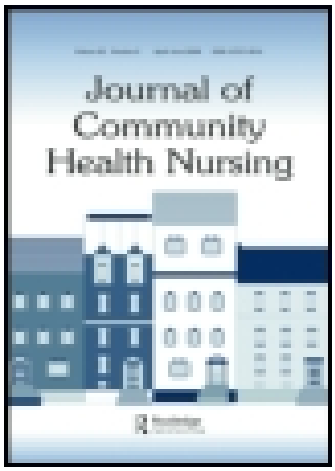

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An Application of Johnson's Behavioral Model: A Case Study

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INTRODUCTION

This case study was conducted while leading a support group for the caregivers of Alzheimer's Disease patients. The purpose was to apply Johnson's model in the assessment of and interventions with this group.

First, an overview of Johnson's model is presented, and Alzheimer's Disease and the problems associated with caregiving are discussed. Next, an assessment of the caregivers in the group applying Johnson's model is presented; finally, nursing diagnoses, client goals, interventions, and client outcomes for the group are developed.

Overview of Johnson's Theory

The Johnson Behavioral Systems Model for nursing views the human being as an open behavioral system comprised of interactive and interdependent components (Derdiarian, 1983). The system is composed of seven subsystems: (a) aggressive-protective, (b) achievement, (c) affiliative, (d) ingestive, (e) eliminative, (f) dependency, and (g) sexual. Each of these can be described and analyzed in terms of structural and functional requirements (Torres, 1986).

Some of the functions are regulated by the person's age, sex, motives, values, and beliefs. The four structural elements include (a) the drive or goal (direction and strength), (b) set (behavioral response pattern), (c) choice (behavioral alternatives available), and (d) the action (behavior applied). The functional requirements for each subsystem are nurturance, protection, and stimulation. These functional requirements, also termed *sustenal imperatives*, are supplied by the person's

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environment and are necessary prerequisites to maintaining healthy behavior (Johnson, 1980).

Systematic use of this model will guide the nursing process through its four essential stages: assessment, diagnosis, interventions, and evaluation (see Table 1).

There are two levels of assessment. The first level reflects any change in behavior patterns of the client in relation to each subsystem. This change may indicate a need for assistance to adapt. A second, more in-depth diagnostic assessment is required in those behavioral subsystems in which the actions are not functional for meeting the goal of the subsystem (Grubbs, 1980).

The nursing diagnosis is a description of that behavior which does not meet the goal of the system (Derdiarian, 1983). A person can experience structural stress or functional stress. Structural stress reflects inconsistencies between the goal, set, choice, or action (Johnson, 1980). Functional stress reflects overload or insufficiency of any of the sustenal imperatives caused by environmental changes or restrictions. These behaviors require some type of intervention so that stability may be maintained or regained.

Interventions for structural stress should focus on the goal, set, choice, and actions that will facilitate effective behavioral functioning and inhibit those actions that do not facilitate effective functioning. Interventions for functional stress should focus on protecting, nurturing, and stimulating the individual.

These interventions are evaluated in terms of output behaviors that have provided adaptation and effective functioning of the total behavioral system (Torres, 1986). Expected outcomes are expressed as observable behaviors and/or client responses.

Alzheimer's Disease and Caregiving Stressors

Senile dementia, Alzheimer type, has been identified as the most prevalent form of senility in the United States (Aronson & Lipkowitz, 1981). It occurs in adults and strikes persons of all socioeconomic circumstances and ethnicities. The symptoms

TABLE 1
The Nursing Process and Johnson's Behavioral Model

Assessment	*First level assessment* actual/perceived threat *Second level assessment* each subsystems suspected is analyzed for structure and function.
Diagnosis	*Insufficiency/discrepancy* within subsystems—structural stress *Incompatibility/dominance* between subsystems—functional stress
Interventions	*Structural*—focus on goal, set, choice, and action. *Functional*—focus on sustenal imperatives.
Evaluation	Change in subsystems—goals client responses—outcomes

are insidious and progress through three stages. These are characterized by intellectual, language, and motor impairment which leads to forgetfulness, confusion, total disability, and eventually death (Cole, Griffin, & Ruiz, 1985).

Caregivers, usually women (wives and daughters), who care for a family member with Alzheimer's Disease often report stress-related symptoms such as anxiety, depression, and feelings of fatigue. Zarit, Orr, and Zarit (1985) reported that caregivers are often angry or resentful and feel guilty about not doing enough even though they may spend 24 hr a day with their relative.

For many caregivers, the cost of care for a person with Alzheimer's Disease is devastating. For example, some families face financial difficulties when their incomes are no longer adequate to meet the expenses incurred while caring for a relative who can no longer work. In addition, these caregivers are subjected to witnessing a slow deterioration of their relative's personality and abilities even though the person appears outwardly healthy.

The caregiver's life changes dramatically with a large increase in responsibility and confinement (Fiore, Coppel, Becker, & Cox, 1986; Zarit et al., 1985). This increase in responsibility refers to the caregiver's need to take over all their relative's previous obligations (i.e., banking, gardening, cooking, etc.) which results in role overload for the caregiver. Confinement refers to the emotional and social isolation experienced by the caregivers as a result of living with a relative who can no longer reciprocate emotionally and who can no longer be left without supervision.

Methodology and Sample Selection

The data for this study was collected while conducting a support group. The subjects for the study were volunteers who came to a specific location in response to an advertisement placed in the local newspaper. These people were then informed that they would be subjects in a small study, that their confidentiality would be maintained, and that the main focus of the group would not be affected by the study. Two of the initial eight respondents dropped out after the first session.

During the first session, each member was asked to write down their expectations and goals for the group. These responses were then used as a basis for structuring the remaining nine sessions. At the end of each session, the leader recorded conversations, observations, and reactions which were used as data for analysis using Johnson's Behavioral Model as a guide.

Group Characteristics/Regulatory Components

The support group consisted of six individuals, four women and two men, ranging in age from 23 to 56 years old. One of the two daughters in the group was a second generation Italian who seemed very close to her family and was struggling with the idea of giving up her teaching position to care for her mother. The other daughter

in the group was an only child who felt upset and angry because her father had placed her mother, who has Alzheimer's Disease, in a nursing home.

Both wives in the support group lived with and cared for their husbands who were in the early stages of Alzheimer's Disease. One wife, age 50, had a multiproblem family (i.e., caring for a 5 year old from a son's broken marriage, supporting another son to help him get through college, and living with yet another son who is retarded). The other wife, also in her 50s, had a mature son living at home and worked full-time at a hospital laundry to maintain the family home. Her difficulties in expressing her feelings and asking her family for help seemed to be the main barriers in relieving her stress and frustration.

The two men in the support group were sons. The younger, 23-year-old son, lived at home with his father who had Alzheimer's Disease. He was trying to understand the disease process so that he might help his family cope with the dynamics of the situation. The other son, age 50 and semiretired, was feeling angry and helpless because his mother was institutionalized by his elderly father who was still living and very much in control of that situation.

Half of the membership acknowledged strong ethnic and religious affiliations; the other half did not acknowledge any affiliations with ethnic and/or religious groups.

ASSESSMENT

The data collected was analyzed using Johnson's Model as a guide to detect any changes in behavior patterns of the caregivers in relation to each of the seven subsystems (first level assessment). The subsystems suspected were then analyzed in-depth, with rationale and interpretation (second level assessment).

First Level Assessment

Aggressive-protective subsystem. Most of the group members were struggling to cope with the changes in their lives related to increased responsibilities and decreased financial security. Some of the caregivers felt angry that they were left with the responsibility of caring for their spouse or parent with Alzheimer's Disease. Others were feeling guilty that they allowed their relative to be institutionalized. All of the support group members felt strongly that their relative's illness was interfering with their daily lives and causing them much frustration. Three of the members expressed their feelings in episodes of crying and outbursts of anger.

Dependency subsystem. The group felt somewhat uninformed with hearsay misinformation as a source of knowledge. They complained that the family physicians did not seem to know much about Alzheimer's Disease or that the physicians would not take the time to offer any explanation. They also complained

about family and friends who did not understand what was happening and who labeled their relative as being *crazy*. Most of them felt socially and emotionally isolated because they no longer had as much time to socialize.

None of the group members had previous experience with this type of disease process and therefore lacked the knowledge and skills necessary to manage the behaviors of the relative.

Achievement subsystem. Following confirmation that their relative had a diagnosis of Alzheimer's Disease, the support group members faced the reality of the consequences for themselves as well as for their relative. Each member struggled to find a satisfactory reason why the illness occurred and to identify what this meant in terms of role changes and responsibilities. For example, the wives in the group had a strong need to achieve control over the situation by trying to maintain their status as being self-sufficient and not asking for help.

Affiliative subsystem. Generally, the caregivers in this support group did not feel that the time spent caring for the relative interfered with their privacy or adversely affected their relationships with other family members.

Ingestive subsystem. Although all of the support group members were overweight, none of them acknowledged a problem with eating behavior.

Eliminative subsystem. Increased stress has been known to alter peristaltic rhythm, however no problem with bowel function was acknowledged in this group.

Sexual subsystem. The two wives in the group stated that they were often tired, depressed, and overwhelmed by the task of caring for their husbands and found it difficult to be intimate with a person who often could not remember who they were. For practical reasons, they slept in separate bedrooms.

The other support group members expressed frustration with having a relative who did not recognize them as son or daughter and who consequently rejected appropriate affection.

Second Level Assessment

An analysis of the first level assessment indicates that there is a disturbance in the function of the aggressive-protective, dependency, achievement, and sexual subsystems (see Tables 2 and 3). Table 2 shows examples of caregivers' behaviors which was found to reflect insufficiency in relation to Johnson's functional components of protection, nurturance, and stimulation. Table 3 shows examples of caregivers' behaviors which were found to reflect inconsistencies between the goal, set, choice, and action of the structural components.

TABLE 2
General Assessment of Johnson's Functional Components

Johnson's Functional Components	*Caregivers' Behaviors Assessment Data*
Protection (safeguarding from threat)	Decreased coping due to an increase in responsibility (aggressive-protective)
	Lack of knowledge regarding Alzheimer's Disease (dependency)
	Social isolation (dependency)
Nurturance (develop new coping mechanisms)	Loss of control (achievement)
	Feelings of anger and frustration (aggressive-protective)
Stimulation (to increase new behaviors)	Mobilization of feelings (aggressive-protective)
	Inadequate problem-solving abilities (dependency)

TABLE 3
General Assessment of Johnson's Structural Components

Johnson's Structural Components	Caregivers' Behaviors *Assessment Data*
Goal or Drive (survival and adaptiveness)	Seeking assistance from doctors and family (dependency)
	Lack of intimacy and appropriate affections (sexual)
	Need to achieve control (achievement)
Set (consistency of response)	Desire for support from family (dependency)
	Determination to be self-sufficient (achievement)
	Group lacked previous experience (dependency)
Choice (available alternatives)	Utilizing available help; placement (achievement)
	Increasing knowledge and problem solving (dependency)
Action (observable behavior)	Episodes of crying and anger in group meeting (aggressive-protective)
	Attending support group (achievement)
	Difficulty asking for help (dependency)

The affiliative, ingestive, and eliminative subsystems appear to be adaptive and functional in terms of behavior at this time.

Aggressive-protective subsystem. The caregivers needed protection and nurturing. Their behaviors were affected by feelings of guilt, fear, and anger as well as by a lack of financial resources. Hoff (1986) and Cole et al. (1985) agreed that the fear of not being able to manage one's life is often expressed in terms of losing control and anger is directed inward causing stress.

Four of the clients indicated that they felt burdened between caring for their relative with Alzheimer's Disease and trying to meet other responsibilities of work and family commitments. Four clients also indicated that they felt angry when they were around their relative. Some of them felt angry at the person who is sick because of his or her iritating behaviors and because they are confined; others felt angry because their long anticipated retirement plans have been altered by this unexpected illness.

All of the caregivers indicated that they had difficulty dealing with feelings of guilt. Two members felt guilty because their relative is in a nursing home where the quality of care is questionable, yet they felt powerless in doing something about this. Crossman, London, and Barry (1981) explained that guilt feelings grow from anger and frustration provoked by the situation. Because it is considered inappropriate to be angry about circumstances that are not within one's control, one responds by feeling guilty.

Financial security was a big concern for all of the caregivers. Two of the clients in their mid-50s who had afflicted spouses were not eligible for most benefits awarded senior members of the population (e.g., Old Age Security and Spouses Allowance) because the age of eligibility is at least 60 years. Another caregiver feared having to give up her job as a teacher to care for her parents.

Achievement subsystem. Most of the support group members felt that they had lost control of their lives since their relatives' illness. One member had difficulty coping when her husband refused to go for a day-care assessment. She became very depressed and upset which resulted in social isolation and loss of work for 2 weeks. It can be argued that the most powerful stressor of all is the real or imagined "loss of control" over one's life in effecting environmental change (Girdano & Everly, 1986).

Role strain was another problem experienced by most of the caregivers. They were now taking on extra responsibilities in caring for their relatives (e.g., extra laundry, supervision, etc.). Three of the group members said that they were having difficulty completing tasks at home and at work because of worry about what was going to happen to their relatives.

Making a decision to modify the environment to meet the demands placed upon them by the patient was difficult for five of the caregivers. For example, some

caregivers were struggling with the decision to remove clothing from their relative's closet in order to limit his or her choices, others were troubled about placing barriers on stairwells to prevent their relatives from wandering downstairs during the night, and yet another was having trouble deciding to place a lock on the refrigerator door to control the relative's eating behavior.

One of the most difficult adjustments the members had to make was role reversal. One of the daughters was now taking on the role of parent for her own parent: washing, dressing, and making decisions for her. The wives were mothers to their own spouses. These adjustments can be particularly difficult when the previously dependent child or spouse must make decisions for the previously dominant parent or spouse (Crossman et al., 1981; Lubkin, 1985; Teusink & Mahler, 1984).

Morycz (1985), in a study on caregiving strain, found that role exhaustion appeared to be the endpoint of role strain due to overload, conflict, or constriction. However, the caregivers were determined to be self-sufficient and did not utilize available family or community support.

Dependency subsystem. All members of the group expressed a desire for emotional and tangible support in order to manage daily tasks and to function in their usual roles both outside and inside the home. At the same time, they expressed resentment over their need to be dependent on others. Most of them had difficulty asking for help from family members and community agencies. Teusink and Mahler (1984), in a study on helping families cope with Alzheimer's Disease, reported that although caregivers recognize that they need help, they may not seek help because they feel that they must deal with it themselves.

When abilities and resources are wanting, the person in crisis usually seeks help from others to compensate for the temporary inability to deal constructively with life's stressors (Hoff, 1986). Hoff (1986) also explained that when nurses and physicians do not communicate openly and are insensitive to the crisis aspect of the illness or situation, they become a part of the person's problem rather than a source of help.

The feeling that reliable and free help should be readily accessible characterized the general attitude of the caregivers. Most of them were not aware of all the resources available or the cost of the services. Only two of them had previous contacts with community agencies.

Nursing Diagnoses, Goals, Interventions, and Outcomes

Based on the assessment data, two nursing diagnoses were developed. These diagnoses identified the caregivers' stressors as being both functional and structural (see Appendix). Also presented are the goals established based on each nursing diagnosis as well as the specific nursing interventions used to protect the caregiver

from harm, to nurture effective behaviors, and to stimulate new behaviors. Client outcomes (see Appendix) are the responses observed following a specific nursing intervention.

SUMMARY

The utilization of Johnson's approach to assess clients' behavioral systems demonstrated that it is an effective way of determining the many factors that impinge on an individual's ability to cope with and adapt to change. Small (1980) used the Johnson model as a conceptual framework in assessing the needs of visually impaired children and found that for nursing practice, the Johnson model was a practical tool for implementing all phases of the nursing process encompassing the child's feelings, needs, and desires. Holaday (1980) combined the Johnson model and the Piagetian theory to assess the cognitive development of a 6-year-old, chronically ill child. She found that use of this model for assessment allows the nurse to describe objectively the patient's behavior, which serves to indicate the presence of any disequilibrium.

The Johnson model can also be used successfully in a group situation such as a support group for Alzheimer's caregivers, where problem solving and making choices to adapt to lifestyle changes are a definite requirement.

For professional nurses in clinical practice, the application of models for assessment of clients will allow them to categorize the phenomena they observe and to gain insight into the clinical situations with which they deal.

REFERENCES

Aronson, M. K., & Lipkowitz, R. (1981). Senile dementia, Alzheimer's type: The family and the health care delivery system. *Journal of the American Geriatrics Society, 29*(12), 568–571.

Cole, L., Griffin, K., & Ruiz, B. (1985). A comprehensive approach to working with families of Alzheimer's victims. *Journal of Gerontological Social Work, 9,* 27–39.

Crossman, L., London, C., & Barry, C. (1981). Older women caring for disabled spouses: A model for supportive services. *The Gerontologist, 21*(5), 464–470.

Derdiarian, A. K. (1983). An instrument for theory and research development using the behavioral systems model for nursing: The cancer patient (Part 1). *Nursing Research, 32*(4), 196–201.

Fiore, J., Coppel, D., Becker, J., & Cox, G. (1986). Social support as a multifaceted concept: Examination of important dimensions for adjustment. *American Journal of Community Psychology, 14*(1), 93–111.

Girdano, D., & Everly, G. (1986). *Controlling stress and tension: A holistic approach* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Greenberg-Edelstein, R. R. (1986). *The nurturance phenomenon: Roots of group psychotherapy.* Norwalk, CT: Appleton-Century-Crofts.

Grubbs, J. (1980). The Johnson behavioral system model. In J. Riehl & C. Roy (Eds.), *Conceptual models for nursing practice* (2nd ed., pp. 217–254). Norwalk, CT: Appleton-Century-Crofts.

Hoff, L. A. (1986). *People in crisis: Understanding and helping* (2nd ed.). Menlo Park, CA:

Addison-Wesley.
Holaday, B. (1980). Implementing the Johnson model for nursing practice. In J. P. Reihl & C. Roy (Eds.), *Conceptual models for nursing practice* (2nd ed., pp. 255-263). New York: Appleton-Century-Crofts.
Johnson, D. (1980). The behavioral system model for nursing. In J. Riehl & C. Roy (Eds.), *Conceptual models for nursing practice* (2nd ed., pp. 207-215). New York: Appleton-Century-Crofts.
Lubkin, I. (1985). The family caregiver. In I. Lubkin (Ed.), *Chronic illness: Impact and interventions* (pp. 150-163). Boston: Jones & Bartlett.
Mace, N., & Rabins, P. (1981). *The 36-hour day*. Baltimore: Johns Hopkins University Press.
Morycz, R. K. (1985). Caregiving strain and the desire to institutionalize family members with Alzheimer's disease. *Research On Aging, 7*(3), 329-362.
Small, B. (1980). Nursing visually impaired children with Johnson's model as a conceptual framework. In J. P. Riehl & C. Roy (Eds.), *Conceptual models for nursing practice* (2nd ed., pp. 264-273). New York: Appleton-Century-Crofts.
Teusink, J. P., & Mahler, S. (1984). Helping families cope with Alzheimer's disease. *Hospital and Community Psychiatry, 35*(2), 152-156.
Torres, G. (1986). *Theoretical foundations of nursing*. Norwalk, CT: Appleton-Century-Crofts.
Zarit, S., Orr, N., & Zarit, J. (1985). Understanding the stress of caregivers: Planning and intervention. In S. Zarit, N. Orr, & J. Zarit (Eds.), *The hidden victims of Alzheimer's disease: Families under stress* (pp. 69-85). New York: New York University Press.

APPENDIX
Nursing Diagnoses, Client Goals, Interventions, and Client Outcomes

Client Goals	*Interventions*	*Client Outcomes*
Nursing Diagnosis #1—Ineffective client coping related to inadequate stress reducing strategies.		
1. The clients will ventilate feelings of anger and frustration in a supportive environment to help the individuals deal with his or her feelings and prevent a crisis.	1. Nurturing. Provision of milieu for the group to express feelings of anger, fear, and guilt (Greenberg-Edelstein, 1986); encouraged effective behaviors to increase coping and mastery of the situation; and provided physical comfort (e.g., quiet room, refreshments, and semi-circular seating).	1. The group expressed their feelings freely, manifested in episodes of crying, laughter, and anger. Also there was mutual exchange among group members.
2. The clients will become familiar with and demonstrate behavior management skills to increase coping and reduce feelings of frustration.	2. Protection. The focus was problem solving and cognitive restructuring to reduce vulnerability (Girdano & Everly, 1986). This was done by focusing on the topic, encouraging participation, and reviewing if new skills were implemented.	2. Increased ability to cope with the Alzheimer's patient by practicing behavior management techniques that were discussed in the group setting. The clients verbalized their successes and failures. Some members channeled their energies by volunteering their services to help the Alzheimer's Society.
3. The clients will elicit emotional support from the group and meet others with the same problems. This will help reduce feelings of isolation and helplessness.	3. Stimulation. Facilitate interaction by limiting the few who talked too much and facilitate potential for self-growth by encouraging the group members to help and support each other.	3. Group members exchanged telephone numbers.
Nursing Diagnosis #2—Alteration in social network support related to lack of knowledge of available resources.		
1. The clients will gain insight into the problems associated with long-term care planning (i.e., placement, legal, and financial options). This will increase their knowledge and thus enable them to choose the appropriate resources to meet their needs.	1. Protection. The nurses: (a) arranged for a coordinator from a placement agency to speak to the group about the logistics of placement, (b) arranged to have a lawyer discuss the legal and financial concerns associated with long-term care planning, (c) provided literature on Alzheimer's Disease, and (d) provided information on available community resources (e.g., adult day care, in-home respite, and homemaking; Mace & Rabins, 1981).	1. (a) Two client members filled out application forms for nursing homes, (b) three clients made arrangements for financial and legal services, (c) clients used the educational materials to inform family and friends about the disease, and (d) two members arranged for their relative to attend a day-care center.
	2. Nurturing. Discussion and self-disclosure were used to assess their resources, and usual coping abilities.	2. The caregivers verbalized feeling less guilt and anger.
	3. Stimulation. Encouraged the caregivers to utilize available community and professional services.	3. The caregivers verbalized that they felt more comfortable asking for help.