The concept of pattern in nursing: conceptual development and measurement

Gretchen Crawford, RN, PhD
Assistant Professor
Community Health Nursing
Case Western Reserve University
Cleveland, Ohio

PATTERN IS A CONCEPT used in nursing, most often in reference to a human and environmental characteristic or a human process. However, the concept is not clearly or consistently defined, nor is it clear how patterns can be examined in the conduct of inquiry.

DEFINITIONS OF PATTERN

Rogers

According to Rogers, *pattern* refers to a human and environmental characteristic. According to Rogers "a concept of patterning incorporates within it recognition that it is the totality of the constituents that compose the pattern."[1(p53)] Pattern is used as a unifying concept in that the individual and the environment have wholeness. Rogers goes on to say that human and environmental patterns are dynamic, that they constantly change.

The meaning of *pattern* is further discussed in Rogers' "homeodynamic principles." According to the principle of reci-

0161-9268/82/0051-0001$2.00
© 1982 Aspen Systems Corporation

procity, "the relationship between the human field and the environmental field is one of constant mutual interaction and mutual change."[1(p97)] Interaction results in the repatterning of the individual and the environment, which leads to a revision in the interaction and further evolution of new patterns. The principle of helicy states that "rhythmic phenomena are expressions of the reciprocal relationship between man and environment."[1(p100)] Thus the individual and environmental patterns are viewed as rhythmic in nature. But, the term *rhythm* is also used to describe the relationship between the individual and the environment that brings about changes in patterns. In the principle of resonancy, "rhythmic flow of energy waves"[1(p101)] is identified as causing changes in human and environmental patterns.

It is not clear whether Rogers means that the relationship between the individual and the environment is patterned or not. This lack of clarity arises because the term *rhythm* is used to describe both the pattern of the individual and environment and the relationship between them.

In a more recent discussion, Rogers refined her definition of individual and environmental patterns as "energy fields" characterized by waves and revised the categories of "homeodynamic principles."[2] One can see a change in the way interaction is described in those principles. Rather than characterizing the relationship between the individual and the environment as rhythmic waves of energy, the new principle of complementarity states that the interaction is "continuous, mutual, [and] simultaneous."[2(p333)] It appears that the interaction between the individual and environment is no longer viewed as rhythmic in nature; thus, only the individual and environment are characterized by patterns, not the relationship between them.

Johnson

Johnson is a nurse scholar who defined pattern as a human process in contrast to Roger's definition of pattern as a human and environmental characteristic. In the early 1960s, Johnson wrote about "patterns of functioning" as the repetitive and regular ways in which persons, in a stable state, meet their bodily needs and interpersonal needs.[3] During illness, according to Johnson, an individual's usual patterns of functioning are disrupted. The nurse's actions are aimed at helping the patient find patterns of functioning that are maximally gratifying. The goal is to help the patient achieve an equilibrium that is a "degree of constancy in his patterns of functioning, both internally and interpersonally."[3(p65)]

More recently, Johnson defined *set* as an individual's predisposition to act in certain ways rather than others.[4] An individual develops and uses preferred ways of behaving under certain conditions. The idea of set seems to incorporate the meaning of pattern discussed by Johnson in the 1960s, repetition and regularity.

Grubbs

Johnson did not link set and pattern, but, in an interpretation of Johnson's behavioral system model, Grubbs associated the two terms.[5] Grubbs stated that individuals learn patterns of habitual responses that are used to adjust to the stresses of daily life and to maintain balance and stability with the

environment. Grubbs defined *perseverative set* as habits that an individual maintains. For Grubbs, pattern is habitual behavior that is modified through learning over time and that which an individual typically uses to achieve balance and stability.

A METHODOLOGICAL APPROACH

Rogers, Johnson, and Grubbs did not discuss ways to study patterns. They defined pattern in abstract terms. However, another definition suggests itself, a definition that can be used in one approach to the study of patterns. For purposes of research, pattern is defined as the configuration of relationships among the elements of a particular phenomenon.

Suppose that some circles represent elements of a particular phenomenon and that lines connecting the elements represent relationships between them. All the elements may be interrelated, as shown in Fig 1. However, all of the elements may not be interrelated, in which case various configurations are possible, as demonstrated in Fig 2.

The complexity of patterns of relationships rapidly increases as the number of elements of a particular phenomenon increases. To illustrate, if the phenomenon consists of four elements, the pattern may take one of several forms. Fig 3 includes only some of the configurations that might be found. Another possibility is that the

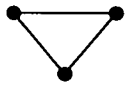

Fig 1. Pattern in which all elements are interrelated.

elements of a particular phenomenon might be arranged in multiple configurations. An example of a pattern composed of multiple configurations is shown in Fig 4.

An investigator interested in examining patterns of relationships might ask, What elements are related to each other, and how many relationships does a particular element have with other elements? Inquiry conducted to answer these questions will result in understanding of the elements of a particular phenomenon as they interrelate.

An investigator interested in examining patterns of relationships might ask, What elements are related to each other, and how many relationships does a particular element have with other elements?

Cross-tabulation analysis is one methodological approach that is appropriate to examine patterns of relationships as they have been defined here. Cross-tabulation is a useful tool for describing basic relationships among variables, since it provides a wealth of detailed information concerning the character of relations.[6]

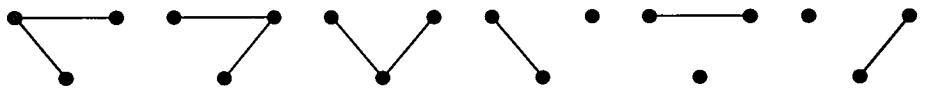

Fig 2. Set of patterns of relationships possible involving three elements.

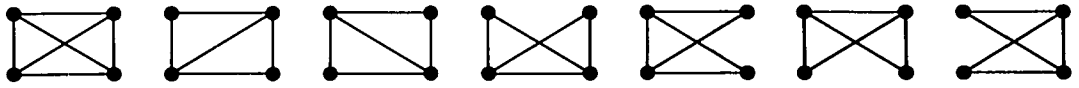

Fig 3. Examples of patterns of relationships involving four elements.

PATTERNS AS HUMAN OR ENVIRONMENTAL CHARACTERISTICS

An investigator might be interested in examining patterns of relationships among elements depicting human or environmental characteristics. Recent research will clarify how patterns of relationships among environmental characteristics can be studied. Social support system elements were the environmental characteristics examined in that research.

Crawford, in a study of teenage girls experiencing a first pregnancy and delivery, identified patterns of relationships within subjects' social support systems.[7] The social support system variables were density, range, scope of affiliation, direction of relationships, frequency of contact, multiplexity, durability, and proximity. *Density* was defined as the number of friends, relatives, and neighbors a subject had. *Range* referred to having much in common with friends, relatives, or neighbors. *Scope of affiliation* was defined as a relative, friend, or neighbor fulfilling more than one social role, such as being a friend and also a co-worker. *Direction of relationship* referred to whether relationships between the subject and relatives, friends, and neighbors were one-sided or reciprocal. *Frequency of contact* was determined by the frequency of visits, telephone calls, and letter writing with friends, relatives, and neighbors. *Multiplexity* was defined as a relative, friend, or neighbor providing more than one kind of help to a subject. *Durability* referred to broken or added relationships. *Proximity* meant the number of friends, relatives, and neighbors living in the subject's community.

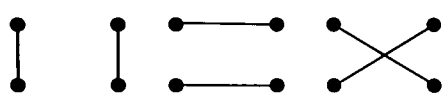

Fig 4. Pattern of relationships involving multiple configurations.

Cross-tabulation analysis was used to determine the configuration of relationships among these social support system elements or variables. There were few relationships among the social support system variables. Only six pairs of variables were related, and the total number of relationships for any one variable ranged from one to three. Durability was related to the number of relatives a subject had, multiplexity, and frequency of contact. Fig 5 shows this configuration of relationships. In contrast, the variables of scope of affiliation, density, and proximity were all related to each other. This configuration of relationship is shown in Fig 1.

Together, these configurations constitute the pattern of relationships among social support system characteristics found in this study. This pattern exemplifies the type of pattern illustrated in Fig 4, ie, the elements of the particular phenomenon (social support system characteristics) are arranged in multiple configurations.

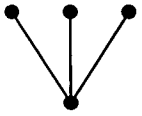

Fig 5. Pattern of relationships among number of relatives, multiplexity, frequency of contact, and durability.

However, the patterns of relationships found in this study are not complex. Few of the social support system elements were related, and there were few interrelationships among them. According to Rogers, pattern becomes more complex or diverse over time.[1,2] If the study described here had been longitudinal, this idea could have been tested. This could have been accomplished by hypothesizing (1) increased numbers of relationships among the social support system variables over time, (2) increased numbers of interrelationships among the variables over time, or (3) different configurations of relationships among the variables over time.

Knowledge of the patterning of environmental characteristics, such as the social support system elements described here, may be relevant for nursing practice. In a general sense, this knowledge provides for better understanding of the complexity of clients' social environments. More specifically, nurses may find it useful to assess these environmental characteristics and plan strategies to enhance clients' abilities to interact with others when needs for social support exist.

PATTERN AS HUMAN PROCESSES

Johnson[3,4] and Grubbs[5] view patterns as habits or repetitive ways that people meet their needs. Here, inquiry might be directed at finding constant patterns of relationships under different conditions. For example, many nurses believe that some clients, in certain situations, need social support. Studies could be done to document relationships among kinds of social support people need when they are well and when they are sick and the ways in which they fulfill those needs.

According to this meaning of pattern, studies could be done to determine if the same patterns of relationships exist among kinds of social support needed when a person is sick as when he or she is well. One might also hypothesize that the same patterns of relationships exist among the processes used to fulfill those needs. Some additional social support needs might arise due to the illness, eg, needs for information or advice about the illness and how to manage it, but if the same relationship patterns were found among the needs for other kinds of social support, such as the needs for encouragement or acceptance, and the same relationship patterns were found among ways that such needs are met, constancy among these patterns could be inferred. The constant needs for social support, and ways of meeting those needs, could then be viewed as essential to the individual regardless of whether he or she was sick or well.

Findings from such research could be used to guide nursing practice. As Johnson pointed out, the nurse needs to help clients achieve "constancy in [their] patterns of functioning, both internally and interpersonally."[3(p65)] One way to help clients achieve constancy is for nurses to assess clients' needs for social support, not just

with regard to what clients might need because they have a particular diagnosis, but also in terms of what kinds of social support are essential to them whether they are sick or well and how to fulfill those needs. Knowledge gained through this assessment would help nurses to plan strategies to help clients meet their essential needs for social support plus those needs related to their diagnoses.

REFERENCES

1. Rogers ME: *An Introduction to the Theoretical Basis of Nursing*. Philadelphia, FA Davis Co, 1970
2. Rogers ME: Nursing: A science of unitary man, in Riehl JP, Roy C (eds): *Conceptual Models for Nursing Practice*, ed 2. New York, Appleton-Century-Crofts, 1980, pp 329-337.
3. Johnson DE: The significance of nursing care. *Am J Nurs* 1961;61:63-66.
4. Johnson DE: The behavioral system model for nursing, in Riehl JP, Roy C (eds): *Conceptual Models for Nursing Practice*, ed 2. New York, Appleton-Century-Crofts, 1980, pp 207-216.
5. Grubbs J: An interpretation of the Johnson behavioral system model for nursing practice, in Riehl JP, Roy C (eds): *Conceptual Models for Nursing Practice*, ed 2. New York, Appleton-Century-Crofts, 1980, pp 217-254.
6. Nie NH, Hull CH, Franklin MN, et al: *SCSS: A User's Guide to the SCSS Conversational System*. New York, McGraw-Hill, 1980.
7. Crawford G: *Teen Social Support Patterns and the Stress of Pregnancy*, doctoral dissertation. Case Western Reserve University, 1980. *Diss Abstr Int*, 1980, 41, 893B. (University Microfilms No. 80-19, 335)