

The local government of Regione Lombardia, Italy, recently (1994) funded a clinical and research project specifically devoted to dementia (Piano Alzheimer). A central role in this project has been reserved for the special care units (SCUs) for demented patients with behavioral disturbances. In order to evaluate their effectiveness, eight SCUs took part in this study. A specifically designed care program, focusing on environment and staff, was implemented in each SCU. Cognitive, functional, and somatic health status, and use of psychotropic drugs and of physical restraints were assessed at baseline, and after 3 and 6 months in 55 consecutively admitted patients. The data show an overall reduction in behavioral disturbances and a decreased use of psychotropic drugs and physical restraints.

**Key Words:** Behavioral disturbances, Psychotropic drug use, Physical restraints

## Special Care Units for Demented Patients: A Multicenter Study

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Behavioral disturbances occur frequently in moderately to severely demented patients and represent one of the most relevant problems in their care (Binetti et al., 1993; Maslow, 1994; Teri, Hughes, & Larson, 1990). In a study of 1,139 elderly nursing home patients, 64% were found to have behavioral disturbances: 42% were classified as moderate and 22% as severe (Zimmer, Watson, & Treat, 1984). In an Australian study, behavioral disturbances were reported

in 47% of 301 patients eligible for nursing home care (Gray, Farish, & Dorevich, 1992). More recently, Wagner, Teri, and Orr-Rainey (1995) assessed behavioral symptoms among 614 patients with dementia living in 70 special care units (SCUs), and found that restlessness, anxiety, and crying affected over 80% of the SCU population.

Behavioral disturbances induce caregiver burnout (Mahoney & Barthel, 1965; Zanetti et al., 1996a, 1996), predict short-term institutionalization (Bianchetti et al., 1995), and are the main determinant of psychotropic drug prescription in the nursing home (Beers et al., 1988; Schneider, Pollock, & Liness, 1995). Furthermore, a relationship between some behavioral disturbances and accelerated cognitive deterioration has been shown (Drevets & Rubin, 1989; Levy et al., 1996; Lopez et al., 1991; Teri et al., 1992).

Studies on the etiology of behavioral disturbances are scanty, but both biological (Kirby & Lawlor, 1995) and environmental factors probably play major roles. It is a common clinical observation that redundancy of visual or acoustic stimuli or excessive cognitive demands can give rise to agitated or disruptive behavior in demented patients (Bianchetti, 1995; Cleary, Clamon, Price, & Shullaw, 1988; Homma, Ishii, & Niina, 1994; Levine, Marchello, & Totolos, 1995). This has been conceptualized by Lawton (1989), in that the quality of the outcome of a person-environment transaction depends on the degree of environmental demand or press and the competence of the patient. When press is high in relation to competence, behavioral disturbances are likely to occur.

In the nursing home, both architectural space de-

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sign and staff attitudes can cause redundancy of visual/acoustic stimuli or excessive cognitive demands (Bianchetti, Benvenuti, Ghisla, Frisoni, & Trabucchi, 1997; Cleary et al., 1988). It can be hypothesized that the reduction in press on behaviorally disturbed demented patients might lead to a decrease in psychological distress and, consequently, to a decrease in behavioral disturbances (Maslow, 1994). Based on this framework, in the recent past a growing number of units for demented patients (SCUs) has been established in the United States and Canada; these SCUs incorporate specially trained and deployed staff, a specifically designed environment, and special programs (Benson, Cameron, Humbach, Servino & Cambert, 1987; Mehr & Fries, 1995). In March 1995, the health department of the local government of Regione Lombardia, Italy (8,500,000 inhabitants) started a project aimed at improving the care of the demented patient (Progetto Alzheimer). An essential part of this operation was setting up in nursing homes SCUs for demented patients with behavioral disturbances (Trabucchi, Bianchetti, & Zanetti, 1995; Trabucchi, Govoni, & Bianchetti, 1994). The aim of the present study was to assess the efficacy of care given in a group of these SCUs on moderately to severely demented patients who were affected by behavioral disturbances.

### Methods

Ten 20-bed SCUs were established in the Eastern Lombardia area as part of the Progetto Alzheimer. All SCUs were created in nonprofit nursing homes that were already equipped for the care of functionally and cognitively disabled patients. Each nursing home provides, on average, 120 beds (with a minimum of 100 and a maximum of 350). The facilities are paid on a contracted per diem rate, which includes room and board costs, nursing service, meal service, therapy service and occupational planning. Licenses for the management of the nursing homes are supplied by the USSIs (i.e., the local social-sanitary units depending on the Health Government of the Lombardia Region), which seek to control the care delivery of the nursing homes. All nursing homes have a medical director and staff physicians who are employed an average of 30–35 hours/week. The nursing staff is composed of registered nurses, and the nurse/patient ratio is regulated according to regional standards (1/16, with 140 minutes/resident/week). Standards also includes 672 minutes/resident/week of care by nursing aides and 42 minutes/resident/week of time with a physical rehabilitation therapist.

Of the ten SCUs located in the Eastern Lombardia area, eight took part in the study, which started on June 1, 1995. One of these facilities had previous experience (Bianchetti et al., 1997), but the other seven had no former experience with units for demented patients with behavioral disturbances. These eight SCUs were chosen for this study because their medical directors decided to establish periodical monthly meetings, coordinated by the Geriatric Research Group (Brescia, Italy), in order to improve the research and cultural activities of the staff physicians and the edu-

cational training of the nursing staff. A specifically designed care program was implemented in each SCU, focusing on environment and staff. Environmental adjustments included the installation of dialer-controlled magnetic locks on exit doors; removal of environmental obstacles for wandering patients; renovations, such as neutral wall colors and soundproof boards to avoid stressful sensory stimulation, room doors and handrails of bright colors to facilitate their identification; and the creation of a separate area for specific activities such as occupational therapy and recreational activities (Bianchetti et al., 1997; Grant, Kane, & Stark, 1995).

Specific training was provided for medical and nursing staff by the second and third authors to help staff recognize behavioral problems and find the possible causes, further patients' autonomy by routine stimulation of the activities of daily living (e.g., such as self-toileting or self-feeding), and adapt medical procedures based on comprehensive geriatric assessments. Nursing staff training included (a) how to reduce the exceedingly high auditory stimuli, the acute noises (such as voices of nursing staff or caregivers), the fast movements and scurrying; emphasis was placed on gentle care and nonpharmacologic therapies for behavioral disturbances; (b) how to pay a specific attention to both the dietary intake of the patients and fall prevention; and (c) how to promote and maintain functional performances through amusing activities. Furthermore, in order to reduce the use of physical and pharmacological restraints, further specific training was supplied according to the OBRA guidelines (Winograd & Pawlson, 1991). Medical staff training took place during the monthly meetings and was aimed principally at the use of the assessment instruments in a standardized form in order to have the most homogeneous administration of scales among the SCU centers. Furthermore, the aim of the project and the modalities for collecting the data were explained. The same physicians in charge in the SCUs established, during their periodic meetings, that multidimensional assessments (see following description) would be made within 7 days of admission, after 3 months, and again every 6 months thereafter.

Each SCU patient received 2.5 hours/day of nursing care, 2.1 hours/week of activity programs, and routine evaluation by a physician every second day (Bianchetti et al., 1997; Trabucchi et al., 1995). In order to be admitted to an SCU, the following criteria had to be met: (a) a diagnosis of dementia of any origin; (b) a score of 14 or lower on the Mini-Mental State Examination (MMSE); and (c) severe behavioral disturbances as shown by a total score of 24 or higher on the UCLA Neuropsychiatric inventory (NPI) or a score of 12 in one of the 10 NPI subscales (see below). All patients coming for observation by medical staff of the nursing homes and meeting these criteria were considered eligible for SCU care and were included in a specific waiting list. Patients admitted to the SCUs were taken from the waiting list on a first-come-first-served basis. From June 1, 1995, to April 30, 1996, 55 patients were consecutively admitted to the SCUs.

The multidimensional assessment evaluated demographics (age, gender, and education); duration of dementia; cognition; function; behavior; somatic health; and use of restraints (by recording type of restraint and timing).

**Cognition.**—Cognition was evaluated using the MMSE and the extended version of Clinical Dementia Rating scale (CDR). The MMSE (Folstein, Folstein, & McHugh, 1975) is a test widely used to assess the presence of cognitive impairment in elderly people, exploring some cognitive domains (spatial-temporal orientation, short-term memory, attention and calculation, language and praxis); scores range from 0 (minimum) to 30 (maximum). The extended CDR (Heyman et al., 1987) measures overall dementia severity and comprises the original 3 levels (0 = absence of disease, 0.5 = questionable dementia, 1 = mild dementia, 2 = moderate dementia, and 3 = severe dementia), as well as level 4 (severe aphasia with maintained mobility), and level 5 (bedridden and dependent in eating).

**Function.**—Function was measured using the Barthel Index and the Bedford Alzheimer Nursing Severity-scale (BANS-s). The Barthel Index (Mahoney & Barthel, 1965) comprises 10 items assessing the subject's impairment in basic activities of daily living and provides a score ranging from 0 (complete impairment) to 100 (absence of impairment). The possible scores for each item can vary from 0 to 5 (grooming and bathing), from 0 to 10 (eating, dressing, preserving urinary and fecal continence, using the toilet, climbing a flight of stairs), or from 0 to 15 (preserving mobility from bed to chair, walking). The BANS-s (Volicer, Hurley, Lathi, & Kowall, 1994), a scale that has recently proved to be reliable, especially in the evaluation of the late stages of dementia (Bellelli, Frisoni, Bianchetti, & Trabucchi, 1997), comprises 7 items evaluating function (walking, eating, dressing), cognition (speech, eye contact), and pathological symptoms (muscle rigidity, and sleep-wake cycle disturbances). The scores range from 7 (best performance) to 28 (poorest performance).

**Behavior.**—Behavior was assessed on the NPI scale (Cummings et al., 1994). The instrument comprises 10 separate subscales, which measure delusions; hallucinations; agitation (aggressiveness, resistance, refusal to cooperate, crying, kicking, and obstinacy); dysphoria (depressed mood); anxiety (worried or frightened behavior displayed for no apparent reason, or tense and fidgety behavior); euphoria; apathy (anhedonia); disinhibition; irritability (rapid emotional fluctuation between frustration and impatience); and abnormal motor output (wandering, picking at clothing, fidgeting and restlessness). The NPI is based on screening questions that provide an overview of each specific domain and are followed by more detailed subquestions as appropriate. Information is gathered by caregivers using structured questions. The informant is asked about the patient's behavior during the month before interview (e.g., "Has the patient in the last month had beliefs that you know are not true?";

"Has the patient in the last month refused to cooperate or to let people help him/her?"). Domains with a negative response to screening questions are not explored. If the informant indicates that the investigated behavior was present, the domain is then stressed with other structured subquestions that provide more detailed information about the specific behavioral features ("Does the patient believe that others are stealing from him/her?"; "Does the patient get upset with those trying to care for him/her or resist activities such as bathing or changing clothes?"). After the subquestions, the informant is asked to rate the severity of the behavior on a three-level (1 = mild, 2 = moderate, 3 = severe) ordinal scale and frequency on a four-level (1 = occasionally, i.e., less than once per week; 2 = often, i.e., about once per week; 3 = frequently, i.e., several times per week; 4 = very frequently, i.e., once or more per day or continuously) ordinal scale. Defining anchor points for severity and frequency allows caregivers to provide an answer that can be rated. A composite score for each domain is the product of the frequency and severity subscores; scores range from 0 to 12 on each subscale. When patients were transferred from other nursing home wards, the informant was a nursing staff member. When patients were admitted to SCUs from their home or a hospital, information on behavior was gathered in two ways: (a) the NPI was administered to family members on admission and considered patient's behavior over the previous month; and (b) 7-15 days after admission to the SCU, family members' ratings were checked with nursing staff members' evaluations of the patient's behavior. In cases of conflict, the nursing staff's ratings were adopted.

**Somatic Health.**—Somatic health was determined by the patient's number of chronic diseases and BMI (Matthews, 1986). In order to compute the number of chronic diseases the Cumulative Illness Rating Scale (CIRS; Parmelee, Thuras, Katz, & Lawton, 1995), a standardized tool comprising 14 items, each one corresponding to a single category of pathologies, was used. The practitioner defined the clinical and functional severity of illness, according to anamnesis, objective examination, and symptomatology; the score for each item ranged from 1 (absence of pathology) to 5 (maximum level of severity of the disease). However, in this study, chronic diseases were computed one by one as absent (0) or present (1), and the sum of the those present was calculated. The BMI is a measure of body fat and is computed as:  $BMI = \text{weight (in kg)} / \text{height}^2 \text{ (in cm)}$  multiplied by 10,000. Normal BMI values range from 18.7 to 23.8 in females and from 20.1 to 25.0 in males, while higher and lower values indicate overweight or low weight, respectively.

**Use of Drugs.**—A standardized form was employed to record drug use, detailing dose and type of molecule for each pharmaceutical prescription.

Clinical diagnoses were made according to NINCDS-ADRDA criteria for probable or possible Alzheimer's disease (AD; McKhann et al., 1984), NINDS-AIREN

criteria for probable or possible vascular dementia, and for possible AD with associated cerebrovascular disease (Román et al., 1993). The diagnoses were supported by Hachinski ischemic score (Hachinski, Lassen, & Marshall, 1974). Three and 6 months after admission, the same complete multidimensional assessment (except for the Hachinski ischemic score) was performed on all patients. The significance of the changes in cognitive, functional, and behavioral variables between admission and after 3 months, and between admission and after 6 months, was assessed with the *t* test for paired samples.

## Results

Patients were admitted to the SCUs from home (20.4%), local hospitals (24.4%), or were transferred from other nursing home wards (55.1%). Table 1 shows that patients were very old and mainly women. The overall severity of dementia was moderate to severe, which was consistent with the MMSE and CDR scores and disease duration of about 5 years. Hachinski scores indicated that dementia was mainly of the degenerative type. In fact, 39 patients (70.9%) had probable or possible AD, 12 patients (21.8%) had probable or possible vascular dementia, and 4 patients (7.3%) had AD with cerebrovascular disease. Functional and somatic health status were moderately impaired, as demonstrated by both Barthel Index and BANS-s scores and by the co-occurrence of about four chronic somatic diseases. However, nutritional status was good, as shown by a BMI mean value of 22.8 (*SD* = 3.4) in men and of 22.2 (*SD* = 4.7) in women. Furthermore, patients had severe behavioral disturbances, as revealed by NPI scores, and required a significant level of psychotropic drug treatment (neuroleptics, benzodiazepines, and antidepressants). On admission, patients took on average more than one psychotropic drug; only 14.5% were not taking psychotropic drugs, and 16.4% took three or more drugs.

Table 2 shows that cognition and function did not improve significantly in follow-up evaluations, although it must be emphasized that the change in Barthel Index scores between admission and 6 months post-admission gained significance (*p* = .06). On the contrary, behavioral disturbances progressively improved despite the psychotropic drug load decrease.

Table 1. Clinical and Demographic Features of 55 Demented Patients on Admission to SCUs

	Mean ± <i>SD</i>	Observed Range
Age	81.4 ± 8.3	54-94
Gender (% women)	78.2%	—
Education (years)	4.5 ± 1.6	2-8
Duration of dementia (years)	5.2 ± 3.5	0.5-9
Mini-Mental State Examination <sup>a</sup>	6.1 ± 5.0	0-14
Extended Clinical Dementia Rating Scale <sup>b</sup>	3.0 ± .7	2-4
Hachinski Ischemic Score	4.5 ± 3.3	1-15
Barthel Index <sup>c</sup>	36.2 ± 26.3	0-85
Bedford Alzheimer Nursing Severity Scale <sup>b</sup>	15.9 ± 4.5	7-27
Neuro-Psychiatric Inventory <sup>b</sup>	38.2 ± 16.5	1-9
Body Mass Index	22.3 ± 4.4	14.7-36.7
Number of chronic diseases (excluding dementia)	4.1 ± 2.1	1-9
Number of psychotropic drugs	1.5 ± .9	0-9

<sup>a</sup>Lower values indicate poorer condition.

<sup>b</sup>Lower values indicate better condition.

At 6 months follow-up, 38.2% of patients were not taking psychotropic drugs and only two subjects were taking three or more drugs. The use of physical restraints also decreased from 36.4% on admission to 29.0% at 6 months follow-up.

In order to describe the change in behavioral symptoms between admission and the follow-up at 6 months, the difference between the scores of each NPI subscale at baseline and 6 months later was computed (delta). The distribution of deltas for each behavioral symptom is shown in Figure 1. The figure shows that the proportion of patients whose behavioral symptoms improved was greater than the proportion of patients whose behavioral symptoms worsened.

Table 3 shows the change in the mean scores of all NPI subscales from admission through follow-ups. On admission patients were very agitated and had high levels of abnormal motor activity and apathy; few subjects had hallucinations and/or disinhibition. All mean scores showed a decrease during the course of the study, except for disinhibition, which increased on the first follow-up and decreased on the second. The reduction in symptoms was progressive and significant

Table 2. Cognitive, Functional, and Behavioral Features of 55 Demented Patients on Admission to SCUs and at Follow-up

	Mean ± <i>SD</i> or Number (%) on Admission	Mean ± <i>SD</i> or Number (%) After 3 Months	Mean ± <i>SD</i> or Number (%) After 6 Months	<i>p</i> <sup>*</sup>	<i>p</i> <sup>**</sup>
Mini-Mental State Examination <sup>a</sup>	6.1 ± 5.0	6.8 ± 6.1	6.2 ± 6.8	n.s.	n.s.
Barthel Index <sup>a</sup>	36.2 ± 26.3	39.7 ± 27.0	41.6 ± 28.2	n.s.	n.s.
Neuro-Psychiatric Inventory <sup>b</sup>	38.2 ± 16.5	29.2 ± 15.7	25.6 ± 16.7	.001	<.0005
Number of psychotropic drugs <sup>b</sup>	1.5 ± .9	1.1 ± .8	.8 ± .8	<.0005	<.0005
Number of physical restraints <sup>b</sup>	20 (36.4%)	—	16 (29.0%)	—	.002

Notes: *p* values represent significance on *t* test for paired samples: \*between admission and after 3 months; \*\* between admission and after 6 months. n.s., not significant.

<sup>a</sup>Lower values indicate poorer condition.

<sup>b</sup>Lower values indicate better condition.

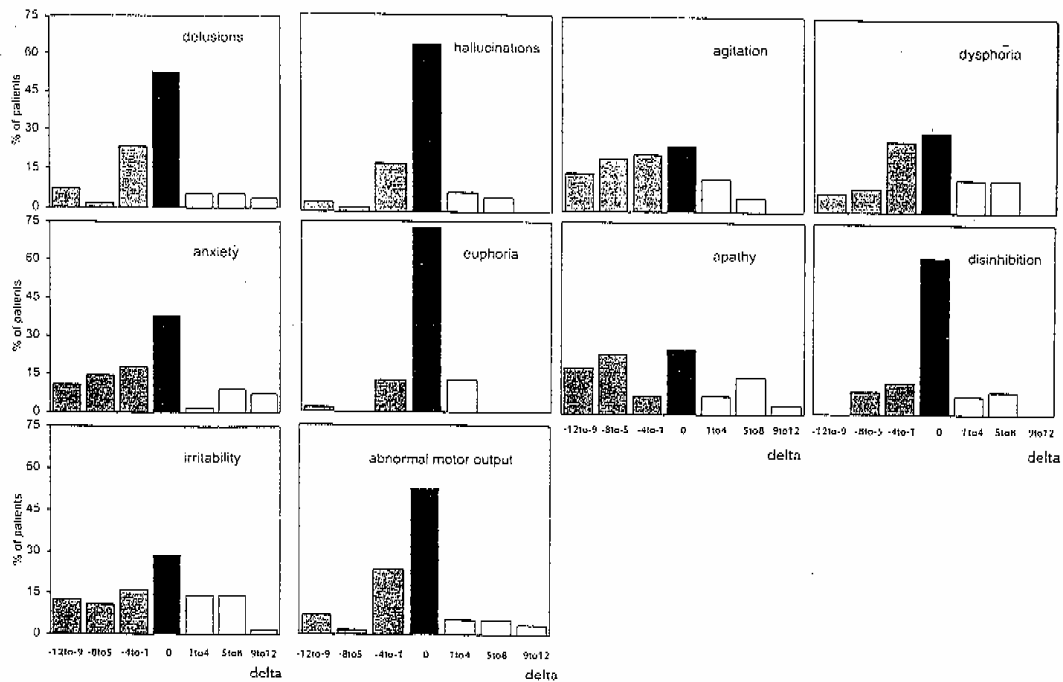


Figure 1. Changes of behavioral disturbances in 55 demented patients between admission to SCUs and 6-month follow-up. Delta denotes the difference of behavioral disturbance score between admission and 6 months later. Negative values of delta indicate improvement (▨), zero indicates no change (■), and positive values indicate worsening (□). Columns indicate percentages of patients.

for agitation, anxiety, and abnormal motor output. It should be emphasized that the reduction could already be appreciated at the first follow-up.

### Discussion

In this article, we have demonstrated that: (a) behavioral disturbances of moderately to severely demented patients decreased after admission to SCUs;

(b) the reduction of behavioral disturbances was specific for some symptoms; and (c) the reduction of behavioral disturbances occurred with a decrease in psychoactive drug load.

Many authors agree that demented patients need the specific care unit approach (Benson et al., 1987; Maslow, 1994). However, controversy exists about the effectiveness of SCUs (Sloane, Lindeman, Phillips, Moritz, & Koch, 1995). In recent overviews, Grant and

Table 3. Behavioral Disturbances of 55 Demented Patients on Admission to SCUs and at Follow-ups

	Mean ± SD on Admission	Mean ± SD After 3 Months	Mean ± SD After 6 Months	p*	p**
Delusions	2.8 ± 4.2	2.4 ± 3.8	2.3 ± 3.9	n.s.	n.s.
Hallucinations	1.3 ± 2.9	1.0 ± 2.5	.9 ± 2.3	n.s.	n.s.
Agitation	6.4 ± 4.6	4.8 ± 4.4	3.6 ± 4.2	.015	<.0005
Dysphoria	4.0 ± 4.6	3.3 ± 3.8	3.1 ± 3.4	n.s.	n.s.
Anxiety	3.7 ± 4.5	3.1 ± 3.8	2.8 ± 4.0	n.s.	n.s.
Euphoria	.7 ± 2.2	.7 ± 2.2	.6 ± 1.7	n.s.	n.s.
Apathy	5.6 ± 5.1	3.3 ± 3.8	3.3 ± 3.7	.005	.014
Disinhibition	1.5 ± 3.0	1.7 ± 3.6	1.4 ± 2.7	n.s.	n.s.
Irritability	4.5 ± 4.6	4.3 ± 4.1	3.6 ± 4.0	n.s.	n.s.
Abnormal motor output	7.4 ± 3.6	4.2 ± 4.3	3.6 ± 4.3	<.0005	<.0005

Notes: p values represent significance on t test for paired samples: \*between admission and after 3 months; \*\* between admission and after 6 months. n.s., not significant.

Sloane claimed that different facility types (size, environment), study designs, and the variety of outcome measures can explain the differences in results of previous studies and the lack of consensus on what constitutes a "good" SCU (Grant, Kane, & Stark, 1995; Sloane et al., 1995). Some studies found benefits for behavioral disturbances (Benson et al., 1987; Cleary et al., 1988) while others did not (Chafetz, 1991; Holmes et al., 1990; Read, 1992). Of the latter type, in two studies comparing SCU demented patients and non-SCU demented patients, the authors did not observe improvement in both behavioral and cognitive domains of the SCU demented patients (Chafetz, 1991; Holmes et al., 1990). However, the results of those studies are not straightforward for a number of reasons: Sample size was small in one case (12 SCU vs 8 non-SCU demented patients); outcome measures failed to recognize different kinds of behavioral disturbances (Chafetz & West, 1987); and subject selection criteria in these studies either included patients who were already residents in the facilities at the time of recruitment (Chafetz, 1991), or assessed SCU demented patients and their non-SCU demented counterparts who had, at baseline, significantly different severities of cognitive, functional, and behavioral impairment (Holmes et al., 1990).

In our study, environmental characteristics of all SCUs were homogeneously modified, patients were recruited on the basis of a first-come-first-served waiting list, and the scale adopted to assess the patients had the advantage of giving separate ratings for each type of behavioral disturbance and of exploring two different behavior dimensions (severity and frequency), showing greater sensitivity in detecting behavioral changes. Furthermore, it must be underscored that we focused our attention on a well-defined outcome—the reduction in behavioral disturbances—where improvement involved all symptoms, but was more specific for some of these, such as agitation, abnormal motor output, and apathy. Although it must be considered that these behaviors had the highest mean scores on admission, which could explain the greater amount of change during the course of the study, this is consistent with the observations of several authors (Levine et al., 1995; Rabins, 1994) and with our aprioristic hypothesis that external environment might influence, serving as a trigger, the occurrence of some specific behaviors. In our study, we observed that those symptoms with a greater environmental component in the etiology (i.e., agitation and apathy) decreased more than others (i.e., delusion and hallucinations). It should also be noted that changes in behavioral disturbances maintained the same improvement trend over the course of time, suggesting that the factor responsible for improvement was efficient throughout the whole observation period.

Another key point in the results of this study is represented by the use of physical and pharmacological restraints. These are largely prescribed for behaviorally disturbed demented nursing home patients (Evans & Strumpf, 1989), although the efficacy of such restraints is not proven (Evans, Strumpf, & Williams, 1991; Rovner & Katz, 1993). A number of controlled trials

have found little usefulness of psychoactive drugs and physical restraints in the treatment of disruptive behaviors (Barnes, Veith, Okimogo, Raskind, & Cumbrecht, 1982; Schneider, Pollock, & Liness, 1995; Sunderland & Silver, 1988) and a significant association with unfavorable outcomes, such as greater morbidity (Avorn & Gurwitz, 1996; McGrath & Jackson, 1996), weight loss (Rohrbaugh, & Siegal, 1989), and falls (Berry, Fisher, & Lang, 1981; Spar, LaRue, Hughes, & Fairbanks, 1987). For these reasons, the improvement in behavioral disturbances occurring together with a reduction in psychoactive drug load and physical restraint use is of central importance. We believe that staff training courses held before the start of the study might explain these results. Prior to the study, our nursing staff was trained to reduce physical and pharmacological restraints (Bianchetti et al., 1997) and to avoid the vicious circle of behavioral disturbance—restraints—more behavioral disturbances (Teri et al., 1992). Both the environmental adjustments and the increase in staff members allowed the staff to adopt alternative strategies in managing behavioral disturbances. On admission, about 85% of our patients were taking at least one psychoactive drug and 25% were physically restrained. After 6 months, the use of psychoactive drugs and physical restraints had decreased.

A number of precautionary steps in the interpretation of these results should be taken. In this study we do not have controls. However, we have the internal control of the specificity of improvement in those behavioral disturbances most amenable to environmental interventions. This supports the view that the improvement was due to the SCU care rather than casual. Second, it can be hypothesized that only those patients most likely to improve might have been selected for SCU admission. However, it must be emphasized that all patients eligible to be admitted to SCUs entered the waiting list only on the basis of the time expectancy to the date on which the caregivers exhibited a request of admission, thus minimizing the potential selection bias.

The preliminary data support the effectiveness of this strategy of care in Italian SCUs. Furthermore, because the patterns of behavior have shown to be similar, as has the relationship of behavioral changes with dementia severity (Binetti et al., 1998) between Italian and U.S. cohorts of demented patients, we think that our findings could be of great interest in a cross-cultural perspective.

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