

Auger in Action: Application of the Model

*Karen Fredricks Broncatello, R.N.,
M.S.N.*

*Instructor of Nursing
Bloomfield College
Bloomfield, New Jersey*

WHEN USED as a basis for assessment, a conceptual model provides the practitioner with a general perspective, a mind set of what is important to observe. It elucidates possible relationships within the client situation upon which nursing diagnoses may be made and provides direction for nursing intervention. For Reilly, "a conceptual model of nursing practice is derived primarily from empirical data and intuition, as relevant theories and concepts from scientific and humanistic disciplines are brought to bear on practice. . . . [It] is primarily descriptive; it seeks to provide a perception of the reality of nursing practice."¹

Nursing literature to date is inundated with conceptual models. Yet there exists a paucity of information of how these models have been applied. Hence, with little documented validation of their efficacy in practice, it is no surprise that the profession views their use as merely an academic exercise. A look at one conceptual model—Auger's behavioral systems

14 model²—may encourage professionals in the field to take a new look at other models and reinforce the need to systematically, repeatedly and publicly test and evaluate models in practice.

THE MODEL

The Auger behavioral systems model is an amplification of the model developed by Dorothy Johnson, professor of nursing at UCLA.³ As a conceptual model, it seeks to order information gained through scientific inquiry and observation in such a way as to provide a framework directly applicable to client care. Because behavior is "a quality of the individual that can be separated from all other qualities with which it is normally found,"^{2(p32-33)} it is amenable to analysis. Thus it is behavior, rather than the individual, that constitutes the system for Auger, as well as the pivotal concept of the model.

Recalling from systems theory⁴ that humans and nature interact as separate entities, each having integrated sets of properties and relationships, we may look at human behavior as "an integrated response to an internal or external stimulus, which is modified by the environmental factors of the behavioral system."^{2(p33)} Thus humans and environment are in constant interaction. Human behavior is not only regulated by biopsychosociocultural stimuli within the self and the environment; it also constitutes an overt representation of the individual's personal stance in relation to the events and situations of that environment.

The Eight Subsystems

Auger divides the system of behavior into eight subsystems, based on the appar-

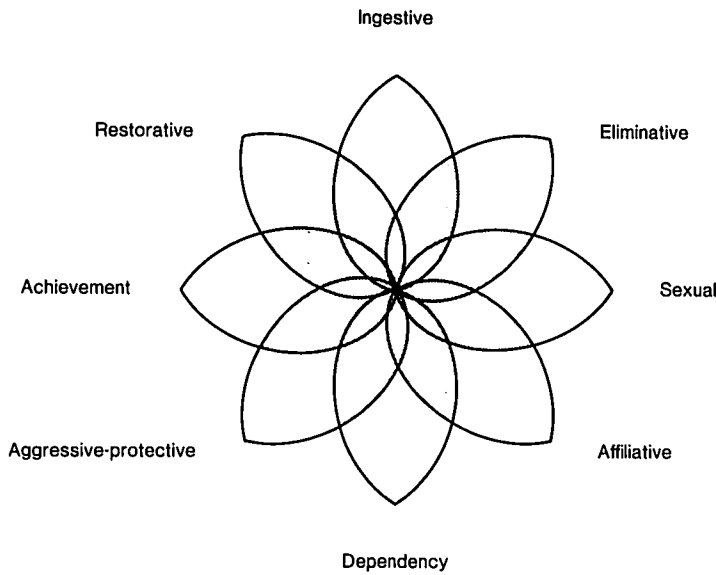
ent relationship among behavioral actions and their assumed function or purpose in the individual. (See Figure 1.) They include ingestive, eliminative, dependency, sexual, affiliative, aggressive-protective, achievement and restorative behaviors.^{2(p33)} Each of these behavioral subsystems, as a set of response tendencies, is composed of five components that interact in a specific pattern to create the overall function of the system.^{2(p34-42)} Structurally, these components organize each behavioral response into the action that is directly observable. Likewise, they structure the behavior in such a way that its intended purpose, its habituation and its selection from other available responses, as they come to bear on the prerequisites for survival of the system, become apparent to the observer.

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chological, social and cultural stimuli elicited by a situation. It processes these factors and produces an integrated response to the surrounding environment in such a manner as to provide meaning and purpose to both the individual and the environment. This integrated response is what we observe as behavior. Thus its function can best be seen as an adaptive one.

The boundaries of the system limit and filter the kinds and amount of stimuli

FIGURE 1. BEHAVIORAL SYSTEMS

Source: Auger, J.R. *Behavioral Systems and Nursing*. (Englewood Cliffs, N.J.: Prentice-Hall 1976) p. 37.

available to the system at any given time. Boundary function is directly related to routinized behavior and to the process of selective inattention to irrelevant stimuli. It is able to maintain equilibrium and behavioral stability through the efficient and effective distribution of available energy to whichever subsystem is dominant at a specific time. Aside from the minimal energy requirements each subsystem has to sustain its basic action, energy is distributed on the basis of need. This is determined by the ongoing response, the demands of the situation, and the environmental input and feedback.^{2(p47)}

Maladaptive Responses

The development of behavioral patterns or habits is a prerequisite for stability, economical expenditure of energy, accomplishment of goals, meeting of needs and

facilitation of social interaction. Thus living becomes more predictable. Since behavior is assumed to be purposeful and adaptive in nature, it is characterized by dynamic adjustments to constant change, directed toward establishing a stable condition of balance between the individual and the environment. When a person is unable to act within the usual behavior pattern, or when the environmental stresses call for behaviors that are foreign to him, the behavioral system may become unstable. Maladaptive responses, which are inefficient and ineffective in meeting the goals of the subsystem, which threaten the individual's biologic or social survival or which thwart the efficient functioning of other subsystems by increasing energy demands, may be observed as physiologic or behavioral change. In analyzing behavior as a system, it is important to recognize

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that a change in one subsystem affects all. Likewise, behaviors commonly associated with a particular subsystem can be employed for the achievement of another subsystem's goal.

The information used by a behavioral system for selecting a response to the environment is determined by factors related to the perception, labeling and interpretation of environmental stimuli. "The external environment and the bio-psycho-socio-cultural aspects of the individual are considered to be the regulators of behavioral system activity because they directly determine the specific information upon which the response is based."^{2(p88)} General regulators, or those relatively stable characteristics of the individual, such as social status, are present in all situations. Certain characteristics of situations, such as current level of adaptation, also constitute regulatory mechanisms.

Behavior Regulators

There exists a wide variety of sources of information in the environment that are potential sources of informational input into the behavioral system. Sensory phenomena, such as light, sound waves, heat and cold, meteorological and climatic stimuli associated with seasonal variations and weather, are all external regulators of behavior. Likewise, factors in the psychosociocultural environment can regulate behavior. Such factors as relationships, personal development, change and control of environment, social institutions, social events and common moral, ethical or religious beliefs shape adaptive potentials and can facilitate or inhibit coping mechanisms. Other general regulators function

to limit and influence activity within the behavioral system. They include genetic inheritance; circadian rhythms; age; sex; attitudes, values and beliefs; social class and role expectations; locus of control; creativity and problemsolving; and self-concept. These are treated by Auger as intervening variables because their activity influences both the input and output of the behavioral system.

"The way a person perceives his surroundings is a major determinant of the way that individual will behave."^{2(p98)} Thus Auger devotes extensive space to explanation of the perceptual process. She defines it as an internal process, selectively regulating the nature and amount of stimuli allowed to penetrate the system boundary and be attended to by the system. While the nature and amount of input to the system are primarily controlled by sensory receptors, the selection of stimuli upon which the system will act may be influenced by other factors, like habit, attention and past experience.^{2(p99)} What is important to remember is that "the observed response will be congruent to and determined by the individual's perception of the reality, not by the reality itself."^{2(p99)} Thus the effective application of this model mandates the accurate assessment and validation of the client's perception of his situation, and the nature of what he perceives to be a threat or a call to change.

APPLYING THE MODEL

Definitions

In order to provide consistency in a discussion of self-concept and body image

as they relate to patients on long-term hemodialysis, conceptual definitions of each should be considered.

Self-concept: "The person's conscious perception of himself, his characteristics and abilities, his perceptions of himself in relation to others and to the environment, and the value qualities which are perceived as associated with experiences, objects, goals and ideals and as having positive or negative valence."⁵

Body image: "The constantly changing total of conscious and unconscious information, feelings, and perceptions about one's own body in space as different and apart from all others; [it] is basic to identity and has been referred to as the 'somatic ego.'"⁶

In examining body image and the changes it undergoes in chronic illness, the nurse must look at the emotional reactions engendered by the disability. "Any alteration in the body is a disturbance of one's integrity, a threat to oneself."⁷ When alterations of body image are precipitated by illness, trauma or surgery, the person experiences a crisis. In working with clients for whom a crisis situation exists, the nurse would be well advised to make an initial three-way assessment of (1) the reality of the event or situation itself, (2) the individual's perception or expectations of himself in relation to the situation and (3) the need for behavioral change. When a person experiences such stress as with changes in self-concept or body image, usual patterns of response, behavior or coping mechanisms may be inadequate to handle the resultant feelings.

Classifying Stresses

Attempting to classify the kinds of stresses hemodialysis patients face, Wright,

Sand and Livingston have identified actual or threatened losses experienced by this population.⁸ These include loss of body part or function; loss of membership in groups; failure of plans and ventures; changes in way of life; loss of home, possessions and financial status; and loss of job or occupation. It would seem, in view of our definitions, that any one or combination of these losses could be classified as losses in self-concept, related, at least in part, to an alteration in body image.

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manization and loss of identity to the dialysis machine.⁹ Body-image disturbance occurs when there is a conflict between a person's actual perception of his body and his mental representation of that body.¹⁰ One such disturbance is described by Shea et al.,¹¹ who cites the "spread" or incorporation of the dialyzer into the body image of an adolescent patient, as depicted in the "mechanical appearing figure drawing." Anger points to the fact that the debilitating nature of chronic renal failure itself forces the patient to face alterations in his body image and self-concept.¹² Weight loss, changes in skin color, feelings of fatigue and general malaise, and sexual impingement have been reported.

Therefore, what must be considered from the start are the losses perceived by

- 18 dialysis patients in relation to actual or potential losses in self-concept related to changes in body image. In view of the multiplicity of internal and external stimuli inherent in the dialysis situation, the analysis of a person's behavioral system, using Auger's model, is an appropriate step toward purposeful intervention in achieving healthful adaptation to dialysis.

DIET

Because of the nature of renal failure, the client must be given a diet that is protein restricted and low in sodium (to prevent fluid retention). The diet must have a high caloric content to prevent protein breakdown in the body, causing further rise in blood urea. Fluids must be restricted, despite the presence of polydipsia. Thus this drive is frustrated. Medication to control hypertension must be taken if blood urea is not too high. Acidosis and electrolyte imbalance result in hyperventilation with deep sighing and air hunger. Thus the ingestive subsystem is extensively limited and drastically changed, and the alternative behavioral choices are decreased in range.

Eating and drinking hold very personal meanings to people. It is generally a pleasurable and satisfying experience; it may even be equated with warmth, security, gratification and anxiety relief. In a dietary report released in 1974 by the Senate Select Committee on Nutrition and Human Needs, *Dietary Goals for the United States*, the opinion was expressed that people's food preferences hold different meanings dependent on sex and socioeconomic levels;¹³ these preferences are not easily changed. For example, the

consumption of red meat is associated with men as a sign of masculinity and, in general, of perceived higher socioeconomic level. Consequently, a man on a restricted meat intake may unconsciously suffer a deterioration of his sexual identity and self-concept on the basis of the sociocultural implications of this restriction.

THE ELIMINATIVE SUBSYSTEM

With respect to the eliminative subsystem, clients with renal failure often have decreased urinary output. This decrease or lack of natural bodily output directly relates to a change in body image. Individuals no longer perceive themselves as whole or normal. Nausea, vomiting and weight loss are common reactions. Pigmentation of the skin increases; in some cases, uric frost may be seen as urea builds up in the sweat glands and is excreted through the skin. The skin becomes very dry, and pruritis is common. Treatment by hemodialysis necessitates frequent blood sampling; consequently, clients are subjected to the periodic drawing of blood for testing. In addition, hemodialysis implies the formation of either an external AV shunt or an internal AV fistula. Thus clients live with a constant reminder of the existence of disease, be it through visible circulation of the blood or the needle scars on the limbs.

DEPENDENCE ON A MACHINE

Closely allied to the ingestive, eliminative and aggressive-protective subsystems is the need for the attachment to the

dialysis machine and its concomitant flowing of blood outside the body.

MODEL IN PRACTICE

With reference to the management of problems related to self-concept and body image in long-term hemodialysis patients, the application of behavioral systems analysis helps define the situation and gives direction to therapeutic intervention. By way of directly observing behavior and obtaining a history of past behavioral patterns, the nurse is afforded a basis upon which to assess the status of a person's behavioral system. The framework of behavioral systems enables the nurse to identify behavior meaning and the goals it is intended to achieve, to explore alternative behaviors with the client and to evaluate their efficacy.

Consequences of Hemodialysis

When a behavioral subsystem fails to function or becomes maladaptive, the system is compelled to seek aid in compensation or correction from the environment. Such is the case with clients who have chronic renal failure. Loss of kidney function and the inability of the individual to compensate or correct this deficiency within himself necessitates procuring assistance from the environment. The kidney is no longer able to excrete waste products that accumulate in the body, build up in the bloodstream and eventually lead to death. Consequently, to help the patient cope with this imbalance, the individual is put on dialysis. Let us examine the consequences of hemodialysis on the

eight subsystems outlined by Auger, keeping in mind the effect they have on body image and self-concept. Research attests to the fact that this is a potential cause of disturbance in body image integrity.¹⁴

FEAR OF DEATH

Probably one of the greatest underlying stresses faced by dialysis patients is their fear of death. Self-preservation is the most basic human drive. The dialysis machine is a constant reminder that the client belongs to two worlds: the world of the living and the world of the dying. So intrinsic is this machine to their survival, it is no wonder that they often incorporate the machine into their body image, unconsciously considering themselves as no longer entirely human. Dialysis patients must answer for themselves the question of whether it is better to live a life that may be perceived as only existence, or to allow themselves to die. Consequently, the fight, freeze, flight dilemma of the aggressive-protective subsystem is a very real one.

IDENTITY CRISIS

Dialysis often presents the client with a dependency-independency conflict. Self-identity and self-reliance, as well as mastery of the self and environment, are often compromised. Attachment to the dialysis machine is often experienced as being representative of the mother-child relationship *in utero*, complete with life-giving potential and umbilical fluid and connections. Nevertheless, unlike the dependent, compliant fetus, the client is encouraged to be independent, to continue work and to maintain normal familial and social ties. This creates a conflict in

messages. In adolescent clients, this enforced dependency contradicts the developmental tasks of their stage in life.

CHANGE IN FAMILY RELATIONSHIPS

In addition, changes in family relationships, especially the marital relationship, may threaten the entire family structure. Role reversal is commonplace, especially when the client is the breadwinner and decision maker. Children may no longer seek his or her help and advice as the recognized head of the family. This also has ramifications on the ingestive and eliminative subsystems with regard to the nature of the support and knowledge the client will seek from his or her family.

DECREASE IN JOB RESPONSIBILITY

In terms of achievement, many clients lose jobs owing to physical restriction or decrease job responsibility as a result of loss of time from the job for dialysis treatment. In a society that is achievement oriented, values the Protestant work ethic and places much personal worth on how effectively a person works, this loss potentiates the loss of self-respect and esteem. The tenuousness of life with renal failure and its treatment may necessitate a change in plans or future ventures. With regard to increased financial commitments and the uncertainty of future financial obligations, the client and his or her family may reach the point of changing their current standard of living and thus their status and socioeconomic standing in the community.

DETERIORATED SEXUAL DRIVE

Keeping in mind that food and sex are two of the basic human appetites, health

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care providers should be aware of the marked deterioration in sexual drive or performance frequently experienced by individuals in chronic renal failure. Loss of sexual function has many implications for the client and his or her spouse. The client may experience feelings of guilt and depression because of the inability to fulfill sexual expectations of marriage. Consider also the ambivalent feelings of the spouse. He or she may be capable of intellectually understanding the source of the sexual problem, yet remains unable to rectify the situation and may experience guilt about his or her own feelings of loss. Hence the sexual frustration is experienced, possibly repressed and denied, by both partners.

Social Estrangement

As a result of their uremic state, clients remain chronically ill, even with the initiation of dialysis. It strips them of their energy and life forces. Membership and activity in groups may be limited or thwarted, not simply because of the disease entity, but because of the patients' own decisions to withdraw. The restricted use of the cannulated extremity and the danger of breaking bones, secondary to decalcification of the skeleton, may lead to withdrawal from athletic activity. There is

an unpredictability in feeling well associated with renal failure that leads to considerable difficulty in planning social commitments. Consequently, clients' affiliative needs may not be met, and they may see themselves as more socially estranged.

Bombarded by this accumulation of life stresses, clients may experience feelings of hopelessness and abandonment. Aware as they may be of their needs and inability to satisfy those needs, clients may have neither the internal resources nor the will to restore their energy supply. Deprived of their usual methods of coping with stress—eating, drinking or engaging in sexual activity—and frustrated in satisfying mastery skills, preservation and affiliation, dialysis patients commonly use psychological defenses to maintain a sense of equilibrium and self-worth.

The Nurse's Role

The implications for nursing care are extensive. Above all, nurses must help clients and their families to view dialysis as an opportunity to gain the most from life, rather than as a precursor to death.¹⁵ Nurses must learn to closely monitor behavioral clues, since they are indicators of potential strengths and limitations in adaptation.

As was mentioned earlier, body-image disturbances relate to nonacceptance of change, to the tendency to hold on to old conceptions of the self. Norris offers a framework in which a person's adaptation to change or to a source of threat can be analyzed.^{6(p44)} This framework is significant because it is amenable to use with the behavioral-system approach and because

adaptability to change presents itself as a common clinical goal. Nurses can examine clients' potential for adaptation by assessing their perceptions of the threat or change, by assessing their observable responses through systems analysis and by assessing their perceptions of the resources available to them. Table 1 represents the correlation between Norris's adaptation-to-change framework, assessment based on Auger's behavioral system model and nursing intervention. The questions cited under *Assessment* reflect the clinical goal of adaptability in light of the functional interplay between behavioral subsystems. Similarly, the directives toward nursing intervention are based on the mobilization of specific behavioral subsystems.

[Note: Use of this framework allows nurses to personalize client services; it enables nurses to identify the perceived threat or change, to identify clients' strengths and limitations and to plan nursing intervention with a certain degree of predictability as to its behavioral outcomes.]

USING THE MODEL: A HABIT TO BE FORMED

Having used the model, it is clear that Auger's approach in assessing clients' behavioral systems is an effective way of elucidating many concurrent and preexisting factors that impinge upon an individual's ability to cope with and adapt to change. It provides for the support and assistance of clients in maintaining coping behaviors that are adaptive, as well as for the recognition and modification of maladaptive behaviors. Likewise, it can be

TABLE 1
 Client Adaptability to Change: Behavioral Systems Assessment and Directives
 toward Nursing Intervention

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Adaptation to Change	Assessment Behavioral Systems Model	Intervention
Nature of the threat	How is the threat perceived? Is there any perceptual distortion?	Help client know and understand nature of threat. Make use of client's ingestive, aggressive-protective, and dependency subsystems.
Meaning of threat to person	Which behavioral subsystems are dominant? Which behavioral subsystems are being compromised? Does behavior reflect understanding of the threat? Is it appropriate?	Assess meaning of threat to person. Encourage client to seek assistance in becoming aware of source of threat. Encourage communication of feelings and emotions related to the threat. Make use of client's eliminative, ingestive and aggressive-protective subsystems.
Person's coping ability	How has client coped in past (fight, freeze, flight)? What regulatory mechanisms, internal and external stimuli influence the client's behavior? What energy is available to the client for adaptation and restoration?	Identify client's past successful coping mechanisms. Support client and help him/her to maintain successful coping mechanisms. Help client to modify coping mechanisms when ineffective or inefficient. Encourage client to explore alternative behaviors. Make use of client's ingestive, eliminative, aggressive-protective, dependency and restorative subsystems.
Response of others significant to him/her	Who are the significant others? Does the client have strong ethnic, religious or cultural affiliations? Does the client have ascribed or achieved membership in groups that would be supportive? Does client actively seek dependency?	Help significant others to support client. Encourage client to seek assistance and support from environmental resources when appropriate. Make use of client's affiliative, aggressive-protective, and dependency subsystems.
Help available to person and his/her family	What environmental resources are available to the client? Is the client aware of these resources? Will client seek assistance from resources? What degree of success can be predicted?	Act as interpreter/advocate of client's needs when necessary. Mobilize environmental and individual resources. Support family activity. Teach prevention by use of alternative behaviors. Make use of client's ingestive, dependency and aggressive-protective subsystems.

used in the teaching and counseling of client systems with regard to the range of alternative behaviors that may be more adaptive to their lifestyles and preferences. As such, it affords nurses a valuable tool in helping clients to recognize and develop their self-actuating potential.

The nurse's consistent use of any model for the interpretation of observable client

The nurse's consistent use of any model for the interpretation of observable client data is most definitely not an easy task.

data is most definitely not an easy task. Much like the development of any habitual behavior, it initially requires thought, discipline and the gradual evolve-

ment of a mind set of what is important to observe within the guidelines of the model. As is true of most habits, however, it makes decision making less complicated.

The task for nurses is the systematic and repeated testing of models for clinical practice in terms of personal satisfaction and professional effectiveness. The author would postulate that if models are consistently and repeatedly utilized in the assessment of clients, and that if the results of these investigations are communicated within the profession, the classification of nursing diagnoses and interventions will be more readily developed. Observation of client data within organized frameworks will eventually allow nurses to categorize the phenomena they observe and to more spontaneously gain insight into the clinical situations with which they deal.

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