

Attitudes of nursing staff working with older people towards nutritional nursing care

Margareta Bachrach-Lindström PhD, RN

Senior Lecturer, Department of Medicine and Care, Division of Nursing Science, Faculty of Health Sciences, Linköpings Universitet, Linköping, Sweden

Sara Jensen RN

Nurse, Local Health Care Services in Central Östergötland, University Hospital, Linköping, Sweden

Rickard Lundin RN

Nurse, Local Health Care Services in Central Östergötland, University Hospital, Linköping, Sweden

Lennart Christensson PhD, RN

Senior Lecturer, Department of Nursing Science, University Collage of Health Sciences, Jönköping, Sweden

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Correspondence:

Margareta Bachrach-Lindström
Department of Medicine and Care
Division of Nursing Science
Faculty of Health Sciences
Linköpings universitet
SE-581 85 Linköping
Sweden
Telephone: +46 13 22 46 01
E-mail: marba@imv.liu.se

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Aim. The aim of this study was to examine attitudes of the nursing staff in geriatric care towards factors of importance for nutritional nursing care.

Background. Studies show that nutritional risk assessment is seldom performed on older patients as routine and very few patients have a nutritional care plan. Patients in long-term care who are easy to feed are also found to be looked upon more positively than those with high feeding needs.

Methods. A total of 252 registered nurses and nurse aids working at geriatric rehabilitation and medical care clinics and resident homes participated in the study. Attitudes were examined using the Staff Attitudes to Nutritional Nursing Care Geriatric scale. The scale includes 18 items and was designed as a one to five-point Lickert-type scale. It gives a total score and five subscales representing the dimensions 'Norms', 'Habits', 'Assessment', 'Intervention' and 'Individualization'. A higher score indicates a more positive attitude.

Results. Of all nursing staff, 53% displayed a positive attitude towards factors of importance for nutritional nursing care and the rest displayed a neutral or negative attitude. The 'Intervention' dimension, dealing with nutritional problems and how to manage them, reflected the highest level of positive attitudes, which represents 71% of the nursing staff. The 'Norms' dimension had the lowest relative frequency of positive attitudes, 27%. The registered nurses held significantly more positive attitudes than the nurse aids did.

Conclusions. Nutritional issues comprise an important and time-consuming responsibility in geriatric care; however, nursing staff do not show an unequivocal positive

attitude regarding this responsibility. The consequences this entails for the older patient need to be examined further.

Relevance to clinical practice. Nursing staff play an important role in caring for patients who are malnourished or at risk for malnutrition. Positive attitudes might hinder the development of undernourishment or the further worsening of an already undernourished patient's condition.

Key words: attitudes, nurses, nursing, nutrition, older people, Sweden

Introduction

Malnutrition and undernourishment still pose a common problem in the care of older people in different care settings in developed countries (Christensson *et al.* 1999, Pirlich *et al.* 2003, Kyle *et al.* 2004). Malnutrition can be described as a result of an imbalance between nutritional needs and nutritional intake. Its cause is often multifactorial including medical, social and environmental factors. Being of old age, dependent on help from others regarding shopping, cooking and eating, living alone and depressive symptoms increase the risk of being or becoming malnourished (Chen *et al.* 2001, 2005, Pirlich *et al.* 2005). Undetected and untreated, malnutrition is found to be detrimental to the quality of life (Visvanathan 2003) and can lead to severe consequences such as prolonged hospital stays, higher risk of infection, pressure ulcers, reduced wound healing, increased morbidity and mortality as well as increased costs for care (Akner & Cederholm 2001, Kondrup & Johansen 2002, Bansal *et al.* 2005, Kyle *et al.* 2005).

Evidence-based actions like serving energy-dense meals or prescribing nutritional supplements containing protein and calories to older people at risk of developing malnutrition have been shown to result in a small but consistent weight gain (Milne *et al.* 2005). Nursing staff need to know who will benefit from such actions and the needs of patients at risk need to be identified. Individualized nutritional treatment plans based on problems, desires and resources are recommended to enhance the administering of optimal nutritional nursing care (Beck *et al.* 2002, Council of Europe 2002). Nursing staff play an important role in both detection of the patient at risk and the implementation of sufficient preventive strategies. However, studies show that a nutritional risk assessment is seldom performed on geriatric patients as routine and very few at-risk patients have a nutritional care plan (Kondrup & Johansen 2002, Rasmussen *et al.* 2004). Studies show that nurses in geriatric care feel they have a great responsibility for nutritional assessment and care but a lack of sufficient knowledge for the task as well as of support from physicians (Perry 1997, Kondrup *et al.* 2002). Swedish recommendations point out the Registered Nurse/physician as being responsible for evaluating

nutritional status and the Registered Nurse alone for informing, ordering, serving food, observing food intake and securing sufficient intake (ESS 1991). These actions demand that staff have sufficient knowledge and appropriate tools for screening and assessment of the older patient.

Attitudes amongst nurses who work with older people are found to be both positive and negative (Courtney *et al.* 2000, McLafferty & Morrison 2004) and patients in long-term care with high feeding needs are found to be viewed less positively than patients who are easy to feed (Barnes 1990). It is also suggested that nursing students can be influenced by negative attitudes towards older patients from both nursing staff and teachers at the nursing school (McLafferty & Morrison 2004, McLafferty 2005). In one study including nursing staff working at resident homes ($n = 176$), 44% expressed negative attitudes to issues important within eating and nutrition. Nutritional education and implementation of a nutritional programme significantly increased the number of positive attitudes towards 'Individualization' compared with a control group (Christensson *et al.* 2003). Education of nursing staff in nutritional issues has also been shown to increase the nutritional status of older people living in resident homes (Christensson *et al.* 2001, Irving-Faxén *et al.* 2002).

The Staff Attitudes to Nutritional Nursing Care scale (SANN scale) has been developed to examine nursing staff attitudes to issues important within eating and nutrition. It consists of items related to the nursing process, areas within assessment, nutritional requirements, eating, environment and individualization; these items constitute 'nutritional nursing care' (Christensson *et al.* 2003). It was originally delimited for use among nursing staff working in resident homes, but has later been developed and tested for use among staff working in all types of care of older people. The 62 item scale had an equal number of positively and negatively worded statements. Discriminatory power (DP-value) was calculated and 21 items with the highest DP-value was further analysed. Item-item- and item-total correlation reduced the number into 18 items. Construct validity was tested using factor analysis showing five underlying dimensions with eigenvalue of > 1 , accounting for 54% of the variance (L. Christensson & M. Bachrach-Lindström,

Table 1 Items in The SANN-G scale and which dimensions they belong to

| Dimension | Item (<i>n</i>) |
|-------------------|---|
| Norms | Staff with a great deal of experience always know what the patient/resident needs to eat (11) |
| | The dining room should be designed foremost to make staff's work easier (5) |
| | It is important to distribute the food in such a manner that all patients/residents receive equal portions (13) |
| | Oral supplementation is a good replacement for ordinary food (14) |
| Habits | It is best that the staff serve food on plates without help from the residents (10) |
| | People aged 70 years or more do not need the same high food value as do younger people (9) |
| | One prepared (warm) meal/day is enough for people aged 70 years or more (1) |
| | Patients/residents with swallowing problems should not be encouraged to eat by themselves (4) |
| Assessment | Residents in hospital or municipal care do not want to be asked about previous dietary habits (3) |
| | It is meaningless to assess the body weight of all patients/residents (2) |
| | It is sufficient to measure body weight of those residents whose physician has prescribed this (8) |
| | Only certain patients/residents will benefit from having their nutritional status assessed (12) |
| Intervention | Patients/residents with overweight should always have low-calorie food (18) |
| | Undernutrition is very uncommon in the elderly in geriatric/medical or municipal care (15) |
| | No special knowledge or experience is needed when helping a patient/resident to eat (16) |
| Individualization | It is no use to train patients/residents with eating problems to eat by themselves (7) |
| | It is impossible to individualize mealtimes (6) |
| | Mealtimes do not need to be individually adjusted (17) |

unpublished data). This version is named the SANN-G scale, with G referring to geriatric care (Table 1).

Aims

The aim of this study was to analyse nursing staff attitudes towards factors of importance for nutritional nursing care of older people using the SANN scale adapted to different types of elderly care.

Methods

All registered nurses (RNs) and nurse aids (NAs) working daytime at geriatric rehabilitation and medical care clinics at one university hospital and one regional hospital were invited to participate ($n = 232$) and 188 (81%) completed the scale. The results from 64 NAs, who had participated when the origin SANN scale was developed, were also used to represent staff working in a resident home (Christensson *et al.* 2003).

The attitudes of the nursing staff were examined using the SANN-G scale (L Christensson & M Bachrach-Lindström, unpublished data). The scale gives a total score and five subscales representing the dimensions 'Norms', 'Habits', 'Assessment', 'Intervention' and 'Individualization'. The scale includes 18 items and was designed as a summative Likert-type scale where 1 represents 'completely agree', 2 'agree on the whole', 3 'doubtful', 4 'disagree' and 5 'completely disagree'. All items in the final scale were negatively worded statements. Consequently, scores 4 (disagree) and 5 (completely disagree)

reflect a positive attitude and 1 (completely agree) and 2 (agree on the whole) reflect a negative attitude. A total score of 18 points reflects the most negative attitude and a score of 90 points reflects the most positive attitude. A total score of 72 implies that the staff scored an average of 4 points on all 18 items reflecting positive attitudes concerning issues important within nutritional nursing care. A total score of < 54 represents that the staff scored, on average, lower than 3 concerning all 18 items reflecting negative attitudes (Table 2).

Data on profession, RN or NA and time worked in actual profession, (< 2 years, 2 to < 5 years, 5 to < 10 years, 10 to < 15 years and < 15 years) were also obtained.

Statistics

The attitudes of nursing staff are given as percentages, median and interquartile ranges. To examine differences between three subgroups, (medical care, geriatric care and residential home) a Kruskal-Wallis test followed by a Mann-Whitney *U*-test with Bonferroni correction was used. To compare differences between two subgroups, a Mann-Whitney *U*-test was used. *p*-values below 0.05 were considered significant. The statistical evaluations were conducted using SPSS[®] version 13.0.

For 16 respondents, the answer to one item was missing. For two respondents two answers were missing and for three respondents three answers were missing. Missing data were substituted with the median value of all items the respondent had replied to. Two respondents had omitted a whole page including eight items which were not substituted.

Table 2 Attitudes regarding nutritional issues described according to type of nursing profession (four participants did not state their profession)

| Dimension (min-max score) | Break point for a positive attitude | All nursing staff (<i>n</i> = 252) | Registered Nurses (RN) (<i>n</i> = 80) | Nurse aids (NA) (<i>n</i> = 168) | <i>P</i> -value (comparing RN and NA) |
|---------------------------|-------------------------------------|-------------------------------------|---|-----------------------------------|---------------------------------------|
| Norms (5–25) | 20 | 17.0 (14.0, 20.0) [†] | 19.0 (17.0, 22.0) [*] | 16.0 (12.0, 18.0) | <0.001 |
| Habits (4–20) | 16 | 16.0 (14.0, 18.0) | 17.0 (15.0, 18.0) | 16.0 (13.0, 18.0) | 0.006 |
| Assessment (4–20) | 16 | 14.0 (11.0, 16.0) [*] | 16.0 (13.0, 18.0) [*] | 13.0 (10.0, 15.0) | <0.001 |
| Intervention (9–15) | 12 | 13.0 (11.0, 14.0) | 14.0 (13.0, 15.0) | 12.0 (10.0, 14.0) | <0.001 |
| Individualization (2–10) | 8 | 7.0 (6.0, 9.0) | 8.5 (7.0, 9.0) | 7.0 (5.0, 9.0) | <0.001 |
| Total score (25–90) | 72 | 66.0 (59.0, 74.0) [†] | 73.0 (67.0, 79.0) [*] | 63.0 (55.3, 70.0) | 0.001 |

Attitudes are presented as median values (Q1, Q3). Higher scores signify more positive attitudes.

*one missing result; †two missing results.

Ethical considerations

This study was conducted in accordance with the Ethical guidelines for nursing research in the Nordic countries [Northern nurses' federation (NNF) 2003]. Permission to perform the study was obtained from the head nurse. Consent was obtained from the respondents after they had received oral and written information about the research and had been informed of their right to decline participation. The scale was either put in a personal post box at the hospital or sent home together with an addressed envelope. The respondents were instructed to answer the scale individually. All participants received a reminder after two weeks. To control dropout, the scale was coded with the name of the nursing ward. All information has been treated confidentially and it is not possible to associate any specific answer with a given participant.

Results

A total of 252 nursing staff of which four did not mark their profession participated in the study.

Of the NAs at geriatric and medical care clinics, 79% (81/103) had working experience of five years or more, compared with 54% (43/80) of the RNs ($p < 0.001$) (Fig. 1). There were no statistically significant differences in attitudes between those with short (<5 years) or long (≥ 5 years) working experience within the group of either NAs or RNs. Corresponding data in nursing staff working at Resident homes were not available.

In the whole group of nursing staff ($n = 252$), 33% displayed a positive attitude, i.e. a median score equal to or above the breakpoint for a positive attitude on the total scale score (Fig. 2). The RNs had significantly higher scores in all dimensions as well as in the total scale score compared with the NAs (Table 2).

In the group of NAs, median values equal to or above the breakpoint, indicating positive attitudes, were found in the

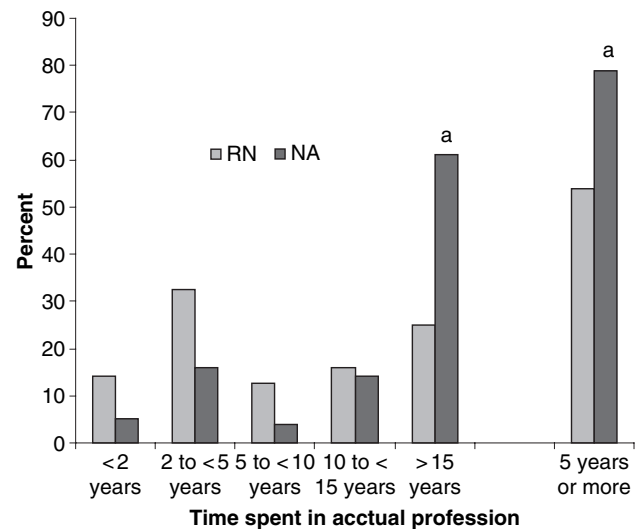


Figure 1 Relative frequencies of Registered Nurses (RN) ($n = 80$) and nurse aids (NA) ($n = 104$) working in medical and geriatric care clinics. a, $P < 0.001$.

'Habits' and 'Intervention' dimensions (Table 2). NAs working at medical care clinics showed significantly more positive attitudes regarding 'Norms' compared with NAs working at resident homes ($p = 0.04$). Both NAs working at medical and geriatric care clinics hold more positive attitudes towards the 'Intervention' dimension than NAs working at resident homes do. There were no statistically significant differences in attitudes between NAs working at medical and geriatric care clinics (Table 3).

The dimension with the highest relative frequency of positive attitudes was the 'Intervention' dimension 71% of all nursing staff. The dimension with the lowest relative frequency of positive attitudes was 'Norms', 27% of all nursing staff. In RNs and NAs working at medical and geriatric care clinics, the highest relative frequency of positive attitudes was held to the 'Intervention' dimension at 91%

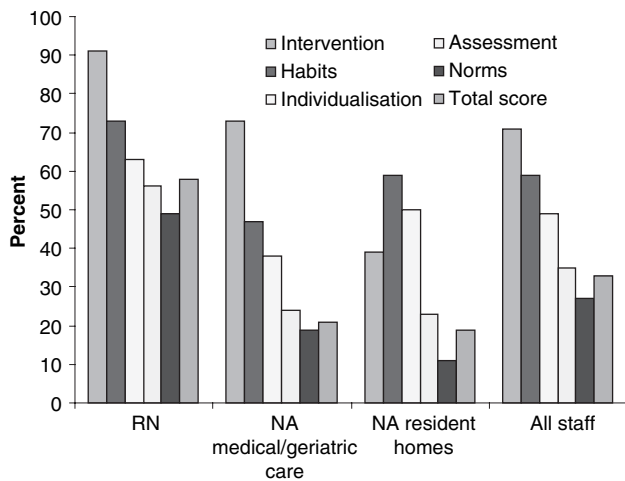


Figure 2 Relative frequencies of Registered Nurses (RN) ($n = 80$) and nurse aid's medical and geriatric care ($n = 104$) and nurse aids in resident homes ($n = 64$) with positive attitudes in the different dimensions and total score of the SANN-G scale.

Break point for a positive attitude: Norms ≥ 20 points, Habits, Assessment ≥ 16 points, Intervention ≥ 12 points, Individualization ≥ 8 points, Total score ≥ 72 points.

and 72%, respectively. For NAs working in resident homes, the dimension with the highest relative frequency of positive attitudes was the 'Habits' dimension with 59% (Fig. 2).

Discussion

When looking at the total score of the SANN-G scale reflecting the nursing staffs' attitudes towards nutritional nursing care, it is only in the group of RNs that more than 50% display positive attitudes (≥ 72 points). In NAs, the relative frequency of positive attitudes according to the total

scale score lies at around 20%, irrespective of place of work. One possible explanation for this can be that RNs learn more about nutritional principles and practices in their education than NAs do. The importance of knowledge and education is stressed by others in relation to both overcoming barriers to nutritional care (Kowanko *et al.* 1999, Crogan & Shultz 2000) and work satisfaction and promoting positive attitudes towards working with older patients (Wade 1999, Häggström *et al.* 2004).

In the European Society for Parenteral and Enteral Nutrition (ESPEN) guidelines, the importance of screening protocols and established routines for identifying those in need of nutritional care in hospitals and health care organizations is stressed (Kondrup *et al.* 2003). Screening as the first step in nutritional care will identify those in need of nutritional attention. Our study shows that 35% of all nursing staff had positive attitudes in the 'Assessment' dimension. The low number of nursing staff showing positive attitudes in this dimension might be one possible explanation for others' finding that very few at-risk patients have a nutritional care plan as planning needs assessment (Kondrup & Johansen 2002, Rasmussen *et al.* 2004). Another hindering factor for nursing staff in performing nutritional care is the staff-to-resident ratio during mealtimes. It has been shown that more than 80% of NAs in nursing homes thought that the time allowed to complete all necessary tasks with the older patient was too short (Crogan & Shultz 2000). This might be applicable for our participants as well when taking into consideration the savings of recent years and an increasingly trimmed general health service and medical care in our country. The subject matter will need to be studied further as no data related to staffing level were collected in our study. Low staffing is also found to be associated with malnutrition in resident homes (Woo 2005) and patient satisfaction with

Table 3 Attitudes in nurse aids (NAs) working in medical or geriatric care or at resident homes

| Dimension (min-max score) | Break point for a positive attitude | Medical care unit ($n = 39$) | Geriatric care unit ($n = 65$) | Resident home ($n = 64$) | <i>p</i> -value* |
|---------------------------|-------------------------------------|--------------------------------|----------------------------------|----------------------------|------------------|
| Norms (5–25) | 20 | 17.0 (14.0, 19.0) [†] | 16.0 (12.0, 19.0) | 14.0 (11.0, 18.0) | 0.04 |
| Habits (4–20) | 16 | 15.0 (13.0, 17.0) | 15.0 (13.0, 18.0) | 16.0 (14.0, 18.0) | 0.30 |
| Assessment (4–20) | 16 | 13.0 (11.0, 16.0) | 13.0 (11.0, 15.0) | 12.0 (9.0, 15.0) | 0.24 |
| Intervention (9–15) | 12 | 13.0 (11.0, 14.0)* | 13.0 (11.0, 14.0) [‡] | 10.0 (8.0, 12.0) | <0.001 |
| Individualization (2–10) | 8 | 6.0 (5.0, 8.0) | 7.0 (5.0, 9.0) | 7.5 (5.0, 9.0) | 0.25 |
| Total score (18–90) | 72 | 65.0 (59.0, 70.0) | 65.0 (55.5, 71.0) | 59.5 (53, 67.8) | 0.07 |

Attitudes are described as median values (Q1, Q3). Higher scores signify more positive attitudes.

*Kruskal–Wallis test.

[†] $p < 0.001$ Mann–Whitney *U*-test with Bonferroni correction comparing differences between NAs working in Medical care and Resident home.

[‡] $p < 0.05$ Mann–Whitney *U*-test with Bonferroni correction comparing differences between NAs working in Medical care and Resident home.

[§] $p < 0.001$ Mann–Whitney *U*-test with Bonferroni correction comparing differences between NAs working in Geriatric care and Resident home.

nursing care, adverse events and mortality (Blegen *et al.* 1998, Whitman *et al.* 2002, Bolton *et al.* 2003, Sasichay-Akkadechanunt *et al.* 2003).

Individualized nursing interventions have been found to improve patient satisfaction with nursing care (Suhonen *et al.* 2005). To involve the older patient actively in his own nutritional care can have a positive impact on the food and energy consumed as shown by Pedersen (2005) in his study where a combination of information to the patient and systematic daily assessment of dietary needs and intake gave a positive result. The older patient at nutritional risk will benefit from an individual nutritional treatment plan, as stated earlier. The dimension 'Individualization' deals with issues within individualizing meals/mealtimes. Almost 50% of the nursing staff displayed a positive attitude in this dimension. When there is not enough time to perform individualized nursing care, a more routinized work with less individualization can be seen as a consequence which might be detrimental to the vulnerable geriatric patient, as studies show that malnutrition in geriatric patients in hospital care is still a significant problem (Kondrup *et al.* 2003, Kyle *et al.* 2004). Our finding of less positive attitudes in the dimension 'Norms' indicates that the nursing staff had attitudes in favour of routinized style care and organization of mealtimes and dining room without involving the patient/resident; it is the staff who 'knows best' how to organize and perform the mealtimes. This was also found by Sidenvall *et al.* (1994, 1996). Norms can be seen to express both the values of the staff members as well as those of society. Both working with older patients and being older have low status in today's society, which naturally may have been reflected in the attitudes of some of the participants in our study. Studies show that nurse students having limited experience of caring for older patients and who are young (<25 years) have less positive attitudes and that those students who had positive attitudes displayed greater tolerance in working with geriatric patients and were also more satisfied with their work (Söderhamn *et al.* 2001, McKinlay & Cowan 2003).

The 'Intervention' dimension dealing with nutritional problems and how to manage them and 'Habits' dealing with notions of decreased need of food are the dimensions with the highest relative frequency of positive attitudes. These dimensions reflect the media debate of recent years regarding older patients in hospitals and resident homes being undernourished and this debate has surely contributed to an increased awareness regarding these questions that is reflected in the more positive attitudes in these dimensions.

The older patient/resident finds himself reliant on the staff's knowledge, as well as their willingness and intention to perform or not perform an action. According to Ajzen and Fishbein's (1980) theory of reasoned action, the individual is to weigh his personal feeling (attitude) against the perceived social pressure (subjective norm) when deciding how to act in a given situation. To be able to increase the quality of nutritional nursing care given to older patients, it seems important to work with the nursing team around the patient as both RNs (responsible for the patients' care plan including nutritional care) and NAs (responsible for the implementation of the nutritional care and often for the assessment as well) need to cooperate, especially in resident homes where there are fewer RNs available and NAs carry a greater responsibility for the basic care of the patients. The shorter hospital stay and more care-dependent older patients in our resident homes contributes to an increased pressure on staff to, in a shorter time and sometimes with more limited resources, form an opinion concerning which patients need a nutritional care plan and which measures must be taken to hinder the development of undernourishment or the further worsening of an already undernourished patient's condition. Well functioning communication between different care settings can contribute to continuity in the individual patient's care in this respect and reduce the risk of undernourishment developing or remaining undiscovered.

Limitations of the study

A number of factors may intervene in the data collection process and cause random errors. For example, factors such as time pressure and the presence of other people or interruption when answering the questionnaire. The high response rate and the fact that there is no significant difference between RNs and NAs in response rate and the low internal dropout rate in combination with the similar result in the occurrence of positive attitudes compared with the previous study using the original SANN scale strengthens the external validity of the results.

Conclusion

Nutritional issues comprise an important and time consuming responsibility to older people; our study shows that nursing staffs do not show an unequivocal positive attitude regarding these responsibilities. The consequences this has on the geriatric patient must be studied further. A possible explanation for these results could be an insufficient patient-staff ratio or inadequate knowledge level, or even the absence of routines concerning these questions.

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Contributions

Study design: MB-L, LCH; data collection and analysis: MB-L, SJ, RL LCH; manuscript preparation: MB-L, SJ, RL, LCH.

References

- Ajzen I & Fishbein M (1980) *Understanding Attitudes and Predicting Social Behaviour*. Prentice hall, New Jersey.
- Akner G & Cederholm T (2001) Treatment of protein-energy malnutrition in chronic non-malignant disorders. *The American Journal of Clinical Nutrition* **74**, 6–24.
- Bansal C, Scott R, Stewart D & Cockerell CJ (2005) Decubitus ulcers: a review of the literature. *International Journal of Dermatology* **44**, 805–810.
- Barnes KE (1990) An examination of nurses' feelings about patients with specific feeding needs. *Journal of Advanced Nursing* **15**, 703–711.
- Beck A-M, Nilsson Balknäs U, Camilo ME, Fürst P, Gentile MG, Hasunen K, Jones L, Jonkers-Schuitema C, Keller U, Melchior J-C, Egberg Mikkelsen B, Pavcic M, Schauder P, Sivonen L, Zinck O, Øien H & Ovesen L (2002) Practices in relation to nutritional care and support – report from the Council of Europe. *Clinical Nutrition* **21**, 351–354.
- Blegen MA, Goode CJ & Reed L (1998) Nurse staffing and patient outcomes. *Nursing research* **47**, 43–50.
- Bolton LB, Aydin CE, Donaldson N, Storer brown D, Nelson MS & Harms D (2003) Nurse staffing and patient perceptions of nursing care. *The Journal of Nursing Administration* **33**, 607–614.
- Chen C, Schilling L & Lyder C (2001) A concept analysis of malnutrition in the elderly. *Journal of Advanced Nursing* **36**, 131–142.
- Chen C, Chang C-K, Chyun D & McCorkle R (2005) Dynamics of nutritional health in a community sample of American elders. A multidimensional approach using Roy adaptation model. *Advances in Nursing Sciences* **4**, 376–389.
- Christensson L, Unosson M & Ek A-C (1999) Malnutrition in elderly people newly admitted to a community resident home. *Journal of Nutrition Health & Aging* **3**, 133–139.
- Christensson L, Ek A-C & Unosson M (2001) Individually adjusted meals for older people with protein-energy malnutrition: a single case study. *Journal of Clinical Nursing* **10**, 491–502.
- Christensson L, Unosson M, Bachrach-Lindström M & Ek A-C (2003) Attitudes of nursing staff towards nutritional nursing care. *Scandinavian Journal Caring Science* **17**, 223–231.
- Council of Europe (2002) *Food and nutritional care in hospitals: How to prevent undernutrition*. 2 rev. Public Health Committee, Committee of experts on nutrition, food safety and consumer health, 6th meeting, February.
- Courtney M, Tong S & Walsh A (2000) Acute-care nurses' attitudes towards older patients: a literature review. *International Journal of Nursing Practice* **6**, 62–69.
- Crogan NL & Shultz JA (2000) Nursing assistants' perceptions of barriers to nutrition care for residents in long-term care facilities. *Journal for Nurses in Staff Development* **16**, 216–221.
- ESS (1991) *Expert Group for Coordination of Hospital Food*. In Food Hospital (In Swedish). Swedish National Food Administration, Libris, Uppsala, Sweden.
- Häggsström E, Skovdahl K, Fläckman B, Kihlgren AL & Kihlgren M (2004) Work satisfaction and dissatisfaction – caregivers' experiences after a two-year intervention in a newly opened nursing home. *Journal of Clinical Nursing* **14**, 9–19.
- Irving-Faxén G, Olsson-Andrén B, af Geijerstam A, Basun H & Cederholm T (2002) The effect of nutritional intervention in elderly subjects residing in group-living for the demented. *European Journal of Clinical Nutrition* **56**, 221–227.
- Kondrup J & Johansen N (2002) Incidence of nutritional risk and causes of inadequate nutritional care in hospitals. *Clinical Nutrition* **21**, 461–468.
- Kondrup J, Allison P, Elia M, Vellas B & Plauth M (2002) ESPEN Guidelines for nutritional screening 2002. *Clinical Nutrition* **22**, 415–421.
- Kowanko I, Simon S & Wood J (1999) Nutritional care of the patient: nurses' knowledge and attitudes in an acute care setting. *Journal of Clinical Nursing* **8**, 217–224.
- Kyle U, Pirlich M, Schuetz T, Lochs H & Pichard C (2004) Is nutritional depletion by nutritional risk index associated with increased length of hospital stay? A population-based study. *Journal of Parenteral and Enteral Nutrition* **28**, 99–104.
- Kyle U, Pirlich M, Lochs H, Schuetz T & Pichard C (2005) Increased length of hospital stay in underweight and overweight patients at hospital admission: a controlled population study. *Clinical Nursing* **24**, 133–142.
- McKinlay A & Cowan S (2003) Student nurses' attitudes towards working with older patients. *Journal of Advanced Nursing* **43**, 298–309.
- McLafferty E (2005) A comparison of nurse teachers' and student nurses' attitudes toward hospitalised older adults. *Nurse Education Today* **25**, 472–479.
- McLafferty I & Morrison F (2004) Attitudes towards hospitalized older adults. *Journal of Advanced Nursing* **47**, 446–453.
- Milne AC, Potter J & Avenell A (2005) Protein and energy supplementation in elderly people at risk from malnutrition. *The Cochrane Database of Systematic Reviews*. Issue 1. Art. No.: CD003288. pub2. DOI: 10.1002/14651858.CD003288. pub2.
- Northern nurses' federation (NNF) (2003) *Ethical Guidelines for Nursing Research in the Nordic Countries*, 4th edn. Allservice AS, Oslo, Norway.
- Pedersen PU (2005) Nutritional care: the effectiveness of actively involving older patients. *Journal of Clinical Nursing* **14**, 247–255.
- Perry L (1997) Fishing for understanding: nurses knowledge and attitudes in relation to nutritional care. *International Journal of Nursing Studies* **34**, 395–404.
- Pirlich M, Schütz T, Kemps M & Luhman N (2003) Prevalence of malnutrition in hospitalized medical patients: impact of underlying disease. *Digestive Diseases* **21**, 245–251.
- Pirlich M, Schütz T, Kemps M, Luhman N, Minko N, Lübke HJ, Rossnagel K, Willich SN & Lochs H (2005) Social risk factors for hospital malnutrition. *Nutrition* **21**, 295–300.

- Rasmussen HH, Kondrup J, Staun M, Ladefoged K, Kristensen H & Wengler A (2004) Prevalence of patients at nutritional risk in Danish hospitals. *Clinical Nutrition* 23, 1009–1015.
- Sasichay-Akkadechanunt T, Scalzi CC & Jawad AF (2003) The relationship between nurse staffing and patient outcome. *Journal of Nursing Administration* 33, 478–485.
- Sidenvall B, Fjellström C & Ek A-C (1994) The meal situation in geriatric care – intentions and experiences. *Journal of Advanced Nursing* 20, 613–621.
- Sidenvall B, Fjellström C & Ek A-C (1996) Ritualized practices among caregivers at meals in geriatric care. *Scandinavian Journal of Caring Science* 10, 53–61.
- Söderhamn O, Lindencrona C & Gustavsson S-M (2001) Attitudes toward older people among nursing students and registered nurses in Sweden. *Nurse Education Today* 21, 225–229.
- Suhonen R, Välimäki M & Leino-Kilpi H (2005) Individualized care, quality of life and satisfaction with nursing care. *Journal of Advanced Nursing* 50, 283–292.
- Visvanathan R (2003) Under-nutrition in older people, a serious and growing global problem. *Journal of postgraduate medicine* 49, 352–360.
- Wade RGN (1999) Promoting quality of care for older people: developing positive attitudes to working with older people. *Journal of Nursing Management* 7, 339–347.
- Whitman GR, Yookyung K, Lynda J & Wang S-L (2002) The impact of staffing on patient outcomes across specialty units. *Journal of Nursing Administration* 32, 633–639.
- Woo J (2005) Low staffing level is associated with malnutrition in long-term residential care homes. *European Journal of Clinical Nutrition* 59, 474–479.