A COMPARATIVE ANALYSIS
OF
BIOLOGICAL AND SOCIAL PERSPECTIVES OF HUMAN BEHAVIOR
AND THE DEVELOPMENT OF A CONSTRUCTIVE FRAMEWORK
FOR THE ANALYSIS, DESIGN AND EVALUATION OF
TREATMENT AND PREVENTIVE MENTAL HEALTH
PROGRAMMING

A Thesis
Presented in Partial Fulfillment of the Requirements
for the Degree Master of Arts

by
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December 1974

The Ohio State University
1978

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ACKNOWLEDGEMENTS

I wish to extend special thanks to the following individuals for their interest and advice in the preparation of the material presented in this document.

Robert Bargar, Ph.D., Associate Professor of Educational Development, The Ohio State University

Andrew Schwebel, Ph.D., Associate Professor of Clinical Psychology, The Ohio State University

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Sheila Wellington, M.P.H., Associate Professor of Public Health, Department of Epidemiology and Public Health, School of Medicine, Yale University

Elizabeth Bellis, Department of Epidemiology and Public Health, School of Medicine, Yale University

I also wish to thank both my parents, Clifton E. Mack, LL.B., LHD (Hon) and Emma G. Mack for their patience and encouragement during the course of my graduate studies at Yale and The Ohio State University
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CHAPTER I

INTRODUCTION

Man has been attempting to understand himself since he set foot in Eden. Over the years there have appeared numerous theories of human functioning, some of which, like psychiatry, have adopted the fervor of religious evangelism. It is time to reflect on what it is we do and do not know about man and human behavior. This paper is a reflection of such knowledge and as such it spans both the medical and social disciplines. The theme running through the chapters which follow is the duality of mind and body. A duality, if taken to the point of being applied to the way behavior is classified can lead to a total revision in the way we classify behavior and, in turn, the way we respond to and treat those exhibiting abnormal behavior.

The thesis, states that man is both a biological and a social creature. Those aspects of man which are social such as learning, interpersonal behavior, social norms and values are better explained by using theories of a socio-cultural nature. As such, disorders of a social nature can best be treated or prevented by using a socio-cultural technology.
On the other hand, those aspects of man which are biological in nature, such as the mechanisms of the various body systems and their respective biochemistries can best be explained by using theories derived from medicine. As such, disorders of a biological nature can be better treated or prevented by using a medical technology.

A model or conceptual framework which attempts to explain the full range of human functioning must consider three factors:

(a) The framework must allow for mutually independent classification of social and biological disorders.

(b) The framework must allow for the concurrence of biological and social functioning while maintaining the independent integrity of each, i.e., a social disorder such as stress would be explained by social factors such as perception and value systems whereas a resulting physical disorder such as dermatitis would be explained and treated by using medical technology.

(c) The framework must explain how perception of one's self and one's ecosystem is determined by biological (the five senses and associated neurologic mechanisms, genetics) and socio-cultural (belief systems, cultural norms, social learning) factors. Further, that perception can be affected by altering social or biological factors.

In preparing this document I have attempted to describe in detail, the existing framework which has been proposed to explain the full range of human functioning. The framework called the medical or public health construct, is shown to have evolved out of medical technology.

I follow the discussion of the medical construct with an overview of both the medical and socio-cultural perspective of human
behavior. In so doing, it is my intention to show that human behavior is a function of both biochemical and socio-cultural factors.

Chapter four reviews some of the problems inherent in using the medical construct described in chapter two as a means of explaining both social and biological functioning. Two problems are identified: the first involves the entrenchment of the medical or public health construct in the medical model of functioning. The second problem involves the finding from a study of preventive mental health programming in Georgia that the program classification system derived from the construct and applied by Gerald Caplan to preventive mental health programming is inadequate as a classification system.

Chapter five is the description of a proposed framework for conceptualizing both social and biological functioning which incorporates the three factors mentioned earlier. It is explained how such a conceptual framework, if applied, will affect the way health care systems design and evaluate mental health programs, as well as the way man perceives abnormal behavior in himself and others.

Man represents a complex interplay of social and biological factors, each of which must be identified and handled in terms of their own reality. The way we label behavior affects what we consider effective means of treating or preventing such behavior. A biological disorder requires medically based preventive or treatment interventions
while social disorders require socially based preventive or treatment interventions.

It is hoped that this overview of social and biological perspectives of human functioning will add a new dimension to the reader's understanding of human nature and those systems which can most appropriately explain this nature.
CHAPTER II

SETTING THE STAGE—A DESCRIPTION OF THE MEDICAL CONSTRUCT AND ITS APPLICATION TO PREVENTIVE MENTAL HEALTH

The opinions of psychologists, physicians, philosophers, educators and lay persons regarding the field of preventive mental health are almost as varied as their faces. They stand, as it were, upon a stage before their peers proclaiming one or another truths about human behavior. But, like actors on a stage, the props or set provide some degree of commonality between them. In this particular case, the stage is, for the most part, bare, with the exception of a large structure at dead center. Either by denial or acceptance of its basic form, each of the players has contributed in some small way to its definition, the delineation of which is the topic of the present chapter.

THE PUBLIC HEALTH CONSTRUCT

The structure will be called the public health or medical construct. Its shape defines two divisions: the first, epidemiology and
the second, public health. Common to both is the triad of agent, host and environment. Data on these three factors as they impact upon a disease is collected by the epidemiologist and later translated into treatment and prevention programs by the public health specialist. The chapter which follows discusses the two divisions and the conceptual model which is common to both.

Epidemiology

The primary structure, epidemiology, might be considered the research and development component of the medical construct.

Descriptive Epidemiology.

The principal element of epidemiology involves the collection of data prescribing the mechanisms of persistence and spread of disease or abnormal behavior. Much of this data is derived from an analysis of such variables as sex, age, race, occupation, temporal frequency, periodic fluctuation, long term trends (historical analysis) and geographic distribution with regard to populations exhibiting specific behaviors or biologic symptoms.

In essence, the collection of data or descriptive epidemiology involves a generalized search for possible trends that may exist within a defined population. The data provides a base upon which to build hypotheses about the interaction of man and his environment.
The science of epidemiology does not stop with the hypothesis, however, the research continues by testing the truth or validity of the apparent trends or hypotheses. At this point, the principal structure is constructive in nature, its objective being to "fill the gaps" between potential causes and observed effects.

Constructive Epidemiology

The method of constructive epidemiology applies scientific principles to identify the dynamics of a specific disease process. This process, normally called "the natural history of disease" focuses upon the interaction of the three critical elements of agent, host and environment. I have identified this structure as the trinity, or the forces that bind public health and epidemiology.

The Trinity: Agent, Host and Environment

The trinity defines the scope of constructive research. The process of constructive research involves the following:

(a) Description of the population and environment
(b) Analysis of descriptive data
(c) Development of hypothesis regarding the dynamics of the agent, host environment interaction
(d) Testing of hypothesis
(e) Application of findings by public health
The factors of agent, host and environment are therefore, key concepts in epidemiologic research and are defined as follows:

Agent Causative Factors

A disease agent may be a substance, element or force either animate or inanimate, the presence or absence of which may initiate or perpetuate a disease process. An agent is usually classified as biologic, nutrient, chemical, physical or mechanical. Biologic Agents are living organisms considered to be the parasites of man. According to Leavell, much is known about the characteristics, reservoirs and sources of microbiologic agents of disease, and since the beginning of the bacteriologic era, much has been accomplished in the prevention and control of diseases initiated by these agents. Nutrient agents are classified as carbohydrates, fats, proteins, vitamins, minerals and water. Chemical agents are specific chemical substances which, exogenous or endogenous to the human host "usually serve no useful purpose in growth and development, but create a chemical change in tissue and actually may do harm. Chemical agents are usually classified according to the mode of acquisition: "they may be inhaled as noxious gases, volatilized drugs, or airborne particles; ingested in foods; taken as medicine or acquired by the skin or other parenteral (other than digestive system) tissues. Physical agents are factors such as abnormalities of radiation, chronic friction, and the mechanical forces which add unexpected new
stresses to body mechanisms. Mechanical Agents are described by Leavell as chronic friction and other mechanical forces which add unusual stresses to body mechanisms, resulting in "crushing, tearing, penetrating wounds, sprains, discoloration, or fractures.

Host Causative Factors

Man is a focus of interest for the epidemiologist and, therefore, information concerning his age and sex, habits and customs, general and specific defense mechanisms, "heredoconstitutional makeup" (genetic predisposition) and psycho-biologic characteristics and reactions provide a major source of data. Man's habits and customs play a critical role in initiating or perpetuating disease processes. Habits relating to food, cooking, refrigeration, cleanliness and pasteurization are important elements in the process.

Man's inventions, such as the automobile, the airplane, mass production, synthetic fuels and nuclear technology all add to the hazards of life and the potential for disease and physical harm.

It has been found that in addition to social customs and technological development, such factors as age, sex and race determine the risk, type and course of certain diseases. Included here would be developmental factors of disease causation of which the well known examples are childhood diseases (mumps, measles, chicken pox); diseases attributed to middle age (cancer, heart disease) and old age (arteriosclerosis and stroke).
The biologic or genetic constitution also varies with the factors of age and race and their variance results in the different abilities of individuals and groups to naturally defend themselves against attack by various agent causative factors. For example, the elasticity and flexibility of the skin, the strength of the bones, and the mobility of the joints are structural defenses against certain physical forces. High blood pressure, a weak heart, poor eyesight genetically pre-dispose the individual to certain risks of developing various disorders. Of course, all the factors described to this point work concurrently to the detriment or well-being of the individual and each is affected by the third grouping of factors called environment.

Environment

Defined as the aggregate of all external conditions and influences affecting the life and development of an organism, the environment is actually inseparable from the agent. In theory, the agents are factors which are directly responsible for the initiation and perpetuation of the disease process, whereas the environment is inclusive of all agents and all other factors external to the human host.

Length of life, freedom from ill health and vigor are subject to physical and mental heritage as well as to physical and social environment. The multiple inter-relations of the two forces constitute the much debated question of heredity versus environment. We cannot measure with absolute precision, the influence of any one inherited characteristic or any one environmental factor, even though it be a major one, without
knowing with equal accuracy the influence of the other factors. (Sydenstricker, E., 1933.)

Leavell outlines three types of environment: physical, biological and socioeconomic.

The Physical Environment includes climate, season, weather, geography and geologic structure. The control of these environmental conditions is one of modern technologies greatest challenges. Well known to most individuals is the depression which comes with a falling barometer, the onset of storms, the long hot summer or the periodic enervation of the seasonal hot winds. "Gloomy days are depressing; bright, crisp days are stimulating; a mild winter brings joy and efficiency and a frigid, stormy winter is exhausting." (Sydenstricker, E., 1933.)

The Biologic Environment is defined by Gordon and Augustin (Gordon, J.E., 1948, pp. 343-357.) as "the universe of living things that surround man, all else than man himself." The Socio-Economic environment includes those conditions defined by social class, psychosocial learning and ability to purchase goods and services.

Sydenstricker has outlined the following social and economic factors that might be involved in health and disease:

1. Factors arising out of social environment aside from economic status and aside from social stratification due to differences in economic status. This would include systems of values, beliefs and customs.
(2) Factors that are essential concomitants and results of the economic system of our era. Such factors would include hiring practices, economic fluctuations and social security provisions.

(3) Factors that are inherent in the nature of specific diseases which are particularly subject to general as well as specific economic and social conditions. Diet, conditions of housing, sanitation, conditions or customs which prescribe clothing worn would be considered here.

(4) Factors arising out of the maladjustments in the production and distribution of curative and preventive services. This would include the availability of health care and health education services.

(5) Factors essentially psychological, although greatly dependent upon the other factors mentioned. Leavell mentions such things as crowd behavior, fads and fashions and superstitions as being consonant with this category.

To this point, I have discussed two major components of the medical construct. In review they are epidemiology and the trinity of agent, host and environment. Epidemiology is both descriptive and constructive. Descriptive epidemiology gathers information concerning the mechanisms of persistence and spread of disease or abnormal behavior. The information is categorized in terms of agent causative factors (biologic, nutrient, chemical, physical and mechanical); host causative factors (age, sex, race, customs) and environmental causative factors (physical, biologic and socioeconomic).

Constructive epidemiology analyzes the data, develops and verifies hypotheses regarding the dynamics of the interaction between
the agent, host and environment. The findings provide a base on which to develop preventive interventions to be applied by public health, the third component of the 'medical construct.'

Public Health

Most of the work for which public health is known involves the prevention of major diseases, such as cholera, typhoid, yellow fever, before they can affect man. Therefore, the major focus of public health and constructive research is upon that period of time prior to man's involvement with the disease. Causative agents such as heredity, social and economic factors or physical environment may actually be creating the potential for disease prior to man's involvement. Man's interaction with such an ecosystem has the potential of resulting in disease, disability or death. The objective of public health is, therefore, one of either reordering the lethal environment or reordering the biologic or mental elements of the host.

Epidemiologists call the period prior to man's interaction with the agent factors, the prepathogenic period. Following contact with disease causing factors and until equilibrium is reached or recovery, defeat, disability or death result, man is in a time frame called the period of pathogenesis. Together, the prepathogenic period and the period of pathogenesis constitute the natural history of disease or disease process.
On the basis of this schema, it is possible to identify points of intervention during the disease process when it is possible to prevent prepathogenic conditions, limit the duration of the illness or possible debilitation following the pathogenic period. The Public Health Service systems interface with epidemiologic systems at that point when intervention is made to alter the disease process. The degree of success of a particular intervention depends on the completeness of knowledge about the dynamics of the disease factors being studied (the interaction of agent, host and environment).

Interventions can be made at any one of three points during the natural history of any disease. Each level of intervention is actually a measure of outcome rather than methodology, though there are particular methodologies associated more with one level than another.

Levels of Prevention

Primary Level

The first set of interventions usually occur during the pre-pathogenic period and are designed to promote general optimal health, specifically to protect man against disease agents and establish barriers against agents in the environment. Such intervention outcomes are labeled primary prevention.
Secondary Level

According to Leavell, "as soon as the disease is detectable early in pathogenesis, secondary prevention may be accomplished by early diagnoses and prompt and adequate treatment. When the process of pathogenesis has progressed and the disease has advanced beyond its early steps, secondary prevention may also be accomplished by means of adequate treatment to prevent sequelae and limit disability."

Tertiary Level

Later, when the defect and disability have been fixed, tertiary prevention may be accomplished by rehabilitation.

Tasks of Prevention

Each of the three points of intervention involve certain recognizable tasks.

Primary Level

The first, primary prevention, consists of two tasks, health promotion and specific protection. Health promotion involves procedures "not directed at any particular disease or disorder but serve to further general well-being." Leavell mentions such items as adequate housing, recreation, agreeable conditions in the home and in the occupation, sex education and counseling before and during marriage as examples of health promotion. Specific protection
involves those measures "applicable to a particular disease or group of diseases in order to intercept the causes of disease before they involve man." Leavell mentions such programs as immunization, improvement in nutritional habits, stimulation of proper personal hygienic attitudes, the use of suppressive drugs, the employment of protective clothing and masks in industry, swamp drainage, housing improvement, control of disease vectors (those animate or inanimate carriers of lethal agents) and the amelioration of deleterious socioeconomic factors.

It is obvious that much of what can be considered health promotion has the potential of specific protection. The two divisions are not necessarily independent or unique groupings of interventions.

Secondary Level

Secondary prevention is said to involve both early diagnoses and prompt treatment and disability limitation.

The objectives of Early Diagnosis and Prompt Treatment are:

1. to prevent the spread to others if the disease is communicable.
2. to cure or arrest the disease process in order to prevent complications or sequelae.
3. to prevent prolonged disability.

Disability Limitation involves the prevention or delay of the consequences of clinically advanced disease. "Only delayed
recognition due to incomplete knowledge of disease processes serve to separate this level of prevention from the previous level."

Tertiary Level

The third stage of prevention is meant to "return the affected individual to a useful place in society and make maximum use of his remaining capacities. "Effective rehabilitation depends upon adequate community support and health facilities with staffs trained to help the disabled individual." (Leavell, H.R., 1958.)

The structure and form of the medical construct is built upon the premise that all diseases follow a natural history or recognizable course and that the disease process may be interrupted at any point during its course given an understanding of the disease causative agents. The construct provides for a common frame of reference, a foil per se, before which the players of preventive mental health may present their varied schema meant to explain the dynamics of human ecology and behavior.

There are principally two protagonists in the preventive mental health drama, their names, Ernest Gruneberg and Gerald Caplan. Both are psychiatrists and both believe the medical construct lends itself well to the explanation of "mental disease processes." Their individual arguments follow:
GRUENBERG'S MODEL

According to Gruenberg "mental-disease prevention and physical disease prevention are similar in that none of the diseases in either group is associated with a single cause." Diseases of both kinds are products of processes which may be interrupted at one or more of the three levels mentioned earlier. The major difference between physical health and mental health "has to do with their relative values." Physical health appears to have a very high value because of our desire to be active, to walk, run, see, feel, touch, and manipulate the physical world about us. However, without continuing "personality functioning" the physical aspects of functioning have less value. Gruenberg points to the "vegetative, purposeless lives of many hospital patients" as a case in point for his theory of physical vs personality functioning.

The interruption of personality development is therefore the cause or major factor which, for Gruenberg, leads to mental disorder in the patient. It would follow that the prevention of interruptions in personality development is the major objective of preventive mental health, if Gruenberg's model is accepted.

The dynamics of the agent, host and environmental causative factors for most if not all mental diseases are not fully understood at the present time. Without such knowledge, the natural history of such disorders remain rife with gaps and inconclusive evidence. The
absence of a firm basis from which to work leads to highly diverse and unsupported measures, each aimed at the prevention of mental illness.

Given the rather difficult nature of the subject, Gruenberg has attempted to outline a series of interventions appropriate at each level of prevention. The interventions described are, for the most part, based on two premises:

1. Children reared in an atmosphere of love and concern for their feelings and emotional needs become stronger personalities, more capable of withstanding stresses than children reared in an atmosphere of hatred for their feelings.

2. Limitations upon one's potential prescribed by social practices or key institutions such as schools, churches, prisons and industry can lead to interruptions in the full development and self-realizations of an individual's personality.

A large proportion of the interventions proposed by Gruenberg fall in the area of health promotion rather than specific protection though he acknowledges that many of the interventions could actually be considered both promotion and specific protection.

Primary Prevention

Based on the premises, interventions during the 'prepathogenic period' would therefore be aimed at restructuring those forces which have the potential of limiting one's ability to develop fully his personality. Such interventions can either be oriented toward the environment, in particular, the school or family through "family life
education" or the individual through 
anticipatory guidance, crises, 
counseling or more general personal counseling.

Family life education consists of programs for parent education 
(P.E.T.) and improved family relations. Many of these programs take 
place in the high school, the elementary school, parent-teacher organ-
izations, child study groups, and obstetric wards. Gruenberg notes 
that the most effective method for helping people overcome unhealthy 
attitudes and feelings about themselves, their spouses and their chil-
dren is through counseling conducted by well-informed and personally 
mature individuals. He views the general practitioner as an excellent 
person to provide help to families.

Limitations prescribed by society upon an individual are a bit 
more complex and therefore require more diverse methods of inter-
vention. Gruenberg's principal argument is that personal security and 
social usefulness are key components in a healthy social system.

"Reassurance that one's neighbors will help in the event of fire, flood, 
or other disaster, such as an overwhelming illness is essential in 
fostering mental health. Governments have developed systems, though 
not entirely efficient or responsive, aimed at the provision of special 
services to meet the needs of those in crises.

Personal Counseling is much more directive than social change 
or family life education. Counseling generally involves one to one 
communication between a person needing the counseling and a helping
person. The objective is to help the individual perceive himself as he is and to become aware of realizable potentialities. Again, the point is made that the physician is a key participant of the helping professions and those who seek him out "take advice very seriously and deserve the most judicious and considered opinions." Counseling is usually sought during a developmental or accidental crisis. During these times, the potential for primary prevention is greatest.

**Specific Protection.** Though all of the interventions mentioned thus far have been of a health promotion variety, Gruenberg does mention some interventions, such as the prevention of certain infections (syphilis, lead poisoning, etc.) proper nutrition, social insurance and counseling at crisis points which, though there exists little evidence, do provide some specific protection. Each of these areas will be discussed in greater detail in Chapter III.

**Secondary Prevention**

The early diagnosis and treatment of mental disorders involve the processes of psychotherapy and somatic intervention.

**Psychotherapy** is defined by Gruenberg as "the treatment of emotional and personality disorders by psychologic means. An important therapeutic factor, common to all types, is the therapist-patient relationship with its interpersonal experiences. A person defined as therapist attempts to help an individual who is experiencing a
sense of distress regarding his mental life. The actual therapeutic ideologies are complex and highly diverse. Many of the models of therapy have found their way into the prepathogenic area, being used as the basis for many preventive interventions. Actually, the same methodologies can and are used in crisis counseling, a technique used in primary prevention.

Somatic Measures are used primarily for the relief of psychiatric symptoms and include sedatives and hypnotics, insulin, tranquilizers, stimulants, antidepressants, electroconvulsive therapy, vitamins and hormones. Most somatic measures are used in conjunction with psychotherapies.

Tertiary Prevention

Gruenberg has associated Rehabilitation with disability limitation and has developed a theory which he calls the "social breakdown syndrome." In essence, the theory states that much of the anti-social and irresponsible behavior of mental patients is actually exacerbated by the environment of the institution itself and attitudes of the public toward the mentally ill. If treated like responsible human beings research shows that the behavior of the mental patient improves immensely.

Gruenberg recommends that intensified treatment in mental hospitals is needed "to increase the number of remissions and shorten
periods of illness. He further advises that integrated, community-based programs be developed to provide transitional and supportive services for those persons recovering from mental disease or disordered behavior.

The application of medical principles to the prevention, treatment and rehabilitation of mental disorders is straightforward and follows the schema set forth by Leavell. Emphasis is placed upon the similarities between physical disease and "mental disease," placing the physician in the key role of change agent and primary caregiver.

CAPLAN'S MODEL

Caplan's line of thought varies little from that of Gruenberg. While Gruenberg speaks of preventing the interruption of personality development, and the importance of counseling during crises periods; Caplan speaks of individual needs or supplies without which the person may fail to develop fully and, threatened with the loss of these supplies, the person may experience a state of crisis.

There are essentially two parts to Caplan's model. The first is called "the long term view" and addresses three categories of supplies that must exist in proper balance for healthy mental development. The second is naturally called "the short term view" and focuses on the recurrent crises associated with sudden changes in an
individual's pattern of behavior. "Both parts of the model emphasize the environmental influences which commonly affect many people to a significant extent and ignore those idiosyncratic factors which determine individual differences."

The long term view is based upon the premise that "in order not to become mentally disordered, a person needs continual supplies commensurate with his current stage of growth and development. The three categories of supplies can be roughly classified as physical, psycho-social and socio-cultural.

The insurance of Physical Supplies would include the provision of food, shelter, sensory stimulants, opportunity for exercise and the like which are necessary for bodily growth and development and the maintenance of bodily health, or the protection from bodily damage both before and after birth. Interventions would be directed toward: (a) the prevention of infection, trauma, or chemical poisons such as bromides (bromide psychosis) and lead; (b) the prevention of malnutrition; (c) safeguarding the bodily health of the fetus and the newborn; (d) promoting safety in the home and in industry and (e) combatting material deprivation due to poverty and urban relocation.

Psycho-social supplies provide for the stimulation of a person's cognitive and affective development through personal interaction with significant others in the family and older persons in the school, church and work. Interventions might include (a) involvement in the
planning of manpower distribution and regulations affecting the life styles of employees; (b) involvement in the revision of welfare laws to dissuade the mother from further illegitimate pregnancies and encourage her to improve the moral quality of her home; (c) involvement in court divorce cases to influence custody rights; (d) support of homemaker services where there is illness or death in the family; (e) modification of hospital regulations to allow the mother to stay with the child during the hospital stay; and (f) the development of parent education classes.

Socio-cultural Supplies include those influences on personality development and functioning which are exerted by the customs and values of the culture and the social structure. The social milieu in which the person lives prescribes the way he perceives himself and others. Therefore, the socio-cultural supplies can impact upon both the psycho-social by defining roles and relationships and the biological or physical by defining habits of personal hygiene and eating behaviors as well as the shelter in which the person lives.

Interventions which have the potential of affecting socio-cultural supplies include modification of retirement homes, revision of retirement laws, provision of anticipatory guidance to those nearing developmental transitions and the development of supportive networks in the community for the elderly and disabled.
Caplan's model has been criticized for its breadth without depth. (Torrey, E.F., 1974.) Caplan argues, however, that his comprehensive approach is based on a belief that "not only are mentally disordered behavior patterns part of the whole system of ecological responses of a population in its interaction with its environment," but that the psychiatrist is part of the ecosystem, or what Caplan calls the "security system" in which socially deviant responses and undue victimization are kept in check.

He does admit that the psychiatrist has certain limitations in such a schema. But the way around the limitations lies in "careful self-scrutiny and self-awareness and in exposing one's practices to the critical appraisal of respected colleagues." The psychiatrist, as a social change agent, must restrict his involvement to identifying potential dangers inherent in particular social planning or environmental conditions and to recommending ways in which these wrongs may be righted. The decision to actually make changes is the present system should be left to the community leaders. Commensurate with this view, Caplan discusses a rather elaborate approach to community consultation. By means of consultation, the psychiatrist helps the community improve cooperative patterns of dealing with community problems and the balanced distribution of supplies.

Rather than campaign to reduce poverty, the psychiatrist's role is to help the community identify specific issues of present
reality, such as the quality of teachers and curriculums in schools attended by poverty-stricken children.

The Short Term View. Making communities aware of imbalances in psycho-social, physical and socio-cultural supplies is only one component of Caplan's model, the second component, called the short term view, is directed toward improving "the adjustment and adaptation of the population during life crises."

Action takes two forms, the first is an attempt to attenuate hazardous circumstances defined as "situations of challenge, loss of basic supplies or threat of loss, the second involves the provision of services to "foster healthy coping."

In essence, attention is focused upon the life cycle and points along the developmental continuum that by their nature present potential hazards for unhealthy coping.

Caplan identifies the following transitional periods in individual development where crises could occur:

(1) beginning school  (5) pregnancy
(2) going to college  (6) childbirth
(3) engagement  (7) climacterium
(4) marriage  (8) retirement

According to Caplan, "these situations require change in role which constitutes a challenge or a threat or because of bodily charges, necessitate new relationships in order to maintain adequate supplies."
There are, however, other crises periods which are not as predictable. These periods are termed accidental crises and include, among other things, physical illness, surgical operations, death and divorce. Like Gruenberg's model, Caplan's model places the physician in a position of principal care-giver and change agent. Opposition to this view forms the basis for much of the opposition to both models.

Caplan's interpretation of secondary and tertiary prevention do not differ sufficiently from the interpretation given by Gruenberg and, therefore, does not warrant special attention.

Summary

The medical construct has been presented in detail as a means of setting the stage for a comparative study of the varying views regarding the factors which are believed to initiate and perpetuate disordered behavior. Though the construct is by no means a universally accepted model for viewing mental disorder (if such exists) it does provide a common point of reference, facilitating comparative analysis. The degree to which beliefs vary with the construct, provides the reader with a barometer, per se, of preventive mental health ideology.

The actual construct is both simple and complex concurrently. It acknowledges the fact that man is both a social and a biological organism who has the capacity to reorder himself and his environment,
given a knowledge of the dynamics of that environment. The theory of preventive medicine is based upon three premises:

(1) all behavior is caused

(2) all disordered functioning has a recognizable and consistent history of development which can be interrupted

(3) factors creating the potential for disease exist prior to man's involvement with the disease process

Though the construct has had wide use in the prevention and treatment of physical disease, its application to "mental disorders" is comparatively recent; therefore, it has yet to be determined whether the construct actually lends itself well to the explanation of such disorders.

In the chapter which follows, it will be demonstrated that there are certain physical disorders which give rise to brain disfunctions and in turn behavioral and emotional disfunctions. Such physical disorders are shown to fit rather well into the medical construct because most, if not all, follow a consistent and progressive pattern, which, if not interrupted by bodily defenses or treatment can lead to permanent physical debilitation or death. However, there exist some disorders, discussed under the heading in chapter three, the socio-cultural perspective, which do not follow a consistent and progressive pattern. Such disorders, as it will be explained in chapters three and four, depend upon subjective opinion or societal perspective for their
existence. This is not to say that social and biological disorders are separate or mutually exclusive entities but rather social and biological disorders require separate models for use in their study, explanation, treatment and prevention.
REFERENCES


CHAPTER III

MODELS OF DISTURBANCE—MEDICAL AND SOCIO-CULTURAL EXPLANATIONS OF DISORDERED BEHAVIOR

There exists a multitude of theories regarding the etiology of what some call mental disorder or organic brain syndrome and what others call behavior disorders or problems of living.

Rather than attempt an in-depth discussion of existing knowledge concerning preventive mental health, I have chosen to selectively describe the major theoretical perspectives as an initial step toward organizing what is at present a very chaotic discipline. Generally speaking, there are primarily two perspectives on preventive mental health. The first, the medical perspective, places greater emphasis upon the biological interaction between agent and host; while the second, the socio-cultural perspective, places greater emphasis upon the interaction between the host and his or her social milieu.
THE MEDICAL PERSPECTIVE

To look into our hearts is not enough . . . one must
look into the cerebral cortex. T. S. Eliot.

The medical perspective consists of three research compo-
nents. The first focuses upon the agent causative factors which are
known to result in the disruption of brain functioning such as bar-
bbituates, bromide and bromide psychosis, metals and metallic poison-
ing (lead, mercury, mad-hatter syndrome), gases (oxygen, hypoxia),
nutritional deficiencies or metallic disturbance and mechanical in-
juries (concussion).

The second component focuses upon specific neurologic dis-
orders that have been linked to genetic abnormalities and those
affective disorders such as the manias and depressions for which
there may exist chemical imbalances. Both these areas (genetic and
biochemical) are discussed under host causative factors.

The third component, though not discussed in detail in this
chapter includes the study of neurologic diseases such as Hodgkin's
disease, multiple sclerosis, epilepsy, and Huntington's disease, for
which there are no known causes and treatment modalities are limited.
Such disorders form a special grouping because they represent or-
ganic brain syndromes associated with diseases of unknown causes.
Due to their unique natures, each of these disorders would require
separate discussions, a task beyond the scope of this document.
With a few of these diseases such as Hodgekin's and Huntington's diseases, genetic predisposition has been mentioned as a possible cause. (Freedman, A.M., 1972.)

It might be said of all three components that much is known concerning the treatment and symptomology of the disorders mentioned but very little is known about the way in which a particular agent acts upon the nervous system to cause the disorder. The second component is perhaps the more vital of the three because of the controversy surrounding genetic research and the current interest of clinical psychologists and neurologists in the biological character of affective disorders. I have chosen to structure the discussion of components one and two around the five agent causative factors, chemical, biological, nutritional, mechanical and host factors.

Chemical Agents

There are primarily fourteen classes of chemical poisons that have been shown to affect the central nervous system. (Arena, J.M., 1974, pp. 85-95.) Just how these chemicals work is not known but their effects range from seizures (strychnine poisoning) to coma (primary as in barbiturate intoxication or secondary as in uremia caused by heavy metal poisoning). In some cases secondary emotional disorders or psychotic behavior cloud underlying causes making diagnosis difficult. Those classes of chemicals which cause
neurologic disorders, for purposes of reference, are the anacholinergic drugs (belladonna, stramonium, bromides, hallucinogens (Meseculine, LSD), barbituates, amphetamines, thiocyaates, anesthetics, hormones (cortisone), disulfiram, antibiotics, alcohol, gases, solvents and heavy metals.

As noted in Chapter II, chemicals (in this case, those which cause "toxic psychosis") may be inhaled, come in contact with the skin, or may be ingested. It must be emphasized that the effects of toxic agents are equally determined by the chemistry of the agent, the conditions under which the person is subjected to the agent as well as his general health, age, past experience and predisposition to illness. In general, however, most toxic poisonings exhibit similar symptomatology regardless of these factors. A full blown acute syndrome of toxic poisoning usually consists of restless, suggestible and confused behavior with a high frequency of both auditory and tactile hallucinations, paranoid tendencies and ideation. The patient's mood is usually described as "labile," irritable, anxious, fearful, depressed, and may exhibit suicidal tendencies. In most cases the affected person is stabilized or brought back to normal functioning within one to three weeks depending upon the severity of poisoning. It is not yet known to what extent poisoning permanently affects brain functioning, however, according to Dr. John Lee, neurologist, Northside Hospital,
Atlanta, Ga., most poisonings, if caught within a reasonable period of time, are reversible. (Lee, J., personal interview.)

Statistics showing the incidence of toxic morbidity and mortality in 1975 (Tables 1 and 2) show a continuing decline of deaths from accidental poisonings among children under five years of age, a population with the highest risk for accidental poisoning. According to Dr. Albert Rauber, physician, poison control center, Grady Hospital, Atlanta, Georgia, the incidence of child poisoning has decreased primarily as a result of laws requiring safety lids for cleaners and drugs. He went on to say that no statistics were available concerning the number of children who had become brain damaged as a result of poisoning. (Rauber, A., personal interview.)

In the adult population, most poisonings are due to illicit drug use, food poisoning and misuse of prescribed drugs, however, as in the case of children psychotic sequelae have not been systematically recorded. At least in the Atlanta area, poisoning in the adult population due to the heavy metals, gases, or solvents is virtually a thing of the past.

Poisoning in the adult population due to drinking alcohol (ethyl), barbiturates, amphetamines and hallucinagines (mescaline, LSD) are well known and do present a real and present danger to human health. Statistics of incidence are varied and do not accurately describe the actual morbidity rates due to these chemicals. However, according
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**Source:** Mortality Statistics-Special Reports, Accident Fatalities
Division of Vital Statistics
National Center for Health Statistics, Health Resources Administration
Distributed by: U.S. Department of Health, Education & Welfare
Public Health Service, Food and Drug Administration
to local physicians, severe toxic reactions due to alcohol abuse and
drug abuse are frequent problems encountered by emergency room
personnel and detoxification centers. The actual number of cases
which result in psychiatric admissions has not been consistently re-
corded.

Though heavy metal poisoning is not a big problem to adults it
does present a problem for young children. In particular, poisoning
due to lead is a major problem in many cities where there are many
old tenement buildings, with walls painted with lead based paints.
The problem of poisoning due to lead contained in paint is not as much
of a problem as it was a few years ago before there were laws regu-
lating the amount of lead contained in paint. According to Dr. Rauber,
Atlanta has seen a large decline in lead paint poisoning since 1960.
However, lead is still causing problems as are other heavy metals
such as mercury, because of their presence in the exhaust of motor
vehicles. Exhaust presents a greater hazard to children because it
has been found to accumulate in large amounts two or three feet above
the ground. This is particularly the case near congested city areas,
highways and bridges.

It may be concluded from the comments of the physicians and
neurologists cited earlier that the chemicals or toxins which cause
the greatest number of toxic psychoses (minor-major not known) are
alcohol, hallucinegens and barbiturates. The next most frequently
encountered toxic psychoses are those caused by the ingestion of aspirin products, medications and cleaners by children, though the number of cases is declining. Poisoning in the same population by lead and mercury follows in reported frequency.

The third most frequently encountered toxic psychoses are those caused by prescribed substances such as the anacholinergic drugs (used for Parkinson's disease and to subdue side effects of tranquilizers). Such chemicals are known to affect the amount of acetylcholine in the body which is believed to be involved in the transmission of almost all nerve impulses in the central nervous system. It must be added, however, that the effects of toxins are not limited to the individual who is exposed to them. Certain toxins can have a delayed effect upon an unborn child whose mother has been exposed to one or more of them.

Toxic Chemical Reactions in Pregnancies

Current research into the effects of certain toxins upon the fetus have revealed a number of potential points of entry to prevent brain damage in the unborn child. Beginning in 1960, the public was made aware of the potential damage of drugs during pregnancies when scientists uncovered the crippling effect of thalidamide on the fetus.

Since then, other drugs such as LSD, alcohol, heroin, barbituates, and tobacco have been found to have adverse effects on the fetus, though research findings are still rather tentative at this time.
However, it is safe to conclude that a pregnant woman who is a chronic user of illicit drugs or tobacco and alcohol may be a high risk pregnancy. Users of such drugs have a higher rate of prematurity, low birth weight, congenital defects, still-births and spontaneous abortions. For example, babies born to users of heroin exhibit signs of withdrawal which include central nervous system irritability and gastrointestinal and respiratory disorders such as tremors, vomiting, a high shrill cry, fever, sweating and sometimes convulsions.

Biologic Agents

In Chapter I, biologic agents were described as living organisms, considered to be parasites of man. Viral infections, one class of biologic agents, cause infectious diseases, many of which affect brain functioning or result in permanent damage to the nervous system. Infectious diseases give rise to brain dysfunction, either by direct invasion of the brain by toxic, hypoxic agents, or allergic affects of infection elsewhere in the body.

The effects of infectious disease upon the brain are manifested in irritability, insomnia, and restlessness. With advanced disease states, more severe changes develop, such as combative ness, visual hallucinations and impairment of memory. In most cases abnormal behavior subsides as the patient is stabilized, however, changes in
personality and intellect persist in a significant number of patients.
(Freedman, A.M., 1972.)

Most of the major diseases which in the past have created
threats to mental health such as malaria, hepatitis, African sleeping
sickness, and Rocky Mountain spotted fever are no longer viable due
to specific controls on sanitation and inoculation. However, some
diseases still create threats to the fetus by infecting the mother or the
unprotected child soon after birth before specific immunities can be
developed. Research has shown that a great many of the infectious
diseases which are viral in origin are associated with mental retarda-
tion. Those producing the most congenital defects are rubella
(German measles) and the cytomegaloviruses (CMV). (Williamson,
A.P., 1972, pp. 1023-30.)

Maternal measles, mumps and possibly chicken-pox have also
been associated with congenital defects in the newborn, but they have
not been linked with mental retardation. (McKendry, J.B.J., 1973,
pp. 352-54.) (Sever, J.L., 1966.) Studies have shown that bacterial
and protozoan infection have a much lower incidence than do some
viral infections but the damage is no less an important factor in neo-
natal health.

If Rubella (German measles), a virus, is contracted by the
mother in the first month of pregnancy, there is nearly a 50% chance
that the fetus will be affected. The likelihood of congenital defects
decline in the second month to 22% and in the third, fourth, and fifth months to between 6% and 10% (Williamson and South). Epidemics of rubella occur at irregular five to seven year intervals. In non-epidemic years, an estimated one out of every 1,000 women catch rubella but in the 1964 epidemic in the U.S., the incidence rose to 22 out of every 1,000. (Sever, J. L., 1966.)

The number of infants infected with congenital rubella is approximately one in 10,000 births. In epidemic years, the number affected would rise about 22 times that number. Protection against rubella can be obtained through immunization, however, it is felt that such protection is not lasting for some children. Generally it has been found that an immunization rate of 90% or more is needed to control the disease, therefore, immunization of both children and women is highly recommended. However, warning is given to the pregnant woman that the effects of the rubella vaccine on the developing fetus is unknown.

Cytomegalovirus Infection (CMV), a common virus producing inapparent infection in both children and adults, is thought to produce overt infection in 3.5 to 6% pregnant women. An estimated .5 to 1% of live births shed CMV and possibly 10% of these are mentally retarded.

Measles, though common and generally not damaging to the child, can lead to serious complications, among them, encephalitis
and meningitis, both of which can cause permanent and irreversible brain damage. An estimated 1 out of 1,000 persons with measles develops encephalitis. (Medical News, 1971, p. 1075.)

Families in the low income groups are the ones most often affected. They have a higher percentage of non-immunized children and have more infectious diseases with more complications than do families in the higher income groups. (Birch, H.G., 1970.) (Eisenberg, L., 1966.) It is therefore recommended that programs aimed at the immunization of children from low income homes be encouraged.

Nutrient Agents

Nutritional factors are difficult to measure without also considering the factors that appear along with them such as proneness to infectious diseases with complications and emotional and personality disturbance. (Scrimshaw, N.S., 1969, pp. 375-88.)

Nutritional problems are most often encountered by the elderly population and by young children. The effects and etiology of malnutrition for these two groups are considerably different. Malnutrition can be the result of both an inadequate diet or metabolic disturbance. In the elderly, nutritional deficits due to metabolism disorders can cause senile and presenile dementia. However, the cause of such metabolic disturbances are not known at present but research
indicates that there may be metabolic, endocrine, vascular or genetic factors involved which may provide answers in the future. (Freedman, A.M., 1972, p. 276.)

Alzheimer's disease, another metabolic disorder affecting those persons aged sixty-plus, has an incidence of 4%. Those affected, mostly women, experience gradual intellectual deterioration. No specific treatment is known for any of these disorders and most affected individuals require protective environments.

Malnutrition due to inadequate diets is a more frequently occurring phenomena in the elderly due to decreased mobility and isolation and difficulty in purchasing food. A recent study conducted in Utah of eating habits of the elderly found that of the population sampled, approximately 4,000, 20.9% ate alone. It has been found that the person who is isolated and has little social contact often neglects preparing balanced meals and find food less appealing. (Gift, H.H., 1972.)

In children, poor nutrition gives rise to indirect effects on learning. (Birch, H.G., 1970.) Birch has noted three effects:

a. A child who is poorly nourished will be more prone to episodes of illness. Such illness will result in lowered school attendance and a general reduction in academic achievement.
b. A child passes through several critical periods of development when key concepts are learned. Poor nutrition during any one or all of these periods can result in retarded intellectual development.

c. A poorly nourished child has lowered energy levels which can result in decreased motivation and the development of an irritable personality.

Unfortunately, there is little knowledge of the actual effect deficiencies have on children. Statistics obtained by the "Nutrition Canada" survey (Nutrition Canada, 1973), shows that well over a third of the children included in the nationwide study proved to have an insufficient amount of iron in their diets. Such a deficiency leads to apathy, listlessness, anemia and ultimately affects learning.

Table 3 summarizes the nutritional findings of the Canada study.

**TABLE 3**

<table>
<thead>
<tr>
<th>Nutritional Deficiency</th>
<th>0-4</th>
<th>5-9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical evidence of protein - caloric malnutrition</td>
<td>3.6%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Moderate risk - serum protein</td>
<td>1.2%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Moderate and high risk hemoglobin</td>
<td>4.4%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Inadequate and less than adequate dietary iron</td>
<td>44.2%</td>
<td>35.5%</td>
</tr>
</tbody>
</table>
Most of the reported malnutrition is said to be caused by the use of convenience foods and "empty calories."

It will be remembered that toxins can have an effect on both the exposed individual and, if a pregnant mother, the unborn child. The same is true in the case of malnutrition. Poor maternal nutrition during pregnancy has been shown to affect the health of the newborn. But direct cause and effect relationships are still difficult to prove because of other variables, such as poverty, disease, lack of education, insufficient interest in health or inadequate medical care. (National Academy of Sciences, 1970.)

Studies have shown a relationship between poor maternal nutrition and the higher incidence of low birth weight infants (infants weighing less than five and a half pounds are both less likely to survive and more likely to develop sensory, neurological, mental, and other defects affecting learning ability. (Eastman, N.J., 1968, pp. 1003-25.) (Singer, J.E., 1968, pp. 417-23.) (Thompkins, W.T., 1955, pp. 114-27.)

Mechanical Agents

Agents which fall into this category are those which exert external forces upon the body creating undue stress which results in tearing of brain tissue, concussion, or other brain trauma. Until there is evidence that the stress created by a person's social or
cultural environment creates changes in the biochemistry or neural structures of the brain, such stress producing stimuli should not be considered mechanical agents.

As in nutrition, children are perhaps the more prone to accidents which cause head injury. It is estimated that between birth and age six, more than three out of every hundred children will be involved in an incident causing head injuries at one time or another. (Caveness, W., 1970.)

However, the incidence of those head injuries leading to retardation is not known. In general, though, head injury is regarded as an uncommon cause of retardation. (Berg, J.M., 1960, pp. 207-11)

Three longitudinal studies of children with head injuries resulted in the major findings that such behavioral traits as hyperkinesis, irritability, poor attention span, poor comprehension and resulting academic difficulties were common after discharge from treatment. (Black, P., 1970.) (Richardson, F., 1970.)

Injury resulting from accident accounts for the majority of cases, however, child abuse is another cause of injury to the brain. Accurate statistics on child abuse are not available because most child abuse cases go unreported and few are actually witnessed.

Mechanical injuries to the brain in the adult population are diverse and statistics are not available. However, the most frequent head injuries in this population are due to automobile accidents.
Second in frequency are those injuries which are the result of massive assaults on the brain by electrical shock. Statistics show seventeen percent mortality among patients in this group, noting that permanent damage to the brain is usually caused by the burning of the tissue rather than the current itself. (Freedman, A.M., 1972.)

Though there is little published on the topic, stress upon brain tissue may also occur as a result of exposure to large amounts of radiation. However, physicians who have had some acquaintance with such persons report that "these patients act like other patients under comparable conditions." (Freedman, A.M., 1972.)

Host Factors (genetic predisposition and affective disorders)

In most every case cited above, the physical constitution of the individual is inseparable from a measure of their vulnerability to lethal agents. Some neurologists believe that genetic factors play an even larger role than formally acknowledged. Much remains to be learned about the precise mechanisms governing the inheritance of characteristics, however, a number of genetic defects have been positively linked with certain types of mental retardation. Recent research into the biochemistry of the depressions and manias has resulted in a number of hypotheses which link these disorders with genetic defects leading to metabolic disturbances.
Some genetic defects produce readily identifiable changes in body structure, as in Down's Syndrome (mongolism). Others, such as phenylketonuria (PKU) result in biochemical changes in the body leading to metabolic disorders. Generally, it is presumed that a family history of a genetically based disorder is indicative of a potentially high risk birth in later generations. However, genetic defects can also occur spontaneously in the population due to the toxic effects of some drugs and chemicals, radiation and maternal age. Other agents implicated in the etiology of both retardation and affective disorders include bodily changes due to developmental changes and environmental stress.

*Retardation* Identifiable hereditary disorders producing mental retardation can be divided into two main groups: those caused by defects in the chromosomes, and those associated with defects in the genes contained within the chromosomes.

**Chromosomes disorders.** Statistics indicate that one out of every two hundred newborn infants will have a chromosome disorder.*

Instead of inheriting the normal number of chromosomes from his or

*Various estimates of the incidence of chromosomal abnormalities have been made. Stated as percentages, some estimates for autosomal defects are 0.17% (WHO study), and for autosomal translocations only 0.092%, 0.172% and 0.137%. Some estimates for XO chromosome defects are 0.228% and 0.142%. These estimates tend to confirm the estimate of an overall incidence of one in two hundred or 0.5%. (Fotheringham, J. B., 1976.)
her parents, the twenty-two pairs of autosomes (an ordinary chromosome that determines all bodily characteristics by itself and has no influence upon sex determination) and the two sex chromosomes (XX or XY), the child with a chromosome disorder will have additional chromosomes, missing chromosomes or rearrangements of whole chromosomes in his cells. (Hilliard, L.T., 1965.) Of the known chromosomal defects (Patau, Edwards Syndrome, etc.), Down's Syndrome has the highest frequency of occurrence. (Milunsky, A., 1973.) In the general population, the incidence of the condition is 14 in every 10,000 live births, but it rises sharply with maternal age. Women aged thirty-five and over account for only 13.5% of all pregnancies but for half of all infants born with Down's Syndrome.

Gene determined disorders Genes are involved in the determination of inherited individual familial characteristics and in the control and manufacturing of enzymes involved in metabolic processes. To date there have been identified more than forty gene determined disorders of the body chemistry which lead to mental retardation. Incidence for gene determined disorders for the general population is low, however, among certain specific populations, the incidence is relatively high for certain disorders such as Tay-Sacks disease among eastern European Jews and their descendants and tyrosinemia found in isolated regions of Quebec.
Gene disorders are sometimes detectable prior to and after conception. While there are still inherent difficulties in the detection of carriers, people of child-bearing age should be tested if there is a family history of a specific gene-determined disorder for which testing is possible. However, test results are not always clear cut because carriers of a defective genetic structure frequently exhibit signs of partial enzyme deficiency and minor metabolic disturbance that are similar to deficiencies in non-affected members of the general population. New methods of enzyme examinations are being developed which are more reactive to slight deficiencies in enzyme metabolism, allowing for better diagnoses of gene disorders.

Affective Disorders

Due to the nature of most biologic research to date, the theories concerning the biologic etiology of affective disorders is best categorized under host causative factors. The biologic study of the affective disorders (mania and depression) is, for the most part, based upon the premise that changes occurring in the metabolism of certain chemicals, such as the biogenic amines (epinephrine, dopamine, serotonin) or the inability of certain physical systems (neuroendocrine system) to function properly results in either depressive or manic behavior.
It must be noted that neurological research in this area is by no means definitive and there is speculation that changes in body chemistry may actually be a secondary phenomena due to other changes in the body not presently understood or to exogenous factors. Perhaps the more vital area of neurologic research are those studies which focus upon the biogenic amines and their relative concentrations in the bodies of depressives, manic and normals. Most noted are the urinary studies and the cerebrospinal studies.

Robins and Hartman have summarized the findings from nine urinary studies of both depressed and manic patients in which the relative concentrations of catecholamines and their metabolites were measured. It was noted that urinary findings were, in general, not consistent with the hypothesis that depressives have a lower concentration of amines or their metabolites than normals. However, findings concerning the hypothesis that manics have a higher concentration of amines or their metabolites were consistent. (Robins, E., 1972, pp. 607-44.) One possible explanation for the inconsistency observed with depressives is the possible heterogeneity of the label depression. Attempts have been made to divide the depressive group into more homogeneous subgroups. (Robins, E., 1972, pp. 283-93.)

Cerebrospinal studies have focused upon the concentration of amines and their metabolites in cerebrospinal fluid of both manias and depressives. Findings for both groups have been inconsistent.
Explanation for the inconsistency involves the difficulty of measuring amine metabolite concentrations in the cerebrospinal fluid. In an attempt to obtain more consistent information, researchers have used probenacrid which blocks the active transport of metabolites (5-HIAA and HVA) out of the cerebrospinal fluid (CBF). Rather than "seep" out, as it were, the metabolite will build up in the CBF providing a more accurate measurement of concentration since the so-called seepage cannot be measured. Unfortunately, interpretation of results is quite complicated and the need for more research is noted.

(Frazier, A., n.d.)

To this point, five aspects of biologic research have been discussed. From the variety and interconnectedness of agents such as nutrition, infection, biologic constitution, as well as genetic predisposition it is not hard to understand why the study of preventive mental health is considered complex. It has been noted repeatedly that few studies have yielded consistent results, particularly in the area of the affective disorders. The interpretation of data that is generated is both ambiguous and contradictory.

However, given the problem with the medical perspective, it is important to be aware that disorders in personality and brain functioning may have a biological origin. Part two of this chapter will attempt to explain disordered behavior from a socio-cultural perspective.
PART 2: THE SOCIO-CULTURAL PERSPECTIVES OF HUMAN FUNCTIONING

Both David Mechanic and George Albee have identified five socio-cultural theoretical perspectives of human behavior. The first, or the psycho-social theory, focuses upon developmental experiences and their effect upon personality and functioning; the second, or learning theory, attempts to explain most behavior as a product of trial and error type learning in which the individual is either rewarded for desirable behavior or, in some way, punished for undesirable behavior; the third, cognitive theory, explains behavior as a complex set of response patterns to groups of stimuli rather than single sensations; the fourth, the crisis theory, explains certain abnormal behavior as the result of inadequate coping mechanisms in stressful situations; and the fifth, the labeling theory, attributes prolonged abnormal behavior to the process by which society labels and segregates deviant persons.

All five theoretical points of view, when applied to health service delivery or the development of treatment or prevention programs are difficult to differentiate. For example, much of our behavior is molded by positive and negative stimuli. Reinforcement type learning occurs at all stages of development and involves both subtle (societal values and overt (academic achievement) stimuli. Such learning can affect personality development if it occurs during one or more of the
critical periods of development (early childhood, adolescence, young adulthood). Social stress is present during all developmental phases, the extent of stress is determined by the presence of accidental crises (death of significant family member or friend, illness, marriage, change in employment) which may coincide with a developmental crisis. Therefore, in practice, it becomes a very complex task to isolate one or more of these factors and measure its impact upon the individual.

A more realistic approach is the judicious application of those theories which are appropriate to specific aspects of human behavior and functioning. In the previous section various theories were described which focus upon the biological aspects of human functioning. Most people would agree that an individual is both a biologic and social organism. It would follow, therefore, that as there are theories and methodologies better suited to the explanation of biologic functioning, there should be theories and methodologies better suited to the explanation of social functioning. For example, an individual who is experiencing a biological disorder may have concurrent social disorders such as a lowered self-concept, isolation from normal human interaction and fear for the future.

In analyzing this particular constellation of social and biological disorders, it is important to consider each disorder independently and the theory or theories which might facilitate the design of appropriate
treatment or preventive interventions for each. One might ask to what extent does each theoretical perspective explain some aspect of a particular disorder. For example, to what extent is the individual's feeling of depression the result of the biological disorder and to what extent is the depression the result of the individual's milieu, stage of development, rejection by peers or self-concept. In so doing, appropriate treatment or prevention programs might be designed to alleviate one or more of the disorders in question.

Both this section and the previous section represent a kind of catalogue of possible explanations for disordered behavior and functioning. This chapter has been divided into biological and socio-cultural perspectives in order to emphasize the duality of human behavior as well as the equality of both perspectives

Psycho-Social Perspective

Sometimes called the psycho-genic perspective, the psycho-social perspective focuses upon the development of an individual's personality from birth until death and those forces such as maternal-child interaction, warmth of family, school environment and concurrent developmental crises which can affect that development. Until recently, the more popular focus of psycho-social research and writing was child and parent education. However, a brief look at the psychology section of any bookstore will reveal that the current trend in
psycho-social research is upon self-development or self-improvement directed toward the young adult, middle aged housewife and young executive. Therefore, it is more correct when speaking of this theoretical base to discuss both the child developmental theorists and those who have written about the developmental phases of adulthood.

The Psychosocial Perspective of Child Development

Proponents of child developmental studies argue that the most critical period for learning of emotional reaction is during the period of childhood. (Kagan, J., 1968, pp. 117-73.) (Newton, G., 1968.) (Rimland, B., 1969.) (Yarrow, L.S., 1961, p. 459.) According to these theorists, the child's home life is critical in the development of the child's personality and, therefore variables such as maternal deprivation, love and warmth and sensory deprivation are basic to such research. G. Bateson and associates, T. Lids, Sullivan and others have attempted to explain the occurrence of schizophrenia in certain sub-groups by studying the individual family histories of these individuals. The hypotheses state that distorted role structures in the family create what has been called a "double bind" situation in which the child is subjected to incongruent or conflicting messages leading to schizophrenic symptomatology. However, given the abundance of research and literature on child rearing practices, there are no data to prove that an "unhealthy" home environment consistently leads to a
"mentally unstable" child or adult. (Hebb, D.D., 1949.) (Frank, G. H., 1965, pp. 191-205.) But the psycho-social perspective is not limited to the child and his environment. For many program designers and social researchers, the whole range of human development has been a topic of great interest.

Caplan, Maslow and Erickson are perhaps the better known proponents of a psycho-social approach to human development. For example, Maslow, a representative of the humanistic school, believes each individual has a life history of potentialities which develop gradually. "They are actualized, shaped or stifled mostly (but not altogether) by extra-psychic determinants (culture, family, environment, learning, etc.)" Caplan identifies three need areas (psycho-social, socio-cultural, biological) that must be in balance for a person to achieve full potential. Erickson identifies seven developmental stages based on Freud's psycho-sexual stages, which the individual passes through at different ages, and which ultimately impact upon the person's self-concept and world view. Erickson states, "Psychosocial strength... depends on a total process which regulates total life cycles, the sequence of generations, and the structure of society simultaneously, for all three have evolved together."

Psycho-social programs can and do exist for a wide range of age groups. William Bolman has developed a framework of psycho-social programming for the family unit. He views the family as a
flexible social organization, an open system subject to stress from its environment which, like Caplan, he describes as biologic, intrapsychic, interpersonal and sociologic. However, he notes that a serious deficiency of most psycho-social programming is the neglect of the father. The father figure has, until recently, been neglected in child guidance clinic practice. It has been found, however, that the father is not only of crucial importance in theapeutic work with children, but he is reachable and able to be included in program activities. Psycho-social theory, as indicated earlier applies not only to childhood development and the family milieu but to adult development as well.

The Psycho-Social Perspective of Adult Development

Recently, interest in the developmental aspects of adulthood has produced more insight into the neglected aspects of family psychology and psychology for the single person. D. Levinson, E. Erickson, E. Jaques, O. Brim and others have investigated development patterns during adult years, however, exactly how their findings impact upon the family unit are yet to be explored.

Levinson and his associates have focused on the male development during the twenty to forty-five year span. They have developed their theory on the basis of data collected during a four year study from a sample of forty men in the 35-45 age group. Levinson
identified three specific periods, early adulthood, 20-40, middle adulthood, 40-60, and late adulthood, 60 and over. Between the end of early and the beginning of middle adulthood there are several years on either side of forty which mark the midlife transitional period. Transitional periods have been identified during adolescence and childhood and have been shown to coincide with feelings of turmoil, confusion, anxiety, and quiet assessment and intensification of effort which may lead to changes in a person's life structure and his internal commitments. The more crucial point of transition for adult development has been found to occur in the late thirties and early forties. The transition reaches its peak in the early forties. This is a time, both of possibility of developmental advance and of great threat to the self. Freud, Eugene O'Neill, Goya and Ghasdi gained through this crisis, whereas Dylan Thomas, Scott Fitzgerald and Sinclair Lewis destroyed themselves in the course of it. At around the age of 45 this crisis-ridden period comes to an end and a new life structure begins to form, creating the "Reestablishment" period. The various patterns found in this period are being examined presently by Dr. Levinson.

Drawing heavily on the work of Levinson, Weingarten, Erikson, Gould and others, Gail Sheehy (1974) set out to study the subject of adult development on her own and came up with a popularized synthesis of the accumulated knowledge and speculation. Her
developmental theory is very similar to Levinson's but she focused more extensively on the middle life crisis. Her own contribution to data came from interviewing 115 men and women regarding their life stories and inner experiences. Sheehy's work is a landmark in adult developmental theory, however, her methodology was weak. She drew from a population of upper middle class individuals who appear to be developmentally fixated during marriage; proceeding in their development after divorce which is similar to her own personal experience. In so doing, she biased the research in the direction of a somewhat unique population, limiting generalizability.

Research regarding developmental life cycles and resulting emotional growth or stagnation would be better validated if there were prevalence rates of emotional disorder or related symptomatology for age groups of short span showing increases of symptomatology during the crisis periods. Unfortunately, such data is difficult to obtain. Publication of Health Statistics on Selected Symptoms of Psychological Distress groups the data in ten year intervals obscuring more detailed variation. As it is, the data does not support the theory consistently. For example, the prevalence of reported feelings of an impending nervous breakdown is highest among males between 45 and 54 years old. Among women, this is true for the 25 to 34 age group. Feelings of nervousness are most frequent for both males and females in the
34-45 age group. Headaches are most frequent among males between 45 and 64.

It is evident that from the selected small samples of men and women who have been studied across the country by Levinson, Weingarten and others, there is some indication that there may be some pattern in our life cycle with increased vulnerability during the transition from one stage to another. Psycho-social theory is in the elementary stages of development. Much more research is needed before conclusive statements can be made concerning the relationship between developmental experiences and disordered personality functioning. Researchers are, however, becoming more aware that psycho-social development is a phenomena of both children and adults alike.

Developmental or psycho-social theories are actually quite diverse. Though all such theories are in agreement that an individual progresses through various stages of development from birth until death and in the interim develops unique sets of skills, abilities and traits, there exists diversified beliefs concerning how an individual develops from childhood through adulthood.

Learning Theory and Cognitive Theory

For many years there have existed two schools of thought, one, the school of learning theory advocated that man was programmed to
see the world a particular way; as such, environmental experiences accounted for little, if any, learning. The other school or the cognitive school of thought, claimed that man was, in fact, a blank slate or "tabula rasa" upon which the social world imposed its own behavioral structure. Commonly referred to as the nature-nurture argument, respectively, these belief systems dictated the way man viewed himself in relation to his environment. Today, it is "out of fashion" to take either theoretical position. Man is both biologically determined and socially structured. For example, neurological and social research have found that there exists both pre-existing biological structures such as those found in the eye and social structures such as values, class structures, etc. that determine perception. (Kaufman, M. R., 1967.) Rather than being concerned with the nature-nurture concept, scientists are now asking how man's biological nature interacts with his social environment to create unique personality and behavioral structures. This section is meant to be a very brief overview of these two rather complex schools of thought.

Learning theory evolved out of the English associationist and empiricist traditions. It is interesting to note that behaviorism, the more popular variation of learning theory, was actually a protest against Wundt's (English empiricist) philosophy of introspection and sensations as was Gestalt, the basis upon which modern cognitive
theory rests. (History of Experimental Psychology.) Both theories actually opposed Wundt's philosophy for differing reasons, a discussion of which is beyond the scope of this section.

The behaviorist or learning theorist placed heavy emphasis on the role of the environment in shaping modes of behavior. A particular task was composed of many elements, each of which had to be learned separately and in progression before the ultimate task could be accomplished. Earlier, the school of associationism, of which Ivan Pavlov is perhaps the best known, found that particular reflexes in an organism could be activated by a previously neutral stimulus if the neutral stimulus were repeatedly paired with an unconditioned stimulus. This finding led to the statement that the elaboration of behavior, observable in the course of development, can be explained, apart from a few exceptions, by the continuous formation of connections among stimuli and responses.

Later, the theory was advanced by the instrumental learning theorists of which E. L. Thorndike is best known. It was found that certain sets of behaviors were learned as a means of manipulating the environment. The product of manipulation was usually associated with the fulfillment of a need state experienced by the organism. For the learning theorist, an organism was born with need states such as hunger, thirst, sex which acted to motivate the organism to fulfill those needs through learned manipulation of his environment.
In the tradition of Thorndike, B. F. Skinner introduced the language of operant conditioning. For Skinner an operant was "a class of instrumental acts which may differ in how they are performed but still produce the same effect." (Stone, L. J., 1974, p. 187.) Much of Skinner's theory is based on Thorndike's Law of Effect," which simply stated, says that those behaviors leading to a satisfying consequence tend to be repeated under like circumstances. Therefore, from the behaviorist's point of view, the origin of behavior is considered external to the organism. Other than those reflexes (eye blink, salivating, muscle twitch, etc.) that enter into the classical conditioning of Pavlov and the motivational states defined as physical needs; the individual's personality is, by and large, without form and content when born.

Kenneth Spence and C. Hall, in the tradition of Pavlov, elaborated on the classical model to account for more subtle learning such as the formation of concepts and values. Calling such subtle learning "latent," Hull believed that concepts or values formed out of identifying similarities or equivalences among a group of stimuli on the basis of the number of "identical elements." His theory was in accordance with the belief that the whole is equal to the sum of its parts. It is on this point that cognitive theorists differ most.

In attempting to explain the more subtle learning, Hull and his followers developed the theory of "latent learning" (incidental
learning). It was found that learning did take place in the absence of overt motivation or reinforcement (reward). The theory was later used to explain how the individual learns spatial and temporal dimensions as well as values and culturally related belief systems. Hull explains that there are in fact fractional need states as opposed to no need states and further that the individual found that an awareness of a potential for meeting those needs later was itself fulfilling. It became clear that learning theory was not sufficient to explain abstract learning which led Hull to become increasingly involved with cognitive theory during the latter part of his career.

John Dollard and Neal Miller, followers of Hull, have since tried to fuse Hullian learning theory and Freudian psycho-dynamics in an attempt to show a learned as opposed to an instinctive basis for behavior. For example, Freud believed that much behavior could be explained by suppressed sexual feelings. Dollard and Miller explain that repression is actually learned avoidance of noxious thoughts. Other psycho-analytic concepts such as the unconscious, conflict and repression were similarly reformulated, using the concepts of drive, cue, response and reward. (Dollard, J., 1950.)

Attempts to use the findings made by learning theorists continued with the work of J. Wolpe. Wolpe maintained that 'neurotic behavior is a persistent but learned and unadaptive anxiety response acquired in anxiety-generating situations. Such anxiety responses
are unadaptive because they are manifest in situations which contain no objective threat." (Mechanic, D., 1969.) Based on these premises Wolff and others have developed methodologies that have been effective in the treatment of phobias (desensitization), extreme anxiety reaction (relaxation) and unadaptive behavior (operant conditioning).

Recently, in his book *Learning Theory and Mental Development*, W. K. Estes, restructured the concept of instrumental, classical and behavioral learning theory into the terms used by cognitive theorists.

According to Church and Stone (Stone, L.J., 1974, p. 187.) in their text on childhood and adolescent development, the theories of behaviorism have become more complex than the behaviors they are attempting to explain. Individuals like Estes have attempted to re-define behaviorism, such that its theories are restricted to those aspects of human functioning for which they are most applicable.

In this writer's opinion, behavior theory explains well the way in which organisms, be they animal or human, learn overt behaviors. Cognitive theory, on the other hand, explains the more subtle variations of learning such as perception, consciousness and concept formation.

Together both theories explain a wide variety of behaviors both learned and existant within the human being.

Cognitive theory, which is grounded in the Gestalt psychology of Koffka, Kohler and Westhimer, is very different from the theories of the behaviorists and associationists. The major difference involves the concept
of "Gestalt" which in German means form, configuration, or pattern. Earlier, it was noted that learning theorists focused upon the elements of behavior patterns, claiming that the whole is equal to the sum of its parts. The cognitive theorist would argue this point, claiming that an individual perceives a whole or integrated pattern, not the elements which make up the whole or pattern. Furthermore, he would argue that the whole is entirely different from the sum of its parts; that the whole has an unique character of its own like the melody in music, the theme in a painting, or the design in a geometric configuration.

Therefore, the Gestalt theorist perceives wholes as given in experience. That the whole is first perceived and its elements are derived from the whole rather than the reverse is their position. Boring, in his History of Experimental Psychology outlines the following points of disagreement between Gestalt theorists and Behavioral theorists.

(a) Phenomeological description vs Analysis into elements.

Phenomeological observation of the environment is perhaps the key concept of Gestalt theory. A phenomeological experience is immediately perceived as a whole and is not dependent upon a synthesis of stimuli to be seen or understood. Gestalt theorists are nativists; they look for givens and are not concerned with how perceptions are generated. The behaviorist, on the other hand, believes that the pattern of space and object relatedness must be learned.
(b) Emergence vs Associations

Simply stated, the whole is more than a collection of its parts. Out of a synthesis of parts emerges a set of new qualities not present in the independent parts. The behaviorist does not believe this, preferring a theory based upon the premise that the whole is equal to the sum of its parts; that the properties of a compound could, in fact, be predicted from the properties of its elements.

(c) Meaning and Objects vs Sensory Content

The behaviorist would say that an individual learns the meaning of specific objects, words, or stimuli of other kinds through the association of new stimuli with old stimuli which have meaning for the individual. The Gestalt theorist, on the other hand, would say that no such association or pairing of stimuli takes place, rather, the individual sees both objects as one object and that single object has a meaning which is not derived from an association of component parts but from the whole.

An outgrowth of the basic Gestalt theory is the concept of field theory. "A field is a dynamic whole, a system in which an alteration of any part affects all other parts." (History of Experimental Psychology.) Therefore, the perception of new relationships can suddenly evolve out of the inclusion of new data into a particular field of understanding. Most noted for field research is Wolfgang Kohler, who demonstrated the concept of insight, based upon the emergence of
meaning. Later, Kurt Lewin developed the theory of "life space" or the total set of relationships between a person and his environment at any point in time. In keeping with field theory Lewin believed that behavior could be explained by changes in the life space of an individual. Lewin focused attention on one of the central ideas that separates behaviorist from cognitive or Gestalt theorists. That is, to understand behavior, one should observe people, not as they seem to others but as they seem to themselves. People do not behave solely because of external forces to which they are exposed. People behave as they do as a consequence of how things seem to them. In other words, life space is both internally and externally perceived concurrently.

Both learning theory (behaviorism and associationism) and cognitive theory stand as possible explanations for human behavior. It is currently the fashion to use both theories to explain various kinds of behavior, cognitive theory being more suited to abstract behavior and thought and learning theory being more suited to overt kinds of behavior. At this time there is little evidence that one is more correct than the other. More research is needed.

The Stress and Coping Perspective

The individual's behavior is assumed to be a product of both learned and inherent response patterns which develop gradually over
a period of time as a product of both learned and inherent qualities. However, the individual does not develop in a static environment, instead, he is constantly adapting old and developing new behavior patterns to counteract environmental forces which he believes threaten his physical well being and the integrity of his belief system. The interface between the organism and threatening environmental forces which strain is called stress. The behavior of the organism in response to the stress is called coping and adaptation.

Stress, coping and adaptation are concepts which lack a consistent frame of reference and are therefore difficult to discuss. Though much research has been conducted measuring what are believed to be stress reactions in both animals and humans, little has been done to consistently define stress itself. (Lazarus, R.S., 1974.) In most research, the concepts of stress, coping and adaptation are dealt with concurrently due to the fact that stress can only be measured as a function of the individual's response to it. Therefore, in light of the available literature, the discussion which follows will consider stress in terms of the total coping and adaptive processes.

Scott and Howard (Levine, S., 1970) have outlined eight stress models which they believe to be representative of the major conceptual frameworks of stress and coping. Since their analysis appeared, the field has experienced some changes with respect to an understanding of stress. A brief review of the eight basic models and
the current trend in stress theory will be the subject of this section.

The first of the stress models to be considered is that of Mechanic. In this particular model, stress is defined as "the discomforting responses of persons in particular situations." (Mechanic, D. 1962, p. 7.)

There exist four factors which determine whether a particular situation, event or happening produces discomforting responses. The first involves the ability and capacity of the individual to deal with the stimuli. The second involves the skills and limitations developed by having been reared in a particular culture or environment. The third involves the resources available to the individual from his immediate environment and the fourth involves the immediate social sanctions which affect whether or not the individual actually uses the skills, abilities, and environmental resources available to him.

According to Mechanics "The mastery of stress is not a simple repertoire, but the active process over time in relationship to demands that are themselves changing and that are often symbolically created by the groups within which man lives and new technologies which such groups develop." (Mechanic, 1974.)

Basowitz and his associates (1955) have developed a second model of stress based upon a study of men in combat. The central concepts in this model are "anxiety," "stress," and "stress situations."
(1955, p. 54.) (Basowitz, H. F., 1955.) Basowitz defines anxiety as a feeling of intense dread or foreboding produced when the integrity of the individual is in some way threatened. In keeping with this model, stress is synonomous with any class of stimuli which produce anxiety. There exists a continuum where stimuli at one end are idiosyncratic, having meaning to some individuals but not others; and stimuli at the other end, because of their intensity and their explicit threat to vital functions, are likely to affect the majority of individuals. It follows that predictions can be made regarding the anxiety-producing qualities of varying situations, in which case, varying levels of response within individuals are unimportant. In other words, the focus of study is the anxiety producing situation, not the individual.

The psychosomatic nature of stress reaction has been studied by Alexander (Alexander, F., 1950), Dunbar (Dunbar, H. F., 1947), and Grinker and Spiegel (Grinker, R. R., 1945). According to the psychosomatic model, anxiety caused by stress results in tensions and strains which can have pathological consequences for body systems. "Solvable conflicts handled directly, or in an overtly assertive fashion, are less likely to result in significant, sustained alterations in organic processes, since the tension generated by the initial conflict is externally and not internally dissipated." (Scott and Howards "Models of Stress." )
A model related to the psychosomatic perspective is that developed by Wolff and his associates. (Wolff, H.J., 1950, 1953, 1948, pp. 313-34.) According to Wolff, stress is a state within the individual causing a complex reaction to occur aimed at sealing off and then ridding the body of its threat. The reaction is said to be similar to the nasal adaptive reaction induced by inhaling noxious fumes in which the body secretes a mucous substance or water as in tearing aimed at flushing out the nose and eyes, ridding the body of the noxious agent. Unlike the psychosomatic model which conceptualizes the protective reaction pattern as a chain reaction beginning with feeling states and then progressing to altered bodily reaction and finally to organic abnormality, Wolff claims that feelings, bodily adjustment and behavior occur simultaneously but in varying degrees.

Hans Selye has developed a biochemical model of stress, defining stress as "a state manifested by a specific syndrome which consists of all of the nonspecifically induced changes within a biologic system. (Selye, H., 1956, p. 54.) According to Selye, a nonspecifically induced change affects all or most parts of a system without selectivity. Non-specifically induced stress occurs during what is called the "General Adaptation Syndrome" which consists of three stages. The first stage is marked by an alarm reaction, during which the organism is mobilized. Resistance follows, characterized by internal responses that stimulate tissue defense. Continued stress
if not affected by bodily responses will result in exhaustion, the third stage of adaptation.

Another set of related studies have focused upon specific physiological changes produced by stressful stimuli. Though none of these studies represent a specific model as such, they do view stress as the internal responses of the organism to an external load placed upon it by some pathogenic agent, stressor or life crisis. Stress in turn produces distinct pathological changes and typical disorders of adaptation. There are primarily two categories into which these studies fall. The first include those studies of the effects of stress on such physiological processes as cardiac functioning (Stevenson, I. P., 1950, pp. 799-817; Wolf, S., 1948, pp. 1056-76.) Mucus Membrane Secretion (Wolf, H.G., 1948, pp. 313-34) and gastric functioning (Margolin, S.G., 1950, pp. 656-64).

The second category includes studies of the relationship between stress and the genesis and onset of specific disease syndromes such as cardiovascular disorders. (Wolf, H.G., 1950.) ulcerative colitis (Grace, W.J., 1950, pp. 679-91; Lindemann, 1950, pp. 706-23) dermatitis (Kepecs, J.G., 1950, pp. 1010-15.).

Dohrenwend has developed a model of stress which, unlike most of the others, takes into consideration the role of mediating factors which act to control the degree of stress reaction exhibited by the individual. According to the particular model, there exists five
basic sets of factors involved in stress reaction. The first involves external stresses that throw the organism into an unbalanced state. The second involves factors that mediate or alleviate the effects of the stressor. The third consists of the stress itself, which is the product of the interaction between the stressor and the mediating factors. The fourth involves the adaptive syndrome, which consists of the organism's response which may be either adaptive or mal-adaptive. Mediation between the stressor and the individual consist of internal and external controls which Dohrenwend identifies as constraints. External control is experienced when force is exerted in favor of activity that is demanded by outer events. Internal control is experienced when an individual attempts to inhibit action demanded by outer events in favor of actions demanded by inner events. Stress, then, is defined as a state intervening between both internal and external constraints on the individual and resulting efforts to reduce these constraints.

The last model reviewed by Scott and Howard is that of Janis. (Janis, I., 1954, pp. 12-25) who has focused upon the stress reactions of air-raid attacks during the war and of patients undergoing major surgery. He identifies three major phases of danger which he believes to be existant in all large scale disasters: the threat phase, in which persons perceive objective signs of impending danger; the danger-impact phase, in which persons are actually confronted with physical
dangers in their immediate environment which requires escape or defense; and the danger of victimization phase which occurs after the initial impact of disaster when the danger has subsided or terminated and the individual becomes cognitive of the loss sustained.

Janis explains that reactions to stress of the kind studied, ranged from apprehensive avoidance to aggressive irritability all of which resulted in a marked drop in mental efficiency. He further observed that social and psychological factors helped determine how the individual responded to the threat and that these factors included such variables as previously formed expectations concerning the danger, social status with respect to receiving aid and personality characteristics.

One of the consistently noted problems with the models so far described is the inconsistency with which the term stress is defined. For example, Mechanic defines stress as the responses individuals have to situations while Basowitz and Janis define it as a quality of a situation independent of the reaction. Selye and Dohrenwend define stress as a state within the individual which intervenes between stressors and reactions. Therefore, it becomes difficult to compare data obtained by these studies. But a further more pressing problem is the limited perspectives of the models. Most of the models deal with only one aspect of the stress or coping process. Lazarus believes that a complete study must "identify the external and internal
forces or stimulus conditions of stress reactions, as well as the interven
ting structures and processes that determine when and in what form
the stress reactions will occur." (Lazarus, R. S., 1966.)

Consistent with this view is the added recommendation that
further research distinguish between long-term stress evoking both
instant fear and lasting change on the implicated individual, e.g. con-
jugal bereavement, loss of a limb or chronic disease, etc., and
fleeting stress evoking temporary and momentary danger and threat
but little or no lasting change on the implicated individual, e.g. horror
films, electric shock, etc. (Chan, K. B., 1977, pp. 89-103.)

Scott, Howard, and Chan believe that a more perceptual or
phenomenological model such as that described by Lazarus is more
accurate in describing stress and coping behavior. In such a model
stress is neither entirely within the individual nor is it entirely ex-
ternal to the individual. Rather it is a function of the individual's
personality, socio-cultural environment, the individual's past and
future and the situation itself all of which must be taken into account.

Lazarus has attempted to structure such a model. A model which
focuses on the concept of "appraisal" or perception distinguishing
potentially harmful situation from the potentially beneficial or irrele-
vant situations. Appraisal involves not only a response to the per-
ception of some threatening condition but also potential avenues of
solution and mastery. Appraisal has a temporal component, that is,
the individual not only appraises the initial situation but also, in what
is called "secondary appraisal," delineates the range of coping alter-
 natives. This is followed by "reappraisal" in which the original per-
 ception may be changed from threatening to benign, or vice versa.

In conjunction with the concept of appraisal, Lazarus defines
two classes of determinants of coping behavior: situational determi-
ants and personality determinants. Situational determinants are those
environmental sources of behavior predisposition such as the selection
pressures of human evolution, socialization processes that are
characteristic of a culture and the relatively idiosyncratic experiences
of the individual. Personality determinants are those personality dis-
positions that are believed to contribute to the specific coping be-
haviors because they provide orientations toward particular stimulus
objects. According to Lazarus, personality dispositions tend to define
a range of permissible responses for the individual in a particular
situation. For example, Scrooge of Dicken's Christmas story would
find it particularly difficult to respond with merriment, if the town
requested that he play the part of Santa at a party. For a more de-
tailed understanding of Lazarus' model, it is recommended that the
reader refer to the chapter "The Psychology of Coping: Research and
Assessment in Coping and Adaptation" by George V. Coelho and
David A. Hamburg.
A brief attempt has been made to review a very complex and poorly organized field of study. However, an understanding of stress and coping mechanisms are critical for any complete view of preventive mental health. Though stress, per se, may not be a cause of debilitating or organic brain damage it does play a part in mild depressions and diseased functioning. A great many problems with regard to teenage drug use have been linked to learned use of drugs as coping responses. (Blum, R.H., 1976.) Increased drug use has correlated highly with transition from sixth grade to seventh grade, ninth grade to tenth grade and High School to college. (Blum, R., 1974) These are transitional periods and therefore indicative of possible stress conditions. Blum has made the recommendation that drug uses might be reduced by affecting the degree of stress experienced in transition through the development of open communication between parents and children from nursery on.

Understanding of stress in child and adolescent development as well as stress in other developmental periods may lead to more effective means of preventing some of the more socially determined disorders encountered in society.

**Labeling Theory**

To this point, three social models of preventive mental health have been discussed. To summarize, the first of these models discussed was the psycho-social or psycho-genic perspective which
emphasizes the importance of early childhood experiences upon the
development of personality and learning. The second, learning theory,
explained behavior as the product of learned association between
specific stimuli and responses. The third, cognitive theory, explain-
ed behavior as a complex set of response patterns to groups of stimuli,
rather than to single sensations. The fourth, stress theory, explained
behavior as the result of either adequate or inadequate coping mechan-
isms in stressful situations.

The last model, or the societal reaction/or labeling perspec-
tive originated in sociology, and in its simplest form, attributes con-
tinued deviant or unsanctioned behavior to the labels society creates
for such behavior. Unlike the other models of disordered behavior,
this perspective shifts attention away from the etiology of initial
deviance and focuses upon the process by which the initial deviance
develops into an entire deviant repertoire or deviant role. Labeling
theorists believe that such a repertoire is created when a society
singles out an individual for having transgressed some behavioral
norm. Thus the individual is labeled a deviant which affects his or her
self image. This leads to what the labeling theorist calls a re-evaluation
of self and the acceptance of the deviant role and the attendant be-
haviors.

Labeling is actually a process involving two stages. Thomas
Scheff speaks of what might be called the primary and secondary
stages of deviance. Primary deviance arises out of a variety of social, cultural, psychological and physiological factors, either in adventitious or recurring combinations. Secondary deviance, on the other hand, arises from societies' attitude toward the primary deviance which, according to Scheff, forces the individual to adopt a new role definition and new self image or deviant self image. Secondary deviance is therefore the focus of the sociologist who questions why certain behaviors are accepted and others are not and how non-acceptance of certain behaviors actually helps structure, organize and perpetuate such behavior.

Scheff argues that many individuals exhibit "deviant behavior" at various times but that most transgressions of the "social code" are for the most part invisible and, therefore, never labeled or defined. Such behavior is usually a part of a larger set of behaviors, the major portion of which is socially acceptable and is neither fixed or persistent. Secondary deviance is said to occur when, for some unexplained reason, the specific deviant behavior is "explicitly" identified and labeled in which case the label acts to structure or organize the identified behavior into a social role. The role created has a specific set of behaviors attributed to it, which are not necessarily a part of the person's repertoire at the moment of labeling. The transition from disordered behavior as an incidental aspect of social performance to mental illness as a social role usually occurs when the individual is under
considerable personal and social stress. Under such circumstances, the person may accept the role and accompanying behavior attributed to him by society and in so doing develop a "deviant self-image."

Of the persons brought before labeling agents, a considerable portion are judged in need of isolation and specific forms of social processing. Goffman describes in detail the process by which the labeled person is gradually isolated from stimuli supportive of a "normal" self-image with the eventual result of a change in self-concept. As the self-concept changes from normal to deviant, the individual begins to own behaviors that are consonant with the new self-concept. Goffman believes that this change ultimately results in a "career" in deviance. In Goffman's words a career would involve "rejection from participation in legitimate social roles, differential association with other deviants and irregular contacts with 'deviant processing' systems," like mental health, police and other protective services, "which reinforce the deviant self-image. (Roman, P.M., 1971.)"

Theodore Sarbin makes a distinction between types of labels and their effect. For example, he believes that a person whose conduct is designated through a series of inferential steps to be like the symptoms of mental illness is subject to a more severe kind of isolation, segregation, degradation, incarceration, surgery, chemical and/or psychological treatment than is the person identified as having "problems in living."
However convincing the labeling theorists may be, there is little research to back them in their observations. Labeling theory is relatively vague and few have specifically identified intervening variables which determine entrance to the various stages of the labeling process. (Loftand, J., 1969.)

Some research does exist, however, which indicates the presence of symptoms not linked with the initial disorder. One such study by Gruenberg outlines a progressive chronic deterioration marked by changes which are observable as modifications of personal and social behavior. Gruenberg calls this behavioral deterioration the Social Breakdown Syndrome (SBS) which was discussed briefly in Chapter I. The syndrome is generally found in psychiatric patients who need hospitalization and in those who have been hospitalized. SBS can be viewed as a description of ways in which the usual relationships between a person and his social world break down. The progression from a normal, abnormal or reduced state of functioning is varied. For example, in some individuals the onset is abrupt and violent while in others the change is slow, taking many years.

Gruenberg lists seven stages of deterioration. The first three stages place the individual in a dependent role looking to the environment for cues concerning right and wrong. In many cases significant persons in the individual's environment decide there is something wrong with the individual. Labeling results and the individual is
placed in the care of professionals where he accepts the role of deviant or sick person within the institution. Total acceptance of the deviant self-concept is considered the final stage of the social deterioration process.

Others have studied the effects of the labeling process for example, Murphy and Ramon examined the observations that peasant societies in Africa and elsewhere seem to produce psychotic patients whose prognoses are much better than in the West. They found that clinical and social outcome for treated schizophrenia is better in the peasant society (Mauritius, Africa) than in Great Britain.

Social Independence (No symptoms)

Mauritius, Africa - Sample 62% (55 out of 86 patients)

Great Britain " 49% (49 out of 60 patients followed)

In Mauritius, Africa, the link with the hospital is severed more completely and the label of patient or deviant is therefore discarded more rapidly. No one makes home visits; no patient is required to return regularly for out-patient treatment; and no local village authority is given responsibility for the patient once he returns home.

G. W. Brown studied the hypothesis that the greater the patients contact with treatment agents and the more integrated and comprehensive the treatment system, the poorer the clinical and social outcome for the patient. (Ability to function in the community,)
He found that of three hospitals studied, the hospital with the most integrated and comprehensive services produced patients who were not significantly different upon follow-up from those treated in two other hospitals which were less integrated and provided fewer services or were significantly worse.

Just what these findings really mean is questionable because the variables being studied: social reaction, independence, and ability to function, are very difficult to measure accurately.

As in previous attempts to deal with mental disorders, labeling theory tends to overestimate the number of persons who are actually labeled and fails to provide an adequate explanation for the vast numbers of persons who commit acts of deviance and go unlabeled. Furthermore, it draws attention away from the question of the social etiology of certain forms of behavior which may have their own functional reality. (Roman, P.M., ibid.)

Summary

An attempt has been made to describe each of the major theoretical perspectives held by preventive mental health professionals. In retrospect, there exist two major perspectives, the medical perspective, which places greater emphasis upon the biological interaction of agent and host and the socio-cultural perspective which places greater emphasis upon the interaction between the host and his or her social milieu.
Discussed within the medical perspective were two research components. The first of these focused upon the agent causative factors known to result in the disruption of brain functioning such as barbiturates, bromide, metals, gases, nutritional deficiencies, metabolic disturbance and mechanical injuries. The second focused upon specific neurologic disorders that have been linked to genetic abnormalities and those affective disorders such as the manias and depressions for which there exists chemical imbalances.

Discussed within the socio-cultural perspective were five basic theories of human behavior. The first focused upon developmental experiences and their effect upon personality and functioning. The second, learning theory, explained behavior as the product of learned association between specific stimuli and responses. The third, cognitive theory, explained behavior as a complex set of response patterns to groups of stimuli, rather than to single sensations. The fourth, stress theory, explained behavior as the result of either adequate or inadequate coping mechanisms in stressful situations. And the fifth, labeling theory, attributes prolonged abnormal behavior to the process by which society labels and segregates deviant persons.

The preceding discussion was meant to make the reader aware of the complex and multifaceted nature of human functioning. In the next chapter, the theme will be continued by illustrating how a single
perspective is inadequate as a base upon which to design both preventive and treatment programs.
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CHAPTER IV

LIMITATIONS OF THE MEDICAL CONSTRUCT WHEN APPLIED TO SOCIALLY DEFINED DISORDERS

The medical construct, discussed in Chapter II, has provided what many individuals believe to be an adequate framework for the study, treatment and prevention of both socially and biologically related disorders. There are those who would argue with these individuals, saying that the public health construct is not adequate as a framework within which to study both categories of disorders, rather, that it is only applicable to those physical disorders for which it was originally designed.

There exist two dimensions to the criticism of the medical construct. The first concerns those individuals like Szasz, who hold that the concept of mental illness is a myth and that physical illness is by no means analogous to disordered behavior or thinking. The second concerns recent research findings that the construct when used as a means of classifying programs, as proposed by Gerald Caplan (Chapter II), fails to identify more than one outcome. For example, a single program in mental health such as crisis counseling has the
potential of treating or, rather, stabilizing an individual in crisis as well as providing him or her with adequate skills to deal with a similar crisis in the future, thereby preventing a recurrance, of the same non-coping behavior.

Section I, a social versus a disease model of disordered behavior is an attempt to discuss briefly some of the problems inherent in applying a disease model to some aspects of mental health. In this section, special emphasis will be given to Szasz and Torrey whose views are representative of those who oppose the disease model.

Section II, the problem of classification, is a report of a study in which an attempt to use the medical construct as a means of classifying preventive interventions in mental health resulted in the recommendation that a new classification system be developed.

Section I: A SOCIAL VERSUS A DISEASE MODEL OF DISORDERED BEHAVIOR

The medical construct outlined in Chapter I was formulated on the premise that a disorder exhibits a consistent and progressive history which, if not aborted, will result in sickness, debilitation or death. It was shown that the progress of an illness, i.e., organic brain syndrome, was contingent upon both host and environmental factors.

Gruenberg was quoted as saying that a physical disease or illness is analogous to a "mental illness" which he defines as a personality, learning or interpersonal disorder.
In this writer's opinion, Gruenberg is incorrect in that physical disorders, for which the model was originally designed, are not dependent for their existence upon the phenomenology or perception of the individual for their reality, as are personality, learning and interpersonal disorders. For example, social disorders, such as child abuse, abusive drinking and stress reaction are dependent upon the moral or value judgement of the particular society or culture, as well as the individual himself, for their existence.

In the case of psychosomatic illness, though the individual may have developed a physical illness as a result of a state of mental stress that physical illness is independently real (existent as a source of physical pain) and must be treated like any other illness, the stress however was perceived and can be eliminated by re-evaluating one's environment. The existence of a physical illness which is the result of a state of mind does not make the state of mind an illness, but rather, makes the illness an illness and the state of mind a phenomenological fact.

During the sixties there was growing opposition to the disease model of mental illness. This opposition took a rather extreme turn, rejecting entirely biological explanations for psychotic, neurotic and personality disorders, claiming that socio-cultural factors would ultimately be shown as the cause for most, if not all mental illness or disordered behavior. The mental hygiene movement, begun by Lemkau
at Johns Hopkins in the fifties, was taking hold and programs to improve housing, jobs, welfare, schools, day care, etc. were growing in number by leaps and bounds. The "scientific method" was out of favor and little if any attempt was made to evaluate the effectiveness of these programs. (Newton, P.M., 1976, p. 584.) Jahoda came to the rescue by saying that such social programs were good because they righted wrongs and program directors need not worry whether they were actually reducing the incidence of one or more mental illnesses.

Out of the turmoil there arose a few voices, attempting to justify the social approach to mental disorders by attacking the medical model. The collective belief of these individuals can best be summed up by a quote from Szasz.

I submit that mental illness is a myth. Bodies are physical objects; minds, whatever they may be, are not physical objects. Accordingly, mental diseases (such as depression or schizophrenia) cannot exist in the sense in which bodily diseases (such as broken bones or ulcerated skins) exist. (Szasz, T.S., 1966.)

Torrey, in his book, The Death of Psychiatry, elaborates on Szasz's belief about the mind, saying in part that the "mind" is shorthand for the activity and function of the brain. It is thinking, remembering, perceiving, feeling, writing, imagining, reasoning and all other activities of which the brain is capable." (Torrey, E.F., 1974, p. 36.)
In other words, by believing that the mind can become diseased we are saying that the mind is, in fact, an object like any other tangible object that can become diseased. It would follow that the diseases of the mind, like the diseases of the liver, heart, lungs, etc. must be treated by physicians. It is argued by those favoring the medical model that there are known chemical and neurological components to mental diseases such as the manias and depressions (discussed in Chapter II) which would indicate that biological, i.e., medical interventions are indicated. However, it can also be argued, as Torrey does, that there are chemical and neurological components to all human functioning but to say that all disordered functioning is the result of chemical and neurological malfunctioning is not necessarily correct. Succinctly stated "The mind cannot really become diseased any more than the intellect can become abashed. A disease is something you have and behavior is something you do." (Torrey, E.F., 1974.)

In defining mental illness Szasz says:

... the term 'mental illness' is used to refer to certain types of bodily diseases ... that is, to diseases of the brain whose predominant symptoms are abnormalities of behavior, (for example, neurosyphilis) .... Those who hold this view assume that some metabolic, genetic or neurological defect, perhaps a very subtle one, will ultimately be found to explain all disorders of thinking and behavior, now called 'mental illness' .... no one would deny that, like any other part of the body, the brain may be impaired or become diseased ... But
for those who regard mental illness as a type of brain disease, the concept of mental illness is unnecessary and misleading. (Szasz, T. S., 1966.)

This statement by Szasz is perhaps the core of the argument against the medical or disease model of mental illness. That is, if in fact, there exists a biological basis for certain abnormal behavior as in the case of hallucinations caused by poisoning or high fever, then those behaviors are direct symptoms of a physical disorder in which case the separate label of mental illness is not needed. In the case of physical disorders such as ulcerative colitis or high blood pressure which are seen as the result of socially induced stress; the physical disorder is an illness, the stress is a social disorder. What is not made clear by the ideas of Szasz and others of the same school is the place of those abnormal behaviors for which there are no apparent illnesses, poisoning or genetic defect, to explain its onset. Abnormal behaviors in this non-medical category might range from a mild depression to murder. If it is argued that persons who exhibit abnormal behavior are in fact sick they have been placed in a medically protective category along with individuals who have broken bones, appendicitis, a brain tumor, etc. all of whom are not responsible for behaviors which are the result of their illness.

Szasz's and Torrey's beliefs are valid to the point at which we begin to question the issue of responsibility for behavior, in which case some rather disturbing questions arise. Is the juvenile delinquent
responsible for behavior learned as a defense against his or her en-
environment? Is the murderer responsible for a murder committed
while in a state of rage or confusion caused by emotional upset? Or
are these individuals, in fact, victims of the socio-cultural environ-
ment in which they live or were raised? The answers are not as easy
as Torrey or Szasz would have their readers believe. Our culture
believes that an ill person is not responsible for his or her behavior
while a well person is believed responsible. Is the child who has
learned to hate as a result of being abused responsible for his hatred
as an adult or is he sick? In both instances, the individual is the
victim of a disorder for which he may or may not have helped to create.
Perhaps there is a need for a third category, not mentioned by either
Szasz or Torrey into which persons might be placed who have been the
victims of unfortunate environmental conditions but are not physically
sick. The creation of this third category would be facilitated by elimi-
nating the phrase "mental illness" and replacing it with either physi-
cal disorders or social disorders. In so doing, the concept, that an
individual becomes disordered (as in illness), would be replaced by
the concept that a person is part of a disordered situation, in which
case the responsibility for behavior is shared with one's milieu.

According to Szasz, "The psychiatrist deals with moral and
social problems, not with medical diseases. Hence, he cannot help
being embroiled in the moral conflicts of his patient and his society."
(Szasz, T. S., 1964)

This view of mental health delivery or policy is consistent with
the concept of there being no mental illness per se but rather a wide
variety of social disorders affecting the behaviors of individuals.
However, Szasz's model fails to incorporate the concept of the duality
of human functioning. While there is no "mental illness" per se, there
is a complex interrelationship between the mind and body, a relation-
ship which is explained by concurrent social and physical disorders.

As Leighton wrote in the introduction of the collected works
of Meyer:

In dealing with the human problems presented in
psychiatry, Meyer believed it important to keep as a
frame of reference the concept of the whole man inter-
acting with a total environment. The whole man includes
all levels of integration from the biochemical levels to the
social. The social factors in turn, embrace not only per-
sonal relations with particular individuals but also the
culture and the nature of the group to which the patient
and these individuals belong. In all aspects, both the
individual and the social, the current situation and the
history of events leading up to this situation are co-
equally important. (Meyer, A., 1952, pp. xx-xxii.)

An effective model would, in this writer's view, encompass
both the biological and the social aspects of human functioning without
subordinating one by the other. Such a model is hard to conceptualize,
given the amount of overlap between the medical and social theories
pointed out in Chapter II. For example, stress is a social phenomenon, a complex interrelationship based on the past, present and future of an individual and his or her life space. However, the stress may be the result of physical illness and injury or result in physical illness and injury. As explained earlier, and as demonstrated here, there exist social and biological components to stress reaction.

Labeling theory plays a role in defining the life space of the person experiencing stress explained in Chapter II calling the individual sick can have the effect of lowering the individual's self-esteem, making him feel less responsible for his state of mind and, in turn, more helpless and less able to cope with the problem.

The way the individual deals with stress affects his learning and perception of the environment, perhaps conditioning him to fear similar situations in which the original stress reaction occurred.

The point is that a single model, be it social or medical, is insufficient to explain complex human behavior. However, through the combination of the many theories presented in Chapter II, social scientists and biologists can begin to understand more fully human behavior; and in so doing, facilitate the development of effective preventive interventions. That is, interventions that prevent either social or biological disorders.
The study which follows explores another dimension of the medical construct which has been found to be inappropriately applied to the classification of mental health interventions.

Section II: THE PROBLEM OF CLASSIFICATION: A STUDY OF PREVENTIVE MENTAL HEALTH PROGRAMMING IN GEORGIA*

Following the Kennedy message to Congress in 1963, preventive mental health has grown as a major area of concern among mental health professionals. (Kessler, 1975; Perlmutter, 1976; Goldston, 1977.) However, much of this concern has taken the form of literary discourse rather than the actual development of preventive type programs. (Perlmutter, 1972 and 1973; NIMH, 1974; Miller, 1976.) The issue of greatest concern and said to be one of the major barriers to the development of such programs appears to be the inconsistency with which preventive mental health is interpreted and applied within the field. (Broskowski, 1974.)

The intent of the present study was that of further clarifying definitional issues and in so doing facilitate program development. This was to be accomplished by cataloging detailed descriptions of programs identified as preventive interventions based on specific

*Taken from "A Study of Preventive Mental Health Programming in Georgia," by Clifton D. Mack, the Division of Mental Health, Georgia Department of Human Resources, submitted December 15, 1977. Georgia State Archives.
behavioral criteria rather than theoretical constructs. The initial problem was, therefore, one of translating theory into practice.

Following Goldston's lead, prevention programming was first narrowed to include only primary prevention or those activities which sought to either prevent an anticipated disorder or foster optimal health. (Goldston, 1976.) Once narrowed theoretically, the next step involved the development of operationally defined criteria.

Looking to current research, it was found that with regard to determining the nature of a primary prevention activity, "there is a need to take into account what was done, to whom, and with what objective." (Miller, 1976.) More specifically this meant that a functional definition must identify the target group, the beneficiary group, behavioral objectives and structural considerations, as well as the intent of a particular intervention.

Programs are usually complex because a single program has the potential of serving more than one purpose, however, the intended purpose is that which is ascribed to an intervention by the program coordinator based upon his or her knowledge of the program's unique social-professional-political context within both the mental health center and the surrounding service area. (Caplan, 1974.) Further complications evolve when the program falls into that gray area in which the symptomatology of the problem being prevented is borderline and the target of the intervention performs more of a treatment function.
In this instance, the intended purpose of the program is overshadowed by the conditions of the intervention, i.e. a treatment or an educational setting, requiring a reevaluation of the program's actual function i.e. to treat or to prevent.

Therefore, a methodology for collecting the data must consistently identify the target group, the beneficiary, the structure and the behavioral objective, as well as, the intent of the intervention. However, there must be a built-in flexibility to allow for the classification of those borderline programs which require a decision based on a careful evaluation of the actual function of the intervention. The methodology selected combines the consistency of a pre-structured instrument with the flexibility of an interview allowing the interviewer to record the unique intricacies of a particular program while requesting the same basic information in each case. Such a design should, according to the current research cited, facilitate the more accurate classification of primary prevention programming.

Method

The study focused upon the identification and description of primary prevention programs sponsored by each of Georgia's thirty-four community mental health centers. Three surveys were actually conducted, the first to identify centers with programs, the second to study the programs identified, and the third to study the functioning of all centers.
The initial survey involved contacting the prevention coordinator for each center and asking that he or she identify those programs which had: (a) an identifiable coordinator, (b) a set of specified goals or objectives, (c) occurred more than once, (d) a preplanned structure and (e) directed its resources toward the prevention of previously identified mental illness or mental health related problems in a population which was not exhibiting signs or symptoms of that problem at the time of intervention.

Once programs were identified, letters describing the study were sent to program coordinators as well as the center coordinators, the consultation and education coordinator and the prevention coordinator for each sponsoring health center. Follow-up calls were then placed to each program coordinator to answer any questions about the study and set up an appointment for an on-site interview.

The on-site interview was structured around the two page, twenty-item, printed instrument consisting of nine major categories of information. Specifically, these categories required identification of the desired outcome, the target group, the beneficiary group, the location of the program, the method of evaluation, barriers and facilitators to program implementation, cooperating agencies and their functions in regard to the program, cost information and required staff skills.
A longer instrument requesting the same information was pre-tested during the first three interviews. The revisions in the final form consisted of shortening the form from five to two pages, using a more informal tone, providing more preworded response categories for the interviewer and grouping related items. Another change involved giving the respondent a list of the twenty items prior to the interview. [Copies of survey instruments in Appendix A.]

The prevention coordinator for each of the centers not sponsoring programs was sent a letter describing the study and requesting that he or she notify the study's coordinator of any programs which were overlooked during the phone interview. A copy of the survey instrument was provided in each case.

The third survey, which consisted of a two page questionnaire requesting staffing, funding and service information, was sent to all thirty-four centers. Much of the reliability was lost, however, due to the use of items which had not been pretested. As a result, much of the information could not be used in the final analysis.

Results

Each of the forty-four programs surveyed was described in terms of its target group, content area, objectives, staff skills, funding, interagency support, method of evaluation, barriers and facilitants (those conditions which facilitated program development).
### Table 1

**TARGET GROUP BY CONTENT AREA**

<table>
<thead>
<tr>
<th>CONTENT AREA</th>
<th>HIGH SCHOOL STUDENTS</th>
<th>ADULTS</th>
<th>YOUTH</th>
<th>RETIREES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>12</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>Health</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Finance</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Environment</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Business</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Agriculture</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>12</td>
<td>6</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONTENT AREA</th>
<th>HIGH SCHOOL STUDENTS</th>
<th>ADULTS</th>
<th>YOUTH</th>
<th>RETIREES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>12</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>18</td>
</tr>
</tbody>
</table>
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(a) Target and Content Area

Adults (aged 20-60 are shown in Table 1 to be the most frequently targeted population. Interventions involving high school students are, for the most part, drug related, and the three major content areas represented by programs are shown to be drug abuse, Life Skills and parenting.

(b) Objectives

The development of more effective child and adolescent management skills is shown in Table 2 as the primary objective for 23% of the programs with stated objectives. The eight Life Skills programs were not included in the analysis of objectives, staff skills and knowledge or barriers and facilitators.

TABLE 2

PRIMARY OBJECTIVES AND THEIR RELATIVE FREQUENCIES

<table>
<thead>
<tr>
<th>Development of Child and Adolescent Management Skills</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Reduction of Anxiety</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Ability to Take Responsibility over Ones Life</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Enhanced Communication Skills</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Ability to Express Feelings</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Ability to Cope with Grief and Separation</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Eliminate Self-destructive behavior and Clarify Values</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Enhanced Relationships with Others</td>
<td>1</td>
<td>03</td>
</tr>
<tr>
<td>Alternative Problem Solving Skills</td>
<td>1</td>
<td>03</td>
</tr>
<tr>
<td>Knowledge of Drug Use Effects</td>
<td>1</td>
<td>03</td>
</tr>
<tr>
<td>TOTAL</td>
<td>31</td>
<td>91%</td>
</tr>
</tbody>
</table>
(c) Staff Skills and Knowledge

Table 3 indicates that group dynamics or group leadership and child and adolescent development were the two areas of knowledge most frequently reported to be required by program staff.

**TABLE 3**

<table>
<thead>
<tr>
<th>KNOWLEDGE AND SKILL AREAS REQUIRED BY PROGRAM STAFF AND THE RELATIVE FREQUENCY WITH WHICH THEY WERE REPORTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Group Dynamic and Leadership Skills</td>
</tr>
<tr>
<td>Child and Adolescent Development</td>
</tr>
<tr>
<td>Teaching Skills</td>
</tr>
<tr>
<td>Communication Theory</td>
</tr>
<tr>
<td>Behavior Modification</td>
</tr>
<tr>
<td>Knowledge of Drugs and their Effects</td>
</tr>
<tr>
<td>Program Specific Knowledge and Skills*</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

*Category includes knowledge and skill areas each mentioned once in regard to a specific program, i.e., dramatic arts, tai chi breathing exercises.

(d) Interagency Support

Schools are shown in Table 4 to be the most frequently mentioned community support agency.

(e) Barriers and Facilitants

Barriers. Of the twenty-three programs asked to identify barriers to implementation, eight, or 35%, cited lack of community support, seven, or 30%, cited insufficient staff, six, or 26%, cited insufficient funds and six did not respond.
### TABLE 4

AGENCIES REPORTED AS PROVIDING SOME FORM OF SUPPORT TO PROGRAM STAFF AND THE RELATIVE FREQUENCIES WITH WHICH THEY WERE REPORTED

<table>
<thead>
<tr>
<th>Agency</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools</td>
<td>20</td>
<td>39</td>
</tr>
<tr>
<td>Civic groups and associations</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Churches</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Medical Organizations and Staff</td>
<td>4</td>
<td>08</td>
</tr>
<tr>
<td>Public Libraries</td>
<td>3</td>
<td>06</td>
</tr>
<tr>
<td>Junior Colleges</td>
<td>3</td>
<td>06</td>
</tr>
<tr>
<td>Welfare Agencies</td>
<td>2</td>
<td>04</td>
</tr>
<tr>
<td>Mental Retardation Agencies</td>
<td>2</td>
<td>04</td>
</tr>
<tr>
<td>Businesses</td>
<td>2</td>
<td>04</td>
</tr>
<tr>
<td>Juvenile Courts</td>
<td>2</td>
<td>04</td>
</tr>
<tr>
<td>Parks and Recreation</td>
<td>1</td>
<td>02</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>04</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>51</td>
<td>101%</td>
</tr>
</tbody>
</table>

*Refers to the number of times the agency was cited and not the number of programs citing the agency.

Facilitators. Of the twenty-three programs asked to identify facilitators to implementation, eleven, or 48%, cited community support, eight, or 35%, cited well trained staff, one, or 4%, cited sufficient funds and four, or 17%, did not respond.

Information concerning Barriers and Facilitators was not asked in the case of 21 (48%) of the programs due to constraints in time and lack of required information. Therefore, these 21 programs were excluded from the analysis of this item.
(f) Methods of Evaluation

Client satisfaction is shown in Table 5 to be the most frequently used indicator of program effectiveness. It should be noted further that some form of evaluation was reported by 65% of the centers surveyed.

**TABLE 5**

**METHODS OF EVALUATION AND REPORTED FREQUENCIES OF USE**

<table>
<thead>
<tr>
<th>Method</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Satisfaction</td>
<td>17</td>
<td>39</td>
</tr>
<tr>
<td>Assessment of Specific Knowledge</td>
<td>3</td>
<td>07</td>
</tr>
<tr>
<td>Pre-Post Test Design with Control Group</td>
<td>3</td>
<td>07</td>
</tr>
<tr>
<td>Informal Verbal Feedback</td>
<td>2</td>
<td>05</td>
</tr>
<tr>
<td>Observation</td>
<td>2</td>
<td>05</td>
</tr>
<tr>
<td>Post Test Only Using School Records of Behavioral Indicators</td>
<td>1</td>
<td>02</td>
</tr>
<tr>
<td>No Evaluation</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>No Response</td>
<td>4</td>
<td>09</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>44</strong></td>
<td><strong>101%</strong></td>
</tr>
</tbody>
</table>

(g) Funding

The majority of program staff could not specify cost or source of funding. However, centers did report staff time as the major item of expense and further that this expense was absorbed into staffing costs for the entire center. Therefore, outside funding to sponsoring agencies was analyzed and it was found that ten, or 63%, of the centers with programs had NIMH staffing grants, whereas only one of the
centers without prevention programming had such a grant. Of the remaining six centers with prevention programs but without staffing grants, four, or 25%, had special outside funding specifically for their programs.

Discussion

The focus of this study was upon the nature and extent of primary prevention programming in Georgia's thirty-four community mental health centers.

The task was, therefore, one of defining primary prevention in order that it might be readily applied as a method of classifying a unique set of mental health services. Every effort was made to objectively identify programs, however, the classification system was found to be inherently subjective, relying almost entirely upon the judgement of the interviewer and the program coordinator.

The problem of subjectivity has been encountered elsewhere (Miller, 1976) and appears to be linked to the static quality of the primary prevention construct itself. Primary prevention, when used to describe an intervention, is capable of only defining a single process-outcome relationship. Most interventions in mental health have the potential of many outcomes concurrently. Therefore, a choice must be made regarding the more valued outcome at any one point in time. Such judgements are usually based upon the social-political-professional climate at the time of the study (Perlmutter, 1976) and therefore
represent highly unreliable indices. In an effort to counteract the instability of this system, many practitioners and theorists alike have defined certain activities such as counseling, case consultation, and early intervention as secondary prevention regardless of potential outcome. But as Caplan has demonstrated some forms of counseling can prevent and treat at the same time. (Caplan, 1964.) The actual dynamics of an intervention are therefore obscured when prevention is defined by process rather than outcome.

Having found primary prevention to be an unreliable means of classification, I have chosen to describe the programs surveyed on the basis of methodology. In so doing, I hope to reinstate the objectivity that was initially intended. Whether or not a particular program prevents a disorder must wait for further research which first defines the specific disorder to be prevented.

From the data, one can see certain elements of consistency. For example, all programs surveyed involved groups rather than individuals. Teaching, group dynamics and leadership skills were the knowledge areas required of most program staff, while the majority of programs involved the learning of specific knowledge and skills. Based upon this data, one might classify the methodology as group instruction.

Schools were found to be the most frequently mentioned support agency while teachers and students together made up the largest target
population. It would seem logical, therefore, to hypothesize that the particular methodology described here is most adaptable but not limited to a classroom modality.

Another interesting trend indicated by the data shows community support to be a major determinant of program success or failure. This would suggest that content presented through group instruction should be responsive to community needs, otherwise there is a possibility that the methodology will fail, though this has not been tested. Program coordinators measured community support by program attendance and the quality or quantity of resources provided by the community agencies, such as schools, churches and hospitals. Therefore, a center wishing to present a particular message through group instruction would be advised to consider the responsiveness of the message to the immediate needs of the community or the group for whom it is intended.

Information concerning specific funding sources for the majority of programs surveyed was not available, however, centers with federal NIMH monies and special program grants were identified. Centers with staffing grants or special program grants were shown to have a greater percentage of group instruction type programs than were centers with operation grants or whose primary funding source is the state. In this writer's opinion, several factors enter into a possible explanation of this phenomenon.
(a) The staffing grant allows for a more structurally independent consultation and educational component than does the operation or state grant mechanisms.

(b) Centers with the staffing grant have had federal funding for a period ranging from at least four to eight years whereas centers with the operations grant have had such funding for a period of between one and four years. This indicates that time may be a factor in the development of group education type programs.

(c) The staffing grant was built upon five services, including C&E, whereas the operation grant is built upon twelve services including consulting and education (C&E). Therefore, the operation grant requires a more specific allocation of center resources. The greater number of required services limits the freedom with which resources can be allocated to non-essential programs.

(d) The staffing grant requires that all five services be in place at the time the grant is awarded or shortly thereafter. The operation grant requires that the twelve services be in place by the third year of operation. Given the high priority for crisis intervention, early identification, accountability, transitional and supportive systems in the '75 legislation, it would follow that a center with an operation type grant would be more apt to respond to direct service needs and the development of crisis support or transitional networks than it
would to the development of community education type courses or media presentations.

(e) The consultation and education section of Georgia's Standards for Area Mental Health and Mental Retardation Programs manual encourages rather than requires area programs to provide a wide range of consultation activities. However, in the same section, federally funded centers are required to "assign at least one staff member to coordinate consultation and education activities." It might be concluded from this clause that consultation and education is not a required component of non-federally funded centers in Georgia. This may explain, in part, the scarcity of structured public education programs in these centers.

A second but related factor is Georgia's growing interest in the balanced service model which puts greater emphasis on crisis support networks, transitional and supportive systems than it does upon public education. Therefore, given the limited resources of non-federally funded centers, the C&E that would be encouraged in these centers would probably be consonant with the balanced service system.

These five factors taken together with the finding that insufficient funding accounted for one of the major barriers to program development would indicate that special program funding is needed at the state level to supplement existing federal or state monies if group
instruction (public education) type programming of the kind surveyed are expected to be developed.

The analysis of programs within mental health is a complicated task, requiring models which accurately describe the dynamics of such programs within the social, political, and professional context in which they exist. This study, like others, has found primary prevention to be an unreliable means of classifying programs in mental health because it fails to describe the multiplicity of such programs. A more dynamic model is required before studies like this can accurately describe the many relationships that exist with regard to the treatment and prevention of a constellation of disorders.

In the interim, data of the kind gathered here can be effectively used by practitioners and administrators alike in the development of similar programs. The extent to which program coordinators attempt to evaluate their efforts is encouraging and should be continued and developed even further. Practitioners not versed in evaluation methodologies will find the evaluation work of others helpful in designing their own techniques.

Recommendations

Further research should focus upon specific disorders and the methodologies found to be effective in their treatment or prevention.
The prevention unit should function in the role of research consultant to program implementation. Persons knowledgeable in the prevention of specific socially and physically defined disorders should be hired at the state level to work with centers in the development and testing of methodologies designed to prevent those disorders.

A newsletter describing various methodologies and their impact upon the treatment and prevention of socially or medically defined disorders might be prepared and distributed regularly by the prevention unit.

A center which has demonstrated success with the treatment or prevention of a particular disorder, might exchange one or two staff persons for a few days with other centers in order that the new knowledge might be shared.

All centers should be sent a copy of this report, including the specific program descriptions so that persons interested in developing similar programs might benefit from the experience of others and avoid duplication of effort.

Conclusion

The present study is intended to stimulate the development of creative programs designed to more effectively prevent specific disorders. The programs I have selected to describe on the following pages represent only a fraction of the potential methodologies and are
meant as guides, not standards. The field of mental health is only in
the beginning stages of growth. There are no right ways or wrong
ways. There are, however, more effective and more economical ways
of dealing with the problems encountered in the field of mental health.
These ways must be found and taught to others.

Summary

In this chapter special attention has been given to the applic-
ability of the Public Health construct to mental health. It has been
pointed out that the two major problems inherent in the construct,
when applied to mental health, are (a) entrenchment in the disease
model, and (b) its inability to describe more than one outcome at a
time for any one intervention.

For the most part, those who oppose the application of the
disease model to mental health explain that most, if not all, mental
disorders are a socio-cultural phenomena which involve moral and
ethical issues rather than disease entities. Basic to this argument is
the premise that the mind is no more an object that can be treated
than is the intellect; that the mind is a structured perception of the
environment, or Gestalt, as well as a collection of processes perform-
ed by the brain.

It is my belief that man is both mind and body and, further,
that the mind and body are interdependent in the performance of
various behaviors including thought and perception. Therefore, a complete model must encompass the whole individual, both mind and body, but not subordinate one by the other as is the case with the disease model. An individual can be physically ill and be involved in a disordered life space concurrently in which case the concept of mental illness is unnecessary.

In my attempts to apply the medical construct to the classification of preventive mental health intervention, I found that the construct did not allow for the identification of multiple outcomes in a single intervention. It was, therefore, recommended that a classification system be developed which would identify methodologies rather than outcome and their potential for primary, secondary and tertiary prevention for specific disorders (social or biological) and populations.

The next chapter briefly describes what I have labeled the constructive model of preventive mental health. The model is an attempt to bridge the gap between social and biological disorders and the many medical and socio-cultural theories while maintaining the integrity of both the medical and social perspectives.
REFERENCES


Mack, Clifton D. 1977. A Study of Preventive Mental Health Programming in Georgia. The Division of Mental Health, Georgia Department of Human Resources.


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CHAPTER V

THE DEVELOPMENT OF A CONSTRUCTIVE FRAMEWORK
OF HUMAN BEHAVIOR

A very fine distinction has been made repeatedly in the course of writing this document. The distinction is between man's biological and social natures. Those who have reviewed this document and have asked, and rightfully so, why I have made such a distinction. I shall answer by asking them the nature of that which we call human kind. Is not the mere phenomenon of being human a kaleidoscope of feelings, emotions, fears, anxieties, joys, unhappiness, hope and despair? And do we not deny our basic nature to be sometimes sad, anxious, depressed, and confused by labeling such aspects of our nature a disease as if it were not naturally a part of our being like arms, legs and the five senses?

It is true that science and technology have advanced to a stage where it is possible to actually manipulate human emotion with synthetic chemicals. (Leff, D. L. 1978.) But to allow man to deny his reality in such an artificial way is, in my opinion, harmful and dehumanizing. A housewife who finds that raising children creates

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stress, anxiety and occasional depression disassociated from a physical illness (refer to Chapter 3 past) is simply experiencing certain human limitations. She can alleviate much of the stress by learning to cope with the reality of a new lifestyle. However, many housewives opt to deny reality by seeking chemical means of coping. True, tranquilizers, antidepressants and sleeping pills will help make living with Tommy more tolerable but denying one's human limitations through artificial means is denying one's human nature.

Man, through the centuries, has been attempting to deny his basic mortality, rejecting age and weakness as if it were a disease. Any aspect of man's nature which he deems a flaw in some immaculate conception of humanity, he labels illness and disease as he would an infected wound, an abscessed tooth, etc. Consistent with such a philosophy, man has endlessly attempted to "cure" what he perceives as flaws in his basic nature with the same types of antidotes he might use on a sore toe, a sprained ankle, or an ulcerated stomach.

Judson Herrick, a former neurologist and lecturer at the University of Chicago, wrote:

Some behavior is good and some is bad if good and evil are defined biologically in terms of what is advantageous to the behaving animal. In the lower ranks of animals, the choice between good and bad behavior is made automatically and inexorably. The unfit are eliminated; the fit survive and their fitness is progressively enhanced in accordance with the well-known laws of natural selection and other biological principles. But, in the human domain, the criteria of fitness are different.
A change in what constitutes good human behavior has been going on gradually for a million years or more and it has now reached a critical stage.

Our civilization and all its accumulated wealth and values are in dire peril just because people have not recognized that the criteria of fitness (the biologist's "survival value") have shifted from the psychological level of bodily security and comfort to the psychological and moral levels. (Herrick, 1950.)

The framework I propose places the full range of social behavior both approved and disapproved, in the hands of the social scientists, philosophers, politicians, educators; and those biochemical transactions, which are the precursors of behavior, in the hands of the physicians. Both social behavior and biological functioning are placed within the individual as a complex transaction between his body and his mind processes. In so doing, social behavior is made a function of man's social milieu and human nature, while biochemical transactions are made a part of his biological nature. We are therefore forced to view bad behavior as a function of our basic personality; social natures and social environments, rather than the function of a disease process to be treated with chemicals by physicians. The housewife who feels depressed or anxious would be forced to reevaluate her social milieu rather than her medicine chest and would seek ways of restructuring her life style and that of her family rather than ways of affecting her biochemistry. What she once believed to be an apparent weakness in
herself she would now learn to see as a weakness in her social milieu, confronting reality rather than denying it through artificial means.

The framework has two basic components, the first establishes that how we perceive the world is dependent upon both biochemical and sociocultural factors. Therefore, perception of reality can be altered by means of biochemical or sociocultural processes.

The second component sets up a conceptual dichotomy between social functioning and biological functioning such that the disorder and intervention might be categorized and evaluated on the basis of social outcomes and biological outcomes.

Incorporated in both components is the premise that biological and social functioning are concurrent and interdependent processes but require separate and distinct models for their analyses.

An explanation of both components is facilitated, if, for a brief moment, the reader looks upon himself as part of a complex and interdependent network of both internal and external systems of perception. (Figure 1 helps to illustrate this concept.)

With this view of oneself in mind I shall proceed to describe five perceptual systems, each of which influences the way we see the world around us.

Component 1, The Systems of Perception Identified

In Figure 1 the reader will notice five circled letters. Each of these letters identifies a particular set of perceptual systems, internal
Figure 1: Systems of Human Perception
and external to the individual. The first of these systems, (A), consists of the learning environment, external to the individual, which includes cultural norms, social values, religious beliefs and language, to mention only a few.

The second system, (B) includes sensory coding mechanisms which translate physical stimuli into neural impulses such as the eyes, nose, ears and skin.

The third system, (C) is involved in the processes collectively called "Mind" such as introspection, remembering, recall and insight, etc. As such, mind processes, though in themselves abstract, depend entirely upon electro-chemical mechanisms for their existence. (Sagan, C., 1977.) In this case, it is the electro-chemical process that is most important in this system.

The fourth system, (D), includes internal biologic feedback mechanisms which relay information from the brain back to internal systems after processing. For the most part this set of processes would include those performed by the autonomic nervous system.

The fifth system, labeled (E) in the drawing includes those mechanisms by which the processed information is translated into behavior through the processes of speech or overt movement. The system includes learned overt behavioral reactions to stimuli (behavioral repertoire) and language.
Each of these five systems represent either biological or social mechanisms, affecting our perception of ourselves and our environment. Therefore, perception can be affected by influencing one or more of the five systems. However, each system is influenced by different forces. For example, system A (the learning system) involves those environmental forces which influence the information our senses receive. Therefore, to affect this system, we must influence sources of information, the value of information, or the environmental factors which the information describes.

On the other hand, systems B, C, D, and E are all influenced by bio-chemical and biological factors which are affected by the manipulation of physical processes. For example, certain drugs, like alcohol, slow down or depress neural activity, which affects the coding of sensory stimuli. In which case, information from the environment may or may not be properly processed, affecting one's perception of that environment.

Component 2, A Classification System of Social and Biological Functioning

Component two explains that intervention into the functioning of one or more of the five systems can be classified in terms of the processes which are ultimately affected by the intervention. That is, an intervention which is directed toward a process included in system A would be labeled a social intervention because it affects information
about the social environment or the environment itself. When the dis-
ordered process or mechanism is found in one of the five systems,
that disorder is classified as either biological or social depending
upon the system in which it exists.

To help clarify the nature of a disorder in function, I have
developed a schema consisting of two categories. The first is a cate-
gory for those disorders discussed as biological (BD) and the second
is a category for those disorders described as social (SD). The labels
"mental illness" and "mental disorder" are no longer needed and
therefore are not used. When a particular intervention is designed to
prevent a biological disorder, or BD, it is called a PD intervention and
when a particular intervention is designed to prevent a social order,
or SD, it is called a PSD intervention. The treatment of an SD would,
of course, be a social treatment, or ST, and the treatment of a BD
would be a biological treatment, or BT. This array of abbreviations is
meant to focus thinking upon the true nature of the disorder without
using value judgements.

E. Cowen, E. Gruenberg, G. Caplan and others have borrowed
a model from public health to explain the complex interrelationships
of social problems, their causes and treatments. As explained in
Chapter II, the model they use has been successfully applied in medicine
to explain the natural histories of most known diseases; but a model
that explains the dynamics of a disease or an illness is not necessarily
appropriate for explaining the prevention of treatment of social disorders. A number of writers have pointed out the inappropriate use of concepts derived from medical practice to describe social phenomena, explaining that such concepts are too limiting. The schema proposed in this study recognizes that man is both a social and biological organism and that there exist complex interrelationships between the mind and the body. It further recognizes that a schema that explains a social phenomenon must be flexible enough to explain a concurrent biological phenomenon. Therefore, due to its medical heritage and limited use, the public health model of prevention shall be restricted in this schema to biological disorders, PBD interventions and biological treatment.

Two hypothetical cases might help explain the dynamics of the proposed schema. The first involves a father who beats his child and has been accused of child abuse. In our culture, child abuse is a set of behaviors not socially sanctioned. Child abuse is, therefore, a social disorder and can be treated by separating the child from the father so the set of behaviors not sanctioned is no longer allowed to continue. Now the practitioner can focus on the father and the child separately to diagnose the disorders that may have either precipitated or been precipitated by the child abuse disorder. The father complains of intense headaches and diminishing sight. Upon visiting a doctor he learns that he has a tumor on the brain that must be removed and, further, that the tumor has been the cause of his sudden and
violent attacks upon his child. The disorder which precipitated the child abuse is biological in nature and will be treated by a neurosurgeon.

The child, on the other hand, has a shattered self-image as well as shattered bones. He, therefore, has two disorders, the first of which is social and the second is biological. He must, therefore, be treated by two specialists, a chiropractor and a psychologist. The child is ill because he has broken bones, not because he has a shattered self-image. The father is ill because he has a tumor, not because he abused the child. There are other disorders precipitated by the child abuse disorder, such as the mother's diminished trust in the father, or the father's concern about returning home and having to rebuild relationships. All these disorders are interdependent but each must be defined and treated, using the appropriate methodologies, be they sociological, medical or educational.

As there are many treatment modalities there are several prevention modalities involved. One can speak of preventing tumors before they occur, a PSD intervention, or one can speak of treating abused children so they won't become abusive parents themselves, a PSD intervention. By identifying the disorder to be prevented, the job of researching appropriate preventive interventions is greatly facilitated and resources are not wasted by evaluating the wrong outcomes.
A second hypothetical case involves the drunken driver. Using this schema, drunken driving is a social disorder because it involves a set of behaviors not sanctioned by society. To prevent the person from driving while drunk one simply removes him from the driver's seat. This is most appropriately done by family or friends. However, when family or friends fail, it is the role of law enforcements to treat the disorder. Once the steering wheel and the drunken driver have been separated, one can begin examining the constellation of disorders of which drunken driving may be only one. The family or friends may complain that the person in question has a history of abusive drinking, a second disorder, which, because of its cultural implications, must be labeled a SD. Abusive drinking can be treated and prevented through the teaching of socially appropriate drinking behavior. However, upon further examination, a third disorder is found, addiction. Addiction is a biological disorder requiring medical treatment. Once treated for addiction, it is learned that the individual was not only addicted biologically but psychologically as well. His psychological addiction is the result of mounting stress at work, unpaid bills, unresolved marital problems and on and on it goes. All these disorders have been accruing simultaneously but each must be identified and treated inde-pendently, using appropriate methodologies and processes, be they medical, psychological, or financial.
The person is not ill because he drove a car while legally intoxicated; he is ill because of his addiction. A PBD intervention would therefore prevent this person from becoming biologically addicted to alcohol while a FSB intervention would either teach the person what is and what is not considered to be abusive drinking in our culture or teach alternative methods of coping with stressful life crises.

A single intervention can therefore prevent and treat at the same time. The distinction is made based upon the presence or absence of the disorder to be treated or prevented; one treats an existing disorder; one prevents the further occurrences of that disorder. The methods used to treat or prevent a disorder depend upon the way we define the disorder.

It follows that there exist two ways of identifying interventions. The first involves the methodology or process itself, be it group instruction, medical treatment, individual instruction (counseling) or law enforcement. The second requires that the disorder be identified and the appropriate treatment and preventive interventions be listed for each.

The constructive model presented here is, of course, based on the premise that man is both social and biological concurrently.

Further, biological disorders, regardless of origin and location within the body, can affect the individual's life space or how he views himself in relation to others and his environment. For example, an individual
with a congenital spinal disease resulting in a degenerative spinal condition terminating in a state of total paralysis would, very likely, have a seriously lowered self-image, experience states of depression and function abnormally in social situations. The person is ill because of the spinal disease, not because of the lowered self-image or inappropriate social behavior. A social treatment would help the person re-evaluate his or her environment while a medical treatment would alleviate the spinal induced pain and suffering or in some way increase mobility.

In essence, our physical nature has an impact upon the phenomenology of self. A more direct example of how alteration in the physical structure affects the mind, or Gestalt, is the effect of changes in sensory systems and perceptions. The mind is entirely dependent upon the body for the way it structures perceptions. Therefore, by affecting the senses, the mind can also be affected. Sensory inputs are received and processed by biological systems such as the five sensory systems and their respective neural connections. Phenomenologists would say that once coded, information reverberates with the past, present, and future through mind processes and the resulting interpretations are stored biologically.

Like any complex system, failure at any point can result in process error and inaccurate interpretation of reality. An error
in biological processes are illnesses or biological disorders; error in interpretation is a learned disorder or a social disorder.

**Summary and Implications of the Constructive Model**

The constructive model is, therefore, a way of conceptualizing the full range of human functioning, both biological and social. It differs from the medical model in four aspects:

1. Social processes are described in socio-cultural terms rather than medical terms.
2. Social processes are shown as conceptually distinct mechanisms, which, though concurrent with biological mechanisms, require social interventions rather than medical interventions.
3. Perception is shown to be affected equally by social and biological forces.
4. The concepts of primary, secondary and tertiary prevention are measures of outcome rather than program categories.

Applying the constructive model of human functioning to preventive mental health would, of course, result in several changes in the way the lay public views disordered behavior as well as changes in the way mental health professions conduct studies of program effectiveness and design mental health services.
Therefore, the model can be said to impact upon two aspects of the present system, (a) the understanding the public has of mental health care and the disordered behavior, and (b) the way in which mental health professionals design and evaluate programs.

(a) The Public's Understanding of Human Functioning

The point has been made repeatedly that there exist both biological and social functioning. As such, the concept of mental illness, a category somewhere between biological and social behavior, disappears along with those stigmas attached to it. However, the change in conceptualizing one's behavior along such guidelines is by no means as easy as it sounds. The concept that bad or evil behavior is somehow a function of forces beyond the control of the average human has its roots deep in the mysticism of both religion and medicine, roots not easily disturbed. Therefore, to institute the constructive model, the public must undergo extensive re-education concerning the "new" understanding of one's human nature. Education, however, is reciprocal, that is, the health care establishment must reinforce the new understanding of behavior by designing and evaluating programs which force the individual to see him or herself as equally biological and social.
In chapter four, a study was described in which an attempt to classify programs as primary, secondary and tertiary prevention, (as proposed by Gerald Caplan) was found to be inadequate. The proposed revision in this system of classification would require that programs be classified in terms of methodology used and the social or biological disorders for which they have been designed to treat or prevent.

Programs would be evaluated in terms of their relative effectiveness in preventing or treating the social or biological disorder for which they were designed. A program could conceivably treat an existing disorder and prevent a future occurrence of the same disorder concurrently and with equal effectiveness. In essence, primary, secondary and tertiary prevention would become measures of outcomes rather than categories of programs as they are now.

Professional Training

Another aspect of the constructive model involves changes in the professional personae of mental health specialists and physicians. This is best stated by a quote from Henry and Sims in their book, the Fifth Profession.

Well, where are we going? Does not our greatest usefulness and our safety come from adhering rather strictly to medicine,
the discipline that nurtured us? I believe so. At present, the "Medical Model" of treatment is under attack by "therapists" of every shade and description. We must have a secure base of operations, a harbor we can depend upon when the winds of social change blow this way and that; it does seem that medicine is that harbor, for no matter to what heights man's spirit and intentions may soar, he will still be trammled with a body and no matter what his status he will have emotional illness. (Henry, W.E. et al., 1971.)

Certainly this professional pride is no small factor to be dismissed lightly. Serious consideration must be given to redefining professional roles such that threat to self-esteem can be kept to a minimum. Yes, it is true, psychiatrists, psychologists, and social workers are human too.

Moral Implications

I have discussed briefly the moral implications of the medical model of human behavior versus the constructive model in the beginning of this chapter. However, I feel it to be an aspect of the proposed change that is of great importance. We humans are at times all anxious to find Ponce De Leon's "Fountain of Youth" without considering the repercussions of eternal life on earth. If man persists in seeking chemicals tailored to increase creativity and intellectual acuity or to produce any emotional state such as: anticipation, revery, determination, curiosity and calm; is he not ultimately creating an artificial man, destroying human nature as we know it today? This, in my opinion, is a very dangerous, if not a potentially fatal dream.
held by scientists. I take issue with a statement made in an article on brain chemistry by David Leff in a recent issue of Smithsonian magazine that:

For now it is enough to know that answers may yet be found to Macbeth’s plea to his wife’s physician, ‘Canst thou not minister to a mind diseased. Pluck from the memory a rooted sorrow, raze out the written troubles of the brain, and with some sweet oblivious antidote close the stuff’d bosom of that perilous stuff which weighs upon the heart? (Leff, D. N., 1978.)

Scientists must stop long enough to consider where their queries will ultimately lead. If they lead to the ultimate destruction of human nature, I seriously question their intentions.

In the physician’s answer to Macbeth’s query:

"Therein the patient must minister to himself."
(Shakespeare, Macbeth.)

lies the main concept of the constructive model of human behavior.
REFERENCES


CHAPTER VI

SUMMARY

If the history of the origin of life were described as having occurred over a thirty day period, it could be said that man and woman originated at 10:30 p.m. on the thirtieth day and that all recorded history occupies the last ten seconds of that same day. With the invention of the atomic bomb, man entered the first second of a new month on earth. Man has the technology to travel in space, explore life on the other planets and for total self-annihilation. But what do we know of man's nature? Having reviewed the major theories of human functioning, I can confidently say that man in the eleventh second on earth knows little more about his nature now than he learned when first he gazed upon his image in a primeval pond. Technology has far exceeded the dreams of the renaissance man, but technology tells us little of our humanness, and it is our humanness that must find ways to cope with the new technology.

In Chapter Two, I discussed an existing framework developed by public health specialists to explain the mechanisms of physical infirmities that have plagued man for many centuries. The framework

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has been shown to be effective, for man is now able to live a longer and more healthy physical existence. The success of the medical model in this area has lead man to apply it in the explanation of disordered human behavior.

Part One of Chapter Three explains how the medical construct aptly describes a great number of biological disorders which ultimately affect behavioral and emotional functioning such as: toxic reactions, congenital disorders, malnutrition and metabolic disturbances.

However when the medical model is applied to the socio-cultural aspects of human functioning it becomes a rather awkward tool which tends to foil rather than facilitate social research. Part Two of Chapter Three briefly describes five socio-cultural perspectives of human functioning: psycho-social theory, learning theory, cognitive theory, stress theory and labelling theory. All of these theories are similar in that each attempts to explain our phenomenological or response behavior patterns to our environment and ourselves. In other words, each theory attempts to explain the origin of social behavior.

The reader will notice that there are few known facts about the origin of disordered behavior or how it is that we learn to perceive the world as we do. Also, many of the nervous system diseases associated with advanced age such as Hodgkin's disease, arteriosclerosis, and Huntington's disease; as well as diseases associated with younger
individuals, such as epilepsy and cerebral palsy, cannot be prevented or treated at the present because little is known about their origin.

Much research has been conducted recently to determine the biochemical precursors of the affective disorders such as the depressions and manias. But the research findings are contradictory and inconclusive.

There was noted, however, that knowledge does exist concerning the effects of poor nutrition on children, chemicals upon the unborn fetus which results in retardation, and genetic abnormalities. There is a great role for education to play in the early and continuing instruction of individuals about the effects of these agents upon themselves and their children. But, knowledge of brain biochemistry represents only a fraction of the existing knowledge. We know for example, that an individual passes through a series of developmental periods each of which represents a critical stage of learning and adaptation. Though there is more to be learned about these stages, individuals would benefit by knowing and understanding each stage and its impact upon his or her developmental welfare as well as that of a wife, a husband or a child. Here education again can play an effective role in teaching people about themselves and why they behave as they do.

What we know about stress and its affect on both biologic and social behavior is quite limited due to the inconsistent methodologies with which stress is studied. Lazarus (refer to Chapter III) and others
have noted the importance of describing both the internal manifestations of stress, as well as the mediating factors, such as personality, perception of stress producing stimuli and phenomenology of the past, present and future at the moment of stress. However, the limitation of what we know about stress should not limit our efforts to teach individuals as to how they might cope with stress-producing situations. Again such teaching requires comprehensive and well planned educational programs designed to help people understand their emotional limitations in order that they might adapt themselves to a situation or redefine the situation itself such that stress is kept at a minimum.

Repeatedly, I have made the point that man is both social and biological concurrently and that we must teach people more about both. In so doing, biological functioning must be explained by using the medical models while social functioning must be explained by using social models. To facilitate the design of such education programs, a conceptual framework is presented in Chapter V which I have called "The Constructive Model of Human Behavior." The model defines five perceptual systems; one of which involves social learning, while the remaining four involve biochemical processes. It is explained that perception of one's environment can be altered through the manipulation of either biochemical or social learning processes.

Chapter V concludes with an explanation of how biochemical processes have been manipulated with the danger of man's developing
an artificial set of emotions thereby obscuring his true human nature, an aspect of man that we know little about. The model points out that learning and education have the potential of replacing certain psycho-
tropic drugs, which merely obscure reality as a means of controlling emotion and coping with crises thereby robbing man of his natural right to develop his own mechanism of control.

Stephen C. Ausband, Associate Professor of English at Averett College, Danville, Virginia has written "The great and lasting-moments in civilization, it seems to me, always came from a society that knew itself--both what a monster and what a godlike thing comprised its individual units." (Harper, S., 1978.) It would follow, that we must learn and accept that which we call our human nature, give human nature an identity unto itself and not deny the flaws thereof by calling them illnesses and evading them with drugs.

Therefore, in our eleventh second of life on earth, we must pause and evaluate what we know and do not know about human be-
havior. We must use preventive measures to assure that our technol-
ogy does not deceive us into thinking that biochemical manipulation of our behavior is the ultimate goal of research. A fine balance must be drawn between our social nature and our biologic nature through the aspects of man's socio-cultural existence on the one hand and through the aspects of the theories derived from medical technology on the other.
REFERENCES


APPENDIX A
ProSite Visit Questionnaire

Programs identified prior to visit:

Title
Target group

Program director
  Degree
  Discipline

Title
Target group

Program director
  Degree
  Discipline

Title
Target group

Program director
  Degree
  Discipline

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PRIMARY PREVENTION SURVEY
(Brief Program Description)

Please write a brief description of your program including the methodology, specific materials used, (if course) the number of sessions and length of each session, average attendance, (if media campaign) the length of spot, time of day aired, number aired per week, number and type of written (printed) matter distributed and a listing of points of distribution.
PART I
Program Title: ____________________________________________
Program Coordinator: ______________________________________
Degree: ___________________________________________________
Discipline: _________________________________________________

PART II
1) the desired outcome:
________________________________________________________________
________________________________________________________________
________________________________________________________________

________________________________________________________________

problem is:
1 = mental illness related 4 = drug related
2 = mental health related 5 = mental retardation related
3 = alcohol related
2) the target group:
________________________________________________________________
________________________________________________________________
________________________________________________________________

3) the beneficiary group:
________________________________________________________________
________________________________________________________________

4) location of program:
________________________________________________________________
________________________________________________________________

5) how program was evaluated:
________________________________________________________________
________________________________________________________________

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PART III
Would you say that:
(6) you made the community aware of the need for this program
(7) the community made you aware of the need for this activity
(8) the funding source requires that you do this particular activity
other

PART IV
I found it very difficult to carry out my program plans because:
(10) I do not have enough money
(11) I did not have enough staff
(12) my staff did not have the proper training
(13) the local politicians were against my program
(14) the community did not show sufficient interest in this program
(15) other

PART V
I feel that the most significant factor which contributed to the success of the program was:
(16) the community interest
(17) the support of local politicians
(18) having enough money to do the project
(19) having a staff which was trained to carry out this activity
(20) other

PART VI
I was able to solicit the help of: (agencies, groups or organizations)
(21) government/planning
(22) criminal justice
(23) health/medical
(24) social service/welfare
(25) other mental health or mental retardation services
(26) civic groups
(27) religious groups
(28) schools
(29) colleges
(30) other (specify)
PART VII
Can you tell me the role or roles of each agency, group or organization in the development and implementation of your program?

1. government/planning
2. criminal justice
3. health/medical
4. social service/welfare
5. other mental health or mental retardation services
6. civic groups
7. religious groups
8. school
9. colleges

1 = collaborator or partner in planning and/or implementing
2 = source of financial support
3 = source of personnel support
4 = program consultation assistance with program development
5 = furnishes supplies, space, or equipment
6 = recipient of CMHC service
   a) reimburses CMHC with fees
   b) pays in kind
   c) receives service grant
7 = they provide access to target group (population)
8 = other

PART VIII
Cost information
Other centers might be interested in duplicating this activity, therefore, it might be of help if you could estimate:

1. (40) How many staff members are needed
2. The amount of time (per week) each staff person can expect to spend:
3. (41) in planning this activity
4. (42) in the field
5. (43) the cost (to your agency) of developing and implementing this activity

PART X
What specific skills or training do you feel to be important for a staff person planning to duplicate this activity?

PART XI
How could the Prevention Unit have helped you on this program?
PART I

Program Title

Your Name

Your Degree

Your Discipline

PART II

Briefly describe your program including the following information:

a) the desired outcome
b) the target group (age, race, sex)
c) the beneficiary group (age, race, sex)
d) where the program took place

Describe the methodology and materials used

PART III

Would you say that:

a. You made the community aware of the need for this program;
b. The community made you aware of the need for this activity;
c. The funding source requires that you do this particular activity.

PART IV

Answer the following questions based on your experience with the program

I found it very difficult to carry out my program plans because:

a. I did not have enough money
b. I did not have enough staff
c. My staff did not have the proper training
d. The community did not support this activity
e. The local politicians were against my program
f. The community did not show sufficient interest

PART V

I feel that the most significant factor which contributed to the success of my program was:

a. The community interest
b. The support of the local politicians
c. Having enough money to do the project
d. Having a staff which was trained to carry out this activity
PART VI

Community assistance: 158

I was able to solicit the help of ___ (agency, group, or organization).

PART VII

Can you tell us the role or roles each agency, group or organization played in the development and implementation of your program?

PART VIII

Cost information:

Other centers might be interested in duplicating this activity, therefore, it might be of help if you could estimate:

a) How many staff members are needed ______________

b) The amount of time (per week) each staff person can expect to spend planning the activity: ______________ in the field: ______________

c) The cost (to your agency) of developing and implementing this activity: ______________

PART IX

For those interested in your program, can you list the names, degrees and disciplines of staff involved in this project?

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Discipline</th>
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PART X

What specific skills or training do you feel to be important for a staff planning to duplicate your program?

PART XI

How could the Prevention Unit have helped you on this project?
Center Profile Survey

What are your center's satellites:
1. 
2. 
3. 
4. 
5. 
6. 

Is your center federally funded? yes no

What type of NIMH grants do you have:
1. 
2. 
3. 

Have you applied for a grant? yes no

What kind of grant:
1. 
2. 

Center directors name

Degree 

Discipline 

Consultation and Education Coordinator's name 

Degree 

Discipline 

Prevention Coordinator's name 

Degree 

Discipline 

What is the average case load at your center (including satellites) for a one month period? 

year of grant

approved
Services intact and operating

- fully operational = 2
- partially operational = 1
- not operational = 0

<table>
<thead>
<tr>
<th>Service</th>
<th>Center</th>
<th>Satellite</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 hour emergency</td>
<td>/</td>
<td>/</td>
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<tr>
<td>Inpatient</td>
<td>/</td>
<td>/</td>
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<tr>
<td>Adult Services</td>
<td>/</td>
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<tr>
<td>Adolescent Services</td>
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<td>Children's Services</td>
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<td>Alcohol Services</td>
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<tr>
<td>Drug Services</td>
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<tr>
<td>Day Treatment</td>
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<tr>
<td>Supportive Living</td>
<td>/</td>
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<tr>
<td>Consultation and Education</td>
<td>/</td>
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<tr>
<td>Medical and Pharmacy Services</td>
<td>/</td>
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<tr>
<td>Other</td>
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Staffing Characteristics:

<table>
<thead>
<tr>
<th>Category</th>
<th>Center</th>
<th>Satellite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # staff (full time)</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>Total # staff (part time)</td>
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<td>/</td>
</tr>
<tr>
<td>Total # psychologists (PhD)</td>
<td>/</td>
<td>/</td>
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<tr>
<td>Total # psychologists (M.A)</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>Total # social workers</td>
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<td>/</td>
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<tr>
<td>Total # nurses (r.n.)</td>
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<td>/</td>
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<tr>
<td>Total # nurses (i.P.N)</td>
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<td>/</td>
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<tr>
<td>Total # educators M.Ed</td>
<td>/</td>
<td>/</td>
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<tr>
<td>Total # theologens</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>Total # business managers</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>Total # others</td>
<td>/</td>
<td>/</td>
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</table>

List on separate sheet