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Effectiveness of nurse-delivered patient education interventions on quality of life in elders in the hospital: A systematic review

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ABSTRACT

Background: Nurse-delivered education is a crucial part of nursing practice; however, evidence regarding its impact on quality of life is lacking. To our knowledge, no systematic review has addressed the effects of nurse-delivered education interventions on the quality of life in a general elderly inpatient population.
Objectives: To evaluate the effectiveness of nurse-delivered education interventions compared to usual care with regard to the quality of life in elders in the hospital.
Methods: A systematic review was performed to identify randomized controlled trials examining the effects of nurse-delivered educational interventions on the quality of life in elders in the hospital. The search was performed in December 2012 in the MEDLINE (via PubMed), EMBASE (via Ovid), and CINAHL (via EBSCO) databases and was limited with regard to publication time and language. The studies were appraised according to methodological quality, and *p*-values were extracted to determine the effectiveness of the interventions.
Results: Four studies were included in the review. One study testing multicomponent interventions showed positive effects on quality of life. Two studies showed no effect, and one study showed a negative effect of the intervention on quality of life. Methodological appraisal revealed single biases in most of the studies.
Conclusions and implications of key findings: Because of the scarcity of positive findings, methodological issues, and heterogeneity between studies, this review could not provide evidence of the effectiveness of nurse-delivered education interventions in elders in the hospital for improving quality of life. Nurse-delivered education may be more effective as a part of multifactorial interventions. Further studies should examine interventions that focus on quality of life using validated measures.

1. Introduction

Older adults are often limited in their everyday lives due to frailty and loss of independence, leading to impacts on their quality of life (Vaarama, Pieper, & Sixsmith, 2008). Referring to the World Health Organization (WHO) ("Study protocol for the World Health Organization project to develop a Quality of Life assessment instrument (WHOQOL), 1993"), we defined quality of life "as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, and their relationship to salient features of their environment". In elderly people receiving inpatient treatment quality of life becomes a major issue as physical health is often affected (Günster, 2010). Therefore, nurses should plan and implement interventions that focus on quality of life as a main outcome.

Nurse-delivered education, defined as the information, counseling, and training of patients, has become a relevant field of nursing care in recent years. However, the potential of this field to become an integrated part of nursing has not yet been reached (Coates, 1999). Since the introduction of grand nursing theories, the education of patients has been regarded as an important issue in nursing. Thus, Orlando (1996), Peplau (1995), and others highlighted the interaction between the nurse and the patient. In their theories, nursing is about participating and empowering the patient to enable him or her to cope with his or her situation autonomously. Education becomes relevant in older adults because chronic diseases increase with age and multimorbidity, loss of independence and frailty exacerbate treatment in this population (Pariel, Boissieres, Delamare, & Belmin, 2013).

Nurse-delivered education may be a suitable intervention to improve quality of life in this population. The effects of nurse-delivered education interventions on quality of life have been widely examined in community-dwelling individuals (Clarke, Shah, & Sharma, 2011; Osborn, Demoncada, & Feuerstein, 2006; Steed, Cooke, & Newman,

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2003) with different results. Clarke et al. (2011) examined in a meta-analysis the effectiveness of nurse-delivered telemonitoring on several outcomes, including quality of life, in community-dwelling patients with congestive heart failure. They found that telemonitoring can help to improve the quality of life in this population. In contrast, Osborn et al. (2006) determined in another meta-analysis of the effectiveness of psychosocial interventions that patient education was not related to improved quality of life in cancer survivors. Steed et al. (2003) conducted a systematic review to examine the effectiveness of different interventions (education, self-management, and psychological interventions) on the quality of life of diabetes patients and found that self-management showed the best improvements in quality of life. To our knowledge, to date, no systematic review has been published regarding the effects of nurse-delivered education interventions on the quality of life in a general elderly inpatient population. The aim of this study was to evaluate the effectiveness of nurse-delivered patient education interventions on quality of life in elders in the hospital.

2. Methods

2.1. Eligibility criteria

Studies that examined the effectiveness of nurse-delivered patient education interventions on quality of life in elders in the hospital were included. Elders in the hospital were defined as patients, aged 50 or older (mean age at baseline), receiving interventions or part of the interventions during inpatient stay in a clinic or hospital. To avoid unintended exclusion of relevant studies quality of life was deemed to be addressed if the term was mentioned as an outcome variable, with no regard to the instrument used or a certain definition of the concept. Studies examining types of educational interventions were included if the interventions basically contained information, counseling, and/or training, such as case-management or telephone interventions. For this review we compared one intervention with usual care. If a study compared more than one intervention we considered the intervention most appropriate to our purpose (i.e., types of educational interventions that basically contained information, counseling, and/or training) to be relevant for this review. Only studies with a randomized controlled design were considered to be eligible for this study to ensure that effects were measured. Furthermore, eligibility criteria were based on the year of publication (2002 to 2012), the language (English and German), and the publication status; studies that examined more than one intervention and reports that had not been published when the search was completed were excluded.

2.2. Information sources

The databases MEDLINE (via PubMed), EMBASE (via Ovid), and CINAHL (via EBSCO) were searched in December 2012. Because of limited personnel resources, we did not conduct any searches of references of identified reports or hand searches.

2.3. Search

We used the following terms for all databases: patient education, referral and consultation, patient information, patient consultation, nursing consultation counseling, and quality of life. If available, we entered Mesh terms in the search engines. Two reviewers independently performed the eligibility assessment by screening the titles and abstracts of the records. The studies were assessed by applying the eligibility criteria listed above. If disagreements occurred, we sought to achieve consensus by means of discussion. If records could not be assessed by the title and abstract, we reviewed the full text of the publication. In a second assessment round, the same two reviewers independently screened the full-text articles of the records that were preliminarily included. As in the first round of assessment, disagreements between the reviewers were resolved in a consensus discussion. If articles lacked information relevant for eligibility, they were excluded. We did not contact study authors for additional information. Finally, four studies were included in the review.

2.4. Data collection process

Data were collected by the same two reviewers independently. We did not use any data extraction form to extract data. To present and summarize the evidence, we extracted information on the following variables: 1. type of intervention (including content, components, process, length, and frequency); 2. follow-up; 3. population (i.e., disease); 4. sample size; 5. setting; and 6. measures (including name of the instrument, items, scoring/evaluation, and cut-off scores).

To assess the quality of the studies, we further extracted information regarding concealment of allocation sequence, blinding of participants and researchers, loss to follow-up, participant characteristics among groups at baseline, continuance in groups, and sample size calculations (Liberati et al., 2009). The criterion concealment of allocation sequence refers to the technique the researchers used to allocate participants to groups, e.g., sealed envelopes; blinding of participants and researchers indicates blinding of participants and/or researchers: if participants were blinded to intervention treatment we added a "+" before the forward slash. If researchers were blinded, e.g., through blinding of data analysis, we added a "+" behind the forward slash. Loss to follow-up was considered to be adequate if it was less than 20% by the end of the study. Participant characteristics among groups at baseline were sufficient if no statistically significant differences between groups were reported at baseline. Continuance in groups was adequate if none of the participants changed the group he or she was allocated to at the beginning of the study. Sample size calculation was rated with a "+" if the authors reported sample size calculation in the method section. To identify duplicate studies, we juxtaposed the authors' names and compared the interventions, samples, and outcomes. If duplicates were detected, we excluded those studies from the review. Disagreements between the reviewers were resolved by discussion if the reviewers differed in assessment in one or more of the items mentioned above. During discussions the items in question were rechecked by both authors.

The primary outcome of interest was quality of life. Mean differences could not be chosen as the summary effect measure because they were not reported in all publications for the quality of life outcomes. We chose *p*-values as the summary effect measures because they were available from all reports. If trials reported more than one type of intervention, we included results from the intervention group that was most relevant to our topic. The possibility of publication bias was assessed by comparing the results of the included studies. To ascertain completeness of the data within studies, we compared the outcomes listed in the methods section with the outcomes reported in the results section.

3. Results

3.1. Study selection

Fig. 1 shows our search strategy. The literature search of all databases resulted in a total of 2504 search results after duplicates were removed. Overall, 387 records were included for further assessment. Four studies were finally included in the systematic review. Table 1 gives an overview of the characteristics of the included studies.

3.2. Interventions

3.2.1. Single interventions

Two of the studies included in the review examined the effects of single nurse-delivered education interventions on quality of life in