Neuroleptic Use in the Management of

Behavioral Problems in a Long-term Care Facility

by

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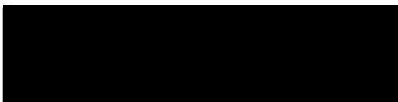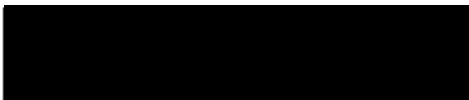Master of Sciences

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CHAPTER I

INTRODUCTION

Review of the Literature

The high incidence of psychopharmacologic use in long-term care facilities has been well-documented as a critical clinical problem. In 1980, Ray, Federspiel, and Schaffner found that 43 percent of Medicaid residents in 173 long-term care facilities received antipsychotic (neuroleptic) drugs. Buck's (1984) study of a single nursing home revealed that 60 percent of residents were treated at least once with this type of drug.

The phenomenon of behavior problems in the long-term care population is also significant. Zimmer, Watson, and Treat (1984) found that 87.5 percent of long-term care residents had documentation of behavioral problems. Hussian (1986) attributes this prevalence to organic disturbances, decrease in adaptive responses, a reduction in positive reinforcement for positive coping behaviors, an increase in interpersonal isolation, and sensory nervous system deficits.

Neuroleptic use has become an accepted treatment mode for behavior problems in the aged, despite the effectiveness of social and environmental factors in modifying behavior problems. Peabody, Warner, Whiteford, and Hollister (1987) note that the primary use of neuroleptics in elderly persons is for disturbed, non-psychotic behaviors, and that this practice lacks well-defined clinical guidelines. Helms (1985) also notes that the lack of guidelines for neuroleptic use has resulted in their inappropriate use for problems not related to mental disorders or neurologic dysfunction. This questionable practice is further undermined by the fact that the treated symptoms (behavioral problems) are inconsistently defined by multiple caregivers, creating difficulties in assessment and intervention. A study by Barnes, Veith, Okimoto, Raskind, and

Gumbrecht (1982) concluded that, while neuroleptics are effective in the treatment of certain behavioral problems, their therapeutic role is limited. Prien (1980) details some of these limitations: a high incidence of side effects associated with neuroleptic use in older persons, and the concomitant occurrence of physical disorders and their treatment regimes which when combined with neuroleptic use can create iatrogenic complications.

Neuroleptic use as a treatment approach is linked to many issues. The multiple disease pathologies, limited tolerances to chemical agents, and high rates of cognitive impairment found in elderly residents make pharmacological monitoring a critical nursing responsibility. Psychopharmaceuticals (e.g., sedatives-hypnotics, antidepressants, benzodiazapines, and neuroleptics) are a particular area of concern. Non-specialist familiarity with these medications is rare and the side effects may be difficult to identify. Unfortunately, decisions to implement use are influenced by limited behavioral management skills of staff, culturally bound attitudes, personnel shortages, and non-supportive environments. While assessment and evaluation of outcome are essential to the management of all psychopharmaceuticals, they are particularly apparent with neuroleptics since it is this category of medication that is most often utilized for management of sleep disorders, agitation, emotional lability and anxiety.

The federal government, in the Omnibus Budget Reconciliation Act of 1987, created standards that have resulted in proposed regulations to monitor and limit the use of neuroleptics in long-term care (Appendix A). Long-term care facilities attempting to comply with these guidelines are in need of baseline data to describe the behavioral problems that their staff may be attempting to alleviate with neuroleptics. Such information on behavioral problems is critical in determining when neuroleptics can be

appropriately used and may encourage the development of the alternative management approaches required by these regulations.

A multi-system approach to the management of behavior problems may decrease the use of neuroleptics for behaviors that are amenable to environmental interventions. Information that defines behaviors by type, frequency, and severity, and identifies the factors that influence the occurrence of behaviors may be essential in determining whether or not a behavioral problems is best managed by an environmental, pharmaceutical, or multifaceted approach.

Purpose of Study

The purpose of this project is to examine the current practices related to neuroleptic management of problematic behaviors on one unit at the Benedictine Nursing Center, a long-term care facility in Oregon. The Benedictine Nursing Center has developed a multi-systems approach to the management of behavioral problems, and the extent to which this approach is followed by nursing staff is of interest to the facility. Current nursing practices on the unit, and their compatibility with proposed federal and state standards regarding neuroleptic use, will be evaluated. In addition, this study will add to existing nursing knowledge about the characteristics of problematic behaviors, the factors associated with these behaviors, and the use of neuroleptics to manage them in conjunction with environmental strategies.

Literature Review

The review of literature addresses four aspects of this problem: (a) The patterns of neuroleptic use in long-term care facilities; (b) the incidence of behavior problems within these facilities; (c) the management of behavioral problems with neuroleptics; and (d) alternative management approaches which utilize aspects of the nursing process.

Studies that identify and address the influence of environment and individual health factors related to these areas will be noted.

Neuroleptic Utilization in Long-term Care Facilities

Ingman, Lawson, Pierpaoli, and Blake (1975) added to the literature on geriatric drug use in a study describing the practice of neuroactive drug use in long-term care facilities. Previous studies had focused on the general geriatric population but had not addressed issues and problems related to long-term care. A sample of 131 patients residing in a 300-bed extended care facility was studied. Data on the utilization of neuroactive drugs, physician prescribing patterns, patient demographics, and characteristics such as mentation and physical status were collected utilizing a physical dependence scale, the Mental Status Quotient, and chart audits. A review of the data by a pharmacist and physician, using standardized criteria, physician orders, and administration records, determined the appropriateness of drug usage. The researchers discovered problems regarding questionable prescribing practices, such as the overuse of prn orders and the use of neuroactive drugs to treat disorders *not recommended* by the criteria. In addition, polypharmacy and the use of drugs to treat symptoms without an accompanying diagnosis were identified as significant problems. A major limitation of this study was that the definition of neuroactive drugs spanned 10 classes of agents and was too broad. However, the finding that neuroleptics were in the top three categories of agents used in long-term care facilities instigated much of the research that follows.

Documentation regarding misuse of neuroleptics was summarized by Ray et al. (1980) in a one-year longitudinal study of Medicaid residents living in 173 nursing homes. The study used a matched design with a comparison group consisting of ambulatory *outpatient* Medicaid recipients. Data were collected from nursing home licenser files,

Medicaid pharmacy claims, a nursing home drug usage index, and a physician prescribing index. Conclusions revealed four major areas of mismanagement: (a) the excessive and extensive use of antipsychotics (43 percent of the total population studied, of which 9 percent were chronic users); (b) widespread variation in antipsychotic use patterns between facilities despite no significant changes in patient populations; (c) an increased use of neuroleptics in larger long-term care facilities with lower staff-client ratios; and (d) widespread variations in physician prescribing practices. This study was the first to expand the problem of neuroleptics misuse to include environmental problems such as institutional size and staffing ratios, thus raising the issue of the use of neuroleptics as a management tool.

A smaller study (Buck, 1984) supported these findings. This study focused on the administration of neuroleptics in a single nursing home during 1984. The use of pharmacy billing records and daily dosages of neuroleptics administered allowed for increased accuracy in determining psychotropic use. Multiple regression analysis was used to analyze the influence of demographic variables as well as institutional variables on psychotropic drug use. The results were consistent with those of Ray et al. (1980). Significant findings included the variability of physician prescribing patterns, the extensive use of neuroleptics in long-term care facilities, and the chronicity of this use. The role of environmental variables, such as size and staff ratios on drug use, was not as clearly demonstrated in this study. Buck concluded that drug use is more influenced by patient characteristics than by the nature of the institutional setting. The strength of this study lies in its clarity, creative use of data sources, and attention to specific factors influencing drug use/misuse. Its results underscored the role of patient characteristics as influencing physician prescriptive

actions and focused research attention on confounding individual variables such as the incidence of behavioral problems, diagnosis, and symptom severity.

In a review of the special problems encountered in geriatric psychopharmacology, Prien (1980) used the results from nine surveys of prescription drug use conducted in the 1970s. Findings from this review include: (a) Persons age 65 and older account for more than one-fourth of the prescriptions of psychopharmacologic drugs in the United States; (b) within long-term care facilities, approximately one-fifth of the residents receive neuroleptics; and (c) 65 to 90 percent of elderly patients treated for psychiatric disorders have at least one concomitant physical disorder, resulting in multiple drug therapies. Prien cited a study by Seidl et al. (1966) that found that the risk of side effects from any medication for persons over 70 years of age was twice that of the population under 50 years of age. This review provides a valuable background perspective and documents the extent of psychopharmaceutical use and the potential problems created by the existence of polypharmacy with multiple drug agents.

A frequent problem noted with neuroleptic administration is the lack of justifiable indicators for their use. Burns and Kamerow (1988) studied variables associated with appropriate psychotropic administration. Using secondary data from a random stratified sample of 150 nursing homes, they conducted a survey of a random sample of 526 nursing home residents. A three member physician panel rated all psychotropic drug prescriptions for appropriateness using standardized criteria. They found that 30 percent of patients receiving psychotropic drugs had no documented medical or nursing indicator for why the drug was in use. This contrasted with 17 percent of patients in the same study who received digoxin with no accompanying indication of cardiac problems. In addition, problems with low, ineffective dosages and polypharmacy (defined as use of more than

one antipsychotic) were discovered. Concerns were raised about physician knowledge of psychotropic drugs and the quality of medical record keeping in nursing homes. This research both substantiated the previous finding regarding misuse factors and redefined them into more identifiable categories.

Research has also focused on the incidence of health problems that are associated with neuroleptic use in long-term care facilities. The early study by Ingman et al. (1975) was one of the few to address issues of dependency and mentation associated with drug use. The surprising finding that increased neuroactive use was associated with superior mentation and decreased dependency has not been replicated or studied further. Later studies by Cohen-Mansfield (1987) and Winger (1986) found a positive relationship between neuroleptic use and cognitive impairment, and agitated and aggressive behaviors.

Problems with medication use and cognitive impairment were evaluated by Larson, Kukull, Buchner, and Reifler (1987). Using an algorithm for classification, a sub-group of 35 clients suffering from adverse drug reactions was identified. Using logistic regression analyses, this group was compared with a control group from the original population of 300 elderly outpatients being evaluated for cognitive impairment. Results indicated that a high incidence of unrecognized and untreated adverse drug reactions existed and were associated with falls, sedative-hypnotic use, and increased number of prescriptions. These authors recommended the systematic use of drug-free trials to identify and reduce aggravating the symptoms associated with cognitive impairment.

The finding that impaired mobility is associated with neuroleptic use was duplicated in a study by Granek et al. (1987) conducted in a 283-bed long-term care facility. These researchers used incident report data and a case control study to determine the associations between falls, drugs, and diagnoses. The 10-month study found that in

the two samples of 184 residents (drawn from the population of 446 residents), the odds of falling increased to a significant level when major tranquilizers were used concurrently with other medications.

Blazer, Federspiel, Ray, and Schaffner (1983) studied the problem of anticholinergic toxicity in 5,902 nursing home residents and a comparable group of ambulatory patients. This is a significant health risk for elderly persons receiving multiple drugs and for patients receiving antipsychotics. The data was drawn from records of Tennessee Medicaid recipients aged 65 years or older. The study identified a high frequency of concurrent use of two or more anticholinergic agents (21 to 32 percent of the nursing home residents and 11 to 13 percent of the ambulatory group). The authors concluded that physicians are not adequately assessing this risk and are not utilizing the option of low anticholinergic antipsychotics effectively. This study underscores the vital role of nursing assessment in managing neuroleptic use and the negative impact that this treatment can have on a resident's health.

In summary, the above studies demonstrate that neuroleptics are frequently used in long-term care facilities oftentimes without an accompanying diagnosis or the treatment protocols usually associated with standard pharmacologic practice. Neuroleptics have been associated with significant health and environmental issues affecting elderly persons such as institution size and staffing patterns, degree of dependency, adverse drug reactions, cognitive impairments, and polypharmacy. Additional study was called for by all of the above researchers. Environmental factors such as staffing patterns and training, the consistency of physician and nursing assessments, administration, and prescribing practices were factors identified as needing further study. Most studies to date are descriptive,

correlational, or predictive in nature. The casual relationships between factors identified as influencing neuroleptic utilization have not yet been clearly identified.

<u>Behavioral Problems in Long-term Care Facilities</u>

Hussian (1986) emphasizes that the constellation of maladaptive learning, poor coping patterns, and organic etiology must be considered when attempting to define or manage behavioral problems. These critical factors can be either etiologic or aggravating factors. The following studies identify the prevalence and types of behavioral problems found in long-term care settings and identify the complex factors that contribute to this phenomenon.

Zimmer et al. (1984) surveyed the incidence and type of problem behaviors found in a 33 percent random sample of patients in 42 skilled nursing facilities. A team of nurse surveyors gathered the data via a federal and state mandated utilization review process. The researchers found that 87.9 percent of residents had some documentation of behavioral problems. Fifty-seven percent of this group had a recorded history of behavioral or psychiatric problems. Although 22.6 percent of the total resident population was classified as severe management problems, only 15 percent had evidence of psychiatric consultation. This study uncovered the severity of this phenomenon, the absence of diagnosis and intervention, and promoted further research. The categorizations developed (Endangering Others; Endangering Self; Disturbing to Others; Non-endangering or Disturbing to Others, but of concern to staff) continue to provide the framework for subsequent studies of behavior problems in long-term care facilities. These categories and the specific behavior problems associated with them are found in Appendix B.

A study by Burgio, Jones, Butler, and Engel (1985) used a survey method to determine the occurrence of significant behavior problems in one intermediate and skilled

nursing facility. Thirty-two day shift geriatric assistants responded via interviews to a

22-item behavioral problem screening tool adapted to the geriatric population. This study

found that 25 percent of patients displayed tantrum-like, non-compliance, and verbal abuse

behaviors. Physical aggression was noted in 20 percent, and aberrant or acting-out

behaviors occurred in 10 to 19 percent of all patients. Differences between the higher

rates of acting-out behaviors in this research compared to the Zimmer et al. study is

attributed to differences in staff respondents. The Zimmer et al. study utilized charge

nurse data while Burgio et al. relied on data obtained from nurses aides who have

increased contact with patients. The samples were also different as this study was

comprised of 85 percent intermediate care patients who have less restrictive medical

conditions.

Research followed that addressed specific types of problems found in long-term

care residents such as agitation, aggression, sundowning, and noisemaking. Despite the

fact that these behaviors are often treated with neuroleptics, only one study reviewed this

association, indicating the need for its inclusion in future behavioral research.

Cohen-Mansfield (1986) studied agitation in 66 nursing home residents selected

from two units for cognitively deteriorated elderly. Behaviors were monitored using a

seven point frequency of occurrence rating scale. Cognitive functioning, ADL status,

sleep patterns, and medication interventions were also recorded. The following results

were reported. Types of agitated behaviors such as restlessness, constant unwarranted

requests for attention, complaining, negativism, pacing, and wandering often occurred

simultaneously. Nonaggressive agitation was the most frequently occurring behavior. Age,

cognitive status and sleep impairments did not differ significantly between the agitated and

non-agitated groups. Falls and medication usage were higher for the agitated group. Neuroleptics were the most frequently prescribed medications for agitation.

Sundowning, defined as agitation or problematic behaviors occurring exclusively in the evening hours, was studied by Evans (1987). She used a Confusion Inventory to observe 59 demented and 30 non-demented patients from a 180-bed teaching nursing home over a two day time span. Physiologic, psychosocial, and environmental data were also recorded. The results indicated that 12 percent of the residents in the facility were identified as sundowners. The following characteristics were associated with the sundowning group: cognitive impairments, fewer medical diagnoses, an increased incidence of urine odor, a recent admission to the facility, a recent room change, and a higher incidence of evening confusion. This study highlighted the strong association between environmental factors and behavioral disorders.

Aggressive behaviors in two Veterans Administration long-term care facilities were studied by Winger, Schrim, and Stewart (1987). The sample consisted of 101 subjects from a qualified pool of 172 residents who, unlike residents in most long-term care populations, were primarily men. A Behavior Inventory was created using categories similar to the groupings identified by Zimmer et al. This scale identified problematic behaviors through interviews with nursing staff. In addition, data were collected on each participant using the MSQ, the Katz ADL Index, and subject ratings regarding health status and perceived control over daily activities. Results indicated that 84 percent of the nursing home patients demonstrated behaviors that were defined as endangering to self or others. This particular group of clients was characterized by lower mental status scores, increased length of stay, decreased perceptions of control, and increased functional dependency. The study also found that the *endangering* problem behaviors occurred in

combination with *disturbing* behaviors, a finding similar to the *cluster* phenomenon found by Cohen-Mansfield et al.

The problem of *noisemaking* behaviors in long-term care was examined by Ryan, Tanish, Kolodny, Lendrum, and Fisher (1988). The study first surveyed 400 residents in a long-term care facility for incidence and type of noise making. A sample of 122 nurses independently completed a standardized checklist with an operational definition of a *noisemaker*. Staff descriptions of the noisy behavior exhibited by each patients was then sorted into six type categories: (a) purposeless and perseverative noisemaking, (b) environmentally responsive noisemaking, (c) purposeful noisemaking, (d) chatterbox noisemaking, (e) deafness related noisemaking, and (f) other. This study was then replicated in another long-term care facility. Results revealed an incidence level of 29 percent and 31 percent of identified noisemakers within the two populations. The typology of six categories proved to be reliable in defining and identifying distinct behaviors and demonstrated the potential diversity of interventions needed to manage specific behavioral problems commonly lumped under a general term (e.g., *noisemaking*).

Identifying factors that influence the assessment of behavioral problems is an important process, as this activity is often imbued with subjective bias. The following studies reveal the impact of factors such as: (a) the power and potential bias inherent in staff perceptions of problem behavior; (b) the need to evaluate the role of environment in a behavioral dysfunction; and (c) the importance of conducting a longitudinal assessment when defining a behavioral problem.

Cumming, Cumming, Titus, Schmelzle, and MacDonald (1982) conducted a survey that first identified patients recommended for transfer due to problematic behaviors and three months later, assessed the current status of the sample and added new patients. The

sample was derived from a population of 995 patients in extended care facilities, (defined in Canada as post hospital rehabilitation), 1,500 patients residing in long-term care facilities, as well as 1,755 clients on outpatient long-term care caseloads. The classifications were determined by standardized interviews conducted with staff at all three types of programs. Results indicated that, over a three month period, a significant proportion of clients with disordered behavior improved *without* dramatic changes in treatment. In addition, a significant portion of the clients who had been labeled problematic (and who had *no* improvement in behavior), were no longer seen as in need of transfer (i.e., the staff perceptions, tolerances or definitions had changed). Problem behaviors were also found to be more frequently identified in newly-admitted patients.

Bernier and Small (1988) surveyed both staff and residents of a 180-bed long-term care over a two month period in order to identify disruptive behaviors. Forty-four out of 168 residents were determined to be competent, able, and willing to participate in this study. The Philadelphia Geriatric Center Morale Scale was used to measure well-being, defined as congruence with the environment. A four-point Likert scale entitled the Work/Living Environment Survey was developed to assess both resident and staff perceptions of disruptive behaviors. The results found *no* consensus between staff and residents in the identification of either the specific type or degree of disruption in problem behaviors. Staff identified more behaviors and different behaviors as disruptive than did the residents whom these behaviors supposedly disturbed.

Neuroleptic Treatment of Behavior Problems

Studies that examine the effectiveness of neuroleptic use with behavioral problems have been scarce, probably due to the complexity in defining the symptoms for which the

drug is being given. A review of these studies will be summarized and the more recent research that has addressed this issue will be described.

Helms (1985) reviewed the 21 studies completed since 1952 regarding neuroleptic use in the treatment of dementia. He found that only three of these studies met his methodologic criteria due to the prevalence of design errors and the absence of appropriate control groups. Based on these three studies he concluded that there are beneficial effects in treating certain symptoms with neuroleptics. However, these *moderate* benefits were limited by the concurrent existence of adverse effects, necessitating low, sometimes ineffective, dosages. No single antipsychotic appeared to be more effective than any other for managing behavioral complications related to dementia.

One of the studies cited by Helms used a double-blind comparison of thioridazine, loxapine, and a placebo in the treatment of 60 subjects with a DSM-3 diagnosis of dementia (Barnes, Veith, Okimoto, Raskind, & Gumbrecht, 1982). Specific behaviors such as anxiety, excitement, emotional lability, and uncooperativness were found to be responsive to neuroleptic interventions. Initial severity of these behaviors was a positive indicator for a good response to the drug. However, a prominent placebo effect was also noted, thus emphasizing the strong influence that social and environmental factors have on behavioral problems.

Reisberg et al. (1987) used the Global Deterioration rating scale and medical record reviews to study the incidence, characteristics, and pharmacologic treatment of behavior problems in 57 outpatients with a diagnosis of Alzheimer's disease. This study also evaluated the effectiveness of neuroleptics in modifying disease-related behaviors identified by a 25-item rating scale. Fifty-eight percent of the studied population had

significant behavioral symptomatology of which 55.6 percent had a positive response (i.e., a reduction in behavioral symptoms) to the pharmacological intervention.

An ex-post facto study conducted by Butler, Burgio, and Engel (1987) employed observational methods to examine the difference in behavior between patients who did, and did not, routinely receive neuroleptics medication. Thirty patients were randomly assigned to the medication group from a pool of patients receiving neuroleptics. A matched control group who met criteria on mental status, age, degree of dementia, non-use of neuroleptics for one month, and psychotic symptomatology were placed in the no-drug group. Observational data were collected using the Barthel Index of ADL function, a behavior problem checklist, a medical record review, and a checklist of physical symptoms. Despite the difference in treatment, patients receiving neuroleptics displayed significantly *more* behavior problems (e.g., non-compliance, aggression, verbal abusiveness, bedtime problems, disruptiveness, and increased activity levels) than did the non-medicated control group. The authors concluded that the effectiveness of neuroleptic treatment in managing behavioral problems was questionable and that the dosages needed to suppress problem behaviors may have been causative in the high incidence of gastrointestinal, central nervous system disruptions, sedation, and akathesia found in the treated group.

Nursing Intervention in Behavior Problem Management

Medically frail and cognitively impaired residents of long-term care facilities are dependent on nursing staff to modify and enhance their adaptation to stressful events. The diverse etiology of behavioral problems and the critical role that nursing staff can play in modifying environmental influences that affect such problems have been studied. These studies and models for nursing intervention strategies are described below.

Ryden's (1989) literature review of behavioral problems in dementia substantiates the need for a multi-casual view of behavioral dysfunction. She noted that the cluster phenomenon in which disruptive behaviors occur together, and lack of precise definitions within the studies, as weaknesses in the research reviewed. Subjective reporting and factors of staff tolerance were identified in two studies as etiologic factors in behavior dysfunction. The ineffectiveness of psychotropic medication, a relationship between impaired cognition and agitation/aggression, and the importance of personal space violation as a antecedent event to behavioral problems were noted in several investigations.

Baltes and Lascomb (1975) used a single subject design to reverse screaming behaviors in an 80-year-old woman. Techniques such as positive reinforcement contingency and modified time out contingency were employed. Data were collected through observational monitoring every 5 minutes between 8:00 a.m. and 8:00 p.m. during a two-week period. The authors concluded that no physical stimuli or events were as powerful a reinforcer in changing the targeted behavior as was the social contact between the patient and the nurses. They stress the importance for nurses to begin using an *ecological* model of treatment (addressing the psychological and behavioral responsibilities of their role) rather than relying on a predominantly biological approach that focuses merely on physical care. This study underscores the critical role played by nursing staff in impacting behavior problems and the importance of utilizing a multi-system approach to behavior management.

Lawton's (1982) model of "ecology of aging" empathizes the importance of considering these multiple factors when assessing or treating a behavioral dysfunction. This model includes the premise that persons with low competence (physical or mental)

have a heightened vulnerability to environmental stressors and that behavior is an expression of a person's attempt to respond or manage environmental input with varying degrees of competence.

The concept of environmental docility developed by Lawton was applied to the phenomenon of behavior problems by Hall and Buckwalter (1987). They developed the *progressively lowered stimulus threshold (PLST) model*, which proposed that dysfunctional behavior is caused by an overload of stimulation on an organism (patient) who has decreased or absent coping responses. They recommended that treatment focus on modifying environmental factors and using baseline data on client behaviors such as anxiety levels to determine the effectiveness of nursing intervention.

Mitchell-Pedersen (1984) presented an approach labeled the Life-Line. This model proposes that problem behaviors are formed by a crisis response to events that trigger long-held patterns. Her method of intervention is based on social and interpersonal interactions. These include: (a) gathering data related to the clients support systems, losses, and need for control; (b) identifying life events relevant to the current behavior; and (c) utilizing a problem-solving process that is similar to the steps of the nursing process. This approach allows for increased identification of the motives and meaning of the behavior to the patient which form the basis of concrete nursing actions designed to address social and interpersonal needs. An important aspect of this process is the increased empathy that results from discovering linkage between the problem behavior and painful life experiences.

The concept of locus of control proposed by Rotter (1966) has been extensively studied as a framework for explaining the variations of intrapersonal responses that persons have to environmental events. A conflict between control orientation and ability

to utilize a preferred or developed style of coping results in dysfunction and increased stress. Aasen (1986) applied this theory to long-term care populations. She describes six categories of nursing interventions that would enhance the development of a *locus of control* model for these residents. This model promotes a "balanced internal/external locus of control for each individual resulting in increased behavioral, cognitive and decisional control" (p.27).

Agenda behavior is a concept developed by Rader, Doan, and Schwab (1985) to explain common behavioral problems such as wandering among older, confused patients in long-term care facilities. This idea describes how intrapersonal dimensions interact with environmental factors; in other words, a behavior problem is often the attempt a confused individual uses in order to manage, explain, or make coherent his world. The concept underscores the importance of understanding the *unique* meaning that a behavior may hold for any individual when assessing, intervening, or evaluating the management of a behavioral problem.

Summary and Conclusions

The review of literature has documented the incidence of behavior problems in long-term care and the use of neuroleptics in treating these problems (Zimmer, 1984; Burgio, 1985; and Winger, 1987). It has also presented a brief overview of alternative management approaches in which the environmental influences, and especially the role of nursing staff, are more effectively utilized. The literature underscores the need to further explore associations between personal factors (e.g., health status, intrapersonal competencies) environmental influences, and behavioral problems (Ingman, 1975; Larson, 1987; Cohen-Mansfield, 1986; and Evans, 1987). Management techniques that include a variety of multi-modal assessment and evaluation approaches were reviewed (Ryden, 1989;

Baltes, 1975; Mitchell-Pedersen, 1984; Aasen, 1986; and Rader, 1985) and contrasted with studies elaborating on the risks and limitations of neuroleptic management (Helms, 1985; Barnes, 1982; Reisberg, 1987; and Butler, 1987).

In conclusion it appears that the management of problem behaviors in long-term care facilities has been overly reliant upon the medical model with its underlying assumption that aging is inevitably linked with organic and cognitive decline. It is this model that provides the conceptual basis for and over-utilization of pharmacologic treatment of behavior problems. Alternative treatment modes that attribute behavior problems to non-organic factors do exist and include contingency management, extinction programs, increasing client autonomy, and minimizing environmental causes of behavior problems (i.e., social and sensory isolation, interpersonal conflict, and impaired communication patterns). These alternative treatment modes provide the basis for an enhanced range of nursing interventions.

The multi-casual nature of behavioral problems in long-term care facilities requires careful assessment using the nursing process and diverse interventions for effective management. If environmental approaches alone are not effective, the judicious use of neuroleptics may be considered as part of a multi-modal approach. Accurate definition of the etiology and influencing factors creating a behavior problem is essential if this multi-modal approach is to be successfully utilized. Treatment cannot be adequately delivered to vulnerable symptoms unless these symptoms are identified. Hence, evaluation of treatment effectiveness using the nursing process will also require that observable phenomenon have been defined as the target of intervention.

Conceptual Framework

Lawton's Theory of Adaptive/Maladaptive Behavior

Lawton's (1982) "ecology theory of aging" empathizes the interplay between the concepts of environment and competence that support a multi-modal approach to treatment. The components of this model are competence, environmental press, and behavior. The model proposes that "behavior is a function of the competence of the individual and environmental press of the situation" (p. 43). According to Lawton, environment refers to the physical, interpersonal, and social forces surrounding the individual that give rise to stimuli. Environmental press refers to "stimuli possessing some motivating quality to activate a cognate individual need" (p. 35). These stimuli can be either external or internal demands. Environmental press is a concept that links behavior to specific environmental forces or stimulus. These forces are composed of personal relationships and socio/cultural dynamics as well as the physical determinants of an environment. Press is distinguished from stress by its neutral nature; in other words, press can be attributed to all influences and not merely destructive interactions.

Competence is broadly defined as the characteristics of an individual. These traits or processes include biological health, sensory-perceptual capacities, motor skills, cognitive capacity, and ego strength. The objective measurement of competencies becomes increasingly difficult as their complexity increases. For example assessing health factors that influence a situation is easier than identifying pertinent ego strengths.

Behavior is an outcome of the interaction between individual competence factors and environmental demands and can be defined as an outward observed phenomenon or an internal affective response. Adaptive behavior is the response a person has to environmental press that does not exceed his or her range of competencies. Maladaptive

behavior results when this range is not activated (environmental deprivation) or over-activated (environmental overload). Therapeutic efforts to promote functional behavior must, therefore, focus on promoting an individual's capacity to adapt to the strength of an environmental press by either modifying the environment or promoting existing competencies.

Persons in long-term care facilities are at high risk for maladaptive behavior due to their deficits in competencies (e.g., physical frailties, cognitive impairments) and the increased degree of environmental press present (e.g., unfamiliar institutional environments, multiple caregivers, and inadequate support systems). The individual's reduced ability to adapt to a demanding environment results in the preponderance of maladaptive behaviors often identified by staff in these facilities as behavior problems. Lawton describes this phenomenon as the environmental docility hypothesis. He suggests that "high competence is associated with relative independence of the individual from the behavioral effects of environmental press, while low competence implies heightened vulnerability to environmental press" (p. 48).

The Nursing Process

The role of nursing becomes critical in managing the maladaptive behaviors that arise as a result of comprised residents' increased vulnerability to environmental influences in long-term care facilities. A concept that provides a problem-solving approach to the nursing management of maladaptive behavior is the nursing process, composed of assessment, intervention, and evaluation activities. This process is a system of organizing data so as to maximize the therapeutic intent of nursing actions. This approach is based upon process theory which assumes that behavior occurs in an orderly sequence and can be observed, recorded, and generalized upon (Meleis 1985).

Process theory proposes that organizing knowledge through sequencing events into a series of stages can define reality, focus skills, and indicate action leading to goal attainment. The concept of nursing process uses the stages of assessment, intervention and evaluation as an interactive process through which a patient's needs are identified and care evaluated. This process then becomes the framework for clinical decision making.

Assessment, the initial stage of the nursing process, relies upon data gathering activities that identify the patient's needs and symptoms of distress. Through this stage, problems are identified and outcomes defined. When applied to maladaptive or problem behaviors, this step includes the identification of both the behavior and the pattern of circumstances, and specifies the factors that may influence the behavior. Gamroth (1989) expanded upon Zimmer's behavioral classification system by adding rating categories of *frequency, predictability, and degree of dangerousness or disturbance.* (Appendix B). These scales may be useful in the assessment stage as they provide measurable indices that aid nurses in determining the degree to which a behavior is problematic.

The data gathered during the assessment stage determines the second stage of the process: intervention. Interventions are nursing actions designed to alleviate the identified problems and/or promote therapeutic responses. Rader and Harvath (1990) identify four types of intervention that decrease problem behaviors: environmental manipulations, therapeutic interaction, prevention programs, and medications. This array of strategies focuses both on strengthening individual competencies and reducing environmental press, thereby providing an effective treatment plan that is not solely reliant upon pharmaceutical management.

Evaluation of these nursing actions and decisions is the final stage of the process. The original data is utilized as a basis for measuring the effectiveness of the nursing

interventions. The development of interventions targeted to identified behaviors, assessed competencies and environmental press allows the evaluation phase of the nursing process to utilize the same framework by assessing the degree of behavioral change and the sensitivity to factors aggravating or ameliorating the behavior.

The sequential aspect of the nursing process is critical as it is a circular, continuous interactive process. All three stages may occur within a single client interaction or be used as a formal problem-solving process by a team of professionals. The evaluation stage often results in a return to the assessment stage for further data collection and alterations in the chosen intervention.

This utilization of the nursing process for analyzing problems and guiding intervention is maximized at the Benedictine Nursing Center by the adoption of *Guidelines for Antipsychotic Use* (Appendix C) and the subsequent utilization of the system developed by Rader and Harvath (1990), the *Behavior Management Chart* (Appendix D). These tools are further explained in the methods section. It is important to note that pharmaceutical interventions are considered by the Benedictine Nursing Center nursing staff during the evaluation and reassessment stages when other interventions aimed at the targeted behavior have proved ineffective.

Conceptual Model for the Study

Figure 1 illustrates the complementary interplay of the concepts of nursing process, environmental press, and competence as applied to the management of maladaptive behaviors of patients at the Benedictine Nursing Center. This figure identifies behavior problems using the Zimmer/Gamroth categories and then furthers the assessment by identifying competency and environmental factors that may contribute to a resident's maladaptive or problematic behavior. These individual factors and environmental

influences are both reconsidered in the evaluation stage as possible targets for treatment interventions including neuroleptic usage. In this study, the research questions focus on the linkage between competency factors (psychiatric diagnosis, cognitive capacity, dependency, and mobility), the incidence of specific behaviors, and the use of neuroleptic medications for these maladaptive behaviors. These variables are highlighted in Figure 1.

Research Questions

The following research questions are derived from the conceptual model and will be used to guide the study.

1.   What behavior problems exist among the patients on the study unit? (a) What is the frequency of individual behavior problems and categories of behavior problems classified by the *Behavioral Scale for Patients in LTC Facilities*? (b) What is the behavioral problem profile for patients experiencing one or more behavior problems?

2.   What are the relationships between the behavioral problem categories and selected health and demographic variables?

3.   Are there differences in the type, frequency, predictability, and severity of behavior problems displayed by patients receiving neuroleptics compared to patients with behavioral problems not receiving neuroleptics?

4.   Are there differences in the demographic variables and health factors of patients with behavioral problems who do and do not receive neuroleptic medications?

5.   For patients receiving neuroleptics, to what extent are the BNC guidelines being utilized in the assessment, intervention, and management of behavior problems?
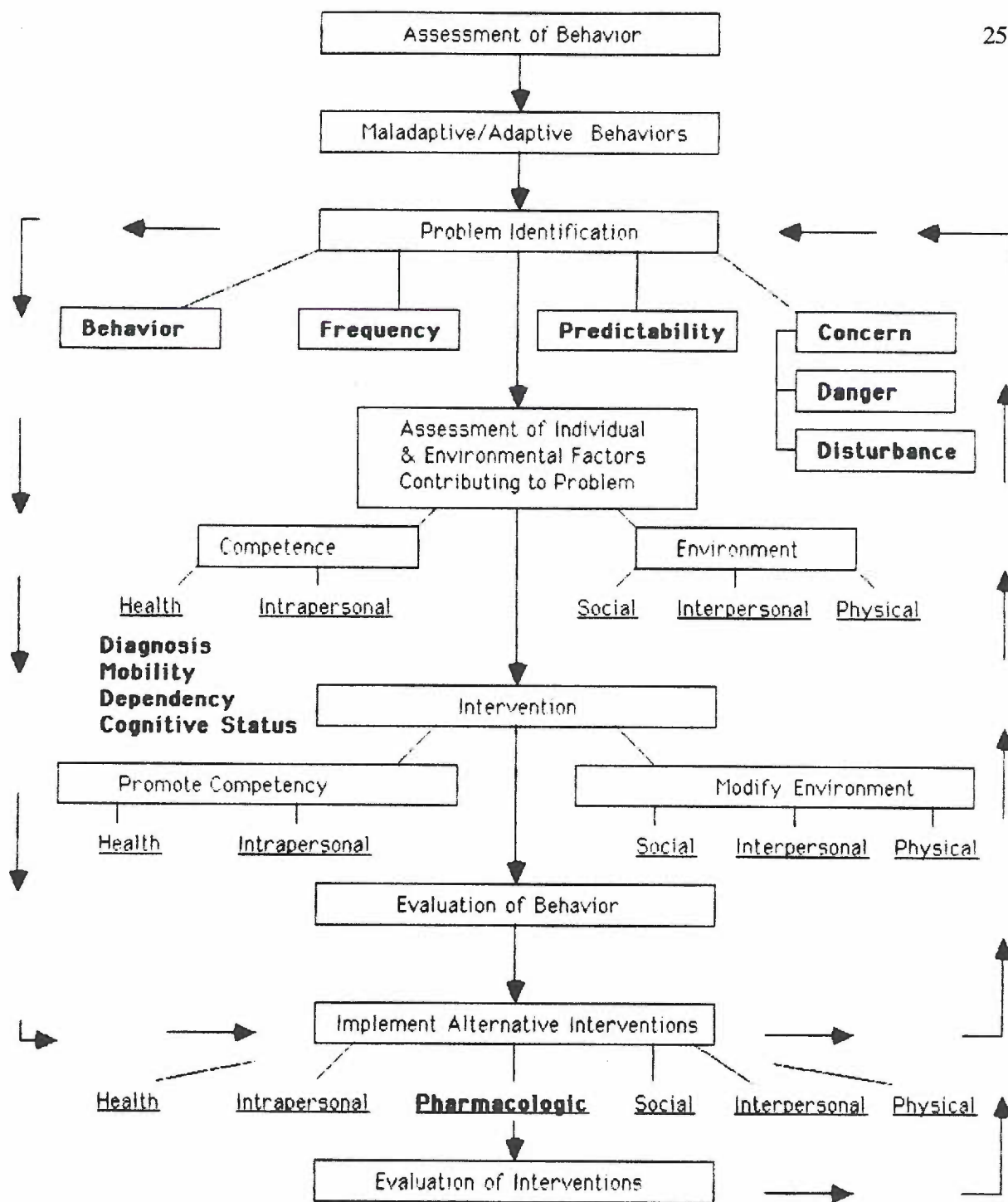
Figure 1. Conceptual Model for the Management of Problematic Behaviors Integrating Lawton's Model of Behavior and the Nursing Process. (Note: Arrows denote the nursing process; boldface concepts are factors in this study.)

CHAPTER II

METHODS

Design

A descriptive study was conducted to address the research questions. Existing data on: (a) demographic variables (length of stay, age, and gender); (b) health factor variables (mental status, degree of dependence, mobility, and diagnosis); (c) patterns of neuroleptic use; and (d) behavioral problem incidence were collected through a retrospective record review. Because of the non-experimental nature of this project, and since there was no attempt to manipulate or control variables, the data lent itself to descriptive analysis.

External factors that may threaten the validity of this study include: (a) the potential lack of consistent behavioral approaches to clients; (b) the presence of unmeasured environmental influences; and (c) the potential for unreliable data because of the selective recording of information by diverse staff persons entering data into the medical record. Internal factors that may threaten the validity of this study include the use of a non-randomized, convenience sample, and the limited sample size. However, an in depth descriptive study provided an optimal design to uncover patterns of behavior problems in relation to patterns of neuroleptic use despite the above mentioned limitations.

Subjects/Setting

The target population chosen for this study was a group of elderly subjects who reside on a secured unit at the Benedictine Nursing Center (BNC). The BNC is a 130-bed, non-profit, long-term care facility located in a rural community in Oregon. It has a long-standing association with a University School of Nursing and is noted nationally for its clinical and educational programs. One of these components is a mental health service

which provides the staff and residents with a part-time, geriatric mental health nurse specialist. Since this was a convenience sample drawn from a single long-term care facility, any conclusions reached from this study will have limited applicability to similar facilities and patients. The characteristics of the final sample are presented in Table 1 in Chapter III.

This sample was chosen for the study because it was anticipated that a wide range of behaviors would be demonstrated by the residents of the unit. The sample consisted of one subgroup of persons with a history of problematic behaviors who were placed on the unit due to its secured access. An additional subgroup was comprised of elderly persons residing on the unit prior to its modification into a secure unit and who wished to remain there. These residents demonstrated a higher level of functioning and suffered fewer dementia-related disorders than the group needing the secured environment. The criterion for inclusion in the sample was residence on the unit during the months of May, June, and July of 1989. Residents under the age of 50 years were excluded from the study.

Instruments

The data for this study were collected from the clinical records of 24 clients residing on the unit for the three-month period of May, June, and July, 1989. Several sources of data from patient records were surveyed. These sources are described in the following sections and related appendices.

The *Medication Administration Record* (Appendix E) is a written recording of all medication administered to residents over a 24-hour period. This record was used to collect data on the incidence of neuroleptic use, plus dosages and duration related to this use.

The *Behavioral Management Chart* (Appendix D) is a 24- hour observation tool utilized for residents receiving medication related to a behavioral problem. A list of descriptive statements which rank the behavior according to severity are numerically coded. These numbers are then entered every two hours on the 24-hour flow sheet by the nurse supervising each shift. Data from this sheet were collected on the effectiveness of the neuroleptic as measured by the decreasing severity, duration, and incidence of the identified problematic behaviors. This tool is considered to be a monitoring and communication tool; therefore, no validity or inter-rater reliability studies have been conducted on it.

The *Behavioral Scale For Patients In Long-term Care Facilities* (Appendix B) was developed by Gamroth (1989) in order to identify the problem behaviors that require nursing intervention. It is based on the behavior categories identified by Zimmer and associates in their 1984 study. In addition, this tool focuses on the frequency, predictability, dangerousness, or disturbing aspects of 17 specific behaviors. Each subject is rated on these behaviors using a numerical scale. Content validity of the tool was established by a group of faculty and doctoral student researchers specializing in gerontological nursing. Chronbach alpha for the total scale was .70. Internal consistency was $r = .80$ and the inter-rater reliability was .90. Data from this scale provided the bulk of the descriptive data regarding the incidence, type, and severity of behavior problems on the unit.

The *Level of Care* checklist (Appendix F) was used to gather information on the dependency and mobility status of each patient via a numerical score. Persons with higher scores are more dependent on nursing staff for basic need fulfillment. No information has

been complied on the reliability or validity of this tool. These observational data were obtained by registered nurses for quality assurance and acuity purposes.

The *Mini-Mental State Examination* (Appendix G) is an 11-item questionnaire administered to each client as part of the medical record. Its purpose is to identify persons suffering from a cognitive impairment, provide baseline data, and estimate the severity of the impairment. Test-retest reliability ranges from .56 to .98, inter-rater reliability is reported at .82, and validity scores range from .82 to .87 (Foreman 1986).

Guidelines for Neuroleptic Use (Appendix C) is a protocol utilized at the BNC when managing behaviors that are being evaluated for and subsequently treated by neuroleptics. Its purpose is to ensure that alternative approaches have been attempted and that the effectiveness of the neuroleptic use will be evaluated.

Procedures

Permission was obtained for the compilation of the data from the Director of Nurses, the Mental Health Clinical Specialist, and the Benedictine Institute for Long-term Care. The Institute had been the agency responsible for the collection of the Level of Care, Mental Status, and Behavioral Profile data as part of a demographic survey. Data collection began with a chart audit process. Charts were examined one at a time by this researcher and data were entered on a coding form for each subject (Appendix H).

Protection of Human Subjects

This study was a retrospective review of records involving collection of data from patient records and not from patients per se. Since subjects did not participate directly in this study, informed consent was not required. Decisions on how to utilize this data, which will remain the property of the Benedictine Nursing Center, will made by this same agency and the Benedictine Institute. Confidentiality was maintained by assigning each

subject a code number, which was secured until the study was completed and then destroyed.

Analysis

To answer Research Question 1, the data from the *Behavioral Scale* were subjected to descriptive analysis. First the frequencies of the 17 behavior types listed in Appendix B were tabulated. Then these 17 behaviors were collapsed into the four behavioral categories: Endangering Others, Endangering Self, Disturbing to Others, and Of Concern to Staff. Frequencies of the categories were determined by identifying whether the behavior (a) existed at all, (b) occurred in one or two of the behaviors within the category, or (c) occurred in more than two of the behaviors within each category. This sub-grouping of the data resulted in a range of frequencies for each category of *none* (i.e., no behaviors in category), *some*, (i.e., one or two in category) and *a lot* (i.e., three or more in category). Last, the type and frequency of behaviors that occurred for each individual subject were examined and patterns of behavior identified.

To answer Research Question 2, the associations between the frequency of the four behavioral problem categories, health factors (diagnosis, mobility, dependency, and mental status), and demographic variables (age and gender) were examined. The scores for mental status were collapsed into three ordinal groups, according to clinical indicators of capacity (Folstein, 1975); scores of 19+ were classified as a *mild* impairment, scores of 12-18 were termed *moderate*, and scores below 12 were designated as *severe* impairments in cognition. Psychiatric diagnoses were similarly grouped into three categories of: *none* (no diagnosis listed), *dementia* (Alzheimers, OBS or Dementia), and *other* (Affective, Anxiety, Substance Abuse or Schizophrenia). Age scores were grouped into categories of *85 and over* and *less than 85* consistent with the *young-old* and *old-old* designations found

in the literature. Due to the skewed distribution, length of stay data were not included in the final analysis. Pearson's product moment correlation coefficients (r) were computed to determine degree of association.

Research Question 3 was answered by computing Pearson's r correlations between the incidence (frequency), predictability, and severity of the four behavior problem categories and whether or not of patients were receiving neuroleptic medication.

To answer Research Question 4, the associations between neuroleptic medication use, and the health and demographic variables of subjects with behavioral problems were determined by computing Pearson's r.

To answer Research Question 5, descriptive data were presented for individual cases using single subject case study methodology. Retrospective data from the subjects' medical records were analyzed for patterns and associations between neuroleptics administered, behavioral symptomatology, health factors, and documented nursing interventions.

The significance level was established at $p < .05$. Statistics that were derived from data with more than 12.5 percent ($n = 3$) missing observations are noted.

CHAPTER III

RESULTS AND DISCUSSION

A description of the sample is provided. This is followed by the results of the study presented for each research question.

Sample Profile

The final sample consisted of 24 subjects, 33.3 percent male and 66.7 percent female. Subjects ranged in age from 51 to 95 years, with a mean age of 82 years. Subjects under 85 accounted for 47.6 percent of the sample. Subjects 85 years and older accounted for the remainder of the sample (52.4 percent). Length of stay ranged from 3 months to 18 years and 2 months. These demographic data are depicted in Table 1.

Table 1

Demographic Data For Sample: Frequencies of Age, Length of Stay, and Gender (n = 24)

Demographic Variable	N	%
Length of Stay		
< 1 year	8	33.3
1-2 years	5	20.8
3-5 years	5	20.8
> 5 years	3	12.6
Missing	3	12.5
Age		
50-79 years	5	20.8
80-89 years	12	50.0
90-95 years	4	16.7
Missing	3	12.5
Gender		
Male	8	33.3
Female	16	66.7

The health factor profile reflected a higher level of functional capacity than the age range would indicate. This may be due to the fact that the unit was locked and designed for persons with behavioral problems, thus discouraging placement of persons with physical frailties. The missing data on the three persons who died might have changed this profile. The results for the health factors are depicted in Table 2.

Cognitive status was equally distributed between *mild impairment, moderate impairment,* and *severe impairment.* This distribution reflects a wide range of capacities among the subjects. It should be noted that the category of *moderate* is especially difficult to interpret. This range of scores can be associated with persons who are relatively functional except for problem-solving processes as well as persons with advanced dementia but who have better memory function and can score well on the rote-type questions asked. Utilization of an indicator of functional abilities along with this type of cognitive test would give a more accurate range of abilities found on this unit. The combined scores (66 percent) of the *mild* and *moderate* categories does roughly conform to the 50 percent of sample noted to have a diagnosis of dementia.

The diagnosis of dementia, Alzheimers or organic brain syndrome was the most frequent, found in 50 percent of the sample. Over one-third of the sample (35.7 percent) had diagnoses of either affective disorder, schizophrenia, substance abuse, or other psychiatric diagnosis. One-fifth (21 percent) of the sample had no indicated psychiatric diagnosis.

The mobility level of this population was surprisingly high considering their age. Sixty percent were described as independent or requiring minimal assistance. The level of dependence on nursing care also reflected this high level of physical capacity with 70 percent of the sample requiring assistance in only 1-3 ADL activities. However, the

Table 2

Frequencies of the Health Factor Characteristics: Status, Psychiatric Diagnosis, Mobility,

Dependency, and Neuroleptic Use (n = 24)

Health Factor	N	%
Mental Status		
Severe (4-12)	5	20.8
Moderate (13-18)	5	20.8
Mild (25-29)	5	20.8
Missing	9	37.5
Diagnosis*		
Dementia	12	50.0
Affective	2	8.3
Schizophrenia	1	4.2
Substance Abuse	1	4.2
Other Diagnosis	4	19.0
No Diagnosis	5	21.0
Missing	3	12.5
Mobility		
Independent	5	20.8
Assist	10	41.7
Dependent	4	16.7
Missing	5	20.8
Level of Care		
Nursing care + ADL	1	4.2
Assistant 4-6 ADL	1	4.2
Assistant 0-3 ADL	17	70.8
Missing	5	20.8
Neuroleptic Use		
Yes	3	12.5
No	21	87.5

*Subjects could have more than one psychiatric diagnosis; therefore, the percentage in this category is greater than 100.

amount of missing data (20 percent) for both of these variables cautions against drawing firm conclusions.

The use of neuroleptics in this sample was much lower than rates noted in the literature review. Only three of the 24 subjects (12.5 percent) had been administered a neuroleptic during the study period. This contrasts with the studies reviewed in the literature that reported rates of 43 to 60 percent. This finding is probably linked both to the lower number of behavioral problems identified in this sample and the presence of procedures designed to promote alternative management approaches. It would be interesting to compare the health and demographic profiles of the subjects studied by Zimmer et al. (1984) to see if the presence within this sample of persons displaying mild to moderate cognitive impairments (50 percent), a high degree of mobility, and requiring minimal assistance was a factor in the low use of neuroleptics. However, overall the findings may speak to the high quality of nursing care in the facility.

Findings for Research Question One

What were the frequencies of behavior problems, behavior problem categories, and the patterns of these categories for each individual subject? The incidence of the 17 behavior types that occurred are found in Table 3.

Two types of behaviors did not occur at all in this sample: *Indirectly endangering others* and *Taking others belongings or food*. Only seven types of behaviors were observed in 25 percent or more of the sample: *Aggressive to Others, Wandering, Resistive to Care, Verbally Noisy, Other Bothersome behaviors, Reclusive,* and *Other behaviors of Concern*. *Reclusive behaviors* and *Resisting care* were the most frequently noted problems, occurring in 45.8 percent and 45 percent of the respondents respectively.

Table 3

Frequencies of the Seventeen Individual Behaviors Exhibited by Subjects (n = 24)

Behaviors	N	%
Endangering Others		
Aggressive to others	6	25.0
Indirect aggression	0	--
Endangering Self		
Self abusive	1	4.2
Wandering	7	29.2
Resistive to care	11	45.8
Self endangering/other	4	16.7
Disturbing Others		
Verbal abuse/noise*	6	25.0
Intrusive ambulation*	2	8.3
Physically disruptive*	1	4.2
Taking objects*	0	--
Urination/defecation*	1	4.2
Sexual*	2	8.3
Other bothersome*	6	15.0
Of Concern to Staff		
Reclusive*	9	37.5
Hoarding*	3	12.5
Excessive affect*	3	12.5
Other of concern*	7	29.2

*Denotes missing data on three or more subjects.

The percentage of subjects exhibiting behaviors in the four major categories are found in Table 4. When collapsed into categories, a higher incidence of behavior problems seems to be apparent among the sample.

Table 4

Frequencies of the Four Major Behavioral Categories Among the Sample (n = 24)

Categories	N	%
Endangering Others		
None	18	75.0
Some	6	25.0
Missing	0	--
Endangering Self		
None	8	33.3
Some	11	45.9
A lot	2	8.3
Missing	3	12.5
Disturbing Others		
None	12	50.0
Some	9	37.5
Missing	3	12.5
Of Concern to Staff		
None	5	20.8
Some	11	45.9
Missing	8	33.3

*Denotes missing data on three or more subjects.

Behaviors observed most frequently among the subjects were in the *Self Endangering* category with 54 percent of the sample demonstrating *some* or *a lot* of these behaviors. Twenty-five percent of the subjects exhibited behaviors that were categorized as *Endangering Others*. This was the lowest observed incidence of behaviors among the subjects. However, the finding could be an artifact of the scoring system since the maximum score for this category was *some* as there were only two types of problem behaviors within the category.

Thirty-eight percent of the subjects exhibited behaviors considered to be *Disturbing to Others*. Behaviors that were not endangering or disturbing but considered to be *Of Concern to Staff* were exhibited by 45.8 percent of the subjects, the second most frequent category of behaviors observed. However, the high incidence of missing data (33 percent) in this sample means that caution must be exercised in interpreting the data. *Self Endangering* behaviors and behaviors *Of Concern to Staff* are the least intrusive of the four categories. It may be that the predominance of dementia-related diagnoses and the *severe-moderate* levels of cognitive impairments shifted the frequency of behavior into these less socially interactive realms.

Individual behavioral patterns for the 24 of the subjects revealed several distinct patterns of behavior categories as depicted in Table 5. The Cohen-Mansfield (1986) and Winger (1987) studies referred to in the literature review mentioned that the cluster of *Endangering Others* and *Self Endangering* behaviors were often found with *Disturbing* behaviors. This combination occurred in 38 percent of this sample, indicating that careful assessment of the less severe category of disturbing behaviors may sometimes be useful in the management of endangering behaviors. Findings from this study also clearly support

Table 5

The Frequency and Patterns of Problematic Behavioral Categories that Occurred Within

the Sample (n = 21*)

Behavior Patterns	N	%
No Behaviors Noted	4	19.0
One Behavior		
Endangering others	0	--
Endangering self	1	4.8
Disturbing others	1	4.8
Of concern to staff	3	14.3
Two Behaviors		
Self endanger/concern	3	14.3
Self endanger/disturbing	2	9.5
Three or four behaviors		
Self endanger/disturbing/concern	3	14.3
Endang. oth./self endang./disturb.	3	14.3
Endang. oth./self endang./concern	1	4.8

*Subjects with missing data on three of the four categories were not included in this analysis.

the notion that behavior problems frequently occur in clusters for a large percentage of

individuals.

Findings for Research Question Two

What are the relationships between the behavioral problem categories and selected

health and demographic variables? The associations between demographic factors (age

and gender), and between health factors (mental status, diagnosis, mobility, and

dependency) and the behavior categories are found in Table 6.

Table 6

Correlations Between the Four Major Behavioral Categories and the Health/Demographic Factors of Mental Status, Diagnosis, Mobility, Dependency, and Age

Behavior	Mental	Diagnosis	Mobility	Depend	Age
Endanger-ing others	r=-.51* n=5	r=.03 n=21	r=-.27 n=19	r=.04 n=19	4=-.45* n=21
Endanger-ing self	r=-.60* n=14	r=.49* n=18	r=-.59** n=17	r=.29 n=17	r=-.42 n=18
Disturbing others	r=-.35 n=14	r=.35 n=18	r=-.67** n=17	r=.20 n=17	r=-.11 n=18
Of concern to staff	r=-.61* n=12	r=.44 n=14	r=-.24 n=13	r=.19 n=13	r=-.14 n=14

*Denotes level of significant of $p < .05$ and **at $p < .01$, 2-tailed test.

Endangering behaviors was moderately associated with age and mental status. *Self Endangering* was moderately associated with the factors of mental status, diagnosis and mobility. *Disturbing Others* was strongly associated with mobility. *Of Concern to Staff* was strongly associated with mental status.

There was a significant negative correlation between mental status and the behavior categories of *Endangering Self*, *Endangering Others*, and *Of Concern to Staff* indicating that a lower cognitive status is associated with an increased incidence of behavior problems. This finding supports the environmental press theory proposed by Lawton, and accents the need for interventions that enhance clients' competencies and provide for alterations in their environment. These results support the findings of both

the Cohen-Mansfield (1987) and Winger (1986) studies and highlight the importance of viewing mental status as a critical factor in behavioral management.

There was a significant negative correlation between mobility and two behavior categories *Endangering Self* and *Disturbing Others*, indicating that increased physical independence is linked with increased incidence of these types of behaviors. The strength of the relationship underscores the important role this factor plays, and hence, the extent it needs to be considered when designing alternative management approaches for behavior problems.

The non-significant correlations for diagnosis (with the exception of diagnosis and *Self Endangering* behaviors) indicates that it is less associated with behavior problems than the factors of mental status and mobility. There was a statistically significant negative relationship between age and only one category: *Endangering Others*. Although age was not associated with other kinds of behavior problems for this sample, being younger was associated with behaviors that were considered to be *Endangering to Others*.

The absence of any significant correlations between behavioral categories and dependency factors is of interest, in that one would expect that persons with high dependency scores (i.e., the most frail) to have a lower incidence of behavioral problems. However, there may have been an insufficient number of frail subjects in the sample to have accurately reflected this phenomenon.

When the demographic and health factors were analyzed for their associations with each other, there was a strong positive correlation between age and mental status ($r = .65$, $p = .008$), and a moderate negative correlation between dependency and mobility ($r = -.46$, $p = .04$). A chi square statistic was computed for gender and the four behavior categories, but no significant relationship was found. A chi square analysis also was

computed for the diagnosis and the behavioral categories; however, no significant relationships were found.

The correlation found between age and mental status, indicating that persons in the younger age brackets were more cognitively impaired, may explain the finding that decreased age is associated with endangering behaviors. This phenomenon may have been due not only to the increased physical threats these persons posed due to their presumed increased strength, but this younger group may represent more of the persons with dementia-related problems. This unexpected inverse association is partially explained by the presence of the sub-group of cognitively intact persons within the sample who had resided on the unit for several years prior to its becoming a unit with a focus on a behaviorally impaired population.

The inverse relationship between dependency and mobility supports the findings that link mobility to behaviors that necessitate some degree of physical capacity to harm or disturb others. Increased frailty (dependency) reduces a subject's mobility.

Findings for Research Question Three

What are the associations between the incidence, predictability and dangerousness of the behavioral categories and the incidence of neuroleptic administration? The results for this research question are found in Table 7.

Neuroleptics use was strongly associated with the frequency of *Endangering Self* and moderately associated with the frequency of *Disturbing Others* behavioral problem categories. Neuroleptic use was strongly associated with the predictability of behaviors for *Endangering Self* and the *Disturbing Others* categories. Neuroleptic use was also moderately associated with the predictability of behaviors for *Endangering Others* and

Table 7

Neuroleptic Use and the Frequency, Predictability, and Degree of Dangerousness for the

Four Behavioral Categories

Behavior	Frequency	Predictability	Dangerousness
Endangering others	r=36 n=24	r=.44* n=20	r=-.09 n=21
Endangering self	r=.61** n=21	r=.82** n=14	r=.71** n=19
Disturbing others	r=.47* n=21	r=.61** n=16	r=.53* n=15
Of concern to staff	r=.17 n=16	r=.51 n=13	r=.42 n=15

*Denotes significant at $p < .05$ and ** at $p < .01$, 2-tailed test.

Of Concern to Staff categories, although due to the small sample this latter correlation was

not statistically significant. It appears that predictability may be a critical variable in

medication usage (i.e., that a behavior becomes problematic enough for management by

medication when it is unpredictable).

Neuroleptic use was noted to be strongly associated with the degree of

dangerousness/disturbance for the categories of *Self Endangering* and *Disturbing* behaviors.

The absence of a statistically significant finding between neuroleptic use and degree of

dangerousness in the *Endangering Others* category is partially explained by the lack of data

within this category (i.e., evident in only 25 percent of the samole).

Statistically significant strong to moderate correlations were found between neuroleptic use and the frequency, predictability, and degree of dangerousness or disturbance for *Self Endangering* and *Disturbing* behaviors. The grouping or *clustering* phenomenon noted in Table 3 and supported in the literature of these two behaviors may account for this association (i.e., if these behaviors occur together, any neuroleptic used by the subject would appear to be related to each separate behavioral category). However, due to the small number of persons on neuroleptics in this sample, these can only be construed as tentative interpretations.

<div align="center">Findings for Research Question Four</div>

What are the associations between the use of neuroleptic medication and the health and demographic variables of subjects with behavioral problems? There were no statistically significant relationships found between these variables and neuroleptic use. Again, these results need to be interpreted cautiously because of the small number of subjects receiving neuroleptic medication in the sample. These results are shown in Table 8.

Table 8

Correlations Between Neuroleptic Use and Health and Demographic Factors

Age	Gender	Mental	Dx	Depend	Mobil
r=-.15	r=.26	r=.20	r=.19	r=.13	r=-.38
n=21	n=24	n=15	n=21	n=19	n=19

*Denotes significance at $p < .05$, 2-tailed test.

Findings for Research Question Five

Research Question 5 addressed the degree to which staff at the BNC adhere to the Guidelines for Neuroleptic Use. A review of the data relevant to Research Question 5 concerning patients receiving neuroleptic medication is found in Table 8. Average doses, the rate of compliance with BNC guidelines and the pattern of behavior problems are noted.

Subject 1 had an average dose of 25 mg per day throughout the study period. All 11 of the guideline criteria were followed during the documented period of medication usage. This subject's diagnosis was dementia with anxiety. She was 85 years of age, had a length of stay of 17 months, and a mental status score of 14. Her medication was changed three times during the study period. There was close adherence to the guidelines throughout these changes. She exhibited three out of the four possible categories of behavior problems, a high incidence for this sample.

Subject 2 averaged 45 mg daily during the study period. Nine of 11 criteria were followed; the post drug evaluations were non-applicable as this subject's medications were not altered during the study period. The subject was 83 years old and female. She had only resided at the BNC for nine months. Her diagnosis was dementia with a history of substance abuse. Her mental status was score was 17 and she demonstrated three out of the four possible categories of behavior problems.

Subject 3 received an average of 6 mg per day during the study period with six of the 11 criteria noted in the chart. This subject was an 82-year-old female. She had resided on the unit for four years and 10 months. Her diagnosis was schizophrenia and she had a mental status score of 11. Her medication was changed one time during the study period. Her behaviors fell into the same three behavior categories that Subject 2

Table 9

Adherence to BNC Guidelines for Subjects Using Neuroleptics

BNC Criteria	#1	#2	#3
Before Use			
Etiology (A)	+	+	+
Communication (I)	+	+	+
Environment (I)	+	+	+
Treatment (I)	+	+	+
Data (E)	+	+	+
During Use			
Diagnosis (A)	+	+	-
Titration (I)	+	+	-
Behv. Monitor (E)	+	+	+
Med. Monitor (E)	+	+	-
After Med. DC			
Titration (E)	+	+	-
Behv. Monitor (E)	+	+	-
Neuroleptic**	25mg	45mg	6mg
Beh. Pattern***	S/D/C	E/S/D/M	E/S/D

(A) = Assessment stage of nursing process.
(B) = Intervention stage of nursing process.
(C) = Evaluation stage of nursing process.

*Thorazine Equivalencies.
**E-endangering other, S-endangering self; D-disturbing, C-concern to staff, M-missing.

demonstrated. The lower rate of adherence to the BNC guidelines appeared to be related to the less frequent entries in the nursing notes, probably reflecting the staff's familiarity with the client and her perceived stability.

All three of these subjects exhibited some type of endangering behaviors. Two subjects exhibited the cluster phenomenon noted in which *Endangering Others*, *Endangering Self*, and *Disturbing* behaviors were combined. The mental status scores reflected a severe to moderate range of cognitive impairment; all three had an additional diagnosis or psychiatric problem noted besides the dementia or a low mental status score. The low dosages used with these subjects despite their multiple impairments is a tribute to the effectiveness of the nursing staff and their adherence to the BNC guidelines for neuroleptic use.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This descriptive study was conducted on 24 subjects residing in a long-term care facility affiliated with a university in rural Oregon. The incidence of neuroleptic use, behavioral problems, and related health and demographic factors were investigated along with the staff's adherence to the facility's guidelines for utilizing neuroleptic medication. The purpose of the study was to describe the behaviors that occurred within this population and to assess the effectiveness of using guidelines that stress alternative approaches to behavior management and ongoing monitoring of behavior problems. Five research questions were examined. The results are discussed below.

Summary and Recommendations

Research question one explored the incidence of 17 specific behavior problems, four categories of behaviors combining similar problems, and the individual patterns of these categories for each of the 24 subjects. Within each of the 17 behaviors, there was less than a 50 percent incidence of occurrence. The most frequently occurring behavior problem was *Resisting Care*. This is clinically significant as it is this type of compliance behavior that may be both a manifestation of neurological impairment as well as an indicator of a client's need for more autonomy, control, and/or self esteem. Especially in persons with cognitive impairment, promoting these types of competencies becomes a critical nursing intervention (Aasen, 1986). Hence, this type of behavior could also have received a high rating due to its problematic implications for staff. Future examinations of the specific behaviors involved in resisting care could assist clinicians in developing specific management strategies.

When the behaviors were combined into categories, the percentage of subjects exhibiting behaviors appeared to be at occurred in rates higher than noted in the literature. While the frequency of behavioral problem categories is higher in this sample than was found in the Zimmer (1984) study, this is partially due to the fact that his study was conducted on a random sample of patients in nursing homes, while this population was chosen for its expected high incidence of behavioral disorders. Caution also needs to be used in comparing this study with the Zimmer findings, as the categories utilized in the Gamroth instrument contain a different combination of the 17 specific behaviors. *Self Endangering* types of behaviors and behaviors *Of Concern to Staff* were the most common categories of behaviors noted. The higher concentrations of these behaviors may reflect a level of professional skill on this unit that prevents the escalation of behaviors into the more intrusive categories of *Disturbing to Others* or *Endangering to Others*.

The two categories of *Endangering* behaviors were noted in over 70 percent of the subjects, although this is a slightly inflated score as subjects could have behaviors in both categories. This finding supports the basic assumption of this study: that behavioral problems are a significant issue in long-term care facilities and that management of these serious problems needs to be closely examined.

The clustering phenomenon noted in the literature review of categories that occur together was replicated in this study (i.e., either or both of the *Endangering* behaviors occurred with *Disturbing* behaviors). This phenomenon indicates an interesting area of future research to more accurately identify this relationship. Do *Disturbing* behaviors precede and deteriorate into *Endangering* behaviors? Are these behaviors linked by the severity of the patient's impairment? Or, do the *Endangering* behaviors create closer

monitoring of the resident's actions and thus inflate scores in the more subtle areas of behavior problems?

Research question two addressed the association between these behavioral categories and the factors of age, gender, mental status, diagnosis, mobility, medication use, and dependency. Mental status was moderately associated in an inverse relationship (low mental status with high behavioral incidence) with the two categories of *Endangering* behaviors and also with the group of behaviors classified as *Of Concern*. Mobility was moderately associated with *Endangering* and *Disturbing* behaviors, indicating a relationship between increased physical mobility and the incidence of these behaviors. These two findings support the model proposed in the conceptual framework in which *competency* and *environment* are viewed as critical phenomenon for nursing assessment and intervention.

Psychiatric diagnosis and age were each associated with one category of behavior. Age was negatively associated with *Endangering Others* (i.e., being younger was associated with increased frequency of the behavior), and diagnosis was associated with behaviors categorized as *Of Concern*. The age factor may have been an extraneous factor since physical capacity to harm is related to age. Another explanation for this finding is that in this study, younger age was associated with more severe cognitive impairment, so that the younger age group may have demonstrated more dangerous behaviors related to their dementia.

The critical variable, neuroleptic use, was found in only 12.5 percent of this sample, that is, only three of the 24 subjects were receiving such medication. This percentage is far below all figures noted in the literature review. Several factors account for this low utilization. A new standard of practice regarding use of major tranquilizers

came into existence after the studies mentioned in the literature review were conducted but prior to this study. Many facilities anticipating federal regulations began reducing or lowering the dosage of neuroleptics. The BNC was a leader in this movement. Additionally, the presence of a part-time mental health specialist who has trained staff in behavior management and the titration of neuroleptic dosages is reflected in the infrequent use of neuroleptic medication to manage individual behavior problems. Further research is indicated to compare rates of behavior problems and the use of neuroleptics in other facilities that may not have a mental health program similar to that offered by the BNC. Another factor may be the BNC practice of using neuroleptics for short periods of time during which the behavior is monitored and then withdrawing persons from the medication as symptoms are managed, as opposed to the more standard practice of using neuroleptics over prolonged periods of time. A study covering a longer time frame might have verified this practice.

Research question three explored the associations between neuroleptic use and issues of incidence, predictability, and dangerousness of the four categories. The category of *Endangering Self* was strongly associated with neuroleptic use and *Disturbing Others* behaviors were moderately associated with its use. Predictability was significantly associated with three of the categories, and dangerousness was a significant factor in two. Further research on the interplay between predictability and perceptions of dangerousness/disturbance is indicated. The unusually low incidence of neuroleptic use in this sample call for cautious interpretation of these findings; however, trends are indicated that might be replicated in larger studies.

Research question four addressed the relationship between neuroleptic use and selected health and demographic factors. There were no statistically significant

relationships found, indicating that neuroleptic use was not associated with any of the above factors in this sample.

Research question five examined whether or not the BNC Guidelines for Neuroleptic Use were followed for the three subjects receiving neuroleptics. Several patterns emerged that due to the small sample size cannot be generalized, but if interpreted as pilot study data indicate significant trends for further research. These three subjects all had indicators of dementia plus one other psychiatric diagnosis. This combination may be critical in identifying individuals at high risk of behavior problems and subsequent treatment with neuroleptics. All three demonstrated behaviors in three out of the four categories of problems. This indicates not only the clustering phenomenon and the severity of their behavioral disturbance but calls into question the effectiveness of neuroleptic medication as a management tool. Butler (1987) noted this same phenomenon of higher incidence of behavior problems in a medicated group. Barnes (1982) noted that the initial severity of behavior problems was a positive indicator for response to neuroleptic use (i.e., that the degree of problematic behavior seen in these patients might have been significantly higher without its use). These findings underscore the need to utilize the conceptual model proposed by this study that emphasizes a triad of interventions. The excellent compliance rate with the BNC guidelines shown in all three of these cases is probably partially responsible for the low dosages used by these persons.

Limitations

A critical problem with this study was the amount of missing data. The Behavioral Scale tool needs to include options for non-existent behaviors in the sections rating the predictability and severity of the behavior to decrease missing data. Currently this option only exists for the frequency section. It is presumed that the raters left items blank when

rating non-existent behaviors on severity and predictability. Utilizing a chart review for the health and demographic factors was not as reliable as conducting a current assessment of each subject. The unavailability of records to the research containing health and demographic data on the three subjects who had died increased this problem. Using data from three secondary sources resulted in missing data on different subjects, further limiting the ability to draw conclusions from this study.

Another problem was the lack of a true indicator of the subjects' functional capacity. Combining acuity scores and the MMSE scores did not give an accurate picture of clients' competencies for handling stress, problem solving, communicating, and comprehending their world. A better tool may have enabled a closer examination of the link between competencies and behavioral problems.

Further, inter-rater agreement studies on the behavioral profile tool, between differing levels of staff and/or persons unfamiliar with the clients, would substantiate the tool's effectiveness. The staff on this unit may view and define behavioral problems with a greater degree of tolerance than a staff or observer with less exposure to and education regarding behaviors. Registered Nurses were the raters in this study. Nurses Aides are the staff who have the most contact with patients, the most involvement with behavior problems when they occur, and the least amount of training with which to approach such problems. Future studies using this group as raters may find a higher incidence of behavior problems.

Conclusion

The relatively low incidence of specific behavior problems and neuroleptic use in this locked long-term care unit is surprising. Several factors may account for this phenomenon and some of the other significant results of the study:

1.   The presence of a mental health specialist within this facility may have given the staff on this unit the interpersonal and environmental management skills that are critical variables in promoting competencies and thus reducing the incidence of behavior problems;

2.   The existence of a specific standard of practice (BNC guidelines found in Appendix I) associated with the use of neuroleptics may have promoted the use of effective alternative management approaches designed to promote competencies and reduce environmental press. The correlation between predictability and neuroleptic use supports the need for this type of approach.

3.   Discouraging the use of neuroleptic medication as the first and only response to behavior problem management reduces its inappropriate use, thus decreasing the incidence of behavioral problems (sedation, withdrawal, agitation, restlessness, confusion) associated with its side effects and overuse.

4.   The findings that link mobility, mental status, diagnosis, and age with some kinds of behavior problem categories support the conceptual model and stress the need to further train staff in alternative management strategies that may more effectively address these factors.

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Appendix A

Omnibus Budget Reconciliaton Act of 1987

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Care Financing Administration

42 CFR Parts 405, 442, 447, 483, 488, 489, and 498

[BERC-396-FC]

Medicare and Medicaid; Requirements for Long Term Care Facilities

AGENCY: Health Care Financing Administration (HCFA), HHS.

ACTION: Final rule with comment period.

SUMMARY: These final regulations with comment period revise and consolidate the requirements that facilities furnishing long term care are required to meet to participate in both the Medicare and Medicaid programs. They contain revisions to our proposal of October 16, 1987 (52 FR 38582) based on comments submitted by the public.

Long term care facilities include both skilled nursing facilities (SNFs) and intermediate care facilities (ICFs) and, as of October 1, 1990, nursing facilities [NF] created by the Omnibus Budget Reconciliation Act of 1987 (OBRA '87). Under these regulations, one set of requirements replaces the existing separate ones for SNFs participating in the Medicare program, and for SNFs and ICFs participating in the Medicare program. (After October 1, 1990, SNFs, and ICFs participating in the Medicaid program will be known as nursing facilities (NFs).) Although some essential distinctions imposed by the statute remain, these new requirements reflect common needs in SNFs and ICFs. These regulations do not apply to ICFs for the mentally retarded or persons with related conditions.

DATES: *Effective Date:* These regulations are effective August 1, 1989, except when specified otherwise. State agencies have until 90 days after receipt of a revised State plan preprint to submit their plan amendments and required attachments. We will not hold a State to be out of compliance with the requirements of these final regulations if it submits the necessary plan material by that date.

Comment Date: To be considered, comments must be mailed or delivered to the appropriate address, as provided below, and must be received by 5:00 p.m. on May 3, 1989.

ADDRESSES: Mail comments to the following address:

Health Care Financing Administration, Department of Health and Human Services,
Attention: BERC-396-FC.

P.O. Box 26878,
Baltimore, Maryland 21207.

If you prefer, you may deliver your comments to one of the following addresses:

Room 309-G, Hubert H. Humphrey Building,
200 Independence Avenue, SW., Washington, DC, or,
Room 132, East High Rise Building, 6325 Security Boulevard, Baltimore, Maryland.

In commenting, please refer to file code BERC-396-FC. Comments received timely will be available for public inspection as they are received, beginning approximately three weeks after publication of this document, in Room 309-G of the Department's offices at 200 Independence Avenue, SW., Washington, DC, on Monday through Friday of each week from 8:30 a.m. to 5:00 p.m. (phone: 202-245-7890).

Organizations and individuals desiring to submit comments on the reporting requirements discussed under the section on "Reporting Requirements" of this preamble should direct them to the Health Care Financing Administration at one of the addresses cited above, and to the Office of Information and Regulatory Affairs, Att.: Allison Herron, Office of Management and Budget, New Executive Office Building (Room 3208), Washington, DC 20503.

FOR FURTHER INFORMATION CONTACT: Samuel W. Kidder, (301) 966-4820.

SUPPLEMENTARY INFORMATION:

I. Background

Prior Rulemaking Activity

On October 16, 1987 (52 FR 38582), we published a proposed rule (NPRM) that would establish consistent requirements for SNFs under Medicare and SNFs and ICFs under Medicaid. The purpose of the revisions is to focus on actual facility performance in meeting residents' needs in a safe and healthful environment, rather than on the capacity of facility to provide appropriate services. The result of this change in focus is to enforce requirements from the perspective of quality of care and life for long term care residents, not only under Medicare and Medicaid, but generally, since most of these requirements pertain to all the residents of an SNF, ICF or NF. We expect that these revisions will simplify Federal enforcement procedures by using a single set of requirements, which apply to those activities common to all facilities.

In the background discussion in the preamble to the NPRM, we traced the development of different statutes and regulations that established requirements for SNFs and ICFs under Medicare and Medicaid leading to the development of the existing regulations, which were proposed in 1974. Key elements of that discussion are:

• The emphasis of current rules is on process, not outcomes. Consequently the potential to furnish quality care, rather than actual rendition of care is emphasized, with undue reliance placed on staff qualifications.

• Medicaid SNFs must meet Medicare SNF requirements. Questions have been raised whether rules established primarily for post-hospital care are still relevant, considering changes in health care delivery.

• A single facility may include both SNF and ICF beds with differing levels of care and patients transferring from more intensive to less intensive care. Current rules are too inflexible to recognize such changes.

• Current rules are difficult to administer, requiring multiple surveys because State program needs differ from Federal program needs.

• Some requirements are detailed and some are not.

In 1983, we contracted with the Institute of Medicine (IoM), a group chartered by the National Academy of Sciences, to study Federal regulations that might enhance the ability of the regulatory system to assure that residents receive satisfactory care. The study concluded in 1986 with a report that stressed the need to develop new regulations that focus on actual delivery of care and the results of that care. Based on those findings, we developed proposed regulations revising the SNF and ICF requirements. Our proposals largely reflected acceptance of the 1986 Institute of Medicine study, findings and recommendations. We accepted virtually all the IoM recommendations that could be implemented under existing provisions of the Act.

Legislative Revisions

On December 22, 1987, the Omnibus Budget Reconciliation Act of 1987 (OBRA '87), Pub. L. 100-203, was enacted, which included extensive revisions to the Medicare and Medicaid statutory requirements for nursing facilities. These revisions were based on the IoM recommendations that we used in developing the NPRM. These revisions were made with knowledge of HCFA's rulemaking activities and followed extensive discussions with HCFA staff and other interested parties. The new statutory provisions are considerably more detailed than the previous provisions, reflecting the intent

Appendix B

Behavioral Scale for Patients in Long-term Care

BEHAVIORAL SCALE FOR PATIENTS IN LTC FACILITIES

The following instrument is to be used in rating patient behaviors that require nursing intervention. For each patient evaluated, please circle one response under each catagory (Frequency, Predictability and Dangerous) below. Please consider the patient's behavior on a 24 hour basis to include all shifts. This may require a check with associate nurses on other shifts. Thank you for your help on this project.

Frequency

0) Does not exhibit
1) 1-3 x/month
2) 1-2 x/week
3) 1 x/day
4) several x/day

Predictability

On a scale of 1 (predictable) to 5 (unpredictable), rate the predictability of the behavior.

Dangerous

On a scale of 1 (slightly dangerous) to 5 (very dangerous), rate the potential danger of the behavior to others when it occurs.

I. Endangering Others:

1. Exhibits physically aggressive behaviors that endanger others such as striking, biting, kicking, etc.

   Frequency: 0 1 2 3 4
   Predictability: 1 2 3 4 5
   Dangerous: 1 2 3 4 5

2. Exhibits behaviors that indirectly endanger others such as unfastening others' restraints, dangerous smoking habits, trying to feed others or offering food to others on restricted diets, etc.

   Frequency: 0 1 2 3 4
   Predictability: 1 2 3 4 5
   Dangerous: 1 2 3 4 5

II. Endangering Self:

3. Exhibits physically self-abusive behaviors such as scratching, banging head, removing catheter, I.V., feeding tubes, dressings, etc.

   Frequency: 0 1 2 3 4
   Predictability: 1 2 3 4 5
   Dangerous: 1 2 3 4 5

4. Ambulates (on foot or by W/C) into unsafe areas within the facility, wanders away from the facility or unties own restraints and ambulates at the risk of injury.

   Frequency: 0 1 2 3 4
   Predictability: 1 2 3 4 5
   Dangerous: 1 2 3 4 5

5. Physically resists care such as spitting out medication, refusing to eat, refusing to bathe, non-compliance, etc.

   Frequency: 0 1 2 3 4
   Predictability: 1 2 3 4 5
   Dangerous: 1 2 3 4 5

Frequency

0) Does not exhibit
1) 1-3 x/month
2) 1-2 x/week
3) 1 x/day
4) several x/day

Predictability

On a scale of 1 (predictable) to 5 (unpredictable), rate the predictability of the behavior.

Dangerous

On a scale of 1 (slightly dangerous) to 5 (very dangerous), rate the potential danger of the behavior to others when it occurs.

6. Exhibits other potentially self endangering behaviors such as verbal suicidal expression, severe agitation, etc. Please list.

Frequency	Predictability	Dangerous
0 1 2 3 4	1　2　3　4　5	1　2　3　4　5

III. Disturbing to Others:

Frequency

0) Does not exhibit
1) 1-3 x/month
2) 1-2 x/week
3) 1 x/day
4) several x/day

Predictability

On a scale of 1 (predictable) to 5 (unpredictable), rate the predictability of the behavior.

Disturbing

On a scale of 1 (slightly disturbing) to 5 (very disturbing), rate the potential disturbance of the behavior to others when it occurs.

Item	Frequency	Predictability	Disturbing
7. Exhibits verbally noisy, abusive behaviors.	0 1 2 3 4	1　2　3　4　5	1　2　3　4　5
8. Ambulates into others' rooms, occupies others' places in the dining room, crawls into others' beds, etc.	0 1 2 3 4	1　2　3　4　5	1　2　3　4　5
9. Exhibits physically disruptive behaviors (throwing food and objects, lying on floor, etc.)	0 1 2 3 4	1　2　3　4　5	1　2　3　4　5
10. Takes others' belongings and/or food.	0 1 2 3 4	1　2　3　4　5	1　2　3　4　5
11. Urinates/defecates inappropriately (urinates in waste baskets, smears feces, etc.	0 1 2 3 4	1　2　3　4　5	1　2　3　4　5
12. Exhibits sexual behaviors that are disturbing to others such as exposing self, masturbating publicly, touching others inappropriately, etc.	0 1 2 3 4	1　2　3　4　5	1　2　3　4　5

13. Exhibits other bothersome behaviors such as taking off clothes, making statements of requests repetitively, other repetitive behaviors, etc.

Frequency
0) Does not exhibit
1) 1-3 x/month
2) 1-2 x/week
3) 1 x/day
4) several x/day

0 1 2 3 4

Predictability
On a scale of 1 (predictable) to 5 (unpredictable), rate the predictability of the behavior.

1 2 3 4 5

Disturbing
On a scale of 1 (slightly disturbing) to 5 (very disturbing), rate the potential disturbance of the behavior to others when it occurs.

1 2 3 4 5

IV. Non-endangering or Disturbing to Others (but of concern to staff)

14. Exhibits reclusive behaviors such as withdrawn behavior, refusing to leave room, refusing to socialize, etc.

Frequency
0) Does not exhibit
1) 1-3 x/month
2) 1-2 x/week
3) 1 x/day
4) several x/day

0 1 2 3 4

Predictability
On a scale of 1 (predictable) to 5 (unpredictable), rate the predictability of the behavior.

1 2 3 4 5

Concerned
On a scale of 1 (slightly concerned) to 5 (very concerned), rate the potential concern of the behavior to others when it occurs.

1 2 3 4 5

15. Hoards food, clothes, etc.

0 1 2 3 4

1 2 3 4 5

1 2 3 4 5

16. Exhibits excessive affect such as tearfulness, laughter, etc.

0 1 2 3 4

1 2 3 4 5

1 2 3 4 5

17. Exhibits other behaviors that are of concern to staff. Please list.

0 1 2 3 4

1 2 3 4 5

1 2 3 4 5

Appendix C

Benedictine Nursing Center Guidelines for Neuroleptic Use

Appendix C

Benedictine Nursing Center Guidelines for Neuroleptic Use

SUGGESTED GUIDELINES FOR USE OF
ANTIPSYCHOTICS IN LONG TERM CARE SETTING

This category of drugs has powerful side effects and therefore should be administered appropriately and with care. The following guidelines are proposed to insure judicious use of these medications (Haldol, Mellaril, Navane, Trilafon, Thorazine, Stelazine, etc). Medications should be used as a last resort to control behaviors. Prior to initial use of medications there should be documented evidence of:

a) attempts to assess the underlying cause of the problem

b) alternative approaches tried, such as skillful communication and interaction, changing the environment, treatment of acute illness

c) a specific diagnosis, medical and/or nursing in chart associated with the use of the medication

d) behavioral flow sheet to provide data base for assessment of behavioral response to use of medication

e) a plan of use of medication - titrating the dose according to need

After initiating medication there should be documented evidence of:

a) evaluation of the effectiveness made in progress notes

b) the effectiveness, possible side effects and continued use of the medication reviewed at least every three months

c) if it is determined that it may no longer be needed, than a plan should be initiated to titrate the person off the medication; it is helpful to do this by dropping the dose by 1/4 to 1/3 of the daily amount for 1-2 steady states and repeat this process until patient is off drug

d) the behavioral flow sheet should be continued during this process and for approximately 1-2 months after drug is stopped.

Revised 3/20/89

Adherence to BNC Guidelines

_____ Subject (NE usage plus behavioral symptomology)

Before NE Usage

1. Check for etiology _____ (assess.)

2. Attempts at interaction/communication _____ (interv.)

3. Environmental alterations _____ (interv.)

4. Medical tx _____ (interv.)

5. Data base _____ (eval.)

During NE Use

6. Diagnosis _____ (assess.)

7. Titration _____ (interv.)

8. Beh. monitoring _____ (eval.)

9. Med. monitoring q 3 mos. _____ (eval.)

After NE Disc.

10. Titration _____ (eval.)

11. Beh. monitor 1-2 mos. _____ (eval.)

Appendix D

Behavior Management Chart

Figure 1. Behavior Management Chart and Coding Examples

Day of the Month

Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
8:00 -10:00 am																															
10:00 – noon																															
noon – 2:00 pm																															
2:00 – 4:00 pm																															
Nurse's Initials																															
4:00 – 6:00 pm																															
6:00 – 8:00 pm																															
8:00 –10:00 pm																															
10:00 – midnoc																															
Nurse's Initials																															
midnoc – 2:00 am																															
2:00 – 4:00 am																															
4:00 – 6:00 am																															
6:00 – 8:00 am																															
Nurse's Initials																															

Coding Scheme: Example 1

0 - sleeping
1 - quiet, awake
2 - restless in chair/bed
3 - attempting to remove restraints
4 - combative

Coding Scheme: Example 2

0 - no tearful episodes in conversation
1 - tearful episodes in conversation

Coding Scheme

0 - cooperates with care
1 - mild resistance to care activities
2 - moderate resistance to care activities
3 - severe resistance to care activities
4 - combativeness, striking out with care activities

Appendix E

Medication Administration Record

MEDICATIONS AND TREATMENTS

ALL NURSES SIGN ON REVERSE SIDE	HOUR GIVEN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

MONTH & YEAR

MEDICATIONS REVIEWED BY

DATE REVIEWED

Benedictine Nursing Center
Mt. Angel, Oregon 97362
Phone: (503) 845-6841

PATIENT

RECORD NO.

Appendix F

Level of Care Acuity Sheet

BENEDICTINE NURSING CENTER   DATE   LEVEL OF CARE

Level of Care

Name _____

Unit _____

Patient Number _____

I. ADL Management (Record one response for each and
check any additional items indicated)

    A. Nutrition/eating tube feeding
        1. independent
        2. assistance-needs help, coaxing, supervision
        3. dependent feeding

    B. Dressing
        1. independent
        2. assistance-needs help in selecting clothing, dressing or needs
           encouragment,coaxing
        3. dependent

    C. Personal hygiene
        1. independent-bathes all body except back and performs hygiene if
           equipment set out
        2. assist, able to partial bathe, needs help with other hygiene
        3. dependent, needs bathing, shaving and skin care

    D. Mobility/activity
        ambulatory ___ bedfast ___ chairbound ___ contractures ___
        1. independent-controls movements at will, can transfer with help
        2. assistance-needs help changing position. Can walk or transfer
           with help, may need restraint at night
        3. dependent w/c patient, needs restraints, unable to get from one
           place to another, more than 1 person transfer

    E. Bowel and bladder control
        1. independent-continent
        2. assist-occasional incontinence, can't manage cath or colostomy
        3. dependent-no control, can't manage cath or colostomy, indicate
           cath_____ colostomy_____

    F. Cognitive Status
        0 - Not confused or disoriented
           1. Confused or disoriented
           2. Confused and disoriented
           3. Behavior problems

Level
1. skilled, dependent 4-6 ADL's
2. skilled, dependent 0-3 ADL's
3. dependent 4-6 ADL's
4. dependent 0-3 ADL's or assist in at least 3
5. dependent 0 ADL's, Independent in at least 4

Date							
Skilled							
A.							
B.							
C.							
D.							
E.							
F.							
Level							
Signature							

Comments:

Appendix G

Mini-Mental Status Exam

Appendix H

Coding Sheet and Definitions

1.   Subject #_____

DEMOGRAPHICS
2.   Age __ __
3.   LOS, months __ __ __
4.   Gender __ 0=male, 1=female

HEALTH FACTORS
DSM 3 diagnosis 0=yes, 1=no
5.   Dementia__ 6. Affective__ 7. Schizo.__ 8. Sub.
Abuse__ 9. Other__
10. Mental Status__
11. Mobility__ 1=independent, 2=assisted, 3=dependent
12. Level of Care__ 1=skilled 4-6ADL, 2=skilled 0-3ADL,
3=dependent 4-6ADL, 4==dependent 0-3 ADL

NEUROLEPTIC ADMINISTRATION
13. Neuroleptic__ 0=yes, 1=no
Dosage, average received during each week. 14.__,
15.__, 16.__, 17.__ 18.__, 19.__, 20.__, 21__, 23.__, 24.__,
25.__, 26.__
Duration __ __ # days

BEHAVIOR PROFILE
Endangering Others
     27. Frequency   v2, 5
     28. Predictibility   v3, 6
     29. Dangerousness   v4, 7
Endangering Self
     30. Frequency   v8, 11, 14, 17
     31. Predictibility   v9, 12, 13, 15, 18
     32. Dangerousness   v10, 13, 16, 19
Disturbing Others
     33. Frequency   v20, 23, 26, 29, 32, 35, 38
     34. Predictibility   v21, 24, 27, 30, 33, 36, 39
     35. Disturbing   v22, 25, 28, 31, 34, 37, 40
Non-Endangering or Disturbing
     36. Frequency   v41, 44, 47, 50
     37. Predictibility   v42, 45, 48, 51
     38. Disturbing/Concern v43, 46, 49, 52

DEMOGRAPHIC

Age, gender and birthdate. Using # months from beginning of study 5/1/89
LOS, length of stay, # of months rsidence at the nursing center

HEALTH FACTORS

Psychiatric didagnosis, list the related DSM 3 diagnoses.
Mental status, score on the mini mental state during study period. Score/# items completed
Level of Care, describe ADL score, scale 1 that reflects overall degree of dependency on nursing care.
Mobility, list mobility level, item D on level of care acuity scale.

NEUROLEPTIC ADMINISTRATION

Neuroleptic, presence of order during study period, converted into 100 mg. thorizine equivalences.
Dosage, average dose for each week of study period.
Duration, total 3 days of use within study period.

BEHAVIOR PROFILE

See Appendix B for definition of terms. Each behavior is rated according to frequency, predictability and degree of dangerousness, disturbance or concern related to the specific behavior.
Endangering others, 2 types of behaviors rated
Endangering others, 4 types of behaviors rated.
Disturbing to others, 7 types of behaviors rated.
Non-endangering or disturbing but of concern to staff, 4 types of behaviors rated.
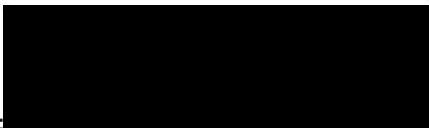
AN ABSTRACT OF THE
MASTER'S RESEARCH PROJECT

Megan Hornby

For the MASTER OF SCIENCE

Date of receiving this Degree: June 1990

Title: NEUROLEPTIC USE IN THE MANAGEMENT OF BEHAVIORAL
PROBLEMS IN A LONG-TERM CARE FACILITY

Approved: _____
Beverly Hoetter, RN, D.N.Sc., Thesis Adviser

This descriptive study examined the incidence of neuroleptic use, behavioral

problems, and related health and demographic factors in a long-term care facility. The

study also reviewed the staff's adherence to the facility's guidelines for utilizing neuroleptic

medication. The purpose of the study was to describe the behaviors that occurred within

a specific population and to assess the effectiveness of guidelines that stressed a nursing

process approach to the management of behavior problems.

The data were collected on a convenience sample of 24 residents who resided on a

secured unit at a licensed community-based nursing home. The incidence of 17 behavioral

problems, their predictability, and severity was examined using an observational scale. The

health factors of neuroleptic use, mental status, psychiatric diagnosis, degree of

dependency in activities of daily living, and mobility were examined using data from

medical charts and an acuity scale.

Five research questions were addressed and the demographic profile of the sample

described.

1.   What behavior problems existed among the patients on the study unit? (a) What was the frequency of the individual behavior problems and categories of behavior problems classified by the Behavioral Scale for Patients in LTC Facilities? (b) What was the behavioral problem profile for patients experiencing one or more behavior problems?

2.   What were the relationships between the behavioral problem categories and selected health and demographic variables?

3.   Were there differences in the type, frequency, predictability, and severity of behavior problems displayed by patients receiving neuroleptics compared to patients with behavioral problems not receiving neuroleptics?

4.   Were there differences in the demographic variables and health factors of patients with behavioral problems who did and did not receive neuroleptic medications?

5.   For patients receiving neuroleptics, to what extent were the BNC guidelines utilized in the assessment, intervention, and management of behavior problems?

Results indicated that *Self Endangering* and behaviors *Of Concern to Staff* were the most noted categories of behaviors. *Resisting Care* and *Reclusive* behaviors were the most frequent specific behaviors. Behaviors in the *Disturbing* category occurred with behaviors in the *Endangering Others* or *Endangering Self* categories.

The health factor of mental status was associated with both the *Endangering* categories and behaviors *Of Concern to Staff*. Mobility was associated with the *Endangering* and *Disturbing* categories. Age factors were associated with the *Endangering Others* category and diagnosis with behaviors *Of Concern to Staff*.

The incidence of neuroleptic use in the sample was lower than expected for a long-term care population. Its use was associated with the *Endangering Self* and *Disturbing Others* behavioral categories. Predictability was associated with neuroleptic use in three

behavioral categories, and severity was associated with its use in two categories. The adherence to the BNC guidelines was high.

This study concluded that the low utilization of neuroleptics for a population that exhibited a range of psychiatric diagnosis, a high degree of mobility, cognitive impairments, and multiple behavior problems may have been related to: (a) the presence of a mental health specialist who provided the staff with training in alternative management approaches to behavioral problems; and (b) a standard of practice that combined neuroleptic use with alternative interventions and an ongoing evaluation of behavior. The health factors of mental status and mobility seemed to be critical variables to consider in developing alternative management strategies. Assessment of behavioral type, predictability factors, degree of dementia, and the multiplicity of diagnoses may alert nursing staff to the types of behaviors and patients that are in most need of careful pharmacologic and environmental interventions.