

'When They Sleep, They Sleep'

Daytime Activities and Sleep Disorders in Nursing Homes

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[Anatomy of an article – Annotations by Uwe Flick
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Abstract

Are nurses aware that activities can reduce residents' daytime sleepiness and increase sleep quality at night in nursing homes? This question is studied in a project focusing on sleep disorders and multi-morbidity in long-term care. In Germany, episodic interviews with 32 nursing staff members (age 24–60 years) with different qualifications addressed their views on links between residents' daytime structure and activities and their sleep/disorders. Three interpretive and activity patterns (intervention; missed opportunity; ignorance) were found, which differ in relation to how far the interviewees motivate residents' activity. Implications for a training program based on these different premises are discussed.

Keywords

- activation
- day structure
- nursing facilities
- sleep disorders
- staff's knowledge and practices

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Question: Does the title give an orientation for the article's content?

Commented [UF2]: Subtitle outlines more seriously the problem that was studied and the topic of the article.

Question: Does the subtitle make transparent what was studied and is reported?

Commented [UF3]: The abstract summarizes the problem, methodology, context, participants, the results on a comparative level (patterns and their distinctions) and the implications of the findings for training in the field.

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Commented [UF4]: The five keywords refer to the problem of the study (*sleep disorders*), the concrete focus of the study (*staff's knowledge and practices*), the context where the problem is studied (*nursing facilities*) and aspects of the empirical approach (*activation day structure*) focused in the article.

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RESIDENTS in long-term care facilities often have a characteristic sleep-wake pattern: while residents repeatedly take short naps, they wake up in the night and have problems going back to sleep. Nightly sleep interruptions and frequent daytime sleep are mutually linked and may lead to a destruction of the regular sleep-wake pattern in the long run (see Alessi et al., 2005, p. 803; Martin & Ancoli-Israel, 2008). Sleep disorders including irregular sleep-wake patterns are connected with health risks in higher age as well. They intensify somatic symptoms of chronic diseases and are risk factors for falls and injuries, stroke, coronary heart disease and cancer (Krishnan & Hawranik, 2008). Day sleepiness is linked to cognitive and functional losses (Ohayon & Vecchierini, 2005, p. 987).

Sleep disorders are caused by individually varying factors, but we find some specific causes in the context of the 'nursing home'. The most important reason for the high prevalence and pronounced degree of symptoms is that the majority of the institutionalized suffer from diseases normally accompanied by sleeping disturbances. The often multi-morbid inhabitants bear chronic illnesses like coronary heart disease, arthritis, pain, depression or neurological disorders like Parkinson's and dementia. In the context of nursing homes we find specific reasons 'beyond the individual'. However, the particular conditions of collective living have also been recognized as frequent causes of disturbed sleep. They are caused as well by behavioral and environmental factors, which are potentially reversible (see Alessi et al., 2005, p. 804; Martin & Ancoli-Israel, 2008). Here, light and noise in the ward coming from nursing activities as well as a lack of light in the institutions and of stays outside in the daylight have been mentioned. More behavioral causes of sleep disorders are the inactivity of residents spending most of their day in their own rooms. The longer residents stay in bed and the less they participate in social activities the more likely day sleepiness occurs (Martin et al., 2006). To be active and to have a satisfying social life is seen as a protection against insomnia in the general population (Ohayon, Zulley, Guilleminault, Smirne, & Priest, 2001, p. 365). According to a clinical research review by Montgomery and Dennis (2002), physical exercise has improved the duration and quality of sleep. Because the exposure to behavioral and time-giving cues was generally reduced among old people, the promotion of structured physical or social activity was beneficial for night sleep (Naylor et al., 2000).

Richards, Beck, O'Sullivan and Shue (2005) exposed 147 nursing home residents to an individualized social activity. The consequence was a change of sleep patterns. Study participants fell asleep faster, awoke seldom at night and reduced their daytime sleep. Such changes have been found as a result of an intentional intervention or therapy for particular residents, for instance, persons suffering from cognitive impairment or depression (Ancoli-Israel, Martin, Kripke, Marler, & Klauber, 2002). Because of the mutual effects of sleep disorders and physical and mental problems and diseases, sleep problems should receive particular attention in health care and nursing for the elderly.

Professionals' awareness

Studies like the ones mentioned above have analyzed interrelations between activities and sleep quality or problems on the level of the residents. However, we find very few studies addressing the question of how far nurses and physicians are aware of the relevance of sleep and sleep disorders for the elderly. The few studies available show that sleeping problems of the elderly are often ignored and understood as a part of the normal ageing process or as a health problem, for which treatment is difficult (see Krishnan & Hawranik, 2008; Martin & Ancoli-Israel, 2008). Physicians in primary care often do not diagnose the sleep problems of their aged patients and nurses in nursing homes often ignore these problems, too (Adamsen & Tewes, 2000; Shulman, Taback, Rabinstein, & Weiner, 2002).

Multimodal interventions address various causes of sleeping problems and aim at factors in the institutional environment and in residents' life style. However, the institutional level seems to be the primary level for interventions. Here it seems most relevant to make the nurses more sensitive to the importance of sleep and sleep disorders and for possible influences. As Schnelle, Alessi, Al-Samarrai, Fricker and Ouslander (1999, p. 438) discuss regarding noise at night produced by nurses, the nurses' awareness of sleep disturbing influences alone is not sufficient to limit the effect of such factors in their own practices (see Martin & Ancoli-Israel, 2008).

In what follows, the tension between being aware of a problem and changing one's own nursing practices regarding this problem is addressed. The main question is how far nurses working on a day-to-day basis with residents as their main contact persons are aware of links between day structure and activities

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Question: Does this overview give a concise impression of what has been done in this field already?

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and sleep quality. The second question is, what consequences such awareness has for nursing practices.

Methods

The research presented in this article is part of a larger empirical study¹ on sleep disorders and multimorbidity in institutional long-term care. It is based on two methodological approaches: (1) a secondary analysis of assessment data collected with the

Resident Assessment Instrument 2.0 (Morris et al., 1995) focusing on activity levels of nursing home residents suffering from sleep disorders (see Garms-Homolová, Flick, & Röhsch, this issue). (2) interviews with staff from nursing facilities in Berlin, in which the assessment data were collected. These provide the results presented here. The research question pursued in the interview was: are nurses and caregivers aware of the importance of the stimulating environment that seems to be a necessary precondition for a reasonable quality of sleep? Do they understand that persons who are frequently napping will have problems staying asleep at night? Sampling for the interviews aimed at covering staff with different levels of qualifications and various professional backgrounds. The proportions in each subgroup in the study were derived from the nursing staff structure in Germany according to the *Fourth report about the development of the Long-Term Care Insurance—LTCI* (BMG, 2008, p. 134).

We accessed potential interviewees via the heads of nursing staff in each nursing home who decided whether the institution in principle was ready for participating in the study. Ten out of the 20 institutions originally addressed refused participation. Reasons given included lack of time and staff, but implicitly also distrust of this research.

Heads of nursing staff with an interest in the study were given detailed information about the background, research question and the aims of the research and asked to forward such information to potential interviewees. A letter to potential interviewees highlighted that their participation was voluntary and that all statements and information would be anonymized according to data protection rules. The head nurse then arranged contact with staff members with different professional qualifications on the basis of this informed consent. From December 2008 to May 2009 we interviewed 32 nurses and caregivers—six male and 26 female from 10 nursing homes. The sample included the professional groups displayed in Table 1.

Table 1. Sample of the interviewed nursing staff

Professional group	Gender		Total N
	Male N	Female N	
Geriatric nurses	3	7	10
Nurses	1	6	7
Nursing auxiliaries	1	4	5
Caregivers without formal qualifications	1	9	10

The participants had professional experience in the institution ranging from five months to 29 years, with an average of 8.5 years. They had finished their professional training between 1979 and 2005 and were between 24 and 60 years old. Episodic interviews (Flick, 2009) combined concrete, focused questions about sleep and sleep problems with narrative stimuli focusing on specific situations and experiences. Interviewees were asked about the relevance of 'good sleep' for old, multi-morbid residents and about their experiences with sleep related interventions. They were invited to recount the situations of such interventions. The interview included topics of: daily routines; residents' sleep-wake habits; frequency and causes of sleep problems; effects of sleep problems on nursing; prevention and management of sleep disturbances; obstacles to effective management. In this article, we focus on the participants' awareness of day structure and daytime activities. We consider their understandings of the effects on sleep and wake behavior of the residents, but at the same time on nursing and care giving. Questions referring to this topic were for example: 'What are the sleeping habits of your residents? What happens when you have to help them going to bed? Can you describe such a situation?' 'What can you do to prevent sleep problems of your residents? What is done here in your institution for this purpose? Please describe such a typical situation to make it clear to me.' One female interviewer did all the interviews, which took between 30 and 60 minutes. They took place in a room in the nursing facility provided by the interviewees (e.g. currently unused resident or meeting rooms). The interviewees also decided the time of the interview—mostly immediately before or after their shifts.

Thematic coding (Flick, 2009) was used for data analysis. Statements referring to a particular issue

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Question: Are the research questions specific and clear?

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Question: Is this outline informative but also brief enough for maintaining the focus on the current article?

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Question: Does the reader know what was done?

Commented [UF13]: The research questions of the part of the study reported in this article are stated.
Question: Are they clearly formulated?

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Question: Is it transparent why and how the data were collected?

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Question: Does the reader know how data were collected?

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Question: Does this allow to see the properties and limits of the sample?

(e.g. prevention of sleep disorders) were coded for each interview separately. Then comparative dimensions were identified across all cases for analyzing similarities between different interviews. Cases were categorized into groups along these dimensions, before similarities and differences within a group were noted. This was the basis for identifying interpretive patterns, which again were examined by comparing and contrasting cases within and between the patterns.

Results

Daytime activities and sleep disturbances: representations in nursing staff's experiences

Based on the interviews with nursing staff, we found three interpretive patterns concerning the relations of daytime activities and sleep quality:

1. *Intervention.* [This pattern is characterized by the understanding that quality of sleep depends on the time structure applied in the ward. This 'understanding' means that residents have to be pushed to accept the invitation to engage in activities provided by the facility because the more active they are, the more tired they would become. Consequently, they would not wake often during the night. Therefore, interviewees who draw on this interpretation try to motivate the residents to participate in daytime activities for improving their sleep at night.]
2. *Missed opportunity.* Here, the respondents see the links between daytime activities in the ward and residents' sleep (problems). But they seem either not to understand that residents must be motivated to take part or do not recognize the benefits of activation. Rather, they give a number of justifications, which refer to the residents or professional standards, to explain why they refrain from motivating the residents to participate in daytime activities.
3. *Ignorance.* These interviewees do not pay attention to 'sleep disorders'. Moreover, neither this issue nor possible interventions for improving sleep quality are part of their work. Thus, they do not motivate residents to engage in daytime activities for improving their sleep.

Comparing the first and second patterns shows that respondents in both cases have a clear assumption about which activities residents of a nursing

home would accept. They believe that only games, walks or excursions are 'meaningful'. Only this type of occupation can contribute to social integration of individuals, to communication among residents and also between residents and the staff. 'Meaningful activities' are considered a compensation for functional loss. Activities should be adjusted to the individual needs of different target groups and must not be over-challenging:

We try to get them together, so that we can provide them with some offers—in particular for people with dementia ... so that the group is as cohesive as possible. Then, we do a bit of memory training. Then, there is the prevention of falls, too. (Mr A)

The respondents stressed the importance of involving residents in the ordinary routines of the facility. This allows maintaining connections to their lives before entering the institution. Many interviewees seem to recognize that their residents are able to be responsible for their own basic affairs, which will increase their everyday satisfaction. They might relax, and they may have fewer problems with falling and staying asleep. Renewing the links between the life in the facility and the individual past was described as being particularly important: a part of the responsibility for their own business is given back to the residents. Thus, activation of residents must not just 'kill time', but keep them in control of their own day course:

Then we made meatloaves in the evening ... and that was really action; and then you fall into your bed and are dead tired ... I really think a meaningful activity has to be given somewhere, not only to paint in some pictures ... then you have a good reason to be tired. (Mrs B)

A difference between the 'intervention' and 'missed opportunity' patterns is how far the respondents are ready to transfer their knowledge into real care work. Whereas the proponents of 'intervention' showed a considerable motivation, the pattern 'missed opportunity' indicated that not much was done. Moreover, according to their reports, any kind of intervention was neglected. On the contrary, the pattern 'intervention' included efforts to realize a variety of activities in the ward. Good sleep at night was recognized as the most important precondition for clients' acceptance of the activities and events. The respondents were aware of the reciprocity in the relationship between 'activity' and 'quality of sleep': they considered daytime

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Question: Does the reader know what was done?

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Question: Are the patterns easy to understand?

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Question: Are the patterns easy to understand in their details?

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Question: Does this help to assess the patterns and findings?

occupation as a basis for the residents' good sleep, and having good sleep as a way to enable the individuals to accept the invitation to participate. It was stressed repeatedly that the activities must not be too demanding: 'when they did not have a good sleep, they are simply moody. For example, when we had any activities in the home, they were always interested. Today of course they had no interest at all in such activities' (Mrs C).

Additionally, structured daily routines are used to enable residents with dementia to distinguish day and night. Therefore, nurses try to fix the time schedule for getting up in the morning and going to bed in the evening. Meal hours and occupations are scheduled at fixed times as well. Residents are not allowed to stay in bed during the daytime, but have to leave their rooms (unless a person feels ill).

Our respondents rejected an attitude that in their view is otherwise highly prevalent among professional nurses: 'Residents have the right to spend their days free of any constraints because they have grown old after a stressful life.' Rather, such a freedom is seen as something that would overstrain the clients, reduce their physical and mental capacities and would finally cause sleep disturbances. Residents benefit from unchangeable routines and fixed schedules. Anything else would be overstraining. A compulsory day routine confronts the residents with certain demands and is an essential contribution to health promotion in general:

It has been modern in a way ... to let everybody do what they like to do ... For maintaining health, I believe, a bit of discipline is quite important, that the people know breakfast is in the morning and lunch is at lunchtime and dinner at night. That you do always postpone everything to varying times of the day. Well they get uneasy, they become sicker, they become ill-humored. (Mrs D)

Nevertheless, according to our respondents, residents have the opportunity to decide when they want to go to bed. If their wishes do not fit the facility's regime, the latter must be changed.

In contrast to 'intervention', the pattern 'missed opportunity' is dominated by justifications of why nurses do almost nothing to improve the duration and quality of sleep, although they know how important activation and daytime structuring is. Obstacles are seen in two aspects: the person of the resident or professional standards.

Obstacles in the person of the resident

The staff members in this subgroup see few alternatives to a day routine structured by the basic nursing routines and perceived by residents as monotonous and empty. The residents' 'inactivity' manifested in social withdrawal, was evident and beyond question. They admitted, only marginally, that it might also be their job to stimulate activities. In this context, the unstimulating atmosphere in the resident area was trivialized. Thus, no need was seen for remedying the lack of activity offers:

Besides that, the day routines in general are a bit dreary for the people. That's everyday life, ... the night ... they generally can no longer sleep through the night, because they rest so much during the day, and because it is a bit calm here. (Mrs E)

At the same time they complained that the residents often rejected offered activities and instead dozed in their rooms. The frequent day sleep is seen as a deliberate 'wish to sleep' and difficult to understand for the staff. It demonstrates 'that the residents do not want to do much, that they mostly want to sit in their chairs and sleep' (Mrs F). This is experienced as a personal rejection. These respondents react with anger, when their attempts to 'offer something' like various daytime activities do not find responses. Then it is the residents' own fault that they are bored. Instead of accepting the day structuring offers they often doze and have sleeping problems at night. This is seen as the result of the residents' general attitude of refusal:

They also reject offers of activities, that is the problem, that they are in their daily grind and that they no longer let themselves be motivated ... They do not know really in general, that is only 'can't be bothered'. I mean if you do not come out of this day for day, then you let yourself fall quite easily. (Mrs E)

These respondents are not sure how to motivate the residents to participate in daytime activities and how to plan these activities so that the residents will accept them. This uncertainty leads to a rather vague notion that they should occupy the residents with 'just something' (Mr G) to prevent them from falling asleep.

In addition to this diffuse disinclination, which prevents the residents from participating in certain daytime activities, health impairments and physical diseases are also seen as obstacles. The residents are

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understood to be easily over-challenged by participating in suggested activities. This leads to the ambivalent view that, although residents should be more active so as to be tired in the evening, at the same time these nurses were convinced that they failed in this goal, because 'you cannot demand more from the residents' as one nurse held.

Obstacles in the professional standards

Some nurses identified professional standards as the reason that they fail in fighting against sleep disorders. They saw preventing residents from going to bed too early by offering them an adequate evening activity as an illusion. Moreover, needs expressed by residents and their reduced capacities are held sacred. Therefore, these staff members see themselves as the residents' advocates who protect their interests and sleeping habits. Cognitively impaired persons should be particularly 'protected' against the application of guidelines, which are seen as unrealistic and even cynical. Accordingly, the guidelines should not be the measure for planning the work with the residents. Rather it is important to allow observations of the residents' behavior to imply their needs and to react flexibly to them:

Then I think, they need the rest then, I don't know when, at six in the evening, some of them until seven in the morning, they need that sleep, and then the MDK [Institute of Professional Control] can come a hundred times and tell us 'eleven hours is too long without eating', when they sleep, they sleep, that is the case and there are some contradictions to what is postulated and what everyday life really looks like. (Mrs H)

These interviewees mentioned a fixed day structure as an orientation for residents with dementia in particular, which gives them a feeling of security, reduces their fears and thus makes them sleep better. Accordingly the interviewees referred to fixed times in their ward for waking up the residents and for going to bed, mostly in the early evening. Residents' extended phases of rest during the night were not questioned but seen as part of structured daily routines. The respondents hardly recognized that this long period in bed without external stimulations and demands could be a reason for sleep disorders. Sometimes they could not admit this, despite knowing that older people need less sleep: 'When they have the same rhythm every day, get up early, go for breakfast at nine, let's say at two some

siesta, then a coffee in the afternoon and to bed at six' (Mrs I). The residents were seen as exhausted from any activity during the day, so that they need long periods of rest. Day sleep, going to bed early and getting up late compensate for a not very refreshing night's sleep.

Despite the awareness that a fixed day structure gives an orientation, such a structure is understood as an offer without obligation for the residents, who decide when to get up and to go to bed. This sleep-wake behavior was seen as a long-term habit and as a part of the residents' personality and is respected. When these individual day rhythms lead to changes in the mealtimes and make them irregular, this was seen as unproblematic. The same interpretation applies when residents might miss daytime activities because they sleep. The interviewees sometimes deliberately, sometimes because of a lack of knowledge, ignore the understanding that irregular day routines contradict rules of sleep hygiene. They also accept an inverse day-night rhythm for some residents because they should have as much freedom as possible. The atmosphere in the institution should be as livable as possible and that excludes too many rules in its everyday life:

We made it like she slept during the day and made the night a day. Then she ate during the night and we put aside some of the lunch and she had her lunch at night. Everything else, breakfast and dinner, she has made everything the other way round. (Mrs I)

Such a modified sleep-wake behavior was trivialized as individual preference to be respected. The interviewees assumed that they have no right to influence their residents' sleep habits for therapeutic or nursing reasons. To insist on structuring the day means to incapacitate the residents and to take away their age-specific 'liberties', which include the independence after work life:

They are grownups in some way, who can do what they want ... They all have worked their whole lives, probably they all had to get up early ... most certainly they were always there for their children, and so they can sleep in now. (Mrs J)

In contrast to 'intervention' and 'missed opportunity', the pattern 'ignorance' shows that the interdependency between the daytime structure and residents' sleep problems remains unrecognized by a significant portion of the interviewed staff. They seemed not to care, whether residents really sleep or not. The day and night course is not seen as the

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Table 2. Connection between daytime structure and activities and sleep quality: patterns

Pattern	Professional group		No formal qualification		Total N 2232
	Formal qualification		Nursing auxiliaries N 225	Caregivers without formal degree N 2210	
	Geriatric nurses N 2210	Nurses N 227			
Intervention	3	4	1	—	8
Missed opportunity	6	3	3	4	16
Ignorance	1	—	1	6	8

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staff's responsibility. Accordingly, it is not assumed that a particular day structure could prevent sleep disorders. The intention to activate residents remains vague and was rarely mentioned. The sentence 'Residents are allowed to participate' (Mrs K) shows that daytime activities were considered entertainment and luxury without a therapeutic use for sleep improvement. Day structure and activities stand side-by-side without any connection with sleep and sleep disorders:

Offerings in the dayroom, where games are played, language training, bricolage ... you see how the residents are delighted.

I: And do they have any influence on sleep?

No, I wouldn't say so. (Mr L)

Summary

As the patterns 'intervention' and 'missed opportunity' demonstrate most of our respondents assumed that inactivity or lack of structured time could somehow intensify residents' sleep disorders (see Table 2). However, only some understand that persons who are neither physically nor cognitively challenged will have sleeping disorders. They saw daytime activities and structured institutional routines as useful for preventing or reducing sleep disorders. This interpretive pattern largely applies to the examined nurses among our interviewees. To discover whether these nurses truly stimulate the residents to participate in daytime activities or only said so in the interviews, further research should triangulate interviews and participant observations of caring practices (see Flick, 2008). In general, such awareness does not become relevant for the staff's everyday work as residents are less likely to be encouraged to participate in the activities and

events of the facilities. Mainly, examined and non-examined nursing staff used different excuses for neglecting the activation and encouragement of residents. They either wanted to respect residents' rights to passivity, or they preferred other aspects of their work. The activities that were offered were apparently often not very appealing to the residents because these staff only chose activities that do not over-challenge the residents. For some interviewees who were caregivers without formal qualifications, residents' sleep disorders were no issue at all. Thus, they did not see any reason for improving sleep qualities by offering daytime activities.

Discussion

Sleep disorders are a health related risk factor for the elderly, as they can cause falls, serious physical diseases and cognitive impairments (see Krishnan & Hawranik, 2008; Ohayon & Vecchierini, 2005). In our interviewees' reports about how they deal with sleep and its disorders, this high relevance of a disturbed sleep for health (problems) was not represented. As in Danish and Canadian studies (Adamsen & Tewes, 2000; Krishnan & Hawranik, 2008), we have found that sleep and its disorders were not seen as an important issue of nurses' daily work. Actually, our participants did not believe in their own professional competence in influencing residents' sleep-wake behavior through structured routines. The low level of activity found in people suffering from sleep disorders in our assessment data (Garms-Homolová et al., this issue) corresponded with nurses' reports, that residents are frequently refusing invitations to events of the facility. Excessive sleepiness during the day and sleeplessness were considered as residents' own fault.

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Question: Does the discussion allow to locate the findings and link them to the literature and research presented in the first part of the article?

Commented [UF27]: The summary refers to the patterns found and thus to the results obtained and to the differences between them.

Question: Are the main points included here?

Consequently, different types of interviewed nurses seldom expressed the determination to offer stimulating and interesting occupation to their clients. Moreover, they wanted to protect them from overstraining and over-stimulation. Similarly to other studies (see Martin et al., 2006), our project also shows that residents spend most of their time without occupation and activity.

The cause of this attitude seemed to be primarily limited knowledge. Interviewees' ideas of the impact that the structured regime can have on the residents' sleep quality at night mostly resulted from experience-based everyday or lay knowledge. Scientifically informed professional knowledge seemed less influential. Mostly they referred to the general insight, that activities during the day are a condition for a good sleep at night.

Inactivity was seen as a life-long habit, if not a privilege; after a long working life, an individual has a right to rest the whole day. Some nurses recognized that such behavior might cause poor quality of sleep during nighttime, however, most participants ignored this. A 'professional concept of sleep disorders and corresponding options of intervention' was expressed only by a limited number of respondents. Table 2 shows that this applied to respondents with a formal nursing qualification, whereas 'the lay concept' prevailed in the group without comprehensive nursing training. As found in other studies, such awareness does not necessarily lead to health care practices (Martin & Ancoli-Israel, 2008; Schnelle et al., 1999). In our study, all types of nurses—the 'professional' and 'non-professional, lay concept oriented' as well—found excuses for why intense activation and day structuring could not be applied. The proponents of the professional concept believed that other professional standards (e.g. repositioning during the night) must have a priority. Or they wanted to protect residents' autonomy in deciding not to participate in activities offered by the nursing home. Sometimes, shortage of staff was seen as an excuse that nothing could be done. The representatives of the 'lay concept' of care saw sleep disorders as a natural development of an individual life course or as the result of residents' stubborn behavior. Again, the latter perspective corresponded with our assessments: residents with sleep problems frequently had a higher level of conflicts with staff and other residents (see Garms-Homolová et al., this issue).

Because our study did not use a representative sample, we cannot guarantee that it was not only

staff members who were interested in the sleep issue, or who were convinced of giving a good account of their relevant nursing knowledge and practices, who agreed to be interviewed. Another limitation of the study is that the staff were only interviewed but not observed in their caring routines. Thus, it remains unclear how far the described interventions correspond with the real work.

Practical implications

These results indicate that the staff's poor knowledge and its limited application may be one cause for residents' limited sleep quality. Thus, the results suggest developing strategies for training nurses on a sound scientific basis about the issue of residents' sleep in nursing homes. The main purpose of such training would be to provide information on sleep, its pathology and basic rules of sleep hygiene and to discuss the range of effective interventions. Particularly staff without formal qualifications seemed to need basic information on sleep and sleep disorders, for our interviews showed major limitations of knowledge available to this group.

Many of our interviewees accepted that the residents spend a large part of their day in bed and believed that it is in the residents' interest to let them stay in bed. However, just more knowledge may not be sufficient. Our results showed a gap between the existing awareness of sleep/disorders and the consequences on the practical level. Many of our interviewees refrained from integrating residents in daytime activities because they assumed that their clients were not keen on it and rather preferred being alone. This gap and this misconception could be issues for training offered by health psychologists.

Training programs should also discuss how to include the residents in the planning of day routines so that these can better meet their individual needs and interests. In this context, staff should be trained in communication with reluctant and/or passive individuals. The tension between residents' sovereignty and the requirements of modern therapy of sleep disorders should be addressed as well. As our interviews showed, many of our participants saw interventions influencing residents' sleep-wake patterns as an invasion of their privacy. This fear of doing something wrong by intervening could be found for the majority of the registered and of the non-registered nurses. Here, we find the strongest need for further education. Nurses should learn that the neglect of appropriate

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Question: Are the suggestions made here clearly rooted in the research and its findings?

intervention has greater negative consequences than most of the therapies available today (Avidan et al., 2005). For this purpose, nurses need sound information about possible consequences of absent interventions. They should become aware that more activation during the daytime does not only support residents' restful sleep at night but also their health in general. Further research should study the effects of such training: does it have an impact on nurses' knowledge and nursing practices? And finally, does enabling the staff with better education and information about the issue have an impact on the residents' sleep quality?

Note

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Commented [UF30]: Here the funding of the research is made transparent.

Question: Does this show the funding background?

Commented [UF31]: Here those works that have been quoted or explicitly referred to in the article are listed.

Question: Does the list of references help to localize the methods used in the research presented here?

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Question: Does this give a clearer idea of the background of the study?