Z Gerontol Geriat 41:453–459 (2008)
DOI 10.1007/s00391-008-0023-3

Tania Zieschang
Ilona Dutzi
Elke Müller
Ute Hestermann
Norbert Specht-Leible
Katinka Grünendahl
Anke Braun
Daniel Hüger
Peter Oster

A special care unit for acutely ill patients with dementia and challenging behaviour as a model of geriatric care

Received: 30 September 2008
Accepted: 14 October 2008

Dr. med. T. Zieschang (✉)
Bethanien Krankenhaus, Geriatrisches Zentrum an der Universität Heidelberg
Rohrbacher Straße 149, 69126 Heidelberg
Tel.: +49-6221-3191746
Fax: +49-6221-3191505
E-Mail: tzieschang@bethanien-heidelberg.de

Psychologin I. Dutzi, Bethanien Krankenhaus
Tel.: +49-6221-3191570
E-Mail: ilona.dutzi@web.de

RN, Dr. phil. E. Müller, Bethanien Krankenhaus
Tel.: +49-6221-3191504
E-Mail: emueller@bethanien-heidelberg.de

Dr. med. U. Hestermann, Bethanien Krankenhaus
Tel.: +49-6221-3191739
E-Mail: uhestermann@bethanien-heidelberg.de

Dr. med. N. Specht-Leible
Bethanien Krankenhaus
Tel.: +49-6221-3191727
E-Mail: nspechtleible@bethanien-heidelberg.de

K. Grünendahl, Klinikum Ludwigsburg
Posilipostrasse 4, 71640 Ludwigsburg
Tel.: +49-7141-9997640
E-Mail: Katinka.Gruenendahl@gmx.de

Dr. med. A. Braun, Bethanien Krankenhaus
Tel.: +49-6221-3191742
E-Mail: abraun@bethanien-heidelberg.de

Dr. med. D. Hüger
Medizinische Klinik der Universität Heidelberg, Im Neuenheimer Feld 410
69115 Heidelberg
Tel.: +49-6221-5638796
E-Mail: Daniel.hueger@med.uni-heidelberg.de

Prof. Dr. med. P. Oster, Bethanien Krankenhaus
Tel.: +49-6221-3191701
E-Mail: poster@bethanien-heidelberg.de

Die Geriatrisch-Internistische Station für Akuterkrankte Demenzpatienten (GISAD) als Innovatives Versorgungsmodell

► **Abstract** This paper describes the development and management of a new model of care for hospitalized patients with challenging behaviour evoked by dementia and/or delirium. To ameliorate care for patients with dementia in a geriatric acute care hospital a segregated Special Care Unit for patients with challenging behaviour was created. Environmental features allow for safe and unrestricted ambulation within the unit and create a home-like atmosphere. Day-time activities structure the day and assure additional professional presence in the unit. An intensive training program for the staff was provided. The SCU has been well accepted by the staff and is considered to be an improvement in care. Psychological burden of the nurses did not increase over a time period of one year in caring for these difficult patients.

► **Keywords** behavioural and psychological symptoms of dementia (BPSD) · delirium · acute care · special care unit

► **Zusammenfassung** Dieser Artikel beschreibt die Entwicklung eines innovativen Versorgungskonzepts zu Behandlung von Menschen mit Demenz, die in einem somatischen geriatrischen Krankenhaus stationär behandelt werden. Es wurde ein halb-geschlossener geschützter Spezialbereich für Patienten mit herausforderndem Verhalten eingerichtet, welches durch eine Demenz, eine Delir oder ein Delir bei Demenz bedingt ist. Innerhalb des Bereiches sind die Patienten in ihrer Mobilität nicht eingeschränkt. Die Milieugestaltung erzeugt eine möglichst wohnliche Atmosphäre. Tagesstrukturierende Maßnahmen führen zu Aktivierung und gewährleisten zusätzliche professionelle Präsenz. Es erfolgte eine intensives Schulungsprogramm für die Mitarbeiter. GISAD ist im Krankenhaus gut angenommen und wird als eine Verbesserung der Patientenversorgung angesehen. Die psychologische Belastung der Pflegenden hat trotz Selektion dieser schwierigen Patienten im Verlauf eines Jahres nicht zugenommen.

Abbreviations

BPSD	Behavioural and Psychological Symptoms of Dementia
LOS	Length of Stay
SCU	Special Care Unit

Introduction

Older people have a high risk of a deleterious outcome after a hospital stay [3, 4]. This is enhanced in persons with dementia with a prevalence of delirium exceeding 50% [7] and a higher mortality [6, 8]. Suffering delirium worsens the prognosis of dementia and accelerates cognitive decline [7].

Risk factors for delirium in the hospital setting include immobility, medications, iatrogenic events, concurrent illness, sensory deprivation, and social isolation [12], but also multiple room changes, ICU, medical or physical restraints, and absence of a clock or reading glasses [16]. Challenging behaviour in demented patients can be evoked by the interactions of people in their surrounding [13]. However, adequate communication with demented persons requires insight into the psychology of dementia; thus training of the staff is essential. Confronted with challenging behaviour, a promising approach is to find the meaning of the behaviour and act accordingly

Dementia disorders increase the burden of acute care systems; with excess use of nursing resources, complications, nosocomial infections, and increase in length of stay (LOS) [9]. The high prevalence (95%) of agitated behaviour is not only associated with staff burden [27], but it also can result in lucid patients becoming irritated [20].

Growing awareness in the medical community for the need of models of care for persons with dementia who suffer an acute medical or surgical illness has promoted several such models but implementation on a broad basis in somatic hospitals is lacking. The Special Care Unit GISAD for patients with dementia at our geriatric hospital in Heidelberg probably is the first of its kind in Germany. The Diakonissen Hospital, Frankfurt, and the Bethanien Hospital, Hamburg, have already modified our concept to suit local requirements. In the international literature, we found a description of a similar segregated care concept for the Alzheimer's Acute Care Unit at the Department of Internal Medicine and Geriatrics at the University Hospital in Toulouse, France [26], and the Acute Care Dementia Unit at Cabrini Medical Center, New York City [18].

Special Care Units for people with dementia in the nursing home setting have been shown to improve quality of life of the residents [21]. Characteristics of these SCUs are small groups of residents, activity programs, and noninstitutional design features with a homelike ambiance [5]. Useful approaches in managing challenging behaviour include the "ABC" approach: Nurses are trained to look at the Antecedents of behaviour, the Behaviour itself and the Consequences of the behaviour. With this information they can set about changing the antecedents and the consequences.

A segregated concept for patients with dementia in the hospital setting would be expected to improve care of these patients and reduce adverse effects of hospitalization by incorporating findings of long-term care into the structures of an Acute Care of the Elderly (ACE) Unit.

Methods

Description of the geriatric hospital

The Bethanien Hospital is the Geriatric Centre at the University Hospital of Heidelberg with 100 acute care beds, a 72-bed rehabilitation unit, and a day care clinic. Admissions are either directly from the GPs or through the emergency departments or acute care wards of the university or other surrounding hospitals. In this specialized hospital patients profit from comprehensive geriatric care and assessment, nursing focussed on maintaining function, multidisciplinary team meetings, planning for discharge, and review of medications.

Development of the special care unit for patients with challenging behaviour (GISAD)

A questionnaire-based survey among the staff of the hospital unambiguously revealed the need for change of current structures and processes in the management of persons with dementia and challenging behaviour. Thereupon, a multidisciplinary working group defined the following goals: amelioration of care of patients exhibiting challenging behaviour, safety for wandering patients, reduction of psychological stress and workload for the staff, better integration of proxies. Taking into account structural and financial limitations, a 6-bed Special Care Unit was created on one of the acute care wards by dividing off the end section of a floor with a newly installed code-locked door. Thus, there is no traffic through the unit which would produce distracting, unrelated noise. Office-judicial permission for liberty-extracting measures is obtained within the first 72 hours after admission for all mobile patients.

One room of the GISAD unit was designed as a living room with a couch, an antique wardrobe containing games, books, yarn, etc., a TV set and a table for the meals which are held in common.

Admission process

Admission to GISAD is discussed with the referring physician, clarifying the need for in-hospital treatment and focussing on probable disruptive behaviour such

as wandering. Upon admission nurses ask accompanying proxies if challenging behaviour has occurred during prior hospital stays. If this is the case, admission to GISAD is reconsidered.

Discharge

In case delirium and associated disruptive behaviour resolve, transfer back to the initial ward is considered. Discharge planning involves proxies and the GP to organise aids for the home setting or a nursing home placement if necessary. Discharge planning starts on admission and is routinely discussed in the team meetings.

Comprehensive geriatric care

At the weekly multidisciplinary team meetings in addition to the typical nursing issues, nurses are requested to comment on behavioural derangements during the past week. Such observations are complemented by other team members. The "ABC" approach focussing on antecedents, behaviour and consequences is applied to work out a strategy to reduce BPSD. Pain as a potential cause for challenging behaviour is also discussed. For treatment of the concomitant medical disease, all diagnostic and therapeutic equipment of the acute care hospital is available.

Mealtimes as a social event

All meals are taken together in the common room. Breakfast is a special event though, as two therapists eat with the patients, create a family-like atmosphere, and at the same time support the patients with their professional expertise.

Daytime activities

Two trained lay helpers arrange a diversity of activities depending on the season, weather and the particular patients present: drawing, painting, singing, reading, and walks in the garden. Since the patients on the unit are extremely vulnerable, prone for the development of delirium or already attaint with delirium, therapeutic interventions have to exceed simple occupation. The psychologist conducts a biography oriented conversation group applying the concepts of Self-maintenance Therapy [23] and Integrative Validation [22]. In addition, music therapy takes place twice a week and individual therapies are applied as indicated.

Restraints

One of the objectives of the model was to avoid using physical restraints as well as medication such as antipsychotics which can be considered to be "pharmacological restraints". One approach is structuring of the day by the activities described above. Needs of these patients also include the environment of attitudes and non-pharmacological approaches that nurses use with these patients. Since nursing care for demented or delirious patients is very challenging education of the nursing staff is paramount.

Involvement of proxies

Proxies of our patients are welcome on the ward at all times. Caregivers are invited to take part in the daytime activities, where our psychologist can contact them and offer particular counselling. Appointments with the social worker are arranged as needed.

Training of staff

We conducted a mandatory in-house training for all nurses inspired by the concept of Carol Archibald [2] whose practice guide for registered nurses was translated into German with our collaboration [1]. Our program contained the following topics: underlying philosophy, biomedical perspective of dementia, different forms of dementia, delirium and dementia (assessment, interventions), drug interventions, involvement of family carers, communication with people with dementia, challenging behaviour, pain and people with dementia, food and drink. Objective of these training sessions was not only to pass on information and knowledge but also to provide a platform for reflection of the daily work processes and for sharing experiences on the unit, thus ensuring an adequate knowledge concerning dementia but also facilitating the transfer from theory to practice [14]. Additionally nurses were encouraged to attend courses on relevant topics offered by our academy such as: communication with persons with dementia, person-centred approach to dementia [13], integrative validation [22], 10-minute activation [25] and experience of violence in the personal history of older women and men. The other professions were invited to the training as well and attended some of the sessions.

Evaluation

Acceptance of the Special Unit among the 12 doctors who had already worked in the hospital prior to establishment of the Special Care Unit and the head nurses

was addressed two-and-a-half years after opening of the unit by a questionnaire with 15 items on a 3-point Likert scale. We evaluated the teaching programme using a questionnaire. The wish for in-depth training or repetition was assessed for each training session. On a 4-point Likert scale the relevance of each particular topic for daily work was evaluated. Psychological burden of nurses was evaluated using the BHD questionnaire [10] before and after the intervention period.

Statistical methods

For quantitative variables mean and standard deviation are presented when normally distributed. Otherwise median, minimum and maximum are shown. For comparison of patients treated on GISAD to the other patients concerning not normally distributed variables the Mann-Whitney-U test was applied, the t-test for normally distributed variables. Statistical analyses were conducted with SPSS statistical software, version 15.0.

Results

Acceptance of the SU GISAD by the staff, reduction of work load for the other wards

All physicians who had already formerly worked in the hospital considered the SCU an efficient method to ameliorate care for patients with challenging behaviour; none advocated more frequent transferral to gerontopsychiatry. Ten of the 12 doctors stated that they encounter fewer patients with challenging behaviour and wandering in the units outside GISAD than before opening of the Special Unit, six physicians felt that there is also a decrease in patients with agitation or aggressive behaviour. Nine stated that they now have more time for their other patients. Moreover, the existence of the unit eases the psychological burden of caring for persons with challenging behaviour, especially wandering, for the physician on duty by having a place were they are safe with a nursing staff capable to adequately treat them.

Attendance and appraisal of the training program by the nurses

Of the 16 nurses, eight attended all six in-service courses; three attended five courses. Some took part in supplementary courses conducted in our academy and promoted as relevant to the project.

Feed-back whether the particular training sessions were helpful for every day work showed a demand for transfer of knowledge especially for the sessions on a) the medical and psychological fundamentals of dementia and delirium and the related assessment tools, b) pain, c) integrative validation, and d) experience of violence in the history of older persons. The wish to enlarge upon or repeat a topic was expressed concerning a) delirium, b) assessment and differential diagnosis of dementia vs. delirium, c) pain, and d) positive handling of complaints (Table 1).

To the open question whether the training program had any impact on their attitudes towards and their work with persons with dementia positive feedback ca-

Table 1 Answers to the question whether the particular training session was helpful for daily work

Topic of training session	Was the training session helpful for daily practice?				
	Not at all helpful n (%)	A little helpful n (%)	Quite helpful n (%)	Very helpful n (%)	Total number of answers
Underlying philosophy	0	4 (44.4)	4 (44.4)	1 (11.1)	9
Basics on delirium	0	0	3 (30)	7 (70)	10
Biomedical perspective and different forms of dementia	1 (11.1)	1 (11.1)	2 (22.2)	5 (55.6)	9
Assessing delirium and dementia	0	2 (20)	2 (20)	6 (60)	10
Involvement of family carers	0	4 (50)	3 (37.5)	1 (12.5)	8
Challenging behaviour	0	3 (50)	3 (50)	0	6
Pain in people with dementia	0	3 (30)	2 (20)	5 (50)	10
Food and drink	2 (25)	2 (25)	4 (50)	0	8
Person-centred approach (Kitwood)	1 (20)	2 (40)	2 (40)	0	5
Integrative validation (Richard)	1 (12.5)	2 (25)	1 (12.5)	4 (50)	8
Experience of violence in the biography of older persons	0	0	1 (20)	4 (80)	5

Table 2 Psychological burden measured by BHD scale including only the 11 nurses who completed the questionnaire before and after the training program. Values of 1 to 3 represent a "positive range", values of 4 to 6 a "neutral range", and values of 7 or 8 a "critical range" [10]

Item	Before intervention (n=11)	After intervention (n=11)	P t-test
Emotional exhaustion	4.7 ± 1.1	5.3 ± 1.7	0.30
Intrinsic motivation	5.3 ± 2.2	5.6 ± 1.4	0.54
(Dis)Satisfaction	5.4 ± 1.6	5.9 ± 1.7	0.11
Aversion towards patient	4.7 ± 2.2	4.9 ± 1.7	0.77
Reactive shield	2.3 ± 1.4	3.8 ± 2.4	0.11

me from several nurses, for example: "My attitude towards working with persons with dementia has changed. It does not appear to be so problematic and fruitless to me anymore." Or: "Care for persons with dementia can be very gratifying." But also limitations due to lack of time: "We can't always work as we were taught in the training, because – often it is such a hassle, we barely manage the absolutely necessary."

Psychological burden of nurses

In Table 2 the psychological burden as measured by the BHD scale [10] is shown for the 11 nurses who filled in the questionnaire before and after the training program. The psychological burden remained in the neutral range and did not change significantly after the training (Table 2).

Observations about the patients treated on GISAD

Several informal observations deserve comment. Challenging behaviour such as aggression often dissolves shortly after transfer to GISAD. This is probably due to a more relaxed and quiet atmosphere on the unit, unrestricted ambulation inside the unit, and the option to leave the patient alone until he or she is willing to communicate. Structuring activities during day-time seem to decrease behaviour such as calling and agitation, as well as sleep disorders. Situations have occurred when the needs of different patients on the unit were incompatible. Some female patients were afraid of men due to sexual abuse in their history. Some patients endangered other patients, so transferral to gerontopsychiatry was inevitable.

Economics

The nurse-to-patient ratio was not increased, for 6 patients this amounts to 1 nurse in the early shift, 0.69 in the late shift and 0.34 at night. The lay helpers' 80 hours a month cost 960 Euro. Two hours a week of music therapy, and three hours for the psychologist led conversation group and one additional hour for counselling of proxies cost 850 Euro a month. This amounts to 12 Euro per patient-day. Mean length of stay (LOS) for patients treated on the SCU during a period of 20 months (n=332) did not significantly differ from LOS of other patients treated in the acute hospital during the same period (n= 4866) (15.3 ± 8.3 days vs. 15.0 ± 10.3 days, t-test, p=0.54). The same is true for the DRG-based excess LOS (actual LOS minus DRG based expected LOS) (median of 4.0 (-17.0 – 43.0) days vs. 2.8 (-27.3 – 72.0), Mann-Whitney-U test, p=0.30). So far, the additional costs are not covered by liquidation in the DRG system.

Discussion

The obvious need for new models of care for patients with dementia hospitalized for concomitant somatic disease and the psychological strain expressed by our staff in caring for patients with BPSD has led to the development of a segregated Special Care Unit for patients with challenging behaviour due to dementia and/or delirium.

The code-locked door does not only assure safety for the patients from keeping them from wandering off the ward but also allows unrestricted ambulation within the unit which very often dissolves aggressive behaviour exhibited before transferral to the unit. Furthermore, the unit is quieter than the rest of the hospital with reduction of unrelated noise and commotion. The "living-room" with its home-like atmosphere has been very well accepted, patients like to go and stay there. Only rarely have we had patients who repeatedly tried to leave the unit or stayed close to the door. Our observations support the findings that family-style mealtimes increase caloric intake in persons with dementia [19].

The daytime activities assure additional presence and observation on the unit which has been important especially in the afternoon when staffing is reduced and "sun-downing" is likely to occur. Furthermore, they prevent boredom and day-time sleep and enable targeted therapeutic intervention by the psychologist or music therapist. Meaningful activity has been shown to reduce sleep disturbances during the night [24].

Caring for patients with dementia is very demanding. Sophisticated communication strategies are essential for the well-being of the patients and prevention of deleterious complications such as delirium. However, they are not at

all self-evident. Therefore, staff training is crucial. This includes basic knowledge about the bio-medical and psychological issues of dementia and delirium as well as communication skills with persons with dementia. Feedback from the nurses clearly shows that knowledge, awareness and esteem for their work have increased during the training period. However, implementation of the acquired communication skills in daily routine is still achieved to a lesser degree. This might have been ameliorated by extra staffing during the training period to facilitate the implementation of the new methods in everyday work.

With the limitation of a potential bias due to the fact that not all the nurses answered the questionnaire the psychological burden as measured by the BHD scale did not reach a critical range before or after the training program. This shows that despite caring for a selection of especially difficult patients the psychological strain seems to be balanced by positive factors. The psychological burden as reflected in this scale did not decrease due to the training program, which might have been expected. On the other hand, caring for patients with challenging behaviour over a period of one year might have resulted in an increase of psychological burden due to burn-out syndrome, which was not the case. Additionally, there has been an increase in workload for the nurses throughout the hospital during this time-period.

The Special Unit has been well accepted throughout the hospital; it is a relief for the other wards and for the physicians to have a specialized team to handle difficult situations due to challenging behaviour (BPSD). The nurses on the ward on which the Special Unit is located have profited from the training sessions, feeling more comfortable about treating persons with dementia and/or delirium.

The development of GISAD on an existing geriatric acute care unit was accomplished with minor reconstruction efforts. The costs for the activities and presence of personnel in addition to the nurses care (26 hours a week, 1800 Euro per month) seems to be reasonable for this population at risk of poor outcomes. It also has to be seen in relation to reduction of work load for the nurses on the other wards who are relieved of these time-consuming patients. This might result in a decrease of LOS [17]. LOS in medical patients with dementia has been described to be longer than in patients without dementia [15, 9]. LOS of 15±7 days for patients treated on GISAD did not differ from other patients in the acute hospital. This also indicates the efficiency of the model which might very well be cost-effective. The main target of this project is an improvement in quality of care resulting in better outcomes in the treated patients. Additionally, this serves as a quality feature, which becomes paramount at a time where competition between hospitals is increasing. However, without a cost-effectiveness study it is strictly speculative whether the Special Care Unit is beneficial for the hospital in financial terms.

The model presented has several limitations due to lack of a control group. In particular we were not able to measure what effect the training of the nurses had on the care of the patients other than by punctual observation and interviews. We did not conduct a standardized evaluation of family caregiver satisfaction. There was no follow-up of the patients. Physicians and nurses were trained to use the German short form of the Confusion Assessment Method (CAM) [11] to help diagnose delirium, but this was not used in a standardized fashion throughout the evaluation period. Further research is needed to evaluate the impact this model has on quality of patient care, staff satisfaction and costs.

All on-site feed-back a well as the descriptive results presented in this paper lead the authors to believe that realisation of a Special Unit for patients with dementia such as GISAD, represents an innovative advance in the care of acutely ill hospitalized older persons with dementia.

Acknowledgements The authors thank the team of the ward, especially head nurse Nelli Herrmann, for their courage to try a new model. We thank PD Dr. Klaus Hauer for his assistance with the manuscript and Hanne Detterbeck and Dr. Bettina Uhlfelder for their help with the database. *Sponsor role* This project was funded by a grant of the Otto- and Edith-Mühlschlegel Stiftung in the Robert Bosch foundation (Project number: 11.4.1365.0006.0). The sponsor had no influence on manuscript preparation. T. Zieschang is fellow of the Forschungskolleg Geriatrie of the Robert Bosch Foundation.

Financial disclosures The authors have no conflicts of interest.

References

1. Archibald C (2007) Menschen mit Demenz in Krankenhäusern. Eine Lern- und Arbeitshilfe für Pflegekräfte. Köln: Kuratorium Deutsche Altershilfe
2. Archibald C (2003) People with dementia in acute hospitals. Stirling: Dementia Services Development Centre
3. Covinsky KE, Palmer RM, Fortinsky RH, Counsell SR, Stewart AL, Kresevic D, Burant CJ, Landefeld S (2003) Loss of independence in activities of daily living in older adults hospitalized with medical illness: Increased vulnerability with age. J Am Geriatr Soc 51: 451–458
4. Creditor MC (1993) Hazards of hospitalization of the elderly. Ann Intern Med 118: 219–223
5. Day K, Carreon D, Stump C (2000) The therapeutic design of environments for people with dementia: A review of the empirical research. Gerontologist 40(4): 397–416
6. Dinkel RH, Lebok UH (1997) The Effects of Dementia in German Acute Care Hospitals. Dement Geriatr Cogn Disord 8: 314–319

7. Fick DM, Agostini JV, Inouye SK (2002) Delirium superimposed on dementia: A systematic review. J Am Geriatr Soc 50: 1723–1732
8. Fields SD, MacKenzie R, Charlson ME, Sax FL (1986) Cognitive impairment. Can it predict the course of hospitalized patients? J Am Geriatr Soc 34: 579–585
9. Fillenbaum G, Heyman A, Peterson B et al. (2000) Frequency and duration of hospitalization of patients with AD based on Medicare data: CERAD XX. Neurology 54(3): 740–743
10. Hacker W, Reinhold S (1999) Beanspruchungsscreening bei Humandienstleistungen (BHD-System). Frankfurt am Main: Swets Test Services GmbH
11. Hestermann U, Backenstrass M, Gekle J, Hack M., Oster P, Thomas C (2008) Validation of a German version of the Confusion Assessment Method (CAM) for delirium detection. Psychopathology (in press)
12. Inouye S, Charpentier P (1996) Precipitating factors for delirium in hospitalized elderly persons. J Am Med Assoc 275: 852–857
13. Kitwood T (1990) The dialectics of dementia: With particular reference to Alzheimer's disease. Ageing Soc 10: 177–196
14. Kolb A, Kolb DA (2006) Learning styles and learning spaces: A review of the multidisciplinary application of experimental learning in higher education. In: Sims R, Sims S (eds) Learning styles and learning: A key to meeting the accountability demands in education.Hauppage, NY: Nova Publishers, pp 45–91
15. Lyketsos CG, Sheppard JE, Rabins PV (2000) Dementia in elderly persons in a general hospital. Am J Psychiatry 157: 704–707
16. McCusker J, Cole M, Abrahamowicz M, Han L, Podoba JE, Ramman-Haddad L (2001) Environmental risk factors for delirium in hospitalized older people. J Am Geriatr Soc 49: 1327–1334
17. Needleman J, Buerhaus P, Mattke S, Stewart M, Zelevinsky K (2002) Nurse-staffing levels and the quality of care in hospitals. N Engl J Med 346: 1715–1722
18. Nichols JN (2002) Windows to the heart: Creating an acute care dementia unit. J Palliat Med 5: 181–193
19. Nijs K, de Graaf C, Kok FJ, van Staveren WA (2006) Effect of family style mealtimes on quality of life, physical performance, and body weight of nursing homer residents: cluster randomized controlled trial. British Medical Journal 332: 1180–1184
20. Ragneskog H, Gerdner L, Hellström L (2001) Integration of lucid individuals and agitated individuals with dementia in different care units. J Clin Nurs 10: 730–736
21. Reimer MA, Slaughter S, Donaldson C, Currie G, Eliasziw M (2004) Special care facility compared with traditional environments for dementia care: A longitudinal study of quality of life. J Am Geriatr Soc 52: 1085–1092
22. Richard N (2003) Zugänge zu Demenzkranken: Integrative Validation. In: Bundesarbeitsgemeinschaft Hospiz (eds) Mit-Gefühlt. Curriculum zur Begleitung Demenzkranker in ihrer letzten Lebensphase. Wuppertal, pp 44–45
23. Romero B, Wenz M (2001) Self-maintenance therapy in Alzheimer's disease. Neuropsychol Rehabil 11: 333–335
24. Schmidt-Hackenberg U (1996) Wahrnehmen und Motivieren: Die 10-Minuten-Aktivierung für die Begleitung Hochbetagter. Vincentz Network
25. Smith B (2001) Dementia on a general ward: The benefits of activities. J Dementia Care 9: 30–31
26. Soto ME, Nourhashemi F, Arbus C, Villars H, Balardy , Andrieu S, Vellas B (2008) Special acute care unit for older adults with Alzheimer's disease. Int J Geriatr Psychiatry 23: 215–219
27. Sourial R, McCusker J, Cole M, Abrahamowicz M (2001) Agitation in demented patients in an acute care hospital: Prevalence, disruptiveness, and staff burden. Int Psychogeriatr 13(2): 183–197