[4]

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[1]Tatsuoka, Discriminant Analysis: The Study of Group Differences, p. 32.

[2]Ibid., p. 9, p. 51.

[3]Ibid., p. 52.

[4]Ibid., p. 9.

APPENDIX D - Continued

In the present study these weights are referred to as scaled vectors. The pattern of these scaled vectors indicates how much each factor contributes, and in which direction, to the discrimination between diagnostic groups and to the discrimination between treatment groups.

APPENDIX E

TABLE 8.3

SCALED VECTORS FOR DISTINGUISHING BETWEEN PATIENTS WITH AND WITHOUT A RECORDED DIAGNOSIS OF ALCOHOLISM ON THEIR FIRST VISIT TO THE HOSPITAL AS A FUNCTION OF THEIR TOTAL NUMBER OF VISITS FROM 1956 TO 1963

	Patients with a Total of				
Predictor Variables	1 Visit (N=336)	2 Visits (N=174)	3 Visits (N=104)	4-9 Visits (N=265)	10-42 Visits (N=65)
Primary Characteristics					
Symptom Level	.62	.58	.81	.50	.52
Secondary Characteristics					
Age	-.18	-.21	***	-.02	-.12
Extraneous Characteristics					
Sex	.23	.20	.15	.18	.13
Race	.58	.42	.45	.57	.49
Marital Status	-.14	-.10	***	-.09	-.20
Insurance Status	.39	.17	.46	.31	.31
Employment Status	.24	.25	.11	.08	.26
Year of First Hospital Visit	-.20	-.14	-.10	-.18	-.08
Source of Information	-.18	***	-.07	-.03	-.05
Residence	-.22	-.08	-.23	-.23	-.17
Physician's Professional Orientation					
Training	-.36	-.31	-.50	-.48	-.55
Treatment Location Preference	.24	.10	.09	.07	.14

***Weights for these variables were below the minimum criterion for inclusion in the discriminant function.

APPENDIX E - continued

TABLE 8.4

SCALED VECTORS FOR DISTINGUISHING BETWEEN PATIENTS WITH AND WITHOUT A RECORDED DIAGNOSIS OF ALCOHOLISM ON THEIR SECOND VISIT TO THE HOSPITAL AS A FUNCTION OF THEIR TOTAL NUMBER OF VISITS FROM 1956 TO 1963

Predictor Variables	Patients with a Total of 2 Visits (N=174)	3 Visits (N=104)	4-9 Visits (N=265)	10-42 Visits (N=65)
Diagnostic Characteristics				
Prior Diagnosis	.44	.29	.38	.30
Time Since Prior Diagnosis	.06	.08	.05	***
Primary Characteristics				
Symptom Level	.63	.47	.54	.52
Secondary Characteristics				
Age	.03	***	.12	.16
Extraneous Characteristics				
Sex	.29	.15	.15	.18
Race	.50	.31	.49	.27
Marital Status	-.13	-.06	-.23	-.02
Insurance Status	-.17	-.15	***	-.17
Employment Status	.28	.10	.29	.19
Year of First Hospital Visit	-.19	-.12	-.11	-.13
Source of Information	-.05	-.08	-.07	-.09
Residence	-.13	-.17	-.23	-.06
Physician's Professional Orientation				
Training	-.23	-.12	-.16	-.28
Treatment Location Preference	-.12	-.05	-.18	-.04

***Weights for these variables were below the minimum criterion for inclusion in the discriminant function.

APPENDIX E - continued

TABLE 8.5

SCALED VECTORS FOR DISTINGUISHING BETWEEN PATIENTS WITH AND WITHOUT A RECORDED DIAGNOSIS OF ALCOHOLISM ON THEIR THIRD VISIT TO THE HOSPITAL AS A FUNCTION OF THEIR TOTAL NUMBER OF VISITS FROM 1956 TO 1963

Predictor Variables	Patients with a Total of 3 Visits (N=104)	4-9 Visits (N=265)	10-42 Visits (N=65)
Diagnostic Characteristics			
Prior Diagnosis	.37	.31	.28
Time Since Prior Diagnosis	***	.03	.06
Primary Characteristics			
Symptom Levels	.62	.59	.52
Secondary Characteristics			
Age	.12	.14	.03
Extraneous Characteristics			
Sex	.18	.15	.16
Race	.51	.33	.33
Marital Status	.05	.07	.07
Insurance Status	.21	.21	.19
Employment Status	.37	.43	.30
Year of First Hospital Visit	-.14	-.09	-.21
Source of Information	-.11	-.08	-.10
Residence	-.22	-.11	-.18
Physician's Professional Orientation			
Training	-.17	-.10	-.07
Treatment Location Preference	-.09	-.26	-.12

***Weights for these variables were below the minimum criterion for inclusion in the discriminant function.

APPENDIX E - continued

TABLE 8.6

DIAGNOSTIC CLASSIFICATION PERFORMANCE OF THE DISCRIMINANT FUNCTIONS FOR THREE PATIENT SAMPLES ON THEIR FIRST THREE VISITS TO THE HOSPITAL

Random Samples of Patients with a Total of*	First Visit			Second Visit			Third Visit		
		Percent of Sample with Predicted Diagnosis			Percent of Sample with Predicted Diagnosis			Percent of Sample with Predicted Diagnosis	
	Observed Diagnosis	Alcoholism	Other	Observed Diagnosis	Alcoholism	Other	Observed Diagnosis	Alcoholism	Other
1 Visit (N=116)	Alcoholism	48.7	10.6						
	Other	19.5	21.2						
2 Visits (N=58)	Alcoholism	40.9	15.7	Alcoholism	30.2	17.7			
	Other	17.0	26.4	Other	18.5	33.6			
4-9 Visits (N=93)	Alcoholism	45.2	14.5	Alcoholism	35.0	11.6	Alcoholism	30.0	16.1
	Other	14.7	25.6	Other	17.2	36.2	Other	20.3	33.6

* Since the discriminant functions on which these split-half predictions are based are invalid unless the sample size is at least three times the number of variables used in each function (12 variables were included in the function for the first visit, 14 in the functions for the second and third visits), the samples with a total of three visits (N=35) and with a total of 5 visits (N=22) were omitted.

APPENDIX F

TABLE 8.7

SCALED VECTORS FOR DISCRIMINATING BETWEEN TREATMENT GROUPS GIVEN RAMGT INSTEAD OF RAM ON THEIR FIRST VISIT TO THE HOSPITAL AS A FUNCTION OF THEIR TOTAL NUMBER OF VISITS FROM 1956 TO 1963

Predictor Variables	Patients with a Total of 1 Visit	2 Visits	3 Visits	4-9 Visits	10-42 Visits
Diagnostic Characteristics					
Present Diagnosis	.89	.85	.72	.88	.92
Primary Characteristic					
Symptom Level	.40	.60	.45	.74	.33
Secondary Characteristic					
Age	-.15	-.20	-.21	.13	-.10
Extraneous Characteristics					
Sex	-.09	-.03	***	.12	-.04
Race	.10	.12	.24	.10	.07
Marital Status	.05	.17	.06	.26	***
Insurance Status	-.19	-.29	-.16	.34	-.13
Employment Status	.10	.11	.33	.14	.05
Year of First Hospital Visit	-.01	-.20	-.19	.22	-.07
Source of Information	-.12	-.10	-.13	.11	-.11
Residence	-.20	-.29	-.22	.29	-.16
Physician's Professional Orientation					
Training	-.06	-.13	-.29	.20	-.13
Treatment Location Preference	.15	.18	.02	.22	.09

***Weights for these variables were below the minimum criterion for inclusion in the discriminant function.

APPENDIX F - continued

TABLE 8.8

SCALED VECTORS FOR DISCRIMINATING BETWEEN TREATMENT GROUPS GIVEN RAMGT INSTEAD OF RAM ON THEIR SECOND VISIT TO THE HOSPITAL AS A FUNCTION OF THEIR TOTAL NUMBER OF VISITS FROM 1956 TO 1963

Predictor Variables	Patients with a Total of 2 Visits	3 Visits	4-9 Visits	10-42 Visits
Diagnostic Characteristics				
Present Diagnosis	.88	.85	.79	.82
Prior Diagnosis	.73	.64	.55	.67
Time Since Prior Diagnosis	.01	.05	.06	.05
Primary Characteristic				
Symptom Level	.20	.36	.15	.19
Secondary Characteristics				
Age	-.24	-.13	-.27	-.30
Prior Treatment	-.25	-.06	-.13	-.28
Extraneous Characteristics				
Sex	.11	***	.29	.20
Race	-.06	-.15	-.11	-.11
Marital Status	-.18	***	-.18	-.22
Insurance Status	-.25	-.07	-.31	-.27
Employment Status	.06	.27	.19	.09
Year of First Hospital Visit	-.10	-.10	-.16	-.12
Source of Information	-.21	-.08	-.24	-.21
Residence	-.29	-.16	-.13	-.13
Physician's Professional Orientation				
Training	-.09	-.12	-.32	-.16
Treatment Location Preference	-.13	-.05	-.07	-.14

***Weights for these variables were below the minimum criterion for inclusion in the discriminant function.

APPENDIX F - continued

TABLE 8.9

SCALED VECTORS FOR DISCRIMINATING BETWEEN TREATMENT GROUPS GIVEN RAMGT INSTEAD OF RAM ON THEIR THIRD VISIT TO THE HOSPITAL AS A FUNCTION OF THEIR TOTAL NUMBER OF VISITS FROM 1956 TO 1963

Predictor Variables	Patients with a Total of 3 Visits	4-9 Visits	10-42 Visits
Diagnostic Characteristics			
Present Diagnosis	.76	.92	.83
Prior Diagnosis	.71	.86	.82
Time Since Prior Diagnosis	.05	***	.11
Primary Characteristic			
Symptom Level	.29	.40	.31
Secondary Characteristics			
Age	-.09	-.13	-.04
Prior Treatment	-.31	-.22	-.14
Extraneous Characteristics			
Sex	.05	.10	.07
Race	-.22	-.16	-.16
Marital Status	-.20	-.15	-.09
Insurance Status	-.15	-.14	-.13
Employment Status	-.18	-.23	-.18
Year of First Hospital Visit	-.39	-.05	-.03
Source of Information	-.12	-.11	-.09
Residence	-.21	-.15	-.22
Physician's Professional Orientation			
Training	.19	.27	.21
Treatment Location Preference	-.08	-.16	-.05

***Weights for these variables were below the minimum criterion for inclusion in the discriminant function.

TABLE 8.10

TREATMENT CLASSIFICATION PERFORMANCE OF THE DISCRIMINANT FUNCTIONS FOR THREE PATIENT SAMPLES ON THEIR FIRST THREE VISITS TO THE HOSPITAL

Random Samples of Patients with a Total of*	First Visit			Second Visit			Third Visit		
	Observed Treatment	Percent of Sample** w/ Expected Treatment		Observed Treatment	Percent of Sample** w/ Expected Treatment		Observed Treatment	Percent of Sample** w/ Expected Treatment	
		RAMGT	RAM		RAMGT	RAM		RAMGT	RAM
1 Visit (N=93)	RAMGT	47.9	16.8						
	RAM	12.0	23.3						
2 Visits (N=48)	RAMGT	30.4	27.0	RAMGT	33.3	18.6			
	RAM	14.4	28.2	RAM	20.9	27.2			
4-9 Visits (N=74)	RAMGT	44.1	9.7	RAMGT	50.0	11.4	RAMGT	46.9	10.4
	RAM	21.0	25.2	RAM	10.3	28.3	RAM	14.6	28.1

* Since the discriminant functions on which these split-half predictions are based are invalid unless the sample size is at least three times the number of variables used in each function (13 variables were included in the function for the first visit, 16 in the functions for the second and third visits), the samples with a total of three visits (N=28) and with a total of 5 visits (N=17) were omitted.

** These samples do not include observed and expected "GT" and "neither" treatment.

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