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APPLYING THE PUBLIC HEALTH SOCIAL WORK MODEL: PRINCIPLES OF THE EPIDEMIOLOGICAL APPROACH

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In conceptualizing social intervention, social workers generally focus on the interaction between person and environment in an effort to achieve congruence between the individual's needs and the resources, demands, and opportunities of the environment. This broad focus draws social workers into contact with virtually every human problem. Consequently, there is need for a conceptual approach which provides a systematic method for analyzing problems that may be manifest in such diverse ways as individual psychopathology, lost opportunity, or systematic discrimination. Current models of practice in social work are strongly influenced by a blending of systems theory and the problem-solving approach. Of particular note is the strong predilection for individualizing problems. By "starting where the client is," social workers often find that such phenomena as abuse, unemployment, or suicide become obscured by the rich detail of individual life patterns. The result is an inability to step back and examine the broader causal patterns. This article will explore the value of epidemiology as a model for selecting points of intervention which could decrease the incidence of the problem. It is an attempt to expand the traditional focus on problem amelioration to one which includes preventive intervention strategies.

The epidemiological approach has been the primary research and practice guide in public health for many years. It originally examined epidemics and has been applied to most health problems. Its success in the area of infectious and communicable diseases is well known, and it has also been used to understand behavioral and social disorders such as alcoholism, drug abuse, suicide, and schizophrenia.

Recently, social workers focused on prevention practice in a special edition of Social Work Research and Abstracts. While there appears to be agreement among social workers that primary prevention is desirable, a debate continues over the likelihood that it will become a basic function of social work.

Despite recent attention given to prevention, most social workers remain unfamiliar with the basic concepts and terminology used in public health. Yet this is the only professional field devoted primarily to prevention intervention. The purpose of this presentation is to present and analyze the epidemiological model and its application to public health social work. The model is presented as a supplement to the current conceptualization of social work intervention.

Model Description

Social work is defined as a profession "concerned with the interactions between people and their social environment which affect the ability of people to accomplish their life tasks, alleviate distress and realize their aspirations and values." In order to assist a client, the practitioner must conceptualize the change agent system, client system, target system and action system, determining the best method of intervention considering the circumstances. Thus, problem assessment generally requires an understanding of factors that contribute to the problem and alternatives which may lead to a course of action. Typically, the assessment involves individualizing the situation. For example, in providing service to someone emotionally unstable, the primary concern centers on the manifestation of the problem. How is the person affected, how is their spouse, significant other, or family influenced? Is the affected person able to adjust at all to their environment? Does the environment need to be changed? Is the individual's capacity limited? Intervention might center on the character of the individual's strengths that alter or support properties of desired behavior. Self esteem, assertiveness and fears are often client concerns amenable to intervention leading to better coping capacity. On the other hand, an individual's behavior may be a very rational response to external situations such as unemployment, illness or trauma. The environment may need to be changed to enable the client to alter their behavior. In order for a social worker to assist a client there must be a comprehensive understanding of the individual's problem configuration and some assessment of environmental factors.

The epidemiological model can be used to identify similar factors regarding problem configuration and the role of intrinsic and extrinsic contributors. But rather than individualizing the problem it seeks to interpret the phenomenon by aggregating cases and identifying common patterns which give clues to the etiology of the problem. It is primarily concerned with prevention and has had major success in the areas of communicable and infectious diseases. The model has been applied to problems with multiple contaminants. The closest
application to problems of prime interest for social workers has been in the area of mental illness, most notably schizophrenia.

This model should not be used as a substitute for direct work with individuals in need, but rather it can contribute to the conceptualization of social intervention. Perhaps by moving away from a preoccupation with the individual case, the broader phenomenon may be addressed and a shift from amelioration to prevention achieved. Despite the potential, only a few authors over the last twenty years have explored the value of this approach to the profession and it has received very limited use in the actual practice of social work. 8

**Epidemiological Concepts**

Epidemiology in the broad sense was formerly defined as a public health science which examined epidemics. The epidemiologist model is grounded in the "medical" approach but it is considered somewhat unique and is now shared with sociologists, social psychologists and other non-medical workers who engage in survey research. The major difference between the epidemiologist and non-epidemiologist is the preoccupation with illness as the dependent variable. 9 One could substitute the word "problem" in place of "disease" and expand the focus of interest to social workers.

The merging of the fields of interest for both health and social science disciplines highlights the value of the epidemiological model. Behavioral or societal disorders like alcoholism, drug abuse, child abuse, and teenage suicide are considered prime territory for all helping professions. What is needed is a common conceptual paradigm which will assist in identifying the variable of study and that can accommodate the range of social, legal, medical and economic factors that must be taken into consideration. It assumes multiple causation but seeks to identify key points of intervention which can result in the greatest likelihood of preventing the problem from developing.

**Determining Populations At Risk**

Epidemiology relies on the precision (or care) with which a problem is identified, evaluated and defined. Because the epidemiologic process aggregates case information, inaccuracies at the initial data collection stage can obscure the identification of the population at risk. (those persons who have

the probability or are at risk of incurring the social problem of interest). To determine those persons who are at high risk of the social problems of interest, one must know the number of new cases (incidence) and the number of individuals with the problem (prevalence) at any point in time. Calculating incidence and prevalence allows one to compare differences between populations and identify those populations at higher risk. As an example, if counties of similar size and makeup show dramatically different incidence and/or prevalence rates for a social problem, one would want to investigate the reason why one population had a greater risk than the other. Knowledge of the norm is essential. The comparison enables the identification of factors which may contribute to the problem of interest.

Thus, a series of analytical steps are required in the epidemiologic process. These include the following: 1) define the problem; 2) identification of the population-at-risk; 3) selection of a representative sample; 4) formulation of a clear case definition of the social problem; 5) identification of unusual factors in terms of a set of standard indices. Problems of identification and reporting are common at this stage of the epidemiological model. The front line practitioner is the key to success, yet many do no recognize the essential role they play in defining the phenomenon.

**Etiology**

The model of disease causality takes into consideration many factors but the essential causal chain centers on the agent, host and environmental relationships. In social work terms, they might be described as target system, client system and action system. The agent is viewed as the cause of the pathology. For example, influenza virus is the agent for influenza. Examples of agents from the physical environment are lead, asbestos and carbon monoxide in the inspired air. A possible agent in the social environment is maternal deprivation.

The host is defined as the recipient of the damaging effect which is produced by the agent(s) (see Figure 1). Factors affecting the development of the problem are usually divided into two groups, factors intrinsic to the host and agent, and factors extrinsic, to the environment. Host factors affect susceptibility; factors in the environment influence exposure and sometimes indirectly affect susceptibility as well. The interaction between these variables determines how the problem develops.
It is possible to divide intrinsic and extrinsic factors into positive and negative factors. Positive forces are seen as those which contribute to the problem. Negative forces are those which increase resistance to the problem. Intervention may consist of reducing positive forces or increasing negative forces. This is roughly the same concept as "force field analysis" described by Kurt Lewin. The manipulation of driving and limiting forces should be familiar to most social workers; particularly those concerned with organizational change.

Environmental or extrinsic factors are classified on three levels: biological, physical and social. The biological sector of the environment includes: infectious agents, reservoirs where the agent actually grows, and factors which transmit diseases, plants and animals. Physical aspects of the environment include such factors as radiation, water, air, light, heat, atmospheric pressure and chemical agents. Social environmental factors are defined in terms of overall political and economic stratification of a society and how individuals are integrated into societal structure at various stages in their lives. Social environmental factors are closely related to cultural and social values at the family, group and community levels.

The reservoir is part of the biological, physical and social environment that facilitates or nurtures the development of the agent. It is the context in which the agent gains in strength. Biological agents must grow to the point where they can infect the host. This requires an environment that supports the growth, i.e., temperature and food. Social agents need a nurturing environment also. When the agent is a destructive person, the reservoir would include factors which contribute to the person becoming destructive, i.e. abusive parents often come from a reservoir of abuse as a child and operate in a societal context which view children as the property of parents. Epidemiologists hope to achieve primary prevention by keeping the agent from reaching the point where it can harm the host.

As one moves from biological to physical to social factors, a pattern of multiple causation emerges and choosing the correct point of intervention becomes increasingly difficult. This may explain why epidemiologists have been reluctant to explore the complex social problems of concern to social workers. The manner in which a person is integrated into society can be extremely important, yet it is very difficult to pinpoint the actual cause (agent) at the social level of a patient who is for example, severely depressed. The depression might be linked to social isolation or previous history of this behavior in the family. The loss of a loved one may cause deep depression. Children can be affected by sudden changes in their lives, such as a move from a rural to an urban setting. This requires adjustment to geographic and environmental differences which affect interpersonal development. In the helping process the social worker is looking for the context of the problem, just as the epidemiologist explores the context of the phenomenon. Both are seeking a point of intervention. Typically, the social worker wishes to stop a reoccurrence from further development. The epidemiologist wants to break the causal chain, in order to achieve a level of primary prevention.

The epidemiological model provides a systematic approach for analyzing problems based on multicausal reactions. Multicausal theory includes analysis at the social, cultural and psychological levels. Modification of the model may be necessary but it can be used as a good descriptive outline to categorize variables that affect individual and group behavior.

Model Application

The value of the agent-host model is its ability to illustrate simply the relationship of complex risk factors to a problem, thus providing a guide in selecting an intervention which has potential for success in preventing the problem. It requires that the practitioner examine the context of the phenomenon in addition to understanding the individual client's unique history. Figure 2 presents the agent-host model using child abuse as the social problem. It is an example and is not presented as a complete analysis. Here the agent and the host are separate entities. Of particular note is the intergenerational cycle in which the psychological injuries sustained in childhood seem to be carried into adulthood, with an increased risk of the abuse pattern being repeated.

At least 1 of every 100 children in the United States is believed to be significantly mistreated. However, gaining an understanding of the incidence of child abuse is difficult. It is generally accepted that this figure underrepresents the magnitude of the problem since abuse and neglect are often not reported. Ray Helfer reports that 25 percent of a group of 250 women who had delivered their babies and were not known to have been abused, responded "I agree" to the statement, "When I was a child my parents used severe physical punishment on me or one of my siblings."
Implications

To recapitulate, social epidemiology involves a series of analytical steps which includes identification of a population at risk, conceptualization of a causal pattern, and manipulation of intrinsic and extrinsic risk factors leading to an outcome of reduced incidence of the problem. It is a research and practice model which has had substantial success in the field of public health. The model is a necessary addition to social work practice but is not a replacement for the provision of direct assistance to those in need.

The involvement of practitioners in the identification of risk factors and interactional patterns is essential and has many implications for the education of social workers. Technological innovations such as computers, just beginning to be used in social work practice, offer tremendous potential for assisting in the compilation, analysis, and distribution of practice information needed in this approach. The importance of prevention in the future of social work practice is stressed clearly by David Fanshel, who calls for research in prevention.14 He particularly notes the need for collaboration between practitioners and researchers in identifying the skills required to do prevention-oriented work effectively. Familiarity with social epidemiology is one tool for achieving this end.

REFERENCES

4. David Fanshel, Special Editor, Social Work Research and Abstracts, 18 (Fall, 1982).
7. Pincus and Minahan, op. cit.
Extrinsic Factors in the Environment

1) Parental rights versus children's rights disputed (+)
2) Cultural ambiguity in definition of child abuse (+)
3) Normative legitimacy of family violence (+)
4) Involuntary nature of family relationship (+)
5) Strong protective services (-)

RVOIR ➔ AGENT (abusive parent) ➔ HOST (child) ➔ CHILD ABUSE

Intrinsic

World of Abnormal Rearing (WAR): (+)
- needs not met
- role reversal
- few choices
- senses muted
- feelings action
- low self-esteem
- inability to trust
- inability to help others
- inability to separate
- other-self responsibility
- identification with aggressor

Intrinsic

1) Developmental deficits: low self-esteem, lack of trust (+)
2) Stress (+)
   - isolated
   - marital power
   - addiction
   - marital satisfaction
   - SES status
   - gender
3) Chronically hostile (+)
4) Mental problems (+)

Intrinsic

1) WAR pattern repeated (+)
2) "Difficult" children at risk (+)
   - sickly
   - congenitally defective
   - premature
FIGURE 1

HOST-AGENT RELATIONSHIP