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The Relationship between Health-Related Quality of Life and Care Dependency among Nursing Home Residents in Germany: A Longitudinal Study

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Abstract

Nursing home staff should assist residents in achieving better health-related quality of life (HRQOL). HRQOL has become an increasingly important means of assessing the individual's needs in health care. Up to date assessment of the care dependency of the residents is a standard means of knowing the residents' care needs in nursing homes in Germany. We aimed at evaluating changes in the HRQOL of nursing home residents and the relationship between HRQOL and care dependency.

Methods: A prospective study was conducted in eleven nursing homes (72 residents). HRQOL was measured at admission and after twelve weeks using the Nottingham Health Profile (NHP) in the domains "Physical Mobility", "Energy", "Pain", "Social Isolation", "Emotional Reaction" and "Sleep". Care dependency was evaluated using the Care Dependency Scale.

Results: HRQOL in the domain "Physical Mobility" improved significantly in 55.6% of the residents (p=0.002). A significant decrease was found in the domain "Emotional Reaction" in 54.2% of the residents (p=0.047). Residents with constant or higher values in their "Emotional Reaction" (worse HRQOL in these domain) at T1 compared to T0 were less cognitively impaired than residents with an improved (better HRQOL) "Emotional Reaction". Care dependency improved significantly in the study period. No correlation between HRQOL and care dependency was found.

Conclusion: As there is no correlation between HRQOL and care dependency over the study period, the residents' HRQOL should be evaluated in regular intervals which can be important in drawing conclusions about possible undiscovered needs from the resident's perspective. Assessing the changes from the resident's perspective supports the nursing home staff to assist residents in achieving better HRQOL.

Keywords: Health-related quality of life; Nursing home; Germany

Introduction

Health-related quality of life (HRQOL) has been defined as an individual's subjective experience of the impact that illnesses and their treatments have on the individual's functioning in a variety of domains, such as physical, psychological and social functioning, as well as the impact of illnesses on the ability to engage in daily activities [1]. It is a subjective reflection from the individual's viewpoint rather than that of outside observers and should be measured as long as possible through self-reporting [2]. Therefore, HRQOL scores may be interpreted as reflections of the resident's own experience of gained (or lost) HRQOL and provide a non-disease specific outcome measure [3].

HRQOL has become an increasingly important means of assessing the individual's needs in health care [4]. In the daily nursing home routine, staff members are expected to assist residents in achieving better HRQOL [4,5]. Thus it is important to periodically assess the residents' HRQOL and to seek the residents' opinions on factors that could contribute to improving HRQOL [6], but up to date assessment of HRQOL is not a standard in nursing homes in Germany.

The most important reason for nursing home admission is severe age-related cognitive and physical disability through several chronic illnesses [7,8], enhancing the problem of care dependency [5]. Most nursing home residents, particularly those aged 80 years and above, depend on others to assist them in the basic activities of daily life [9]. In Germany in 2011, 12,400 nursing homes provided care for 743,000 residents with more than a third (36%) aged above 85 years [10]. By 2050 Germany will have the second highest share of people over 80 years old (15% of the population) in the countries of the Organisation for Economic Co-operation and Development (OECD), Japanese will have the highest share (16.5%) (OECD average: 9 %) [11].

Care dependency takes many forms ranging from physical, mental, emotional and social dependency, to name only some important categories. Dijkstra, Buist, and Dassen [12] has given the following definition for assessing the nursing dimension of the patient's/resident's degree of care dependency: "nursing care dependency is a process in which professionals offer support to a patient whose self-care abilities have decreased and whose care demands make him/her to a certain degree dependent, with the aim of restoring this resident's independence in performing self-care". The promotion of independence requires institutions and nursing professionals to provide qualitatively good care based on patient needs, thereby improving the quality of life [5]. Assessment of the care dependency of the residents is a standard means of knowing the residents' care needs in nursing homes.

The correlation between care dependency and HRQOL are discussed differently in the literature. While Gonzáles-Salvador et al. [13] found a significantly lowered quality of life in residents with high care dependency, a study of Menzi-Kuhn [14] in Switzerland did not find a correlation between care dependency and HRQOL. It remains questionable if the assessment of care dependency through the

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professional caregiver reflects the individual needs from the resident's perspective, which is assessed by HRQOL. HRQOL philosophy is a step away from the view that experts know best [15]. The relationship of care dependency and HRQOL is not clear. In Germany, so far no study has investigated the influence of care dependency and HRQOL.

A further influencing factor of HRQOL is cognitive impairment, which is also viewed differently in the literature. While some studies found no correlation [16,17], others stated that better cognitive function correlates with higher HRQOL [13,18]. Negative influencing factors are depression [13] and pain [19].

It is known that the estimation of HRQOL is subjected to adjustment processes which refer to a change in the meaning of one's self-evaluation of HRQOL by comparing their expectations with their experiences. For example, if a person moves into a nursing home and sees other residents more dependent on mobility than they are, he/she will compare his/her situation with the situation of others and adapt their expectations accordingly [20].

The aim of the present paper is to evaluate changes in HRQOL of nursing home residents and the relationship between HRQOL and care dependency. Our research answers the following questions:

Does HRQOL change from the time of admission to three months after among nursing home residents?

Does the HRQOL of nursing home residents correlate with their care dependency?

Materials and Methodology

Study Design

The present study was designed as a multicentre longitudinal study as part of in the project "Health-related quality of life of residents in nursing homes in Germany", which aims at evaluating HRQOL with regard to pressure ulcers, falls, incontinence, care dependency and structural factors of the nursing homes, such as staff qualifications and activities provided for the residents. The present analysis used parts of the whole study. The variables included in the present analysis are HRQOL, care dependency, cognitive impairment, age, gender and activities provided for the residents. Ethical approval was given by the Ethical Committee of the Charité-University Medicine Berlin, (No: EA1/212/07).

Setting and Participants

Eleven out of 288 nursing homes with a minimum of 50 beds in Berlin and Brandenburg were randomly selected for this study. All of the 553 consecutive residents newly admitted to the nursing homes in the recruitment period from April 2008 until December 2009, or their legal representatives, were informed of the project. One of the mandatory inclusion criteria was the written informed consent of the nursing home resident or the relevant legal representative within the first two weeks upon nursing home admission. Nursing home residents in a final stage of life with a survival probability of less than four weeks and short-term care residents with a planned stay of less than four weeks were excluded from our study. Residents with a severe cognitive impairment (MMSE <10) were also excluded.

Measures

Health-related quality of life was measured using the German version of the Nottingham Health Profile (NHP) which, according to a former study, is a feasible questionnaire for residents with normal cognitive function and moderate cognitive impairments (MMSE ≥10) [21]. The NHP was designed to be a standardised and simple measuring instrument of the subjective health status in the physical, social and emotional domains. It was validated in different settings and translated into 22 languages [22]. The NHP consists of 38 items in six domains. The items are answered with "yes" if the statement adequately reflects his/her current status or feeling, or with "no" otherwise. Positive responses (yes) were weighted and summed for each domain ("Energy", "Sleep", "Pain", "Emotional Reaction", "Social Isolation" and "Physical Mobility"). The range of the domain score was from zero (good subjective health status) to 100 (poor subjective health status) [23]. For our purpose and in agreement with the German author Kohlmann, the NHP was modified into questions. For instance, the original statement "Everything is an effort." was changed in our study to "Is everything an effort for you?". The modified version was previously tested (Cronbach's α>0.7 in four domains, >0.6 in two domains, ICC >0.7) and showed acceptable results [21].

Care dependency was measured with the Care Dependency Scale (CDS) consisting of 15 items. The scores of the CDS range from 15 (high care dependency) to 75 (no care dependency). The CDS was categorised into low care dependency (60 to 75 points), moderate care dependency (45 to 59 points) and high care dependency (15 to 44 points) [24]. The CDS is widely used and has been validated in long-term care populations [5].

The cognitive status of each resident was evaluated using the Mini-Mental State Examination (MMSE) with scores ranging from zero (very severe cognitive impairment) to 30 (no cognitive impairment). The MMSE is widely used and has been validated in long-term care populations, such as nursing homes. The MMSE was categorised into normal cognitive function (MMSE ≥21), moderate cognitive impairment (MMSE 10-20) and severe cognitive impairment (MMSE <10) [25,26].

Diseases were recorded from the patient's file using chapters of the International Classification of Diseases (ICD-10), such as "Diseases of the musculoskeletal system and connective tissue" [27].

Data collection

The recruitment period lasted from April 2008 until December 2009. Data collection was carried out by trained research assistants. The one-day training was performed by the study coordinator (CH) and the responsible author (MT) at university.

The NHP was collected in the second week (T0) and in the twelfth week (T1) after nursing home admission within the resident's room. We chose this timeframe for two reasons: firstly, the dropout rate in those settings due to death or other dropout mechanisms like cognitive impairment is known [28]. Secondly, it is recommended to measure changes in the HRQOL at short intervals [2]. When the resident was found to be unable to complete the NHP independently due to visual or other physical impairments, the NHP interviews were conducted by research assistants. The NHP was not collected if the resident was unable to answer the questions, for example if he/she could not communicate with the research assistant or was disoriented and could not stay on topic.

The CDS was collected in the second week (T0) and in the twelfth week (T1) after nursing home admission within the resident's room from the responsible nurse of each ward. The responsible nurse also documented the resident's activities, such as cognitive and physical training sessions participated in per week.

The research assistant evaluated each MMSE once after the resident's admission and resident's age, sex, and diseases.

Statistical analysis

Statistical analysis was based on all residents who completed the questionnaire at T0 and T1. Demographic variables were analysed using descriptive statistics. Approximately normally distributed variables were summarised using mean and standard deviation (SD). Where data were not normally distributed, medians and inter-quartile ranges (IQR) were reported. Longitudinal differences in the NHP domains were analysed using non-parametric Wilcoxon matched pair signed rank test for repeated measures. If HRQOL data was found to be significantly different, nursing home residents were split into two groups: those who had improved at T1 (mean domain score at T1 was lower (better HRQOL) than mean domain score at T0) and those who had not improved and declined/remained constant (mean domain score at T1 was constant or increased (worse HRQOL) compared to T0) in this period. Univariate comparisons between the groups were performed using the Chi-square Test and t-Test for independent samples. In all cases, differences were considered statistically significant for P<0.05. Score differences between T0 and T1 in the CDS and the NHP domains were used to calculate partial correlation between HRQOL and care dependency. Potential confounders were considered to be age, gender and cognitive impairment scores measured with the MMSE. The complete statistical analysis was performed with IBM SPSS Statistics 20.0 and 21.0 for Windows.

	Low; T1 n (%)	Moderate; T1 n (%)	High; T1 n (%)	Total; T0 n (%)
Low; T0 n (%)	19 (73.1)	6 (23.1)	1 (3.8)	26 (36.1)
Moderate;T0 n (%)	14 (41.2)	17 (50.0)	3 (8.8)	34 (47.2)
High; T0 n (%)	3 (25.0)	7 (58.3)	2 (16.7)	12 (16.7)
Total; T1 n (%)	36 (50.0)	30 (41.7)	6 (8.3)	72 (100.0)

Table 1: Care dependency groups of residents at admission (T0) and follow-up (T1).

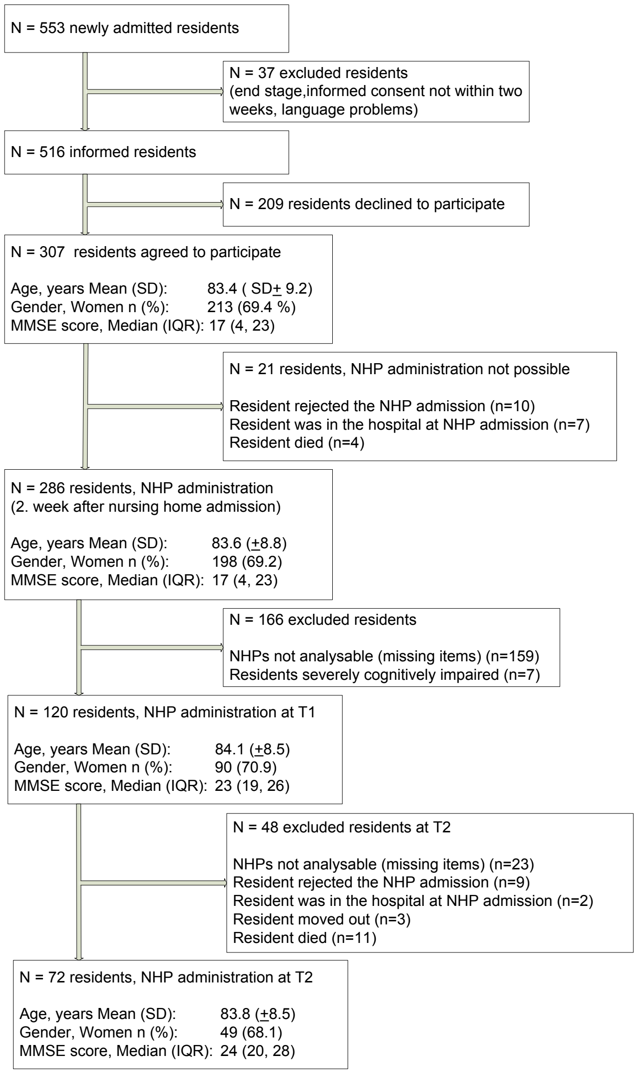

Figure 1: Study population. NHP**:** Nottingham Health Profile, MMSE**:** Mini-Mental State Examination.

Results

Sample

Following a screening for exclusion criteria, 72 residents could be included (Figure 1). The mean age of residents was 83.8 years (SD ± 8.5) and, most residents were female (n=49, 68.1%). Most of the residents showed a high grade of multi-morbidity with an average of 4 diseases according to the ICD-10 chapters [IQR 3, 5]. The majority of the residents (n=60, 83.3%) was diagnosed with "Diseases of the circulatory system", followed by "Mental and behavioural disorders" (n=39, 54.2%), diseases of the musculoskeletal system and connective tissue (n=36, 50.0%), endocrine, nutritional and metabolic diseases (n=33, 45.8) and diseases of the genitourinary system (n=31, 43.1%).

The median cognitive status measured with the MMSE was 24 points (IQR 20, 28). Fifty residents (69.4%) showed normal cognitive functions while moderate cognitive impairment was seen in 22 (30.6%) residents.

The mean care dependency score of the residents at T0 was given as 54.6 (SD ± 12.1) and 58.2 (SD ± 9.7) at T1 showing a significant difference (p=0.023). The number of residents with a care dependency categorisation of low, moderate and high at T0 and T1 and also the changes within the care dependency groups are shown in Table 1. The care dependency group did not change for a total of 38 (52.7%) residents, 24 (33.3%) residents changed to a lower care dependency group (increase) and 10 (13.9%) residents moved to a higher care dependency group (decrease) between T0 and T1 (p= 0.041).

In the period from baseline (T0) to follow-up (T1), 60 residents (83.3%) participated in one or more activities provided by the nursing homes. Twenty seven residents (37.5%) participated in only one of the activities, 17 (23.6%) residents were involved in two different activities and 16 (22.2%) residents participated in three different activities. The most frequently used activities during the follow-up period were physical activities (n=50; 69.4%) with a mean frequency of 6 ± 4, followed by cognitive training (n=41, 56.9%) with a mean frequency of 5 ± 3.

Health-Related Quality of Life (HRQOL)

HRQOL was measured in the domains "Energy", "Pain", "Emotional Reactions", "Sleep", "Social Isolation" and "Physical Mobility" with domain scores ranging from zero (good subjective health status) to 100 (poor subjective health status).

The mean scores of the HRQOL domains at T0 ranged between 20.1 (SD ± 22.9) in the domain "Emotional Reaction" and 53.4 (SD ±

23.4) in the domain "Physical Mobility". At T1 the mean scores varied between 22.7 (SD ± 25.4) in the domain "Social Isolation" and 47.8 (SD ± 23.0) in the domain "Physical Mobility". HRQOL in the domain "Physical Mobility" improved in 40 (55.6%) residents significantly (p=0.002) from T0 to T1. A significant decrease was seen in the domain "Emotional Reaction" in 39 (54.2%) residents (p=0.047). All domain scores for T0 and T1 are provided in Table 2.

With respect to gender, "Physical Mobility" was found to be significantly different (p=0.032) (Table 3). The amount of male residents who improved was higher compared to the amount of female residents, where "Physical Mobility" declined or remained constant (male improved n=17, 73.9% vs. male declined/constant n=6, 26.1%). Residents who improved in "Physical Mobility" were also less care dependent at T0 than the group of residents in which "Physical Mobility" deteriorated or remained as it was. An improvement, albeit not statistically significant, in care dependency at T1 was seen in both groups when "Physical Mobility" increased or deteriorated/was constant.

The domain "Emotional Reaction" is significantly influenced by the cognitive status (p=0.029) (Table 4). The group of residents in which "Emotional Reaction" improved included more cognitively impaired residents compared to the group where "Emotional Reaction" deteriorated or remained constant.

Again, the group of residents in which "Emotional Reaction" improved was more care dependent at T0 and also at T1 than the group of residents where "Emotional Reaction" deteriorated or did not change.

NHP domains	Admission (T0)		Follow-up (T1)		2 Tailed p value (Wilcoxon Test)
	Mean (SD)	Median	Mean (SD)	Median	
Energy	40.5 (36.8)	36.8	42.1 (38.2)	36.8	0.492
Sleep	20.3 (24.4)	12.6	27.5 (30.4)	12.6	0.065
Pain	27.2 (29.8)	15.6	23.6 (28.9)	10.9	0.265
Emotional Reaction	20.1 (22.9)	10.5	25.2 (26.4)	17.6	0.047*
Social Isolation	22.7 (26.9)	19.4	22.7 (25.4)	22.0	0.880
Physical Mobility	53.4 (23.4)	57.9	47.8 (23.0)	47.5	0.002*

Table 2: Changes in health-related quality of life at admission (T0) and follow-up (T1) (0=best HRQOL, 100=worst HRQOL).

	Improved (n=40)	Declined/ constant (n=32)	Significant
Gender n (%)			0.0321
Male	17 (42.5)	6 (18.7)	
Female	23 (57.5)	26 (81.3)	
Age (yrs), mean (SD)	83.1 (9.6)	84.7 (6.8)	0.425[2]
Cognitive status, mean (SD)at T0	23.0 (5.3)	22.6 (4.6)	0.793[2]
Normal cognitive function, n (%)	26 (65.0)	24 (75.0)	
Moderate cognitive impairment, n (%)	14 (35.0)	8 (25.0)	
Care dependency score, mean (SD)	T0: 56.3 (10.8)	T0: 52.7 (13.0)	0.626[2]
	T1: 59.1 (10.1)	T1: 57.0 (9.7)	
Differences T0 minusT1	-2.83 (9.8)	-4.31 (15.8)	
Activity frequency T0 until T1			
Cognitive, mean (SD)	2.6 (3.4)	3.3 (3.5)	0.093[2]
Physical, mean (SD)	4.7 (4.6)	4.4 (4.5)	0.703[2]

T0 admission; T1 follow-up.

[1] Chi -Square test.

[2] t-test.

Table 3: Possible influencing factors in the domain "Physical Mobility" during the study period.

	Improved (n=33)	declined/ constant (n=39)	Significant
Gender n (%)			0.434[1]
male	9 (27.3)	14 (35.9)	
female	24 (72.7)	25 (64.1)	
Age (yrs), mean (SD)	83.8 (8.7)	83.8 (8.4)	0.955[2]
Cognitive status, mean (SD) at T0	21.5 (5.7)	24.0 (3.9)	0.029[2]
normal cognitive function, n (%)	20 (60.6)	30 (76.9)	
moderate cognitive impairment, n (%)	13 (39.4)	9 (23.1)	
Care dependency score, mean (SD)	T0: 52.6 (12.3)	T0: 56.4 (11.9)	
	T1: 57.7 (11.3)	T1: 58.5 (8.7)	
Differences T0 minusT1:	-5.1 (12.4)	-2.1 (13.1)	0.320[2]
Activity frequency T0 until T1			
cognitive, mean (SD)	2.5 (3.3)	3.2 (3.5)	0.399[2]
physical, mean (SD)	4.8 (4.9)	4.5 (4.2)	0.784[2]

T0 admission; T1 follow-up

[1] Chi -Square test

[2] t-test

Table 4: Possible influencing factors in the domain "Emotional Reaction" during the study period.

Correlation of HRQOL and care dependency

No significant correlation between HRQOL and care dependency was found within the study period controlled by age, gender and cognitive impairment score. In the domains "Energy" and "Emotional Reaction" the correlation to care dependency was almost zero ("Energy" r=0.06, p=0.63; unadjusted: r=0.056, p=0.64 and "Emotional Reaction" r=0.05, p=0.68; unadjusted: r=0.046, p=0.70). Negative but also neglectable correlations were seen in the domains "Pain" (r=-0.03, p=0.83; unadjusted: r=-0.035, p=0.77), "Social Isolation" (r=-0.13, p=0.28; unadjusted: r=-0.15, p=0.22) and "Physical Mobility" (r=-0.06, p=0.58; unadjusted: r=-0.026, p=0.83). A slightly meaningful negative correlation of r=-0.24 was found in the domain "Sleep" only, without it being significant (p=0.05) (unadjusted: r=-0.226, p=0.056).

Discussion

The evaluation of HRQOL using the six domains of the Nottingham Health Profile of newly admitted nursing home residents showed a significant improvement in "Physical Mobility" and a significant deterioration in "Emotional Reaction" during the study period. All other domains ("Energy", "Sleep", "Social Isolation" and "Pain") showed no significant changes over the study period. Our second aim to evaluate the correlation between HRQOL and care dependency found no correlation between the two over the study period.

The HRQOL mean scores at T0 and T1 in the four domains "Pain", "Sleep", "Emotional Reaction" and "Social Isolation" were in the lower third (≤27.5) of the total NHP range (100), which could be interpreted as relatively good HRQOL. These domain scores go alongside the results of other cross-sectional studies in similar settings [29,30].

The scores in the domains "Energy" and "Physical Mobility" were higher compared to the other domains during the study period (T0 "Physical Mobility" 53.4"; T1"Energy" 42.1), but did not reach the maximum score of 100 (worse HRQOL). As most nursing home residents suffer from several chronic diseases leading to substantial physical dependency, higher values compared to the other domains in "Physical Mobility" are not surprising [6].

During the study period HRQOL decreased significantly in the domain "Emotional Reaction" (mean score T0: 20.1; T1: 25.2; p=0.047), which could be interpreted as residents feeling more depressed during their stay in a nursing home. The significant influencing factor to "Emotional Reaction" was the cognitive status (p=0.029). Residents with constant or higher values in their "Emotional Reaction" (worse HRQOL in these domain) (n=39) at T1 compared to T0 were less cognitively impaired than residents with an improved (better HRQOL) "Emotional Reaction" (n=33). One explanation might be that residents with a better cognitive status are also more aware of their situation, especially in a new environment, in which personal autonomy, self-determination, independence and privacy are largely comprised and affect the residents' psychological status [8,31]. Moreover it has to be taken into account that the decision of moving to a nursing home is not always made by the elderly person's free will. The mourning over the loss of independence and freedom as well as ongoing difficulties in adapting to the institutional environment appeared to be major causes for the residents' depressive emotional states [31].

In our study the mean "Physical Mobility" scores significantly improved over the study period (mean score T0: 53.4; T1: 47.8; p=0.002). With regard to an improvement in physical functioning, a study in Canada with 138 residents, which used the Minimum Data Set, found similar results in 10% of the residents over a period of 12 months, whereas 56% of the residents in our study improved [32]. As no interventions were made in our study, the significant improvement in "Physical Mobility" could be very carefully interpreted as a consequence of the professional care, which potentially provides the residents with means of assisting their mobility. Pain has a significant impact on the physical mobility for residents' living in nursing home; therefore pain management should be given a high priority to enhance quality of life, which is also supported by current research [33]. In the present study we did not control for changes in pain medications which therefore should be addressed in future research. The significant improvement in "Physical Mobility" could also be influenced by changes in the meaning of the resident's own mobility or possibly the use of supporting aids to compensate for physical limitations. A systematic review claimed the engagement in physical activity as a reason for the improvement of "Physical Mobility" [34] which was not observed in our study One of the reasons could be that the participation frequency in both resident groups (improvement or not) was similar.

Care dependency and HRQOL

The present study showed that the residents at T1 were significantly less care dependent compared to T0 (mean score T0:54.6, T1:58.2; p=0.023). But both times the residents were still moderate care dependent. Thirty percent of the residents changed to a lower care dependency group. Based on the residents' needs, it seems that nurses support their independence. Compared with a study by Lohrmann et al. [5] and colleagues on 81 nursing home residents, residents in our study were less care dependent (fitter) which could be influenced by our inclusion criteria. Residents in our study had a relatively high cognitive status (MMSE ≥10) and continued to live after the three months period, therefore they are not representative of all nursing home residents.

There was no correlation between care dependency and HRQOL over the study period, which is comparable with the other studies in similar contexts [14,35]. This could possibly be a relief/reassurance for relatives, who are evaluating their family members from their own perspective and could rate the HRQOL of their relatives as worse than the results of the resident's self-evaluation. Results of a former cross sectional study which showed an influence between care dependency and the domain "Sleep" for high care dependency residents could not be replicated in this current longitudinal study [36]. Nevertheless, other studies also reported a poor sleep quality in nursing home residents [37]. Also psychosocial factors like "peace of mind" are important parameters for the occurrence of sleep disturbances [38], future research in this field is highly encouraged.

Up to date assessment of the care dependency of the residents is a standard means of knowing the residents' care needs in nursing homes in Germany. Additional information will be gained in assessing HRQOL to know the needs from the resident's perspective and therefore to know how they actual feel and where he/she needs support from their perspective. It could be that residents are more interested or are more in need of improving their "Emotional Reaction" through opportunities for conversations or group activities and do not need to make major improvements to their mobility. Improving "Emotional Reaction" could also possibly influence other areas, such as sleep, but were not discussed in the daily routine and also not assessed in the care dependency. Through an assessment of HRQOL, important conclusions can be drawn about possible undiscovered needs.

Limitation

This study was limited by the sample size and selectivity because it only included residents with a moderate cognitive function and a normal cognitive status who were able to answer the HRQOL questions and still lived after the three months. Our study was based on only one instrument, instruments for severe cognitive impairment residents recommended by Makai et al. [39] were not included. The amount of high care dependency residents owing to our inclusion criteria is possibly not representative. The data was collected in two out of 16 federal German states. Therefore, our results cannot be generalised but they are an important step in long-term care evaluation, especially with regard to the low number of follow-up studies in this setting.

Replication studies should be done with a bigger sample size to prove the current results for generalizability. Data collection in nursing homes itself is currently discussed. Apart from the question whether a web-based approach might help to increase response rates [40], a more familiar person to the resident who know the residents best "cognitive" time to collect a questionnaire might also increase response rates. Following the implications of the qualitative study of Sonntag et al. [41], who analysed the wishes of nursing home residents concerning their life situation in 24 German nursing homes, residents should be asked about their concrete wishes with respect to psychological and social aspects to improve their "Emotional Reaction".

Conclusion

The study showed that HRQOL in German nursing homes improved significantly after admission in the domain "Physical Mobility" after three months, but decreased significantly in the domain "Emotional Reaction". Care dependency improved significantly in the study period. As there is no correlation between HRQOL and care dependency over the study period, the residents' HRQOL should be evaluated in regular intervals which can be important in drawing conclusions about possible undiscovered needs from the resident's perspective. Assessing the changes from the resident's perspective supports the nursing home staff to assist residents in achieving better HRQOL.

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