Prevalence of Confusion in Elderly Hospitalized Patients

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Abstract

Incidence and prevalence of confusion in a sample of hospitalized patients over age 60 was studied in a general hospital in northern Michigan. Fifty-five out of 99 patients studied during two study periods of 22 and 24 days respectively were found to have acute confusion. Data were gathered by the use of interviews, chart review, and observation. The daily prevalence rate was 5.5% and similar prevalence and severity was found on all three shifts. Only five of the 55 patients were labeled confused on admission and average onset was six and one-half days after admission. A high nurse-patient ratio and “no nursing station” concept of care was credited for the low incidence of acute confusion.

Problem

Elderly patients frequently are labeled “confused” as a result of behavior that is disturbing to the nursing staff caring for them or because they are “difficult” to manage. After observing several examples of this labeling process in a clinical setting, the researchers began to wonder if other needs were being recognized and met, what the nurses saw as the causative factor of the confusion, and if they recognized the effect of their response on the patient’s improvement or lack of improvement. There was concern that elderly patients, who may or may not have been “confused,” were being labeled as such. Further, there was concern that this labeling contributed to sustained confusion status, which staff members then anticipated as the behavior norm of elderly patients.

Concurrently, the researchers became aware of an opportunity to participate in the collaborative research component of the Conduct and Utilization of Research in Nursing (CURN) project sponsored by the University of Michigan, Institute for Social Research, Michigan State University School of Nursing, and the Michigan Nurses Association. An application was made for designation as one of the collaborative research teams and a grant to develop a research proposal related to these concerns was awarded.

Purpose of Study

The problem was based on the perception that there was an unnecessary incidence, prevalence, and severity of confusion among elderly patients. It was believed that there were factors contributing to confused states that were susceptible to nursing intervention. CURN support was requested for more systematic, epidemiological study of our problem, both to better document onset, duration, and severity and to identify potential contributing factors subject to nursing intervention. A subsequent proposal would be submitted for testing the effects of intervention.

Review of the Literature

The term confusion has not been defined clearly and definitions which do exist differ markedly. Definitions found in the literature are based on decline of mental activities, inappropriate communication, and interpretations of behavior made by nursing staff and on probable causative factors such as drugs and specific diseases. Very few papers report prevalence, incidence,
duration, and severity of confusion.

Charatan1 established confusion as a significant problem of the elderly: "In our times, with 1000 Americans reaching the age of 65 every day, acute confusion is an increasing common problem."

Barnes2 defined confusion as "behavior which appeared illogical to the nursing staff," such as jumbling of information. Many define confusion in terms of manifested behaviors or a mental disorder. In these cases, the definitions include such manifestations as wandering behavior, talking incoherently, withdrawal, breaking off relationships, reduced perceptiveness and attention span, and the inability to identify with all aspects of the immediate situation. Thorn2 differentiates between mild, moderate, and severe states of confusion in terms of degree of attentiveness, coherence, distractability; orientation to time and place; and ability to converse.

Although the pathophysiology of confusion is not fully understood, Birren and Schaie3 state that about 10 to 20% of the elderly people who have organic brain syndrome have a reversible form of confusion. They suggest this is due to "temporary malfunctioning of a significant proportion of cortical cells" as a result of drug intoxication or metabolic disorder. Birren and Schaie classify the "critical issues" as consisting of reversibility versus irreversibility, severity, duration, distribution, and progression. Acute brain syndrome is synonymous with acute confusional state and is defined by Reigel5 as "confusion, disorientation or delirium abrupt and recent in onset, possibly associated with alterations in consciousness and physiologic function."
The patient may be inattentive, dazed, stuporous, restless, agitated, or excited.

Confusion also is defined in terms of etiology. Organic confusion, as defined by Morris and Rhodes4, is a mental disorder related to physical causes such as electrolyte disturbances, infectious processes, cerebral disorders, drug toxicity, or respiratory diseases— the prominent features being impairment of the recent memory and disorientation.

Wolanin7 attempted to define confusion in the elderly based on the caregiver's perception of the client's behavior. Thirty elderly nursing home residents over the age of 65, who the staff labeled as confused, were chosen for this study. Seventy percent of the residents had organic brain syndrome or disease. Data were gathered from nurses' and physicians' written records as well as from taped interviews with staff. Observations that indicated confused behavior, according to the caregiver's perception of the event, fell into two categories—cognitive and social inaccessibility. Cognitive inaccessibility referred to intellectual deficits. Social inaccessibility referred to behaviors that were institutionally disruptive activities.

The results of this study suggest that the use of the term confusion is based equally on subjective feelings and objective observations and that its use varies depending on the caregiver. Wolanin also found that the nursing diagnosis of confusion differed from the medical diagnosis of organic brain syndrome. Patients labeled as confused by nurses included patients with acute brain syndrome and those with other diagnoses as well as those who were diagnosed as having organic brain syndrome. In her book, Wolanin defined confusion "as a condition characterized by the client's disorientation to time and place, incongruous conceptual boundaries, paranormal awareness, and seemingly inappropriate verbal statements that indicate memory defects."

From studying physician's records, Wolanin also found that physicians' attitudes show that confusion is being seen as a treatable "brain failure," a symptom related to a pathological state rather than an irreversible disease. Terminology such as organic brain syndrome and senile dementia are being replaced by terms such as "brain failure" and "poor cerebral support" by those who treat elderly people.

Several methods have been employed to collect data about the mental status of the elderly person. Some of the suggested methods and tools are a recall test for mental acuity,3 the "Geriatric Rating Scale,"4 a Confusion Assessment Schedule,9 functional assessment of abilities,10 Short Portable Mental Status Questionnaire,11 Patient Classification for Long-Term Care,12 the Ward Function Inventory Scale,13 and the Reality Orientation Information Sheet.14 Several of these methods and tools relate to evaluating the patient's ability to perform activities of daily living and to measuring orientation and memory.

Slater and Lipman10 used the Confusion Assessment Schedule to measure orientation and memory. At the completion of the interview, attendants were asked to complete a series of assessment scales dealing with disorientation, activity, and behaviors, and to give an overall assessment of confusion—saying whether the residents were rational, moderately confused, or severely confused. Analysis of the data proved there was intercorrelation between the various tests. The findings show that if a person's behavior is labeled confused as a result of verbal and spatial behavior, then the person is spatially confused. In terms of communication, the person then is segregated from the "nonconfused." This segregation correlated positively with the staff definition, and the care they provided tended to facilitate it. Patients who were not confused but were evaluated as being confused because they exhibited evidence of an attribute of confusion became one of "the confused." The authors emphasize the need to rectify the stereotype of the elderly, especially the self-fulfilling effect, through educational theory and clinical practice components of training programs.9

Two studies conducted on elderly hospitalized patients that pertain to assessment of acute confusional states and appropriate nursing interventions were found. Williams, et al.15 conducted a study on elderly hip-fractured patients to determine whether nursing activities are associated with occurrence of acute confusional states, and the relationship of these activities to the patients' postoperative mental status. Ninety-one patients were interviewed and tested on the first, third, and fifth postoperative days using a variety of tools to test memory,
orientation, perception, and ability to follow instructions. Predictors of postoperative confusion were found to be preoperative confusion (on or after admission), presence of postoperative urinary problems and limited mobility, and/or absence of clocks and television. The major nursing intervention was reorientation, explanation of confusion, and relatively frequent use of restraints.

Dodd discusses assessing the mental status of hospitalized patients and presents a data collection tool that differentiates between orientation, confusion, disorientation, and delirium. An interview is conducted in which the patient is asked to respond to a series of questions regarding knowledge, pain being experienced, and the ability to perform tasks upon request. Dodd points out the importance of modifying the questions depending upon the patient's ability to communicate, physical status, and environmental stimuli to facilitate orientation such as clocks, calendars, and other factors. For this tool, there is no numerical score, but mental status is reflected by the number of check marks that occur in any one category.

Methodology

For the purpose of this study, the following definition of confusion was adopted: Confusion is a state of disorientation; a disturbance of consciousness in the sense that awareness of time, place, or person is unclear. Confusion may be occasioned by organic or psychic causes. Confusion is a complication or problem secondary to a primary disease or related to other factors in which the patient is in a state of transient mental disorder that is abrupt in onset. The intent was to exclude chronic or irreversible confusion. The term elderly was defined as those persons 60 years of age and older.

In the initial stages of this study, the intent was to identify a reliable means of determining the presence of confusion and determine which of all suspected causal factors that appear in the literature are actually predictors of confusion. The approach to assessment of confusion involved three data collection tools. The first was an interview tool to

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<th>FIGURE 1</th>
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<tbody>
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<td>NORTHERN MICHIGAN HOSPITALS, INC.</td>
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<tr>
<td>DEPARTMENT OF NURSING SERVICE</td>
</tr>
<tr>
<td>C.U.R.N. PROJECT</td>
</tr>
</tbody>
</table>

**ASSESSMENT OF MENTAL STATUS**

**INSTRUCTIONS**

1. Read the behavior to be observed.
2. Test the patient for the behavior.
3. Check YES or NO to indicate if the category does or does not fit the patient's response. There should be only one check mark for each question.
4. After assessing the patient, tally the check marks at the bottom of the YES and NO columns.

**Behavior Observed**

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patient knows:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) she/he is in a hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) the name of the hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) who is the President of the U.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) the month of the year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) name of the city/town she/he is presently in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) capital of the state she/he is in</td>
<td></td>
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</tbody>
</table>

If two or more wrong on 1-a - 1-f answer remaining questions.

2. Patient can recognize visual stimuli:
   - a) responds correctly to varying numbers of fingers held up |   |   |
   - b) immediate environment (flowers, water pitcher, clock) |   |   |

3. Patient can recognize tactile stimuli:
   - a) patient responds to tactile stimuli to an appropriate degree (e.g., does not recoil or withdraw; does not become combative) |   |   |

4. Patient's memory is intact—recent memory (last 4 hours)
   - a) remembers last meal |   |   |
   - b) remembers colors |   |   |
   - Intermediate and long-term memory (beyond last 4 hours)
     - a) patient's birth date |   |   |
     - b) place of residence |   |   |
     - c) persons resides with |   |   |

5. Patient performs tasks on request:
   - a) touch nose with index finger |   |   |
   - b) stretch out arms with palms up |   |   |

**TOTALS**

Overall, does the evaluator consider this patient confused?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

MILD

MODERATE

SEVERE

CHRONIC

ACUTE

What facts lead you to this conclusion
determine the presence of confusion, "Assessment of Mental Status," (Figure 1) based on the tool reported by Dodd and others.

The tool originally contained 22 items but was modified in several areas, reducing the total number of items to 16. In addition to these 16 items, the interviewer was asked for an impression of presence of confusion and, if present, to note severity and identify it as chronic or acute. Facts that led to the impression of confusion, that is evidence of not cause of confusion also were requested.

The second tool was a protocol to assess potential causal factors. This checklist (Figure 2) completed by the nurse-researcher gave information about demographic data as well as possible physical, environmental, sensory, and therapeutic causes for confusion. This form also contained a space for proposed nursing interventions and the nurse-researcher's hypothesis regarding causative factors.

The third data collection tool (Figure 3) is a checklist for recording degree of confusion of patients included in the sample. The registered nurse on each shift was asked to place a check mark in the appropriate column, indicating the degree of confusion for that patient at some time during the shift. During the 11 pm to 7 am shift when the patient slept, or any time the patient was sleeping or was in a coma, the patient was rated as "not confused."

All patients 60 years of age and older who were judged to be confused were placed on the "24-hour report," which was completed by the registered nurse at the end of each shift. Following identification of patients and as soon as possible after the onset of confusion, a nurse-researcher interviewed the patient using the form shown in Figure 1. At the same time, using the form shown in Figure 2, demographic data was collected. Then the registered nurses on each eight-hour shift were asked to rate the patient's degree of confusion as none, mild, moderate, or severe and record their judgment on the form shown in Figure 3. The patient's mental status was documented for varying periods of time, but for at least one week on every patient unless the patient was discharged, expired, or the study period ended. In addition, demographic data was collected on one or two nonconfused patients for every confused patient identified to provide data needed to identify contributing factors.

The study was conducted in several different phases in an attempt to determine reliability and validity of the above process. The same patients were interviewed at different times by the two nurse-researchers and then protocol findings and clinical judgment of the presence and degree of confusion were compared. The same procedure was followed with the same patient, with one researcher as the interviewer and one as an observer, and judgments were compared. In the next phase, one of the researchers interviewed each patient and compared her judgment regarding the presence and severity of confusion with the staff nurse caring for the patient.

We have attempted to develop instruments for measurement of confusion that are valid (does identify confusion when present; does not record confusion when absent), reliable (concurrent use by different measurer yields the same finding), and reasonably precise. Regarding precision, we see confusion as varying in degree when present, i.e., as a continuous variable. We hoped to have a measure with adequate precision to identify relatively small changes in degree of confusion that might occur as a result of nursing interventions; on the other hand, we did not want to make note of differences not clinically meaningful or sacrifice reliability. We judged the four-point scale (Figure 3) with scores of none, mild, moderate, and severe as sufficiently precise.

The first assessment of validity was at the definitional or face validity level — i.e., selected items reported in the literature that seemed to reflect acute confusion or disorientation as were defined previously in this paper.

The next step was to examine the reliability and acceptability of those items. The first reliability test included independent assessment of 11 patients by the two nurse-researchers, 10 of whom were assessed at different times and the eleventh who was assessed concurrently. With 22 items in the original Assessment of Mental Status Tool, the two assessors agreed on 94% of the individual observations made on these 11 patients. However, in the majority of cases there was no evidence of confusion. If we examine only items where one assessor or both recorded evidence of confusion (N=34 items), the second nurse-researcher made the same observation on 13 items or 38%. Discussion of these discrepancies convinced the nurses that the patient status had been different at the time of the two separate observations (the one patient assessed concurrently resulted in total agreement — absence of evidence of confusion on 20 items, presence on two).

In addition to the 11 patients assessed by both nurse-researchers as part of the first reliability study (five of whom were judged confused to some extent by clinical impression by both researchers; the other six were judged not confused by both) there were assessments by one researcher on an additional 15 patients, five of whom were judged confused by nursing assessment. Analysis of this data suggested to us the value of the first six items of our protocol (items 1 a-f on Figure 1) as a screening test.

From the total group of 26 patients, of the 10 judged confused to some degree by clinical impression, all but one had missed two or more of the first six items (that person missed only one). Of the 16 judged not confused, only one missed any of the first six items (that person missed two). This analysis resulted in a decision to classify patients as confused if they missed two or more of the six items. This rule was correct in 24 of 26 cases (92% correct or "valid") where clinical impression by the nurse-researcher is taken as the criterion.

During these pre-tests, seven of the 22 items were found to be very objectionable to patients, contraindicated behaviors for an acutely ill patient, or lacking in face validity in our hospital setting. The protocol therefore was reduced to 16 items prior to further testing, as shown on Figure 1.

The next test involved five pa-
FIGURE 2
ASSESSMENT OF CAUSAL FACTORS

NORTHERN MICHIGAN HOSPITALS, INC.
DEPARTMENT OF NURSING SERVICE

DATE OF INTERVIEW ____________________________
MR # ____________________________
DATE OF ONSET ____________________________
OF CONFUSION ____________________________

I. DEMOGRAPHIC DATA:
   No. of Beds - 1 □ 2 □ 3 □ 4 □
   No. of Beds Occupied - 1 □ 2 □ 3 □ 4 □

Hospital Day ____________________________
Age ____________________________
Sex ____________________________
Marital Status - M □ W □ D □ S □
With Whom Patient Resides ____________________________
Place of Residence ____________________________
Has Family Visited Since This Time Yesterday? ____________________________

II. FACTORS:

<table>
<thead>
<tr>
<th>Malnutrition</th>
<th>Substance Abuse</th>
<th>Tranquilizer</th>
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<tbody>
<tr>
<td>Dehydration</td>
<td>Diabetes</td>
<td>Sedative</td>
</tr>
<tr>
<td>Cancers</td>
<td>Other</td>
<td>Digitalis</td>
</tr>
<tr>
<td>Endocrine</td>
<td>Abnormal Lab Values:</td>
<td></td>
</tr>
<tr>
<td>Respiratory</td>
<td></td>
<td>Vasodilator</td>
</tr>
<tr>
<td>Cardiac - Other</td>
<td>Hgb</td>
<td>Steroids</td>
</tr>
<tr>
<td>Hepatic Failure</td>
<td>Blood gases</td>
<td>Antihypertensive</td>
</tr>
<tr>
<td>Renal Failure</td>
<td>Potassium</td>
<td>Diuretic</td>
</tr>
<tr>
<td>Infection</td>
<td>Sodium</td>
<td>Antidepressants</td>
</tr>
<tr>
<td>MI</td>
<td>Calcium</td>
<td>Narcotic</td>
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<tr>
<td>CV Bypass</td>
<td>Uric Acid</td>
<td>Chemotherapy</td>
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<tr>
<td>Fracture</td>
<td>Creatinine</td>
<td>Antiarrhythmic</td>
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<td>Weakness</td>
<td>Bun</td>
<td>Electrolyte replacement</td>
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<tr>
<td>PVD</td>
<td>Glucose</td>
<td>Bronchodilator</td>
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<tr>
<td>Anemia</td>
<td>Enzymes</td>
<td>Insulin</td>
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<tr>
<td>Cataract</td>
<td>TP</td>
<td></td>
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<tr>
<td>Fever Unknown Origin</td>
<td>WBC</td>
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<tr>
<td>Urinary Retention</td>
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III. PHARMACEUTICAL FACTORS:

IV. PROPOSED NURSING INTERVENTIONS (BY STAFF):

I.V.:
Activity:
Present □ Bedrest □
Absent □ Limited □
Ambulatory □

Visual Impairment: Hearing Impairment:
None □ None □
Some □ Some □
Severe □ Severe □

Date of Surgery: Isolation:
Yes □
No □

V. RATERS HYPOTHESIS RE: CAUSAL FACTORS:
FIGURE 3
C.U.R.N. RESEARCH PROJECT ON CONFUSION IN THE ELDERLY
CHECK LIST

PATIENT'S NUMBER: __________________________________________

DATE CONFUSION NOTED: ______________________________________

INSTRUCTIONS: Please note each shift whether or not the patient is confused by checking the appropriate column. Please be sure to note date and shift of entry. Thank You.

<table>
<thead>
<tr>
<th>DATE</th>
<th>SHIFT</th>
<th>NONE</th>
<th>MILD</th>
<th>MODERATE</th>
<th>SEVERE</th>
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STATUS AT LAST ENTRY:  □ Death
□ Discharged
□ Still hospitalized, but 1 week completed

PLEASE RETURN TO S. CHISHOLM

Patients who had been labeled confused by nursing notes or physician diagnosis. Concurrent assessments were done by the two nurse-researchers. Here we obtained 100% concordance on both item-by-item assessment and clinical impression, with four of the five judged confused and one not confused, both by protocol (two or more items) and clinical impression.

Concurrent with this last pre-test, we started testing the second system of staff nurse assessment. After a short introduction to our concept of confusion and the form (Figure 3), we asked the staff nurses to record presence and degree of confusion once for each shift for those patients nominated as confused by the “24-hour report.” Using the checklist (Figure 3), the nurse on each shift rated the patient’s degree of confusion as not confused, mildly, moderately, or severely confused. All nurses used the same sheet for checking confusion on each patient. The checklist was kept in the patient’s care plan, thus the previous recordings were accessible to each nurse. It is unknown to what extent each nurse was influenced by the evaluations of others. The researchers did observe that charting in relation to the patient’s mental status did improve over the period of the study and that when charting was present, there was consistency between the nurses’ notes and the rating check on the checklist. The patient’s degree of confusion was confirmed by a nurse-researcher through an interview using our first protocol (Figure 1).

We correlated scores assigned by our nurse-researchers with the rating made by the unit nurse during the shift that our protocol was administered. The correlation of these scores, .77, was judged adequate enough for us to rely on unit nurse ratings for our prevalence study.

Prevalence

For two periods of time (September 11 to October 2 and November 28 to December 21) records were kept of the hospital census for patients 60 years of age and over to estimate prevalence of confusion. This time spanned 22 days and 24 days, respectively, over all three
shifts. The most reasonable definition of prevalence we could generate was "daily prevalence rate," defined as the number of patients aged 60 or over who were judged confused at any time during a day per 100 patients of that age "at risk" of being judged confused. We generated an average daily prevalence rate by summarizing all days for which data were collected.

Our data included 3,330 patient days at risk, of which 185 were confused days—a prevalence rate of 5.5%. Day-to-day variability is shown in Table 1, where it can be seen that daily prevalence ranged from 0 to 13% with no apparent pattern.

There are five units included in our study. We know the capacity of the units and the occupancy by patients 60 years of age or over, but we do not know total occupancy rates and thus cannot analyze the relationship of occupancy rate to prevalence of confusion at this time.

Data on capacity, occupancy by patients 60 years of age and over, and prevalence of confusion are reported in Table 2. Units A-D were occupied to about 50% of capacity by older patients while unit E on average had about one third capacity of elderly.

Data on capacity, occupancy, and variability in occupancy are for the total study combined. We report average prevalence of confusion by unit for each period of observation and combined because upon calculation of overall prevalence and examination of the statistical significance of differences, we found that units differed significantly, but that did not match our clinical impression. Calculation of prevalence by three-week periods again shows differences that are statistically significant (chi square for period one = 9.5, period two = 17.0, combined = 11.5, each with 4 d.f.). Thus although differences are noted from unit to unit over any period of time, the units with high or low prevalence are not consistent from one time to another.

A second view of prevalence, perhaps better labeled duration or chronicity, examines only those
judged to be confused and considers the proportion of time they were judged confused. We shift now from "daily prevalence" as defined above, to "shift prevalence." Shift prevalence is defined as the proportion of eight-hour periods when confusion was noted at any time during the period among those who were confused at some time during our observation period. Thus the denominators of these two prevalence rates are quite different.

We observed a shift prevalence of 27% upon analysis of 2,371 shifts "at risk", slightly more than one fourth of all shifts. For patients during one of the time periods, we were able to calculate shift prevalence after onset, rather than all shifts at risk after admission, and observed confusion during 477 of 852 shifts, a rate of 54% or slightly more than one half of shifts. For this group of patients the average shift of onset was 19.7 or six and half days after admission. Day of onset ranged from 0 to 27.

Data were collected over the two fixed time periods that were selected primarily in terms of when the nurse-researchers had sufficient time to administer the study. We observed confusion in all elderly patients during the period. However, since most were still hospitalized at the end of the period, we are unable to describe prevalence rates per day of hospitalization per patient. We do have data for the total hospital stay for five patients who died during our period of observation and for six who were discharged. The shift prevalence for those who died was 32% of all shifts during that terminal stay. There was slight hint of a pattern — four became confused while one became oriented prior to death. For the six subjects who were discharged, shift prevalence was 43%, somewhat higher than our rate calculated on an observation period basis.

We also looked at the distribution of confusion by shift. There was remarkable similarity in prevalence and severity by shift. The data are reported in Table 3.

Patterns of Confusion

We have seen a wide variety of patterns among the confused elderly in our study with no pattern predominating from visual inspection (Figure 4). The one surprising observation is the lack of confusion at admission or soon thereafter; only five of 55 patients were confused on admission with only two more becoming confused during the first 24 hours after admission.

In addition, we saw great diversity in onset and level of confusion among our patients, with onset of confusion ranging from admission up to day 41 of hospital stay. Severity varies widely; it is rare to have more than two or three shifts being rated the same.

Discussion

This study to date shows that scores on the "Assessment of Mental Status" correlate very highly with clinical impressions of both clinical nurse-researchers and with unit nurses. That finding suggests we do not have a high incidence of mislabeling or a high prevalence of real, acute confusion.

Many factors present within our setting may account for the low prevalence of confusion found. For data collection, five medical-surgical units were used, which have a total capacity of 141. The concepts used in delivery of care on these units include "no nursing station" and unit management system. Together these concepts allow the professional nurse to be at the bedside providing direct care, thus rendering her more available to the patient. Care is more personalized and needs are anticipated and planned for by the nurse. Most of the nurses' activities take place in the patient's room; the nurse has more time with the patient as she does not become engaged in nonnursing activities such as noting all doctor's orders, ordering and securing supplies, and housekeeping chores. Along with the patient-focused care, our philosophy of caring for patients as individuals rather than room-number or disease entities also could contribute to low prevalence rates for confusion.

In addition to the above factors, there is a relatively high ratio of registered nurses to total staff, a relatively high ratio of staff to patient, and a low turnover rate of registered nurses. All of these factors contributed to staff continuity during hospitalizations and over repeated admissions. The assignment pattern of professional staff allows for continuity of patient care from day to day during the hospital stay. Generally the registered nurse to patient ratio is 1:10, with the assistance of one other caregiver. The registered nurse cares for the majority of patients in her caseload from admission to discharge.

Continuity of environment, a high degree of caring and concern, face-to-face interactions, information giving, and stability of staff are reported in the literature as effective in preventing and reducing confusion. These factors may have, in part, accounted for the low prevalence rates found in this study. There would need to be further study done to validate this point.

The original problem identified for the study remains a concern for the researchers, even in light of the low prevalence rate of confusion. Perhaps the perception of a high incidence of confusion is related to the impact of the confusion on the staff and their workload rather than the actual incidence of confusion. The staff's perception of the magnitude of the problem would then influence the nursing interventions.
that they implemented. This may be supportive of Wolanin’s premise that confusion is defined most realistically by the perceptions of the caregivers. In her book, which was being published concurrently with the writing of this article, Wolanin challenges the concept of permanent senilities — that they are nonreatable.

The authors are continuing an analysis of possible predictors of acute confusion to determine if there are potential areas for prevention interventions beyond those organizational characteristics mentioned earlier.

Summary and Conclusions Based on the Study

The researchers began the “problem specification” phase of this proposed nursing intervention project with the impression that much mislabeling of older patients as confused occurred, along with a high incidence of true confusion. This study does not support either assumption.

Based on the findings of this study, the authors urge other nurses to replicate this study in their setting and share their findings. It might be valuable to include description of structural variables, such as the nursing model for delivery of care and patient/staff ratios so that their effects on the incidence and prevalence of confusion might be estimated.

Several questions were raised that may provide a basis for future studies:

- Is it possible that availability of a caring “someone” matters as much as the availability of a professional “someone”?
- Is it possible that contact with the elderly, who are “vulnerable to confusion” by virtue of illness-stress and unfamiliar surroundings, is more important to decreasing or minimizing the awareness of confusion than specific, planned professional interventions?

Preliminary estimates of incidence/prevalence should be obtained prior to initiating systematic assessment because assessment may influence incidence! In settings where nursing notes typically document confusion, a review of a sample of charts and comparison to staff impressions could be instructive. A replication study also could assess the suspicion expressed in this paper about the effects of measurement on incidence.

References

2. Barnes JA. Effects of reality orientation classroom on memory loss, confusion and disorientation in geriatric patients.


Bibliography


