

Enhancement of Patient Education

Information Material for
Hospitals and Nursing Homes

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Declaration

I hereby declare that this thesis is my own original work and that I have fully acknowledged by name all of those individuals and organisations that have contributed to the research of this thesis. Due acknowledgement has been made in the text to all other material used. Throughout this thesis and in all related publications I followed the guidelines of “Good Scientific Practice”.

Graz, 01.01.2017

Daniela Schoberer, eh

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LIST OF ABBRIVATIONS

A	Austria
ADL	Activity of Daily Living
CG	Control Group
CLT	Cognitive Load Theory
EQIP	Ensuring Quality Information for Patients
IG	Intervention Group
LPZ	Landelijke Prevalentiemeting Zorgproblemen
MMSE	Mini-Mental State Examination
N / n	Number
NL	The Netherlands
OCEBM	Oxford Centre for Evidence-Based Medicine
P / p	p-value
RCT	Randomized Controlled Trial
SD	Standard Deviation
WPIM	Written Patient Information Material

Chapter 1

General Introduction



Chapter 1

General Introduction

The importance of education has been well-known since ancient times [1]. Education is a cooperative and inclusive activity that has the aim to help people live their lives as best they can [2]. This is especially important for sick people who are trying to regain control over their lives. The education of individuals with health care problems is an important task of all health care professionals, but nurses in particular play central roles in organising patient-centred and family-oriented educational activities [3,4].

Patient education can be defined as a *“systematic learning experience in which a combination of methods is generally used, such as the provision of information and advice and behaviour modification techniques, which influence the way patients experience their illness and/or their knowledge and health behaviour”* [5] and includes all educational activities that are directed toward patients, residents and families [6]. Today, patient education focuses on active patient involvement and aims to support autonomous decision-making with patients as equal actors [5,7,8].

There is evidence that adequately educated patients/residents participate more actively in care [9] and adhere to treatment [10]. Furthermore, patient educational activities can improve patients' knowledge and skills [9,11,12], lead to better self-management of the disease [9,10] and improve their confidence and self-efficacy [9,11]. Patient education that promotes self-management can also increase patients' empowerment [9].

Empowerment is a process that strengthens a person's ability to meet his or her own needs and allows them to feel as though they are in control of their lives [13]. The strong connection between patient education and the concept of empowerment is shown in Figure 1. Patient education is an antecedent of patient empowerment, where patients own the necessary knowledge, skills and attitudes to contribute actively to their care [14,15]. This active participation in their own care facilitates patient growth, which is in turn an attribute of empowerment [16].

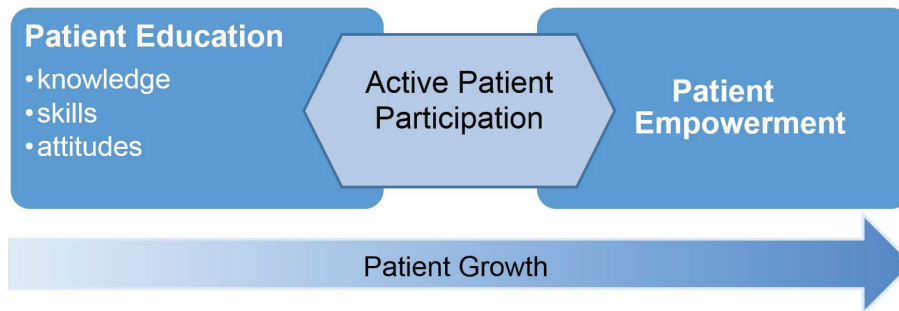


Figure 1: Patient Education and Empowerment

Although the benefits of patient education are well-known, patient education has not always been considered to be part of routine care [3]. Nurses' educational activities mostly occur spontaneously, are unplanned, or are based on personal-experience rather than evidence [3]. One major barrier that prevents nurses from providing adequate education is the lack of information/education materials or scientific sources for patient education [17]. However, information/education materials have been cited as significantly contributing to the success of patient education in various settings [3,17,18].

Information/education material to foster patient education

Several designations of printed material that can be used for patient education exist. Information or education materials are often prepared as leaflets, brochures, or booklets and usually provide information, advice, or counselling about procedures and activities associated with diagnoses and intended care [19]. Decision aids present a variety of care options from which patients can choose and help assist patients during the decision-making process [20]. In the context of this thesis, the term *information material* will be used for all issues mentioned above¹.

Information materials are supportive resources that are used to educate patients/residents and family members [11,21-23]. Patients are often overwhelmed by the huge amount of information they receive in clinical settings [24], and studies have shown that the greater the amount of information patients receive, the lower their recall of the information [24,25]. The provision

¹ In the respective articles (chapter 3 to 7) the preferred term of the journal was used (e.g. written patient information material or brochure).

of written and verbal information can help patients remember important points and allow them to exercise more control over learning. They can, for example, read through the written information wherever and as often as they want [26]. Studies have shown that providing information both verbally and in a written form in hospital settings is more effective than providing verbal information alone, in terms of significantly improving the patients' knowledge and satisfaction and reducing their anxiety [21,22]. Moreover, the written information facilitates communication with health care professionals [27], for example, about nursing care problems. The provision of information material to older people can be helpful, because important information can be organized and formatted in a specific, user-friendly way which reduces the *cognitive burden* on older adults and prevents them from becoming overwhelmed [28].

In the nursing care practice, several highly prevalent care problems are encountered such as falls [29], pressure ulcers [30] and incontinence [31]. The provision of information material on these topics would be of great value [32,33] and is viewed as an indicator of structural quality in hospitals and nursing homes [34].

However, for information material to be effective, it must be used as part of an overall patient educational strategy [35] and be of high quality [36-39].

Developing high-quality information material – framework of the conducted studies

High-quality information material is evidence-based, easy to understand and tailored to the reader [26,28,37,40-42]. This requires a structured developmental process [26], during which various aspects of quality are considered. The developmental process for information material based on Wizowski et al. [26] was used as framework for the studies conducted and is outlined in Figure 2.

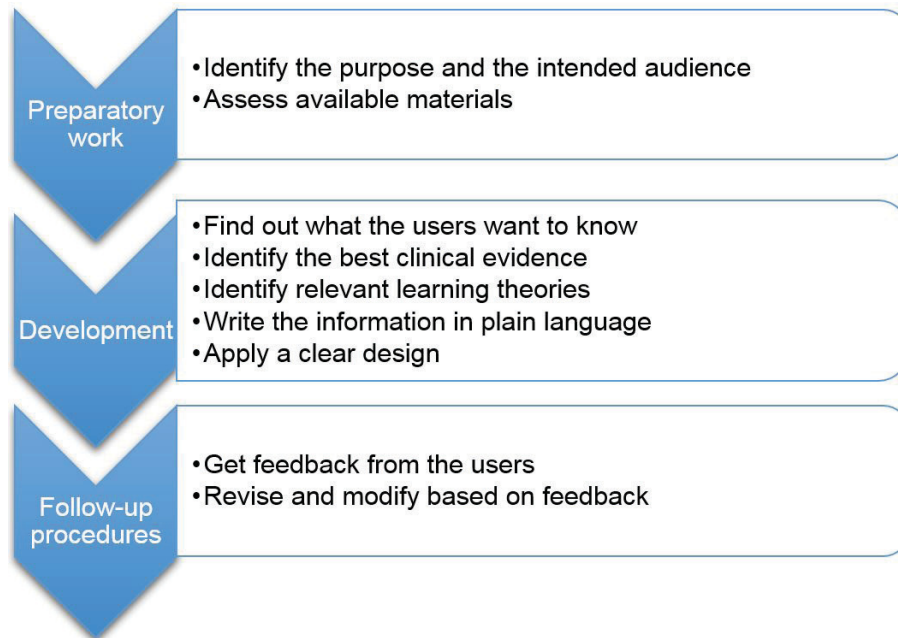


Figure 2: Developmental process for information material: framework for the conducted studies

The individual steps involved in the developmental process are described briefly below.

Preparatory work

The preparatory work begins with the **identification of the purpose and the intended audience**. The educational process is most effective when the characteristics of the learners are considered from the very beginning [40]. The questions ‘Who’ and ‘Why’ guide the entire developmental process and the answers to these questions need to be included in the information material itself [43].

The **assessment of available materials** should examine whether there is a need for the development of new information material [26]. Several tools [e.g., 44-47] and formulas [48] are available that can be used to assess the content, reliability, layout, understandability and applicability of existing information material. The findings of international studies on different health care problems have shown that available information material rarely meet the pos-

tulated quality criteria [49-52], which calls for the new development of information material.

Development

To **find out what the users want to know** necessitates the involvement of patients/residents and potentially family members in the development of the information material from the onset [26,39,42,53]. Studies have shown that if users are not involved, a mismatch between what the users need and expect and what is presented in the information material results [19,53-55]. Instead, patient participation in the development of information material has been shown to lead to more appropriate, readable and understandable information material [19,56]. In addition, the expertise of health care professional needs to be considered, as they are experts in what patients need to know [40].

The **identification of the best clinical evidence** is necessary, because high-quality information material should provide unbiased care options, information about the benefits and risks of these options, as well as numeric data based on current scientific knowledge [37,39,41,57,58]. This requires the use of systematic methods for the identification, evaluation and summary of evidence [59].

Information material should be theory-based [40,60]. The **identification of relevant learning theories** should ensure that theories are applied that impact learning in a particular health care setting and for an intended audience [40]. It is recommended to include learning theories that address the cognitive processes of the targeted audience to ensure that cognitively manageable information material that can easily be processed and understood can be developed [61].

A discrepancy between the users' reading abilities and the skills needed to understand information material often exists [48]. Health care information presented in a complex fashion is especially problematic for people with low health-literacy skills [4,20,62], which is common in older people [62]. Health literacy means the capacity to seek, understand and act on health care information [20]. By **writing information in plain language**, the information is written in a simplified manner so that people with low health-literacy skills can read this information and process it [26,63]. That means that information is written in a conversational style [64] without the use of clinical or statisti-

cal jargon [42,63]. Short sentences are written, active voice is primarily used and one topic is presented at a time [42,48,64]. Recommendations for the reading grade level range from 9 and below [65] to 6 and below [64]. While communicating information about risks and benefits, it is important to consider that absolute risks and natural frequencies are easier to understand than percentages, relative risks or number needed to treat formats [63,65]. Plain language also ensures that information material is 'actionable' [26,44,64]. The use of question answer formats [26,64] that describe the actions the user can perform and checklists [44], for example, can encourage patients to interact actively with the material. When patients interact with the information material, it becomes more personally relevant [26]. The personalisation of the information material, achieved by adding the patients' names and providing space for specific instructions, is also a strategy that can be used to support patients' efforts to interact with the information material [26].

The last step in the developmental process of information material is to **apply a clear design**, which often occurs during the writing process. During the design process, decisions must be made about the font, paper, colours, structures and pictures. Information should be presented in a logical sequence [63], and subheadings and sufficient white space should be used [63,64]. The font size should be at least 12-point serif, and colour should only be added to highlight key information [64]. At the end of the information material, metadata (authorship, date of development, financing, information sources) should be presented [26,37,39]. Graphics can be used to help patients understand the written text [64], draw increase attention to specific points and improve the recall of the information [66]. Images that serve to enhance the patients' understanding and knowledge need to be clear, simple and supported by textual information [37,48].

Follow-up procedures

Follow-up procedures include **getting feedback from the users** and **revising and modifying the information material based on the feedback**. Patients and families are experts in their needs and only they can determine if the information material is easy to read and understand and meets their expectations and needs [26].

This structured developmental process is necessary to guarantee empowering communication about health care [59].

Aims and outline of this doctoral thesis

The overall aim of this thesis was to assess the availability and quality of information material, develop high-quality information material and evaluate newly developed information material from the users' perspective (residents/family members/nursing staff).

Assess the availability and quality of information material

The **first study** was aimed at determining the quantities of information material that is available and distributed in hospitals and nursing homes. As the Netherlands have a strongly established tradition of patient education [7,6,67], information material that address different nursing care problems was collected from Austrian and Dutch hospitals and nursing homes and compared.

The **second study** was aimed at investigating the quality of information material available in Austrian and Dutch hospitals and nursing homes. This study focused on the health care problem of falls, because falls are critical incidents in hospitals and nursing homes [68-70] with many potentially modifiable risk factors [71].

Developing information material

Based on the results of the second study, information material for fall prevention in nursing homes was developed, involving potential users in the development process.

To include the users in the development of fall prevention information material from the beginning of the process, the **third study** was aimed at exploring users' needs and expectations on fall prevention information material.

Evaluating information material

The **fourth study** was aimed at evaluating the fall prevention information material with regard to its usefulness and understandability from the users' perspective (residents, family members and nursing staffs). Based on the results of this study, necessary revisions to the information material were made.

Providing support to implement patient education

The third study yielded unexpected results; specifically, residents did not feel empowered enough to prevent falls, which led to the development of an additional study. In this **fifth study**, the aim was to identify educational interventions that could be used to empower nursing home residents.

An outline of the thesis is illustrated in Figure 3.

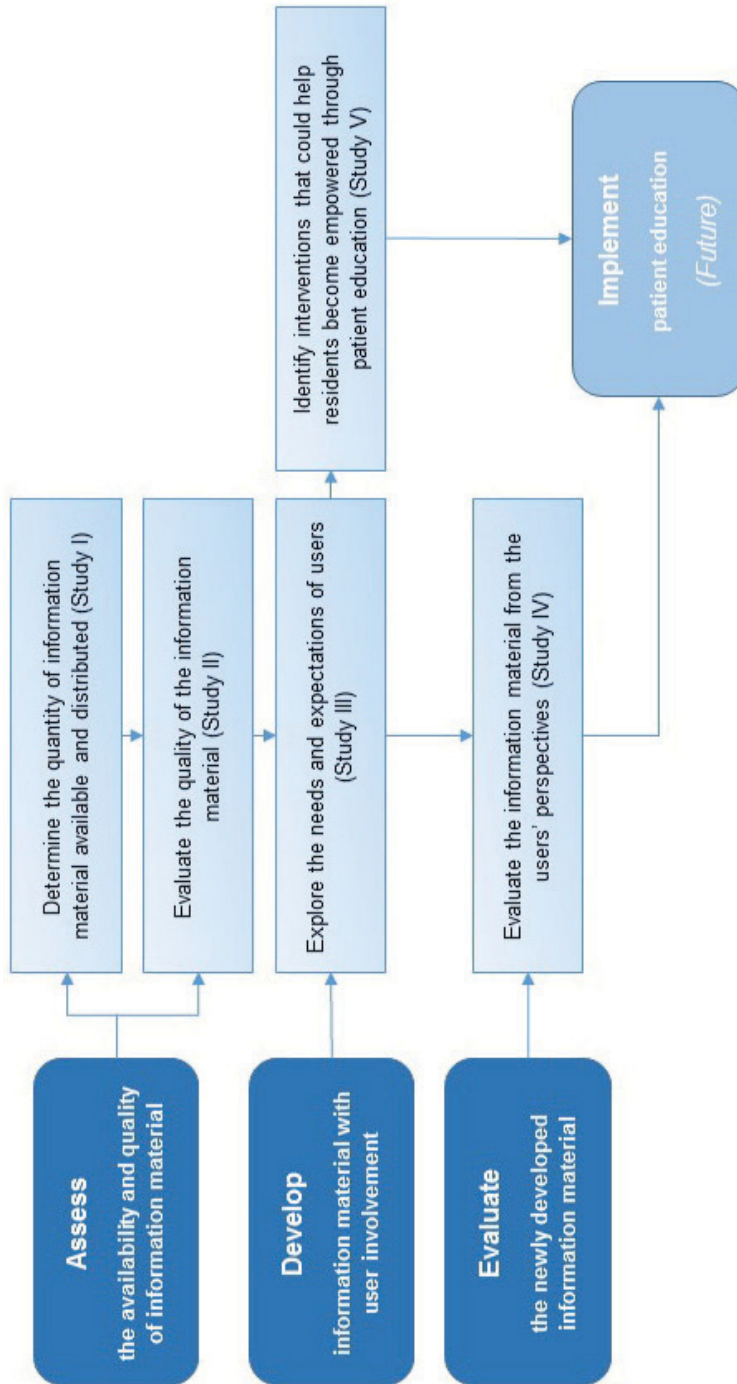


Figure 3: Flowchart of the thesis topics

Chapter 1

The following chapters include:

- a brief overview of the methodological aspects of the conducted studies (Chapter 2)
- the individual studies which have been published in or have been submitted to international peer-reviewed journals (Chapters 3 to 7)
- a discussion of the main findings and methods used, as well as recommendations for practice and future research (Chapter 8)

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Chapter 2

Methods



Methods

Table 1 provides an overview of the methodological aspects of the individual studies.

Table 1: Methodological overview of the studies

	Study 1	Study 2	Study 3	Study 4	Study 5
Aim	To determine the quantity of information material available and distributed in Austrian and Dutch hospitals and nursing homes	To evaluate and compare the quality of information material available in Austrian and Dutch hospitals and nursing homes pertaining to prevention of falls	To explore and compare nursing home residents', family members', and nursing staff members' needs and expectations regarding fall prevention information	To evaluate information material pertaining to fall prevention with regard to its usefulness and understandability from the users' perspective	To identify educational interventions that could be used to empower nursing home residents
Design	Secondary data analysis of a cross-sectional, multi-centre study	Comparative descriptive study	Qualitative content analysis study	Qualitative content analysis study	Systematic literature review
Sample/Setting	Austrian (n=50) and Dutch (n=379) hospitals and nursing homes	77 different sets of information material from Austrian (n=534) and Dutch (n=131) hospitals or nursing homes	Residents (n=25), family members (n=12) and nursing staff (n=14) from three randomly selected nursing homes	Residents (n=15), family members (n=7) and nursing staff (n=10) from two nursing homes	Out of 427 identified articles, ten intervention studies addressed the research question

Data collection

Performed on an institutional level by directors of institutions and on a ward level by head nurses of wards, with standardized questionnaires on two specific days in April 2010 and 2011

Hospital and nursing home directors were contacted through e-mail in August 2012 with a request to forward printed or electronic copies of information material

Nine focus group discussions were performed separately with residents, family members and nursing staff using a self-developed interview guideline

Six focus group discussions were performed separately with residents, family members and nursing staff using the discussion guide from Hirschberg et al.

A systematic literature search was performed in the databases PubMed, CINAHL, CENTRAL, PsycINFO and Embase. Reference lists and searches with SIGLE and Google Scholar were conducted to identify grey literature

Data analysis

Descriptive statistics and statistical tests were conducted to explore differences between the countries and settings

Two assessors evaluated each type of information material independently on the validated EQIP scale. Global scores for quality were calculated and differences between the countries and settings were explored using statistical tests

The recorded discussions were transcribed and a qualitative content analysis using a combined concept-driven and data-driven coding frame was performed

Two authors independently appraised the quality of the studies and assigned levels of evidence. The results of the studies were grouped according to their main empowering outcomes and described narratively

Chapter 3

Availability of written patient information addressing certain nursing care problems in Austrian and Dutch hospitals and nursing homes:

A cross-sectional study aimed at enhancing shared decision-making and person-centeredness

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Abstract

Rationale: Written information material for patients and their families is essential to supplement and re-inforce nurses' verbal information. So far, little has been known about the availability of written patient information material on nursing care problems in hospitals and nursing homes. This paper describes research aimed at determining to what degree written patient information material of the nursing care problems as they relate to pressure ulcer, urinary incontinence, malnutrition and intertrigo is available and distributed in Austrian hospitals and nursing homes in comparison to Dutch hospitals and nursing homes.

Method: A cross-sectional, multi-centre design with standardized questionnaires was used to measure the availability of written patient information material of some highly prevalent nursing care problems in Dutch and Austrian hospitals and nursing homes.

Results: A total of 50 Austrian and 379 Dutch hospitals and nursing homes took part in the survey. With regard to the examined nursing problems, more written patient information material was available in Dutch hospitals and nursing homes than in these facilities within Austria. A significant difference was found for pressure ulcer ($p < 0.01$) and intertrigo ($p < 0.001$). Even where available, written patient information material was not used in one-third of wards.

Conclusion: Written patient information material is often not available in Austrian institutions and, if available, not always offered to patients and/or their relatives. Written patient information material should be developed by quality managers in healthcare institutions or on a national level. Nursing staff should be encouraged to hand out available information material to inform concerned patients and/or relatives to complement verbal information, in a concerted effort to increase the person-centeredness of clinical care.

Keywords: Availability, intertrigo, malnutrition, pressure ulcer, urinary incontinence, written patient information

Introduction

One central role of healthcare professionals is to empower patients to articulate their information needs and to enhance their clinical decision-making abilities by providing relevant information and advice [1-3]. According to the European Charter of Patients' Rights, healthcare providers are obliged to provide easily accessible information regarding patients' state of health and available services to enable patients to make informed choices [4]. Moreover, the International Code of Ethics for Nurses states that nurses have to provide sufficient information as a basis for patients' consent for care and related treatment [5].

Written patient information material can supplement and re-inforce verbal information [6]. On the one hand, written information may be helpful as low-threshold access to information for patients who are reluctant to talk about their health problems [7]. On the other hand, it may facilitate communication between patients and healthcare professionals [8]. Written patient information material can be offered via leaflets, patient decision aids or other forms of educational material. The objectives of these materials are to improve knowledge, patient satisfaction and participation in shared decision-making as well as to reduce decisional conflict per se [9].

Numerous empirical studies confirm that offering high-quality written information material enhances patients' knowledge [7,10,11]. Informed patients are more likely to participate actively in their care and comply with treatment [7,9,10,12] and patients who are actively involved in care/treatment planning have better long-term health outcomes [13,14]. Hack et al. [14] conducted a study involving women diagnosed with cancer who were actively involved in treatment planning. Compared to women with passive involvement in treatment planning, they were found to have a significantly higher overall quality of life, showed higher physical and social functioning and were less afflicted by fatigue. Although information is of essential importance in healthcare practice, patients are not routinely provided with high quality information [15-17]. This is due to a multiplicity of reasons such as time pressure, lack of staff training or the belief that a decision should be purely based on professional clinical skills [2,15,18]. When it comes to clinical decision-making, nurses are often not aware of their patients' perspectives and preferences [19], even though such knowledge is indispensable in order to plan care in a patient-oriented manner.

If patients are not informed and have limited knowledge about healthcare options, their ability to maintain autonomy will be compromised [20]. Many patients feel that they have no choice concerning their treatment/care and are rarely aware of existing alternative treatment/care options [9]. One way to address this problem is to offer high quality written patient information material.

There are several scientific investigations examining the availability, quality and effectiveness of written patient information material in medical healthcare [11,21,22]. Nevertheless, there also exist numerous highly prevalent problems in nursing care, for example, urinary incontinence [23,24], malnutrition [25,26] and pressure ulcer [27,28], in which comprehensive information for patients and their families plays a critical role.

To date, little has been known on the availability of written patient information material about nursing care problems in hospitals and nursing homes. In order to obtain a more objective view about the quality and distribution of written patient information in hospitals and nursing homes, two countries, Austria and the Netherlands, were compared. The Netherlands are recognised for their established tradition in patient education, with special coordinators for patient education in hospitals being responsible for the organization of patient education and the development of new patient information material [29]. In Austria, such standardised structures do not exist. Therefore, we expected the availability of patient information material to be higher in the Netherlands than in Austria. However, does a higher availability rate also indicate that such material is indeed offered to patients and their families to a higher degree in the Netherlands? The aim of the present study was therefore to compare the Netherlands and Austria with regard to offering written patient information material on several nursing care problems (pressure ulcer, urinary incontinence, malnutrition and intertrigo) as part of an overall effort to increase the person-centeredness of clinical care.

The following research questions were posed:

To what degree is the area of written patient information material about pressure ulcer, urinary incontinence, malnutrition and intertrigo addressed in Austria and the Netherlands?

What is the difference in the provision of written patient information material in Austrian and Dutch hospitals and nursing homes?

What is the difference in the provision of written patient information material between hospitals and nursing homes?

Is written patient information material which is available at the institutional level also provided at the ward level?

Methods

Study design

The design involves a cross-sectional multicenter point prevalence measurement in which data about pressure ulcer, urinary incontinence, malnutrition, intertrigo, falls and restraints are collected and where written patient information material on pressure ulcer, urinary incontinence, malnutrition and intertrigo is investigated.

Instruments

For this study, the instruments and methods of the Dutch National Prevalence Measurement of Care Problems (Landelijke Prevalentie meting Zorgproblemen - LPZ) were used [30,31]. The LPZ instrument is a standardised and comprehensive questionnaire about healthcare problem measurement consisting of 3 measurement levels, that is, at institution, ward and patient levels. On the patient level, demographic data, data about care dependency, prevalence data and data about the management of nursing care problems are gathered. At the institutional and ward levels, the questionnaire assesses both the kind of institution and the kind of ward as well as structural indicators, such as the use of protocols or guidelines, educational activities, experts for specific nursing care problems and the availability of an information brochure for residents and their families. The present study used data on the dichotomized statements “an information brochure is available at the institution for clients and/or family members about the prevention of pressure ulcer/incontinence/malnutrition/intertrigo” for the institutional level and “every client with an increased risk of pressure ulcer development/suffering from incontinence/who is malnourished (or at risk of becoming so)/suffering from intertrigo receives an information brochure for clients and/or family about the preven-

tion of pressure ulcer/incontinence/malnutrition/intertrigo” for the ward level. In this context, the term ‘information brochure’ represents any kind of written information material like leaflets, education materials, booklets, brochures or decision-making aids.

As the original version of the questionnaire was in Dutch, the questionnaire was translated into German and sent to Austrian experts for feedback. The resulting changes in wording were discussed again with the Dutch researchers, who are familiar with the German language. In order to test its comprehensibility and applicability, a pilot measurement was performed in 11 Austrian hospitals in November 2008. The feedback on the questionnaire by the participating hospitals was incorporated into the questionnaires by making minor linguistic adjustments.

Sample/setting

All hospitals and nursing homes in Austria and the Netherlands with more than 50 beds were invited for participation by email and a leaflet. In order to obtain a comprehensive overview, data from participating hospitals and nursing homes from the 2010 and 2011 measurements were used for this study. Data from the various hospitals and nursing homes were used only once; therefore, if a hospital or nursing home participated both in 2010 and in 2011, only the more recent data were used. Dutch institutions were free to choose the nursing care problem they wanted to assess, but in Austria, every participating institution had to answer the questions about each nursing care problem. Ethical approval was obtained from the ethics committees of the Medical University of Graz and the Maastricht University Medical Centre.

Data collection

In each participating hospital and nursing home, one coordinator was responsible for organizing the measurement within the institution. All coordinators received training by the research group and were provided with supplementary training material on how to coordinate and manage the survey within the institution, how to use the questionnaires and the data-entry program. In addition, the coordinators received instruction material in order to educate and train the healthcare workers who gathered the data at institution, ward and patient

levels. The sections on structural indicators were completed by the director of nursing for the institution level and by the head nurse for the ward level. Data collection was conducted on one specific day in April in 2010 and 2011 in all participating hospitals and nursing homes.

Statistical analysis

Descriptive analyses were performed using SPSS version 19.0 (SPSS Inc., Chicago, IL). To describe the availability of patient information material, data were collected at ward and institutional levels. For the purpose of this study, data are reported in numbers and percentages. For each nursing care problem, differences between countries, types of institutions (hospitals and nursing homes) and levels (ward or institutional) were analysed using chi-square test for categorical variables. P-values were based on two-sided tests, with values lower than 0.05 being considered as statistically significant.

Results

A total of 50 Austrian institutions (30 hospitals, 20 nursing homes) and 379 Dutch institutions (52 hospitals and 327 nursing homes) took part in the survey. As discussed, Dutch hospitals were able to choose the nursing care problems they would like to measure. As a result, the nursing care problem pressure ulcer was chosen by 233 Dutch hospitals and nursing homes, malnutrition by 114, urinary incontinence by 116 and intertrigo by 90.

Availability of written patient information material in Austrian and Dutch hospitals and nursing homes

Written patient information material about pressure ulcer was available at 181 institutions (64%), about malnutrition at 65 institutions (40%), about urinary incontinence at 57 institutions (34%) and about intertrigo at 13 institutions (10%).

As anticipated, the surveyed Dutch institutions had more patient information material than Austrian institutions with regard to all examined nursing care problems (see Figure 1), but a significant difference was found only for the nursing care problems pressure ulcer ($p < 0.01$) and intertrigo ($p < 0.001$). The

cross-national differences regarding the availability of written information material about malnutrition and urinary incontinence were not significant ($p = 0.09$ for malnutrition; $p = 0.44$ for urinary incontinence, respectively).

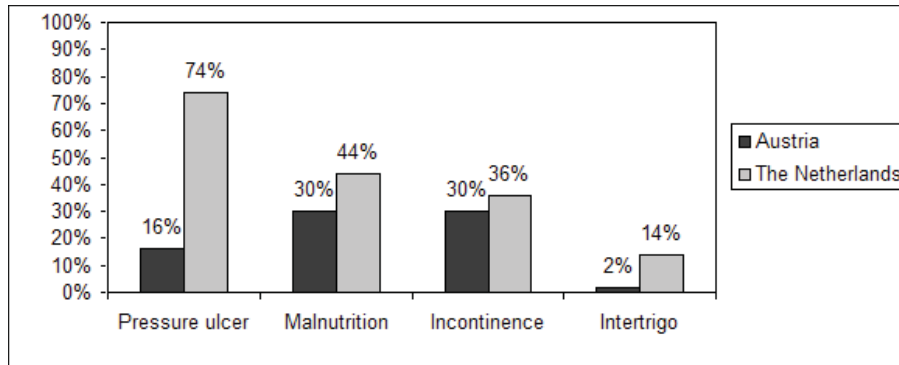


Figure 1: Availability of written patient information material in Austrian (N=50) and Dutch (N=379) hospitals and nursing homes

Differences between hospitals and nursing homes

The examination of differences within the settings for both countries revealed that only with regard to malnutrition there existed more written information material in hospitals than in nursing homes ($p = 0.02$; Table 1). All in all, written patient information material was offered in 26 hospitals (53%) and 39 nursing homes (34%). With regard to the other nursing care problems, no statistically significant difference between hospitals and nursing homes was found concerning the availability of written patient information material. Splitting data to obtain separate results regarding the two countries showed stronger disparities between the settings (see Table 1). Almost every participating Dutch hospital provided written information material about pressure ulcer and malnutrition. In Austrian hospitals, on the other hand, written patient information material about pressure ulcer and malnutrition was available in 6 (20%) and 8 (27%) hospitals, respectively ($p < 0.01$ for both). Except for the nursing problem pressure ulcer, no differences were found between the two countries regarding the availability of written information material in nursing homes. The availability of written information material about urinary incontinence is higher

Availability of written patient information

in Austrian hospitals than in Austrian nursing homes, whereas the situation in the Netherlands is reversed.

Table 1: Differences between Austrian and Dutch hospitals and nursing homes

Nursing care problem	Hospitals % (N)			Nursing Homes% (N)		
	A	NL	Total	A	NL	Total
Pressure ulcer	20(6)*	98(49)*	69(55)	10(2)*	68(124)*	61(126)
Malnutrition	27(8)*	95(18)*	53(26)**	35(7)	34(32)	34(39)**
Urinary incontinence	37(11)	19(3)	30(14)	20(4)	39(39)	27(43)
Intertrigo	3(1)	14(2)	8(2)	0(0)	14(10)	11(10)

*p<0.01, **p<0.02

A= Austria, NL= the Netherlands

Availability of information material on ward and institutional levels

Table 2 shows that only about 35% of the written patient information material, available at the institutional level, is handed out to patients or their families at the ward level; which means that almost 65% of the patients and/or families do not receive written materials. It is remarkable that in some cases, where no information was available at the institutional level, some wards nevertheless distributed written information material to patients and/or their families. This phenomenon was observed especially with regard to malnutrition, both in Austria as well as in the Netherlands.

Table 2: Differences regarding the availability of information material on ward and institutional levels

Nursing care problem		Institution level			
		Yes % (N)	No % (N)	Total % (N)	
Pressure ulcer	Ward level	A Yes	35(25)*	2(3)	10(28)
		A Total	72	199	271
		NL Yes	39(275)*	3(5)	24(278)
		NL Total	967	202	1169
Malnutrition	Ward level	A Yes	30(21)*	11(21)	16(42)
		A Total	71	200	271
		NL Yes	41(127)*	13(27)	30(154)
		NL Total	311	203	514
Urinary incontinence	Ward level	A Yes	16(14)*	2 (4)	7(18)
		A Total	89	182	271
		NL Yes	38(48)*	4(14)	14(62)
		NL Total	127	315	442
Intertrigo	Ward level	A Yes	0(0)	0.3(8)	0.3(8)
		A Total	3	268	271
		NL Yes	33(22)*	6(17)	11(39)
		NL Total	67	287	354

*p<0.01, A= Austria, NL= The Netherlands

Discussion

The investigation revealed considerable differences between Austria and the Netherlands, for example, that more written patient information material was available in Dutch hospitals and nursing homes.

The development of guidelines to provide patients with information can be performed by national organisations (e.g., the National Institute for Clinical Excellence in the UK) or by the quality management department within the healthcare institutions [32]. Existing disparities in quality assurance systems in Austrian and Dutch healthcare organisations may constitute one explanation for the differences between these countries. In Austria, only hospitals are obliged to establish commissions on quality management and, until now, hos-

pitals and nursing homes have not been obliged to take part in a national quality report [33]. Dutch healthcare organizations, in contrast, are obliged to measure their quality of care, evaluate the results of the measurement against standards and disclose their quality management system in an annual quality report [32]. Furthermore, publishing these annual quality reports and making the results thus accessible to the public is believed to reduce the prevalence rate of nursing care problems, especially pressure ulcer [34]. A further explanation for the differences between the countries may lie in differing experiences with regard to the LPZ. The LPZ is a relative novelty for Austrian healthcare institutions. Since 2009, it has been possible to participate in the survey and obtain data about quality indicators, performed interventions and prevalence of nursing care problems [35]. Consequently, the participating Austrian institutions received a detailed report about their situation regarding quality indicators for the first time in 2010 or 2011, respectively. Dutch healthcare institutions, on the other hand, have been able to participate since 1998, which provided them with the possibility to benchmark over the past years and to continually improve their practice.

In Dutch hospitals and nursing homes, most written patient information material focuses on the subject of pressure ulcer and nearly every participating Dutch hospital provides it. The high prevalence rates for pressure ulcer in Dutch healthcare institutions, according to the prevalence data of the last years [27], constitute a reason for the widely-used information material. Professional nurses and nursing researchers are facing the demanding challenge to lower the prevalence rates and a multitude of measures are being taken [34]. In Austria, on the other hand, pressure ulcer prevalence rates are comparatively low, with crude prevalence rates of 3.5% in hospitals and 6.3% in nursing homes [36]. Although the pressure ulcer prevalence rates are higher in nursing homes than in hospitals [27,36], more hospitals offer written patient information material than nursing homes. The same phenomenon applies to the nursing care problem urinary incontinence in Austrian hospitals and nursing homes, where more information material is available in hospitals. However, written information material about urinary incontinence is scarce, even though direct communication about urinary incontinence poses a considerable challenge for healthcare professionals [37] and those affected by urinary incontinence [23]. Such written information supports patients and healthcare professionals in breaching this sensitive subject, which remains a taboo [8], thus increasing the possibility for affected persons to receive adequate care

and treatment. According to the systematic review of Offermans et al. [24], up to 77% of nursing home residents are affected by urinary incontinence. Therefore, nurses face a great challenge in dealing with this problem and have to invest considerable and further effort into quality of care, for example, by using guidelines, experts in the field and easily understood information material for patients and their relatives. The lowest rate of availability for written patient information material was found for the nursing care problem intertrigo. Intertrigo is strongly related to obese patients [38] and as obesity is increasing, intertrigo is becoming an increasing challenge for hospitals and nursing homes. However, up to the time of writing there has been no scientific evidence addressing the prevention of intertrigo in adults and treatment research mostly focuses on pharmaceutical interventions [39]. In spite of a paucity of research, a guideline on the prevention and treatment of intertrigo was published in the Netherlands in 2004 and updated in 2011 [40], from which the available written information material might be derived.

To the authors' knowledge, this is the first study comparing the availability of written patient information material at the institutional level in hospitals and nursing homes in contrast to the ward level at these institutions and the results are sobering. Only about one-third of available written patient information material in hospitals and nursing homes is offered to affected patients and/or their relatives at the wards. Although, according to international studies, the examined nursing care problems are, to differing extents, indeed highly relevant in all respective wards [34,36] and patients should have the opportunity to obtain information about these nursing care problems in all fields of nursing or healthcare. Publishing written information material at ward level may constitute a low-threshold access to this greatly needed information and may be an impetus to talk to healthcare professionals about the specific nursing care problem. Further qualitative research would be helpful in order to determine the reasons why the information material is not offered at ward level. Importantly, this survey was able to illustrate that some wards hand out written information material which is not available at the institutional level. It can be presumed that this information material has been developed and written directly at ward level or via external experts familiar with the ward staff, for example, medical representatives. Especially in the field of malnutrition, it can be hypothesized that commercial companies are responsible for a host of written patient information material.

When interpreting the results, a few limitations have to be considered. In the cross-national comparison conducted within this study, Austrian hospitals and nursing homes are under-represented; only 30 hospitals and 20 nursing homes took part in the surveys of 2010 and 2011. In the Netherlands, the participating institutions have the possibility to choose among the nursing care problems they want to evaluate. It is therefore quite possible that Dutch hospitals or nursing homes may have limited their participation to those nursing care problems in which they invested a great deal of attention and effort in order to improve their quality of care and therefore more structural indicators, like written patient information material are addressed than in Austria. Through the annual reflection of nursing structures, processes and outcomes, Dutch hospital and nursing home staff are probably highly motivated to continually optimize their quality of performance.

The study results are limited to the selectively examined nursing care problems pressure ulcer, malnutrition, urinary incontinence and intertrigo. In nursing practice, there exist several additional highly relevant nursing care problems, like falls or dementia, where written information would be important for patients at risk. These nursing care problems are not the focus of this study, which is why general conclusions about the availability of written patient information material in nursing practice cannot be drawn from the present study.

Conclusion

Despite the benefits of written patient information for patients and/or their relatives, such material is often not available at institutions or not offered to patients and/or their relatives on the ward level. National organisations and quality managers in hospitals and nursing homes should be encouraged to develop written patient information material about relevant nursing care problems, so that nursing staff can use such documents in practice to inform patients in addition to verbally delivered information. Nursing staff are required to reconsider if written patient information material is available in the institution and, if the need arises, to hand out the available information material to affected patients and/or relatives. To benefit from published written patient information material, it is of prime importance that the information material is of high quality as well as being evidence-based. Further studies are necessary to address the quality and understandability of the available written patient in-

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formation material from nursing homes and hospitals as part of more general efforts to increase the person-centeredness of clinical care.

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Chapter 4

Quality of Austrian and Dutch falls-prevention information:

A comparative descriptive study

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Abstract

Objectives: The aim of this study was to evaluate and compare the quality of written patient information material available in Austrian and Dutch hospitals and nursing homes pertaining to falls prevention.

Design: Comparative descriptive study design

Setting: Hospitals and nursing homes in Austria and the Netherlands.

Method: Written patient information material (n = 77) was independently evaluated by two assessors using the 36-item Ensuring Quality Information for Patients (EQIP) scale with regard to content, structure and identification data. EQIP global scores were calculated and country- and institution-specific (hospitals and nursing homes) differences were analysed.

Results: The written patient information material available in Dutch hospitals had a significantly higher EQIP mean score than that in Austrian hospitals ($p < 0.001$). The difference in EQIP global score between the countries was not significant for the written patient information material in nursing homes ($p = 0.479$). Subscale analyses indicated that Dutch institutions reached significantly higher mean values in the global scores for content and structure than Austrian ones ($p < 0.05$).

Conclusion: Although Dutch written patient information material pertaining to falls prevention was of higher quality than that in Austria, both countries suffered from shortcomings, especially with regard to content and identification data. Authors of written patient information material face a great challenge in taking consumer involvement and evidence-based criteria into account.

Keywords: Austria, falls prevention, hospital, nursing home, patient information, the Netherlands

Introduction

Falls and their consequences are treated as critical incidents in hospitals and nursing homes. In a hospital setting, the proportion of patients experiencing a fall varies from 1.9% to 24.5% [1,2], depending on the clinical department and data collection time point; the highest incidence of falls is in care of the elderly units [1-3]. In nursing homes, approximately half of the residents experience at least one fall each year [4,5]. About 35%–50% of falls in institutionalised patients/residents result in physical injuries, for example, fractures, head injuries, contusions, abrasions or haematomas [2,4,6].

Several studies have examined risk factors for falls and/or injuries caused by falls in hospitals and nursing homes, but the majority have only focused on patient/resident-related risks (intrinsic risks) such as age, gender, mobility disabilities or cognition [1,3,5,7]. Falls are not only monofactorial events but also the result of an interaction of various intrinsic and environmental (extrinsic) risk factors [4,6], as well as additional circumstances, such as not calling for help when it is needed [6]. Many of these risk factors and circumstances might be eliminable or changeable through adequately informing and educating patients and their families [8].

Informing patients and families

Verbal information alone as a means to enhance knowledge has been found to be less effective than a combination of written patient information material (WPIM) and verbal instructions; this may be due to the fact that people tend to remember well-written information more easily [9,10]. WPIM can therefore reinforce verbal instruction [11] and facilitate communication between patients, family members and healthcare professionals [10]. Particularly in the case of community-dwelling elderly people who are admitted to a hospital after a fall event, offering and explaining WPIM on falls prevention may be a valuable means of conveying sufficient information about it.

High-quality WPIM

To benefit adequately from WPIM, it is important that the information provided is of high quality with regard to content and structure [12-14]. High-quality

WPIM content can be defined as material that informs patients about the purpose of the possible intervention(s); provides different management options, including information on ineffective options; and discusses effectiveness, risks and side effects [12,14]. WPIM pertaining to falls prevention should critically discuss commonly used measures, guidelines and reviews concerning effectiveness, benefits and harms. These commonly used measures include risk identification, exercise interventions, elimination of environmental risks, vision testing, medication review, falls/fracture prevention supplies such as hip protectors and coping strategies after an accidental fall [15,16].

The recognition of patient needs and preferences necessitates the active involvement of consumers in WPIM development [14]. There is evidence that consumer involvement results in material that is more relevant, readable and understandable [17].

Furthermore, WPIM absolutely must ensure transparency by providing information on financing, authorship, publication date and information sources [12,14,18].

WPIM quality criteria regarding structure have been widely discussed in the literature, which contains numerous recommendations pertaining to readability in particular [19,20]. Presumably, this is due to the high number of people with limited (health) literacy [19,21] and the discrepancy between consumer reading abilities and the skills needed to understand the WPIM [19,22]. In general, easy-to-read written materials consist of short paragraphs with simple words in an active voice that avoid jargon and address one topic at a time [19,20,23]. Images that serve to enhance understanding and knowledge need to be clear, simple and supported by textual information [12,19].

International studies have shown that WPIM seldom fully meets these criteria. In some cases, there are shortcomings in reliability and information quality [11,24-26] and in others, readability and design require improvement [26,27]. To date, WPIM on falls prevention has not been the subject of much critical investigation.

Appraisal tools to assess WPIM

There are several tools available to measure the quality of written healthcare information, but most focus on evaluating medical information on treatment

choices [28,29] or consider only a single quality criterion such as WPIM readability [19]. One tool that assesses the quality of patient information for all types of information and that contains several quality criteria is the Ensuring Quality Information for Patients (EQIP) scale [30,31]. So far, it has been used and tested in WPIM regarding diagnostic tests, medical treatments, invasive procedures, surgical procedures and anaesthesia [30], but it has not been used for preventive issues relevant to nursing care.

Rationale for assessing WPIM on falls prevention

We plan to develop high-quality fall-prevention WPIM to be used in institutional settings in Austria. The process of development requires an extensive analysis of existing materials [32] to ensure that there is a need for this product development. In order to assess the quality of Austrian fall-prevention materials, their WPIM was compared with that of the Netherlands. Dutch institutions attach considerable importance to patient education [33,34], and the Dutch government has created indicators to measure the quality of fall-prevention education. Neither the Netherlands nor Austria has guidelines recommending content for WPIM pertaining to falls prevention. This study aimed to evaluate the quality of Dutch and Austrian WPIM on falls prevention using the EQIP scale, comparing the quality between countries and settings.

Methods

Study design

This comparative, descriptive study sought to evaluate WPIM from Dutch and Austrian hospitals and nursing homes with regard to content, structure and development aspects.

Instrument

The quality of the WPIM was evaluated using the 36-item EQIP scale [30], which was structured and labelled by the authors into three dimensions, namely, content (18 items), identification data (6 items) and structure (12 items) (see Table 4 in the 'Results' section). The identification data dimension refers

to the development aspects of the WPIM and includes criteria such as financing, authorship, publication date and information sources. The first version of the Ensuring Quality Information for Patients (EQIP) scale (20 items) was developed in 2004 and tested for concurrent- and criterion-related validity and reliability. The authors ensured an appropriate correlation with the DISCERN tool (Kendall's $\tau B = 0.56$), an instrument used to judge the quality of written consumer health information on treatment choices [28], as well as strong agreement with the quality of assessment offered by expert raters (Kendall's $\tau B = 0.78$) [31]. Internal consistency reliability using Cronbach's α was 0.80, and inter-rater reliability showed moderate agreement (mean $\kappa = 0.60$), with no differences based on type of information [31]. Based on a comprehensive literature review in 2007, this first version was expanded to the 36-item EQIP scale, which promised better content validity and showed higher inter-rater reliability (mean $\kappa = 0.84$) than the original EQIP tool [30].

Each item was scored on a 4-point scale (yes, partly, no, does not apply). An overall score was subsequently calculated using the EQIP-algorithm, with values ranging from 0 to 100, where lower scores implied lower quality [30,31].

Sample/setting

The authors contacted all Austrian ($n = 254$) and Dutch hospitals ($n = 94$) and nursing homes or nursing home associations (Austria, $n = 764$; The Netherlands, $n = 71$) that were available on respective health ministry databases [35-37] and invited them to participate in the study. WPIM were included if they met the following criteria: fall-specific, available in hospitals or nursing homes, focused on falls prevention in hospitals, nursing homes or home settings, designed for patients and possibly their families, and written in either German or Dutch.

Data collection

All hospital and nursing home directors were first contacted through email in August 2012 with a request to forward printed or electronic versions of their WPIM. Anonymity was guaranteed by allocating a code to each institution and immediately discarding the response email or letter.

The primary response rate was low, and all institutions were sent reminders in October and November 2012. Additionally, in order to maximise participation, a random sample of 75 nonresponding Dutch and Austrian institutions was contacted by phone in December 2012. To ensure that we obtained as many circulating WPIM as possible, we also contacted ministries of health and public insurance companies to request any fall-prevention WPIM developed for use in hospital or nursing home settings. A list of included WPIM can be obtained by contacting the first author.

Analysis of material

The printed or electronic versions of WPIM that were received by post or email were coded and analysed. The documents were first checked for inclusion criteria and catalogued with respect to setting and country. Two of the three assessors (D.S., D.M.M., M.F.) independently evaluated each WPIM. Assessment rules were clarified in a consensus meeting after examining the first three WPIM from each country.

A set of guidelines was developed to rate the items and was based on a set of guidelines from the 20-item EQIP scale [38], as well as on the agreed-upon assessment rules. In order to assess the question of whether the document covered all relevant issues on the topic (question 18), the WPIM was screened for commonly discussed fall-prevention strategies [15,16], namely, risk identification, physical exercise, elimination of environmental risks, vision assessment/referral, medication review/modification, medical devices (like hip protectors, non-slip socks, alarm sensor mattresses) and coping strategies after a fall (e.g. information on how to call for help when lying on the floor). The question was rated yes if at least five out of seven measures were covered, partly if at least three out of seven measures were covered, and no if less than three measures were covered. Based on expert consensus, this kind of rating was adopted to reduce answer variability and subjectivity.

Inter-rater reliability was then calculated for the remaining WPIM. In the event that consensus was not reached, the criterion was discussed until an agreement was found. The global score was calculated using the EQIP-algorithm ($[\text{'yes'} \times 1 + \text{'partly'} \times 0.5] / [36 - \text{'does not apply'}] \times 100$) for each document. In addition, the EQIP-algorithm was used to calculate a global score for each of

the three subcategories. Calculated EQIP scores may have values between 0 and 100, with higher scores signifying higher quality.

Statistical analysis

The Statistical Package for the Social Sciences 20.0 [39] was used to analyse the data. The inter-rater reliability between each pair of raters was first determined by calculating the κ coefficients of the 36 coded EQIP items and the intraclass correlation coefficient (ICC) for the EQIP global scores. The values of kappa range between -1 and 1 , with >0.75 implying very good agreement, $0.6-0.75$ good agreement and $0.4-0.59$ adequate agreement between raters [40]. The ICC was determined using Cronbach's α , with values above 0.7 indicating 'good' reliability [41].

Differences between countries and types of institutions (hospitals and nursing homes) were analysed using chi-square test for categorical variables. The mean, standard deviation (SD), minimum and maximum points of overall global scores and subgroup global scores were calculated as well. Differences in EQIP global scores (maximum score of 100) between Austria and the Netherlands were examined using a T-test for two independent groups. The p-values were based on two-sided tests, with values lower than 0.05 considered statistically significant.

Results

In Austria, the hospital response rate was 64.6% ($n = 164$) and the nursing home response rate was 49.6% ($n = 370$). In the hospital setting, 0.8% of the responders refused to participate; in the nursing home setting, this percentage was 5.2% . In the Netherlands, the hospital response rate was 83.0% ($n = 78$) and the nursing home response rate was 74.6% ($n = 53$), with 1.1% and 2.8% of the responders not participating (see Figure 1).

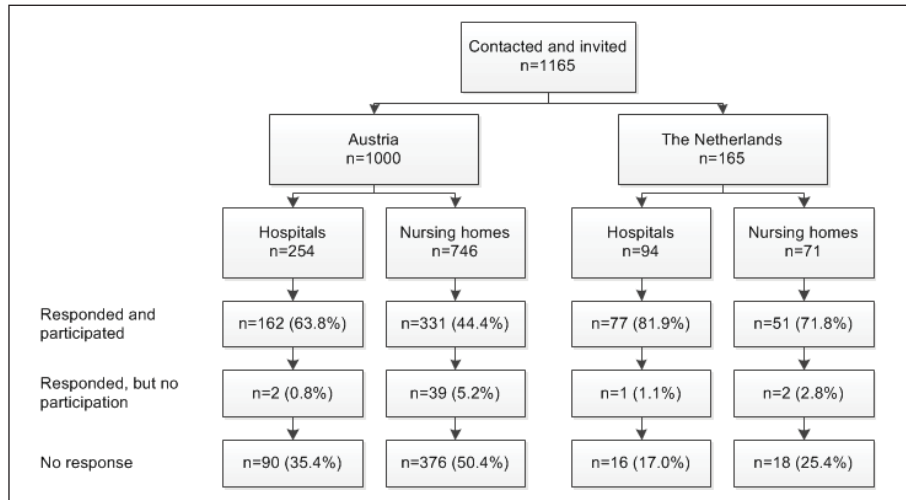


Figure 1: Participant flow chart

Availability of fall-prevention WPIM

Responding hospitals and nursing homes in the Netherlands offered fall-prevention WPIM significantly more often than did participating Austrian institutions ($p < 0.05$). Dutch hospitals' WPIM mostly focused on falls prevention in the hospital setting, while Austrian hospitals' WPIM focused nearly equally as often on hospital and domestic settings. In nursing homes, most fall-prevention WPIM focused on the domestic rather than the nursing home setting (see Table 1).

Because 24 Austrian and 3 Dutch institutions had identical WPIM and 3 Austrian institutions used two different brochures, there were 43 different sets of WPIM from Austrian institutions and 34 different sets of WPIM from Dutch institutions that were critically appraised. There was no new WPIM from contacted ministries of health or public insurance companies.

Table 1: Availability of WPIM

	Austria n=162	The Netherlands n=77
Hospital*	47 (29.0%)	28 (36.4%)
Focus on hospital falls	21 (13.0%)	21 (27.3%)
Focus on domestic falls	22 (13.6%)	7 (9.1%)
Focus on both settings	4 (2.5%)	-
Total n of different WPIM	31	25
	Austria n=331	The Netherlands n=51
Nursing home*	17 (5.1%)	9 (17.6%)
Focus on nursing home falls	4 (1.2%)	4 (7.8%)
Focus on domestic falls	13 (3.9%)	5 (9.8%)
Focus on both settings	-	-
Total n of different WPIM	12	9

WPIM: written patient information material

*p<0.05

EQIP global scores

The EQIP global score of the WPIM pertaining to falls prevention ranged between 22 and 80. A comparison of the countries found that Dutch WPIM had a significantly higher mean score (54.0, SD = 11.0) than that available in Austrian hospitals (41.4, SD = 11.9); the quality of the WPIM in nursing homes, however, did not significantly differ between the two countries ($p = 0.479$). While in the Netherlands the mean scores of WPIM with different foci were similar, the mean scores of Austrian WPIM differed substantially. WPIM offered in nursing homes focused on domestic falls and reached the highest mean EQIP global score (see Table 2).

Table 2: Differences in EQIP global scores between countries

	Austria	The Netherlands	p-value
Hospital mean (SD)	41.4 (11.9)	54.0 (11.0)	<0.0001
Hospital range	22-63 points	36-76 points	
Focus on hospital falls mean (SD)	40.0 (11.9)	54.4 (10.6)	<0.0001
Focus on domestic falls mean (SD)	44.6 (11.9)	51.8 (14.3)	0.340
Focus on both settings mean (SD)	47.7 (12.6)		
Nursing home mean (SD)	52.8 (15.1)	57.1 (13.2)	0.479
Nursing home range	31-78 points	35-80 points	
Focus on nursing home falls mean (SD)	38.7 (6.8)	55.3 (3.0)	0.007
Focus on domestic falls mean (SD)	58.1 (14.0)	58.3 (16.8)	0.985

SD: standard deviation

Content of the WPIM

The Austrian WPIM reached values between 0 (two WPIM) and 90 points, with the maximum being 100. The Dutch global score for content ranged between 11 and 85 points. The mean global score for content was 31.9 (SD = 21.6) points. This score differed significantly from the Dutch mean global score for content (50.4, SD = 19.1) (see Table 4). When comparing the settings, Austrian hospitals' WPIM received only half of the global score for content (mean = 25.6, SD = 16.6) when compared with Dutch hospitals' WPIM (50.0, SD = 18.0). At the same time, however, WPIM from Austrian nursing homes received a higher mean score than that from the Netherlands (52.4, SD = 26.0 vs 51.1, SD = 22.0).

Preventive interventions like medication, medical devices and physical exercises were included in only 13 Austrian and 15 Dutch WPIM and were found mainly in WPIM focusing on domestic falls prevention (8 out of 19 and 7 out of 11).

Conversely, the elimination of environmental risk was mentioned in nearly all WPIM, and a discussion of risk factors for falls was included in most WPIM focused on domestic falls prevention (16 out of 19 and 9 out of 11). Coping strategies after an accidental fall were only described in two Dutch and two

Austrian sets of WPIM focusing on falls prevention in the domestic setting (see Table 3).

Identification data

The mean global score for the questions about data identification did not significantly differ between the countries ($p = 0.770$) (see Table 4). Even when separating the settings, the difference was not significant (Austrian and Dutch hospitals, $p = 0.684$; nursing homes, $p = 0.646$). The lowest score in both countries was 0 and the highest 67.

Structure of the WPIM

The highest mean global score for the structure subgroup (63.9 and 76.4) differed significantly in favour of the Dutch WPIM (see Table 4). The maximum score of 100 was achieved by two sets of WPIM from the Netherlands. The Austrian WPIM scored 33–90 points. Significant differences in mean global score between the settings were identified regarding the criterion of structure, with higher values in Dutch hospitals (mean 74.0, SD = 13.0) and nursing homes (mean = 81.6, SD = 13.8) than in Austrian ones (mean = 62.6, SD = 15.7 and mean = 63.6, SD = 15.6).

Table 3: Falls prevention strategies mentioned in the WPIM

		Risk identification ^a	Physical exercise ^b	Elimination of environmental risks	Vision assessment/referral	Medication review/modification	Medical devices ^c	Coping strategies after a fall
Focus on hospital falls	Austria (n=21)	3 (14%)	3 (14%)	20 (95%)	1 (5%)	1 (5%)	3 (14%)	0 (0%)
	The Netherlands (n=19)	13 (68%)	5 (26%)	18 (95%)	17 (89%)	1 (5%)	4 (21%)	0 (0%)
Focus on nursing home falls	Austria (n=3)	1 (33%)	2 (66%)	3 (100%)	1 (33%)	1 (33%)	2 (66%)	0 (0%)
	The Netherlands (n=4)	2 (50%)	3 (75%)	4 (100%)	3 (75%)	1 (25%)	3 (75%)	0 (0%)
Focus on domestic falls	Austria (n=19 ^d)	16 (84%)	8 (42%)	19 (100%)	11 (58%)	7 (37%)	8 (42%)	2 (11%)
	The Netherlands (n=11)	9 (82%)	5 (46%)	10 (91%)	4 (36%)	3 (27%)	7 (64%)	2 (18%)

WPIM: written patient information material

^aIncluding information about risk factors

^bIncluding strength and balance training

^cLike hip protectors, non-slip socks, alarm sensor mattresses

^dIncluding the three sets of WPIM that focus on domestic and hospital falls

Table 4: EQIP questions: Differences between countries

Question	Austria (n=43)				The Netherlands (n=34)			
	Yes (%)	Partly (%)	No (%)	Does not apply (%)	Yes (%)	Partly (%)	No (%)	Does not apply (%)
1. Initial definition of with subjects will be covered	23.9	28.3	47.8	-	55.9	29.4	14.7	-
2. Coverage of the above-defined subjects	32.6	17.4	2.2	47.8 ^a	76.5	8.8	-	14.7 ^a
3. Description of the medical problem	30.4	34.8	34.8	-	44.1	47.0	8.8	-
4. Definition of the purpose of the medical intervention	13.0	45.7	41.3	-	67.6	32.4	-	-
5. Description of the treatment alternatives	19.6	54.3	26.1	-	17.6	41.2	41.2	-
6. Description of the sequence of the medical procedure	4.3	13.0	10.9	71.7 ^b	20.6	11.8	11.8	55.9 ^b
7. Description of qualitative benefits	15.2	6.5	6.5	71.7 ^b	20.6	-	17.6	61.8 ^b
8. Description of quantitative benefits	4.3	2.2	21.7	71.7 ^b	-	-	35.3	64.7 ^b
9. Description of qualitative risks and side-effects	2.2	2.2	23.9	71.7 ^b	5.8	2.9	29.4	61.8 ^b
10. Description of quantitative risks and side-effects	-	-	28.3	71.7 ^b	-	-	38.3	61.8 ^b
11. Addressing quality of life issues	21.7	26.1	52.2	-	47.1	14.7	38.2	-
12. Description of how potential complications will be dealt with	4.3	-	23.9	71.7 ^b	8.8	-	29.4	61.8 ^b
13. Description of precautions that the patient may take	8.7	-	19.6	71.7 ^b	14.7	5.9	20.6	58.8 ^b
14. Mention of alert signs that the patient may detect	2.2	2.2	23.9	71.7 ^b	5.9	2.9	32.4	58.8 ^b
15. Addressing medical intervention costs and insurance	4.3	6.5	89.1	-	8.8	5.9	85.3	-
16. Specific contact details for hospital services	41.3	28.3	30.4	-	47.1	11.8	41.2	-
17. Specific details of other sources of reliable information/support	13.0	2.2	84.8	-	23.5	29.4	47.1	-

18. The document covers all relevant issues on the topic	8.7	47.8	43.5	-	20.6	76.5	2.9	-
<i>Global score for content (0-100)*</i>	<i>Mean(SD)=31.9(21.6)</i>				<i>Mean(SD)=50.4(19.1)</i>			
19. Date of issue or revision	47.8	-	52.2	-	61.8	-	38.2	-
20. Logo of the issuing body	89.1	-	10.9	-	79.4	-	20.6	-
21. Name of persons or entities that produced the document	34.8	41.3	23.9	-	52.9	11.8	35.3	-
22. Name of persons or entities that financed the document	-	4.3	95.7	-	8.8	5.9	85.3	-
23. Short biography of evidence-based data used in the document	6.5	2.2	91.3	-	-	-	100.0	-
24. The document states if and how patients were involved/consulted in its production	-	-	100.0	-	-	-	100.0	-
<i>Global score for identification data (0-100)</i>	<i>Mean(SD)=34.1(16.5)</i>				<i>Mean(SD)=35.3(16.9)</i>			
25. Use of everyday language, explain complex words or jargon	58.7	37.0	4.3	-	85.3	14.7	-	-
26. Use of generic names for all medications or products	15.2	-	2.2	82.6 ^c	5.9	-	2.9	91.2 ^c
27. Use of short sentences	43.5	47.8	8.7	-	61.8	38.2	-	-
28. The document personally addresses the reader	69.6	19.6	10.9	-	58.8	38.2	2.9	-
29. The tone is respectful	45.7	52.2	2.2	-	79.4	20.6	-	-
30. Information is clear (no ambiguities or contradictions)	50.0	41.3	8.7	-	58.5	41.2	-	-
31. Information is balanced between risk and benefits	4.3	6.5	17.4	71.7 ^b	17.6	8.8	17.6	55.9 ^b
32. Information is presented in a logical order	37.0	47.8	15.2	-	50.0	50.0	-	-
33. The design and layout are satisfactory (excluding figures or graphs)	45.7	45.7	8.7	-	67.6	32.4	-	-
34. Figures and graphs are clear and relevant	13.0	43.5	6.5	37.0 ^d	17.6	8.8	-	73.5 ^d
35. The document has a named space for the reader's notes	10.9	43.5	45.7	-	20.6	47.1	32.4	-

36. The document includes a consent form, contrary to recommendations

100

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Global score for structure (0-100)* Mean(SD)=63.9(15.5) Mean(SD)=76.4(13.5)

SD: standard derivation

^a If question 1 is answered negatively, then question 2 does not apply

^b If interventions like medication, medical devices or physical exercises are not included, then the answer does not apply

^c If neither medication nor medical products are included, then the answer does not apply

^d If figures and graphs are absent, then the question does not apply

*p<0.05

Inter-rater reliability

The criterion-related κ coefficients of the 36-item EQIP scale, between the pair of raters who assessed the Austrian WPIM, showed very good agreement on 31 items (range between 0.81 and 1), good agreement in 3 items (range between 0.68 and 0.77) and moderate agreement on 1 item (question 35: $\kappa = 0.55$).

The κ coefficients of the Dutch WPIM items ranged from 0.48 to 1, with two outliers (question 30: $\kappa = 0.31$, question 33: $\kappa = 0.39$). Out of all Dutch WPIM, 4 items showed very good agreement (range between 0.786 and 1), 24 items showed good agreement (range between 0.60 and 0.75) and 5 items showed moderate agreement (range between 0.48 and 0.59). In 2 items, it was not possible to interpret the kappa value (question 22 of the Austrian WPIM and question 26 of the Dutch WPIM) because of very different marginal frequencies.

The ICC for the EQIP global score of the Austrian WPIM was 0.98 (95% confidence interval = 0.97–0.99), and Cronbach's α of the Dutch WPIM was 0.88 (95% confidence interval = 0.75–0.94).

Discussion

As expected, Dutch hospitals and nursing homes provided higher quality WPIM, as measured by the EQIP global score and all EQIP subscores, than did participating Austrian institutions.

One reason for these findings could be that Dutch organisations tend to emphasise patient education [33]. In Austria, authors of WPIM on nursing care problems are usually nurses without specialised training in patient education. Material that is focused on the domestic setting, however, and is primarily found in nursing homes tends to be developed by experts from government bodies, insurance companies and local municipalities. This may explain the substantial variance in WPIM focused on hospital/nursing homes and domestic falls prevention in Austria.

Obviously, patient education involves more than just providing WPIM. However, WPIM as an additional measure, if its content is accurate, well designed

and easy to understand, can contribute to sustainable gains in knowledge [9], an essential prerequisite for behaviour change.

Nevertheless, only some forms of WPIM on falls prevention were of high quality with respect to content criteria. Even when assessed by different evaluation tools, this result is similar to information materials on osteoporosis [25], prostate cancer [26], chronic obstructive pulmonary disease, arthritis, healthy eating/obesity, measles, mumps and rubella vaccinations [11], as well as material related to surgical procedures [24].

WPIM with content-related shortcomings prevents patients/residents from making informed decisions about appropriate fall-prevention strategies. Interventions such as physical exercise and medical devices (e.g. hip protectors) demand particularly careful consideration of person-specific benefits and risks. However, only a few documents focused on physical exercises or medical devices, and even then, within a domestic setting. One function of WPIM should be to identify effective as well as ineffective interventions [12], and this was not the case for any of the WPIM appraised in this study.

There is also a trade-off between maintaining the high-quality content criteria of evidence-based WPIM and meeting plain language criteria. The Plain Language Action and Information Network [23] recommends writing what the audience wants to know and indicates that patients/residents prefer practical advice on falls prevention over statistics [42]. The same applies to meta-information such as brochure development, financial support or the source of evidence-based data. Many patients/residents perceive this information as redundant [42]. It is possible that much WPIM on falls prevention is indeed evidence-based, but the authors simply neglected to refer to this fact in the WPIM itself. Particularly in short flyers, there is too little space for background information, requiring the reader to contact the authors in order to obtain additional information on the development process.

In order to meet WPIM consumer needs, it is important to involve/consult the target audience in the development process [12]. However, no kind of patient/resident involvement regarding falls prevention was described in the WPIM reviewed. This finding is in accordance with a random sample of WPIM concerning medical interventions [30]. Regrettably, only a few appraisal tools (e.g. King's Fund, International Patient Decision Aid Standards [IPDAS]) assess patient/resident involvement [11].

The lowest number of shortcomings were found in the structure subgroup, which reflects the findings of a study by the Picker Institute, in which 285 sets of UK patient information materials on medical issues were analysed and the highest mean score was achieved in the section 'clear structure and layout' [11]. Although the Dutch WPIM was awarded a significantly higher global score for structure than Austrian WPIM, it is conspicuous that figures and graphs were seldom included in Dutch materials themselves. The importance of including graphic elements is emphasised in several manuals (e.g. [19,43]), and the adage 'a picture is worth a thousand words' is particularly appropriate with regard to people with limited literacy and cognitive issues.

Despite our efforts to secure all circulating brochures and a satisfying response rate, we cannot guarantee that a good brochure was not left out of the analysis. One important limitation was the non-satisfactory inter-rater reliability of some items in the structure subgroup, which was similar to the agreement of the EQIP tool authors in their psychometric properties testing [30]. Some items in the structure subgroup, such as the item 'the information is clear', were difficult to rate because many factors influence the rating and, in some cases, it seemed to be a matter of personal opinion between rating 'yes and partly' or 'no and partly'. There was also no guideline available for rating the items on the 36-item EQIP scale – only for the 20-item EQIP scale, which required us to develop a comprehensive guideline that contained detailed assessment rules.

In the literature, there are many formulae by which to objectively assess readability. They include the Fry Readability Graph and the Flesch Reading Ease formula [20]. However, these tools refer only to words and syllables per sentence and do not consider the clarity and comprehensibility of a text. Thus, a text with short sentences and words could score well and be appropriate for low reading levels, while still containing contradictions and ambiguities. Although the EQIP tool was less reliable than these formulae, more elements of text quality were included.

Conclusion

Despite our comparative study showing the superiority of Dutch over Austrian fall-prevention WPIM, both countries had shortcomings. With regard to structure criteria (consideration of everyday language, active voice and a clear

writing style), the quality of most WPIM was satisfactory. In contrast, the content was often not in accordance with the quality criteria for evidence-based patient information, and data on sources, patient involvement and financial support were generally lacking.

In order to benefit from falls prevention WPIM, it is crucial that the development process be transparently described and that evidence-based content criteria be fulfilled. Including content that patients/residents want to know about is not possible if they are not involved in the development process. Yardley et al. [44], for example, showed that falls prevention advice could even be misconstrued as patronising or insulting to elderly people and that positive messages are preferable. Therefore, the authors of future forms of WPIM are called upon to survey patient/resident needs and to develop WPIM in consultation with their target audience. As images and graphs were often missing in Dutch WPIM, those responsible for patient communication should consider their inclusion, in particular for people with limited literacy.

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Chapter 5

Involving the consumers: An exploration of users' and caregivers' needs and expectations on a fall prevention brochure:

A qualitative study

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Abstract

This study aims to explore and compare nursing home residents', family members', and nursing staff's needs and expectations regarding a fall prevention brochure. Focus groups were carried out with 25 residents, 12 family members and 14 nursing staff separately, from three randomly selected nursing homes. Qualitative content analysis was used to analyze the data using a concept-driven coding frame. Results showed that residents want to be informed about dealing with extrinsic fall risks and coping strategies after a fall event. In addition, family members wanted to have detailed information on intrinsic fall risks as well as specific fall prevention strategies, such as body exercises. Of special importance for nursing staff was that not all falls are preventable even when preventive measures were taken. As the need and expectations of users differ substantially, one brochure could not comprise all postulated criteria and different brochures are necessary for residents and for family members.

Keywords: Needs and expectations, Fall prevention brochure, Nursing home residents, Family members, Nursing staff, Qualitative study, Focus groups

Introduction

Falls and fall-related injuries are highly prevalent in people aged 65 and over [1-3], with highest magnitude in nursing home residents [1]. In addition to the physical burden [4,5] and the psychological consequences [6] for affected older adults, falls lead to immense costs for the health care system [1]. Causes for falls are manifold and Boelens et al. [7] categorized them into intrinsic risk factors (e.g. gait disorders), extrinsic factors (e.g. inappropriate footwear) and behavior-related risk factors (e.g. fear of falling). Of the three, extrinsic and behavior-related risk factors in particular are potentially modifiable in order to prevent falls [7]. Therefore, health care professionals are advised to adequately educate older adults on reducing these risk factors.

In the education of residents, information in brochures can reinforce the verbal instructions of nursing staff [8]. It is important to provide information in various forms (e.g. verbal, written, figurative), as people learn and process information differently [9]. The content of the various information sources should be the same or complementary. Empirical studies confirm that offering educational interventions where brochures and verbal information is provided will enhance older adults' knowledge [10,11], which may lead to older adults adopting healthier behaviors. The effectiveness of brochures concerning fall prevention is not examined with regard to its use as stand-alone intervention, but rather as part of multifactorial interventions, which have been found to reduce falls [12]. It is noteworthy that it is not only effective in healthy older adults, but that also cognitively impaired persons can profit from combined verbal and printed information [13].

Recommended fall prevention measures

International guidelines recommend providing residents at risk of falling with written educational materials in addition to verbal information about measures that can be taken to prevent falls [14,15]. According to current systematic reviews, evidence shows that only multifactorial interventions targeting multiple risk factors are effective in reducing falls in nursing home residents [12,16]. If falls are unavoidable, there is evidence that hip protectors can be used to reduce the risk of hip fractures slightly, but a slight increase of the small risk of pelvic fractures must be taken into consideration when providing hip protectors [17]. For residents with a risk of falling, international guidelines recom-

mend multifactorial interventions, including a fall risk assessment, strength and balance training, a review of psychotropic medications and education on relevant topics [14]. Fall prevention should target not only older adults, but also family members, as it has been demonstrated that the opinions of others influence older adult's decisions [1].

Optimal brochure development

Brochures should be theory-based [18] and fulfill evidence-based criteria, such as providing different unbiased care options, information about benefits and harm, as well as numeric data detailing current scientific knowledge [19-21]. At the same time, they should take into consideration readability, plain language and comprehensibility [22-25]. There are guides to structuring, inserting pictures, and ensuring attractiveness, as well as what must be considered when developing a brochure for older adults [26]. Guidelines and recommendations concerning the development of health care brochures endorse engaging the consumer and asking what they want to know about the particular subject [24,25,27]. However, the users are seldom involved in the development process [28,29] except when consulted for evaluation after the material is already developed [30]. This is a problem, because evidence exists that shows a mismatch between what the users need and expect, and what is included in a brochure [31-33]. The evaluation of an evidence-based booklet about fall prevention in independently living older adults [34] showed that they would prefer practical suggestions rather than statistics [31,32]. Yardley et al. [33] investigated older adults' views on advice about fall prevention. Some fall prevention advice was seen as self-evident while others, especially hazard-minimization advice, was perceived as potentially patronizing and distressing [33]. Consultation of the users in the early process of a brochure development seems indispensable.

We plan to develop a high-quality fall prevention brochure that fulfills internationally postulated criteria, meets consumers' needs and can be used in educating older adults and their families. To ensure that there is a need for the development of a new brochure, existing brochures that were available in Austrian hospitals and nursing homes were assessed with the 36-item Ensuring Quality Information for Patients scale [23] regarding their content, structure (including layout) and identification data. The results showed that brochures

available in nursing homes had significant shortcomings. The content was often not in accordance with the quality criteria for evidence-based patient information, and data on sources, patient involvement and financial support were generally lacking [28]. This study highlighted the need for the development of a new brochure.

This would need to be designed with consideration to different perspectives: those of the nursing staff (e.g. current standards of practice, experience with the information need of users), the residents and family members (e.g. information, presentation needs) [25].

Therefore this study aims to explore residents', family members' and nursing staffs' needs and expectations regarding a fall prevention brochure.

Material and methods

Design

This was a qualitative study using a focus group approach. Needs and expectations of residents, their family members or informal caretakers and nursing staff with regard to fall prevention brochures were gathered and compared. Focus groups were used since they can guide product development [35], primarily by gaining an understanding of values and opinions on the topic by the potential users. As recommended for product development by Krueger and Casey [35], three separate focus groups were initiated, one for each constituent group (residents, family members and nursing staff).

Participants

A convenience sample of residents, family members or informal caretakers and nursing staff who were able to attend a 2-h focus group were included. The specific inclusion criteria for residents was being a long-term resident (having stayed at least since 6 months in the nursing home) and having a risk of falling - defined according to the National Institute for Health and Care Excellence [14] as residents over 65 years old with a fall history and/or gait or balance disorders. Residents with mild cognitive declines were not excluded as they represent the nursing home population. The nursing staff of the par-

ticular nursing home decided if an older adult was able to participate. Family members had to be relatives or significant others of residents, who make regular (at least weekly) visits. Nursing staff had to be nurses, nursing aids or elderly assistance workers (assistance workers who are responsible for entertaining residents and are educated to do basic care in older adults) working in the particular nursing home. Each focus group was intended to include five to eight people to ensure both breadth and depth of experience [35].

Sampling

Austria has nine federal states with about 890 public and private nursing homes [36]. Roughly 66,000 persons receive nursing home care: this corresponds to 4% of persons older than 65 years and 18% of persons older than 85 years. The average entrant age is between 74.2 years and 81.4 years, depending on the federal state. No definition of “need of care” exists in the Austrian long-term care system. The assessment of need of nursing home care is instead based on individual requirements for services and assistance, based on doctors’ or nurses’ expert opinions [37]. According to the Austrian Prevalence Measurement of Care Problems survey, about 60% of nursing home residents have the medical diagnosis of dementia [38].

Three Austrian nursing homes with more than 50 beds in the federal state of Styria were selected by computer-generated randomization from a ministerial database [36]. The directors of the nursing homes received an invitation letter in July 2014; additionally they were informed about the study by phone by the first author. One nursing home director declined to participate; therefore an additional nursing home was randomly selected. After the agreement of the directors of the nursing homes, potential participants were invited to a 30-min information meeting via information leaflet. During the information meeting, the first author informed interested residents, family members and nursing staff about the importance of the study, the study aim, inclusion criteria, the course of the focus group discussions, meeting dates, locations and informed consent. After the information meeting, informed consent for participation was obtained and an information sheet about the study was handed out. Participants who were not able to decide immediately were asked to think about taking part and indicate their decision at a later date.

Data collection

The nine focus group discussions were performed separately with residents, family members and nursing staff in each participating nursing home, between September and November 2014. A moderator (first author) and an assistant moderator conducted the focus groups. The moderator, a former geriatric hospital nurse, was experienced in conducting interviews with older adults. The participants were informed about the moderators' work, but there was no relationship between the moderator or the assistant moderator and the participants beyond the focus groups' discussions. An interview guideline with opening, introductory, transition, key and ending questions [35] was used. In Table 1, the interview guideline for residents is given as an example.

Table 1: Interview guideline for residents

Opening question	How long have you lived in this nursing home? Have you experienced a fall since living here?
Introductory question	Have you ever seen or received a fall prevention brochure?
Transition question	What do you think about this fall prevention brochure?
Key question	Which topics should be addressed in a fall prevention brochure? What requirements do you have regarding the design of a fall prevention brochure?
Ending question	(After a short overview by the moderator) Have we missed anything? Is there anything that we should have talked about but did not?

If fall brochures were not known, different examples of brochures (with different lengths, formats, contents) were handed out for review. When participants were talking about their experiences with falls and causes of falls, the moderator asked if these experiences would be important to include in a fall prevention brochure. In addition, the moderator introduced specific fall prevention topics (main categories found in Table 2), so that these could be discussed by the participants. For clarity, at the end of the focus group meeting the moderator summarized the discussion for the participants and asked for clarification and further comments. The focus group discussions were electronically audio-recorded and lasted an average of 54 min (between 42 and 60 min).

Data analysis

The data were analyzed separately for residents, members and nursing staff. The recorded discussions were transcribed into an abridged transcript [35]. A qualitative content analysis was performed by designing a concept-driven coding frame (deductive category application) [39]. The coding frame, developed by the first author, is based on fall preventive strategies and topics usually discussed in international guidelines (e.g. Refs. [14,15]) and layout dimensions mentioned in appraisal tools for brochures (e.g. Ref. [23]). The coding frame consists of main categories and subcategories, specifying relevant aspects, and values specifying the meaning (see Table 2).

Each category and subcategory was provided with a definition, anchor examples and coding rules [39]. The minimum coding unit was a phrase. The first focus group transcript was assigned to the categories by two researchers independently and consensus was checked. The few discrepancies were solved by discussion and the coding rules were refined. The remaining focus group transcripts were assigned to the categories by the first author and checked by a second researcher. The first author reduced the data assigned to the categories by generalization and summary (e.g. binding, integration) to the main statements. Finally the main statements of residents, members and nursing staff were compared and contrasted and discussed between the first three authors. MAXQDA 11 was used to manage the data.

Needs and expectations regarding fall prevention brochures

Table 2: Coding frame

Main categories	Subcategory	Value
Information about intrinsic risk factors		
Information about extrinsic risk factors		
Information about behavior-related risk factors	Decline of assistance Overestimation of one's own abilities Anxiety to become a burden Anxiety about falls	
Information about removing extrinsic fall risks	Clothing Footwear	Enough knowledge / non-essential to include
Information about physical activity	General instructions about physical activity Targeted physical activity	
Information on medical devices	Walking aids Hip protectors Non-slipping socks Sensor devices Costs of medical devices	Important task / conceivable to include Uncertainty about relevance
Information about measures restricting freedom		
Information about coping strategies after a fall event		
Details of other fall prevention sources of information/support		
Structure and layout	Format Type size Length Pictures Colors	

Ethical considerations

Ethical approval from the Medical University of Graz (26-400ex13/14) was obtained. Participants received verbal and written information about the study and gave their informed consent to participate.

Results

In total 56 persons agreed to participate. Five members canceled their participation on the day of the meeting due to time constraints. Thus 51 participants (25 residents, 12 family members and 14 nursing staff) were included in the focus group meetings. Characteristics of the focus group members are shown in Table 3. Subsequently the needs and expectations are presented structured into the different categories respective to the focus group members (1st residents, 2nd family members and 3rd nursing staff). Not all categories were addressed by all focus group members.

Intrinsic fall risks, including behavioral-related risks

Information need about intrinsic risk factors, behavioral-related risk factors and how to deal with them were combined because the topics overlapped. There were few statements from residents concerning the importance of information about person-related fall risk factors. Residents felt that some falls cannot be avoided, especially when one fears falling. *When you feel that there is anxiety, it is too late. Then you are already on the floor. You cannot remain standing.*

Family members found information about fall risk factors important, e.g. to know who is at risk of falls. There were two opinions about detailed information on specific risk factors such as medications: on one hand too much information about medications and their side effects would bother them, but on the other hand they wanted to have information about medication and side effects including low blood pressure or vertigo. Another important aspect from the family members' point of view was consistently reminding residents to ask for help when needed: *...she would never ask for help despite the nurses pointing it out. She doesn't ring the bell if she needs help*

Table 3: Characteristics of focus group participants

	Nursing staff (n=14)	n	Residents (n=25)	n	Family members (n=12)	n	
Profession	Nurse	7	Fall experience in the last year	Yes	Relationship to resident	Spouse	2
	Nursing aid	5		No		Daughter/son	8
	Elderly assistance worker	2	Use of walking aid/wheelchair	Yes		Significant other	2
Sex	Female	12	Sex	Female	Sex	Female	10
Years of work experience in the nursing home	< 3 years	5	Years living in the nursing home	< 1 year	Residents' years in the nursing home	< 1 year	2
	3-10 years	8		1-3 years		1-3 years	8
	> 10 years	1		> 3 years		> 3 years	2
Fall brochure known from practice	Yes	6	Fall brochure ever received or seen	Yes	Fall brochure ever received or seen	Yes	2

It was of special importance for **nursing staff** to include information about the risk factor “dementia,” especially as they perceive that family members need to be counseled that not all falls are preventable in this high-risk group, despite preventive measures. In addition, it was important to inform family members that previous falls are a major risk factor. The nursing staff indicated that sometimes they are not told when a resident has fallen in the presence of a family member, as the family member has not disclosed the fall to staff.

Generally, information about medication-related fall risks was important for nursing staff to include. Similar to family members, different opinions were expressed concerning the extent of information about medications.

Advising residents about seeking assistance (e.g. if mobility declines or nightly toilet needs occur) was important for nursing staff. As verbal advising was not always successful, nursing staff confirmed that verbal advising should be reinforced by written communication.

Extrinsic fall risks and how to remove them

Information need about extrinsic risk factors and how to deal with or remove extrinsic fall risks were also combined due to overlapping.

Residents related many fall events due to environmental risk factors. Based on these, they recommended including advice about adequate shoes, the importance of good lighting, and using grab handles. *Most falls occur because you are not looking carefully, or because of bad shoes, slippery shoes.* There was uncertainty about what constitutes adequate shoes. Most residents were aware of the danger of carpets and knew how to handle slippery floors. Although residents felt well informed about extrinsic risks, they found it important to be included in a brochure. *This is the most important aspect: one’s surroundings...*

Information about environmental risks and how to create a safe environment was an essential matter to **family members**. They wanted older adults to be informed about tripping hazards such as carpets or steps, and slipping hazards in the bathrooms including urine. *Such suggestions would be important about the surroundings. At the beginning, something [urine] was leaking and then she fell on the wet floor...* Appropriate footwear was also an important topic for the family members. They wanted to have detailed information on

how appropriate footwear should look and recommended asking specialists when uncertain.

For **nursing staff** it was important to include what residents/ family members should avoid, for example, bringing the residents' own furniture (e.g. carpets) into the nursing home. One nurse recommended, and others confirmed, including a "moving into a nursing home" brochure for family members. *What you have to consider when moving into the nursing home, what kind of clothes to take with them, what shoes to prevent falls, for example to ensure the trousers are not too long. Clothes with Velcro tape, no shoelaces, sturdy shoes, just like that, a simple moving-into-a-nursing-home aid.*

Nursing staff also found it important to include suggestions to prevent tripping such as putting the bed on the lowest level and removing hazardous items when leaving the resident's room. *According to the motto: When you are leaving your family member in the evening, put the chair back or tell the nursing personnel that you are leaving...* For nursing staff it was very important to inform family members that not all fall events are preventable. *It is a part of education to say that it is common that somebody can experience a fall. Brochures rarely explain that a fall can happen anyway.*

Physical activity

For some **residents**, incorporating physical activity based on the recommendations in a brochure would be conceivable. Others remarked that such activities are unrealistic because of their poor health state. However, motivation to do physical activities was seen as an important element. *...Since turning 60 I have done therapy [exercise]. ... You have to tell people that they should do something. But not everyone wants to.*

Family members saw physical activity as well as motivation and animation to be essential parts of a fall prevention brochure. Many stated that they were willing to do physical activities with their relatives. Family members recommended not only including physical activities for ambulant residents but also activities in a sitting position for chair-bound residents. Further, they recommended physical activities for residents without physical limitations and without fall risk, merely as prophylaxis. *In the brochure there should be a separate*

part about maintenance of balance and strength for people who are not at risk, so that they can start sufficiently early.

One commonly held point of view of **nursing staff** was that residents are not able to do physical activities anymore, and therefore inclusion in a fall prevention brochure would be useless. *The question for me is, when I look at my residents, 20% are cognitively able to do it and from them, 10% are not at risk for falling. - When I look for the residents with a fall risk and good cognitive abilities, there are not many.* The second critical point was that they questioned who would do the physical activities with the residents due to limited time resources.

Medical devices

Residents considered their walking aids as sacred. In general, they were satisfied with them and were not interested in other options since their handling was familiar. *You have to go in such a way that you can put on the brake at any time ... Never sit down [on the walker] without applying the brakes.* Hip protectors and non-skid socks were unfamiliar to residents and there was limited interest in learning more about them. They argued that nurses and family members ought to decide when medical devices should be utilized.

Family members affirmed that they were well informed about walkers. Additional information about them was not seen as necessary. Hip protectors were something quite new for family members. Nevertheless, some family members had great interest in learning more about them: *I have never heard about hip protectors. [...] But I also want to know about the advantages and disadvantages of them.* The interest in non-skid socks was great too, although there was uncertainty as to whether or not they make sense for people who cannot walk well anymore. Family members agreed that money is less important as long as the medical device works. They decided that costs should not be stated in the brochure.

Similarly to residents and family members, **nursing staff** did not believe comprehensive information on walkers was necessary. *We are competent, along with the medical doctor, to decide what is best for the resident. The more options family members have, the more difficult it will be.* General information on

the importance of a good walker, though, was seen as important to communicate with family members.

Nursing staff's attitude toward hip protectors was widely negative, based on the perception that they would be uncomfortable and impractical. For this reason, they perceived their inclusion in the brochure as unnecessary. Nursing staff were of the opinion that information on non-skid socks is necessary in a fall prevention brochure, especially because of their cost-efficiency and high resident compliance rate. They considered such information useful in convincing family members to help in procuring such medical devices. Nursing staff stated that including costs for such items in the brochure is very important, because costs often play a decisive role in family member decision-making. Information about sensor devices was not perceived as important by the majority of residents, family members and nursing staff for people living in a nursing home.

Measures restricting freedom

Family members expressed an interest in being informed about measures restricting freedoms. They questioned why some measures are not allowed, despite appearing to help prevent falls. *I would prefer that he be buckled up for an hour and half rather than tumbling from his wheelchair and possibly suffering a traumatic brain injury.* **Nursing staff** agreed that information about measures restricting freedom would be important for family members due to their lack of understanding of their context.

Coping strategies after a fall event

Residents found importance in knowing what they can do when a fall occurs and they are not able to get up. They described their experiences with awkward situations. **Family members** confirmed that this information would be important for residents. They presumed that the residents do not know what to do if they fall. Most **nursing staff** were of the mind that written information about coping strategies after a fall event would reinforce any verbal advice. They explained that many residents do not attempt to get someone's attention when they are lying on the ground.

Other sources of information/support

Family members and nursing staff regarded details on additional sources of fall prevention information as supportive. While some family members favored only including contact information for therapists or orthopedists, others wanted to include central contact points should questions arise. Nursing staff expected that opinions of specialists would strengthen their ability to provide care.

Structure and layout of the brochure

There was broad consensus among the residents, family members and nursing staff that the brochure should be short and concise, with many pictures and no larger than A5 size. Residents argued that the most important facts, in large font, supported by pictures, would be useful for them. Family members expressed their interest in effect ratios in addition to accurate information, as well as advantages and disadvantages of preventive interventions. For residents, they determined that one page of information would be sufficient. Nursing staff noted that the needs of residents and family members are not the same. Accordingly, they suggested that two different brochures be provided: one for the family members and one for the residents. Nursing staff saw numerical data as important for family members, because the data would grab their attention.

An overview of topics that should be included in a fall prevention brochure according to residents, family members and nursing staff are summarized in Fig. 1. The words in bold illustrate the same needs and expectations from the residents and at least one of the other groups.

Recommended information for residents		
From residents	From family members	From nursing staff
<ul style="list-style-type: none"> • Extrinsic fall risks including appropriate footwear, illumination • Coping strategies after a fall event 	<ul style="list-style-type: none"> • Requesting assistance when needed • Extrinsic fall risks including tripping and slipping hazards • Getting up from a chair for vertigo residents • Coping strategies after a fall event 	<ul style="list-style-type: none"> • Requesting assistance when needed • Using a walker when walking • Coping strategies after a fall event
Recommended information for family		
From family members	From nursing staff	
<ul style="list-style-type: none"> • Intrinsic fall risks • Extrinsic fall risks including appropriate footwear • Physical activity • Motivation to physical activity • Hip protectors, non-skid socks • Measures restricting freedom • Other sources of information/support 	<ul style="list-style-type: none"> • Intrinsic fall risks including medication, previous falls, dementia • Extrinsic fall risks including carpets • "Moving into a nursing home" guide • Leaving the nursing home (removing things, lowest bed level) • Not all falls are preventable • Importance of a good walker • Non-skid socks • Costs • Measures restricting freedom • Other sources of information/support 	

Figure 1: Information that should be included in a fall prevention brochure according to users

Discussion

Expectations and needs of residents and family members regarding fall prevention brochures differ substantially. Residents want to have short and concise information about the most important facts on the mitigation of external fall risks and behaviour after fall events. This is derived from their perception that falls are inevitable and unavoidable, which is a major barrier to fall prevention programs [40,41]. Yardley et al. [33], who detected similar assumptions in older independent living people, argued that this behavior may be a way of avoiding feeling responsible for falls. It is known from several studies

that older adults, compared with younger people, wish to assume less responsibility for treatment decisions and tend to rely more on the expertise or opinions of others [42,43]. The low interest in measures to protect against falls and fractures (like hip protectors) indicates a preferred passive role in decision-making, while putting the responsibility for fall prevention measures on nursing home staff and family members.

Family members play, and most want to play, a central role in communicating and decision-making in nursing homes [44]. According to our results, family members agreed to take part in fall prevention e.g. by doing exercises with the resident. In addition, they wanted comprehensive written information about different kinds of fall prevention strategies. Their inclusion in fall prevention as a mediator of information and assistance in decision-making is inevitable.

The information to be included in a brochure for family members overlapped partially between the family member and nursing staff groups, with different views on including physical activity, costs, and hip protectors. Nurses believe that hip protectors and physical activity are of no use, as constituted by the negative attitude and disaffirmation of including such information in a brochure. However, a positive attitude is fundamental to achieve compliance in fall and fracture prevention interventions [40,45]. Furthermore, physical activity is recommended in national and international guidelines [14,15], hence there is a mismatch between the nursing staff's current practices and evidence-based knowledge. Family members understand the importance of motivating older adults to participate in physical activity. It is known from the literature that messages that convey positive images and benefits of interventions, rather than focusing on threatening aspects of fall risks, are the most appealing for older adults [33]. Customized brochures containing suggestions for physical activities can motivate older adults to do exercises, and there is evidence that such brochures also prompt patients to use behavioral strategies that promote exercise [46].

Nursing staff emphasized the need to inform family members that falls are not always preventable. One possible explanation therefore is that fall events represent a significant burden for nursing staff.

Residents, family members and nursing staff were in agreement on the structure and design of a fall prevention brochure. This coincides largely with recommendations from the literature [24-26] to use large font, many pictures, and

concise information. However, there were different needs and expectations between residents and family members concerning the length of the brochure.

Some limitations must be considered when interpreting the results. As a convenience sample was used, it can be assumed that interested individuals, and especially motivated family members, took part in the focus group discussions. It is unclear whether family members are really doing what they have related (e.g. doing physical activities with residents), keeping in mind the effect of social desirability. Member checking, by reconvening the focus group at a subsequent point of time, was seen as impractical, due to a change in group dynamic [47]. To establish credibility the moderator, at the end of each focus group discussion, summarized the main statements of the participants for confirmation and clarification. In addition, peer debriefing was done within doctoral students' meetings, to obtain feedback on general methods used. The second moderator who attended the focus group meetings examined the transcripts and preliminary codes to ensure validity. To establish confirmability, a second researcher independently analyzed one focus group interview transcript and then compared the results.

Conclusion

The demands for high-quality brochures are multifaceted, and several articles on brochure development endorse the inclusion of all relevant issues on the topics [20,23]. Using a user-centered perspective had shown diverse needs and expectations of different user populations, with different interests on the specific fall prevention issues. The expectation of residents regarding fall prevention information was low; in contrast, family members wanted to be informed in depth about different kinds of fall prevention strategies and wanted to be actively involved in fall prevention. One brochure ought not cover all postulated criteria, and different brochures are necessary, as nursing staff suggested in the focus group discussion.

Recommendations for practice and research

Brochures for residents should include concise information about important risk factors and how to avoid or reduce them, as well as information about what to do when a fall has happened. In addition to general information, in-

formation in small units about specific topics (e.g. physical activities or hip protectors) should be developed to provide targeted information and avoid overwhelming the readers. As residents have the feeling that falls are inevitable and they are unable to do anything to prevent them, nursing staff must help older adults to feel empowered to prevent falls themselves, by motivating and encouraging them.

For family members, comprehensive brochures should be developed including information about risk factors, preventive strategies, and where they can get additional support. Of special importance to include is what they can contribute to help the older adults in their lives prevent falls (e.g. clothing choices, removing hazardous items when leaving the nursing home, etc.). For nursing staff, education on effective fall prevention strategies is recommended. The negative attitude and low interest of nursing staff in some fall prevention interventions demonstrated that need.

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Needs and expectations regarding fall prevention brochures

Chapter 6

A user evaluation of brochures for fall prevention education created to empower nursing home residents and family members

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Submitted

Abstract

Objective: This study evaluated evidence- and theory-based fall prevention information material to assess its understandability and usefulness for users, whereby users were involved in the process of developing the materials.

Methods: A qualitative study was conducted with focus groups of targeted users (residents, family members and nursing staff). Content analysis using a concept- and data-driven coding frame was used for data analyses.

Results: A total of 32 participants participated in six focus group discussions. Residents and family members had no difficulties understanding the material and tried to apply the content to their particular situations. Nursing staff commented on some ambiguities and incongruities with respect to the current nursing care practice. Participants expressed concerns regarding the usability of the materials for cognitively-impaired residents'.

Conclusion: By involving users in the development of evidence-based information material, this material has a high acceptance rate and motivates users to address the topic.

Practical implications: The involvement of users is essential during the development of information material that meets users' needs. Users with severe cognitive impairments require particular information material.

Key words: user involvement, information material, evaluation, nursing home

Introduction

Nursing home residents have a high risk of falling [1]. About 60 percent of residents experience at least one fall per year and many suffer multiple fall events [2,3]. This risk of falling is associated with functional status limitations and decreased quality of life [4]. The activity index and quality of life are also lower in residents who suffer from a fear of falling [5,6], which is very common among members of older populations [7,8], and can be both a risk factor and a consequence of falling [6,7].

To reduce risk factors of falling and support residents in their efforts to live as safely as possible, free of fear, it is necessary to enact multifactorial intervention programs [9-11]. A core component of multifactorial interventions is to educate residents and their family members, verbally and in a written form, about risk factors and protective behaviour [12]. This component is, however, not always carried out, as is demonstrated by the fact that only a small number of nursing homes in Austria and the Netherlands have made information material about fall prevention available to residents or family members [13]. The widespread belief shared by nurses is that members of the older nursing home population cannot be educated effectively, due to the decline in cognitive function (a natural result of aging) or the effects of diseases such as dementia [14]. In addition, many residents are not empowered and encouraged to do something actively to prevent falls [15]; they are often of the opinion that falls are inevitable and cannot be prevented [16].

To empower nursing home residents so that they can benefit from an educational intervention, it is essential to motivate and encourage them [17-19]. In addition, interactive group educational programs combined with individual tailored educational programs, in which adequate knowledge that is based on needs and preferences is provided, seem to be key elements required to educate nursing home residents effectively [18,19]. Providing printed information material (e.g., brochures) and verbal education (e.g., discussions) ensures that learning skills are matched in older people [20].

Many evidence-based recommendations have been made for the development of printed information material [21-24]. According to these recommendations, these materials should be based on current scientific knowledge, present unbiased care options, describe the benefits and drawbacks and present numerical data [22,23]. In addition, the cognitive processes of the target audi-

ence members should be considered, and simple materials written in plain, readable language [21,23,24] that can easily be grasped and understood [25] should be created. The results of scientific investigations have shown that, even when many of these criteria are fulfilled, difficulties in understanding may still arise. In particular, the presentation of study results in the form of numeric data may cause confusion and result in misunderstandings [26,27].

To address these problems and meet the target audience members' education needs, users must be involved in the development of information material [23,28]. In a Cochrane review, two randomized, controlled trials were identified in which users were consulted in the development of printed information material. These results have shown that involving users allows the development of materials that are more comprehensive, readable and understandable and also include more detailed, practical information than materials that have been developed by professionals without input from users [29]. Although the benefits of user involvement are well-known and it is recommended in information material manuals [30], in practical reality, users are seldom involved or consulted in the development of information material [13,31].

In order to fill this gap, information material for fall prevention was developed while involving users in the development process and considering the evidence-based recommendations as well as the cognitive processes of the audience members. This strategy was undertaken specifically to empower residents and family members. During the last step in this development process, the information material is normally evaluated from the perspective of the user [32]. As part of this investigation, the fall prevention information material in the form of brochures was evaluated with regard to its usefulness and understandability from the perspective of the users of these materials, and specifically the residents, family members and nursing staff.

Development of the information material

The content of the information material (brochures) is described in the sections below, focusing on the development process. The development process incorporated several iterative stages based on the guide of Wizowski et al. [28] to developing information material.

Considering the needs and expectations of the target audience

To determine what the target audience wants to know and wants to have included in printed information material, a qualitative study with focus groups was conducted. Focus groups were held separately with residents, family members and nursing home staff. The results of another study have shown that the residents' and family members' expectations differ substantially [13]. Based on these results, different materials for residents and family members were developed. As residents only wanted to be informed about the most important, extrinsic fall risks in the nursing home (including risks related to the use of personal equipment) and how to remove these risks, as well as coping strategies that could be used after a fall event, these topics were addressed in a general brochure for residents in a concise and clear manner. In addition, one brochure was developed for residents, describing fall events that cannot effectively be prevented. This brochure addresses topics such as hip protectors or sensor devices. In addition, each topic was illustrated with a picture.

Because family members wanted the brochure to include comprehensive information, the following topics were included in the brochure for family members: intrinsic and extrinsic fall risks and how to avoid extrinsic risks, physical activity and how to motivate older people to be physical active, descriptions of medical devices such as hip protectors, measures that restrict freedom and additional sources of information or support. The advantages and disadvantages for each of these topics were described and the effect sizes (in natural frequencies) were presented, if possible.

Each brochure additionally contained a short introduction in which the problem of falls in nursing homes was stated, the content of the brochure was described and a fall event was defined.

Identify the best clinical evidence

To identify the best clinical evidence, a search was conducted for evidence-based clinical practice guidelines that were not older than five years and had been published in English or German. Examples of the screened guideline databases and websites are the Guideline International Network (<http://www.g-i-n.net/>), National Guideline Clearinghouse (<http://www.guideline.gov/>) and Scottish Intercollegiate Guidelines Network (<http://www.sign.ac.uk/guidelines/index.html>). In addition, Google Scholar and the PubMed database were searched using the keywords fall and guideline. Guidelines that focused on

fall prevention in non-institutionalized older people were excluded as well as guidelines that were syntheses of other guidelines. The guidelines identified were appraised using the AGREE II Instrument [33]. Only guidelines with the highest possible quality, identified using the overall guideline assessment of the AGREE II Instrument, were used as basis for developing the information material. After the guidelines had been identified, a search for more up-to-date systematic reviews was conducted using the PubMed and CINAHL databases and the search terms fall and nursing home. Suitable systematic reviews were selected and appraised using the AMSTAR tool [34].

Out of 12 fall prevention guidelines identified, two guidelines met the inclusion criteria and were rated as having the highest quality score possible: one international guideline from 2015 [12] and one national guideline from 2012 [35]. Although the guideline from the National Institute for Health and Care Excellence [12] was revised in 2015, the recommendations related to nursing home fall prevention were not updated. Therefore, an additional search was undertaken for the period from 2012 to the end of 2015 to identify more recent systematic reviews. Out of 43 hits (20 PubMed, 23 CINAHL), seven met the inclusion criteria and were internally valid [11, 36-41].

In addition to guideline recommendations, evidence from these reviews was used to develop the content of the information material, which was designed to meet the needs and expectations of the residents and family members.

Design, writing and motivational aspects

As a theoretical framework for designing the information material, the Cognitive Load Theory of Chandler and Sweller [42] was applied, because it can also be used to develop instructions for people with age-related, cognitive impairments [43]. Based on the CLT, several effects were generated to reduce the cognitive load, some of which were used to design the information material (e.g., the split-attention effect). The split-attention effect can be observed when learners are forced to split their attention between two or more sources of information. To reduce this effect, different sources of information such as textual information embedded into pictures need to be integrated by the designer [44] (see examples in Figure 1).

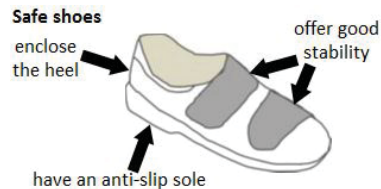


Figure 1: Examples of textual information embedded in a picture

Two other effects that were considered, based on CLT, were the imagination and self-explanation effects. Residents were encouraged to imagine and explain a process to themselves in order to acquire a schema for it (e.g., “look at your walking aid and check to see if the height is appropriate”). A schema is a cognitive construct that allows people to classify multiple elements of information into a single element [44].

As a framework for structuring and writing the information material, the guidelines of the Plain Language Action and Information Network [45] were considered. Headings were formulated in questions, the audience was directly addressed using active voice (e.g., please do not walk without your walking aid), not more than one topic was mentioned per paragraph, white space was strategically inserted and short sentences were used. Vertical lists and bold-face font were used to focus the readers’ attention toward important points.

To empower nursing home residents and family members, motivational and encouraging messages were included and repeated throughout the text, such as “You can help reduce risks!” or “Your support is important!” In addition, residents were encouraged to feel responsible for their equipment, using specific requests to complete tasks such as “please, check to see if your shoes enclose your heel”.

Readability

The readability of the material was measured using the Amstad Readability Index [46], an adaption of the Flesh Reading Ease readability formula, which has been developed to assess texts in German. The index ranges from 0 to 100, whereby lower scores indicate that the text is harder to read. The readability indexes of the resident brochures were around 80, which indicated that they were relatively easy to understand. The brochure developed for the fam-

ily members had a readability score of around 60, which implies moderate readability (understandable for a 13-15 year old school pupil).

Methods

To test and evaluate the usefulness and understandability of the material, a qualitative study was conducted with focus groups of the target users (residents, family members and nursing staff).

Participants and sampling

Two of the three nursing homes that participated in the assessment of needs and expectations with regard to fall prevention information material [14] agreed to participate in the evaluation of the material. The directors of the nursing homes chose eligible residents and invited family members as well as nursing home staff to take part in the evaluation procedure. To be included in the evaluation, residents needed to be at least 65 years of age and at risk of falling (i.e., they had a history of fall or gait/balance disorders and the cognitive abilities to understand the focus group discussions). Family members had to be close family members of residents (spouse, partner or child) and have a history of regularly visiting the residents at the nursing home. Nursing staff had to be nurses or nursing aids who worked in the particular nursing home. Written information about the aim of the study, the direction of the focus group discussions, dates and locations were provided by the directors of the nursing homes for people who were interested in joining the evaluation. The directors of the nursing homes were also the contact people for questions that arose and collected the participation agreements.

Data collection

The focus groups were held in the participating nursing homes with residents, family members and nursing staff, separately. An attempt was made to include a maximum of eight persons per focus group discussion to guarantee a safe environment, where participants could freely share their opinions [32]. The first author, who was experienced in conducting focus group interviews, moderated the focus group meetings, which were held in separate rooms. About

one week before the focus group meetings, participants received the corresponding information material in order to become familiar with it.

The discussion guide used was based on that used in a previously conducted study about the usability of health information [47] and included opening, key and ending questions as well as questions about usability and understandability (see Table 1). The guide was slightly adapted depending on the focus group (e.g., nursing staff members were asked “Do you think that there is something new for residents/family members?” instead of “Was there something new for you?”).

In order to receive feedback from each member, at the end of each focus group meeting, the moderator summarized the discussion points and asked if clarification was needed and for further comments. The discussions were audio-recorded using a digital recorder.

Table 1: Discussion guide

Type of question	Topic	Questions
Opening questions		What was your first impression of the material?
Key questions	Usability	Did you notice something?
		What have you learned?
		Was there something new for you?
		What did you find interesting about the material?
	Understandability	Is something missing, which you would find important to include?
		What is the writing style of the material?
		What effect do the numbers have?
	Usability	Are they clear for you? (questions only for family members)
		Did the heading catch your interest?
		Were the topics presented in an interesting way?
Understandability	What do you think about the length?	
	Are there some ambiguities in the text or the wording?	
Ending questions	Usability	Are the pictures clear to you?
		Did reading this have any consequences for you?
	Will the material help you to communicate with residents/family members/nursing staff?	
	Would you recommend the material to others?	
	How would you assess the credibility of the material?	
		<i>-after a short summary by the moderator-</i>
		Did I understand everything you told me in the right way?
		Is there anything missing, you want to add?

Data analysis

The recorded discussions were transcribed, and a qualitative content analysis was performed [48]. A combined concept-driven and data-driven coding frame was developed. Initially, the main categories were defined using a concept-driven strategy based on the research questions. Next, subcategories were created using a data-driven strategy based on the data material (transcripts). Subcategories were generated by subsumption [49], which is an appropriate strategy to use if the main categories are generated in a concept-driven manner and an idea of what to look for already exists [48]. After revising and streamlining the coding frame (e.g., subcategories, which overlap, were grouped or specified), decision rules were defined between subcategories. The final coding frame was discussed among the authors. Subsequently, the first author divided the data into thematic segments so that each segment fit into one category of the coding frame. This allowed different people to compare the coding. The first and second authors coded half of the data independently of one another and checked the codings for agreement. The first author coded the remaining data and, in cases of doubt, the coding was discussed with the other authors. Finally, the codes were summarised according to each subcategory and are presented, using exemplary personal quotes. MAXQDA 11 [50] was used to support the data management.

Ethical considerations

The ethical approval was obtained from the Medical University of Graz (26-400ex13/14). Participants received verbal and written information about the study and gave their informed consent before being allowed to participate.

Results

A total of 32 participants agreed to participate in the focus group discussions, which lasted an average of 44 minutes. The main characteristics of the focus group members are presented in Table 2.

Table 2: Characteristics of focus group participants

	Residents (n=15)	Family members (n=7)	Nursing staff (n=10)
Age, mean (SD)	83.9 (7.6)	64.6 (9.9)	37.0 (10.0)
Gender woman, n	15	7	8
Length of time in the nursing home (residents), n			
< 1 year	4	2	-
1-5 years	6	4	-
> 5 years	5	1	-
Years of work experience in the nursing home (staff), n			
< 3 year	-	-	1
3-10 years	-	-	7
> 10 years	-	-	2
Profession, n			
examined nurse	-	-	5
nursing aid	-	-	5
Type of family member, n			
wife	-	2	-
daughter (in law)	-	5	-
Number of accidental falls in the last year (resident), n	12	7	

Understandability of the information material

The textual information and pictures could be easily understood by both residents and family members. The layout was also found to be supportive for the learning success of both residents and family members. The residents paid particular attention to the pictures and projected themselves into the pictures. Family members emphasized the numerical information, which they found particularly interesting. Nursing staff identified shortcomings and gave sug-

gestions for improvement. Based on their criticism, some ambiguities in the presentation were detected. Nursing staff questioned whether the brochure would be understood by residents with severe cognitive impairments. The nurses' opinions with regard to the numeric presentations were divided. On one hand, they judged them positively and found them understandable and, on the other hand, they expressed concern when data was presented without clear recommendations. They argued, for example, that family members would potentially not pay for hip protectors if they knew of their actual (small) effect. The results on understandability are presented in Table 3, illustrated by exemplary personal quotes from the particular focus group participants.

Usability of the information material

Concerns regarding the understandability for severely cognitively impaired residents also translated into concerns regarding usability. Nursing staff and residents suggested that brochures with only simple pictures could be used for people with limited cognition, so that the education could take place in a playful way. Residents without severe cognitive impairment found the brochures to be informative and helpful. Residents tried to identify with the content of the brochures and discussed the potential hazards, interventions and best-fitting equipment with each other. Family members emphasised the importance of the information about equipment they could provide (e.g., which shoes they could provide for residents). In addition, the motivational messages were interpreted as encouraging by both residents and family members. Nursing staff perceived that the information could underpin the information they provide to residents and family members and support the communication with family members. Family members were disappointed that no clear recommendations were given for exercises that they could perform with residents. The process of contributing to the development of the brochures allowed residents and family members to obtain knowledge about devices that had been previously unknown to them. In particular, the hip protectors aroused their interest and led to discussions in which they weighed advantages and disadvantages. No concerns were expressed with regard to the credibility of the information provided in the brochures. An excerpt of the results on usability aspects can be found in Table 4.

Table 3: Results/quotes according to the main category: Understandability

Subcategories	Residents	Family Members	Nursing staff
Textual Information	Interpreted as understandable: <i>For me it is really well-written – easy to understand.</i>	Interpreted as understandable: <i>It is written in an easy style, everything is clearly described ... suitable for older people.</i>	Ambiguities identified: <i>[hazards in nursing homes] ... these hazards also exist at home... nursing home should be removed...that can lead to misunderstandings... the nursing home could be construed as a dangerous place.</i>
Imagery	Identified with the pictures: <i>The nightstand is too far away in this picture ... it is so hard to pull it closer.</i>	Underpinned the textual information: <i>The pictures are very good, illustrates the written text ... consecutively throughout the whole brochure.</i>	Ambiguities identified: <i>Something with this picture bothers me. I recommend trekking shoes... and these look different. They have ankle straps and are not totally closed [as in the picture].</i>
Layout	General satisfaction expressed: <i>It is no problem for me to read the writing... I find nothing that should be changed.</i>	General satisfaction expressed: <i>I like that there is one topic per page ... also the boldface font is good – it caught my eyes.</i>	General satisfaction expressed: <i>I like the headings, the visual structure ... important things can be found easily and quickly.</i>
Numeric Presentation	---	Interpreted as interesting and understandable: <i>I like the numbers, it is easier to imagine it, the dimension [of falls] ...the numbers really aroused my interest.</i>	Interpreted as understandable, but scepticism expressed: <i>Generally, the numbers are understandable, but maybe they make them [family members] feel insecure.</i>

Table 4: Results/quotes according to the main category: Usability

Subcategories	Residents	Family Members	Nursing staff
Concerns regarding usability	<p>Interpreted as having limited usability for the cognitively-impaired:</p> <p><i>For those [residents] who doing well – they are useful anyway, but we have so many cognitively impaired [residents] ...</i></p>	<p>Interpreted as having limited usability for the cognitively-impaired:</p> <p><i>I really like the brochures... if they would still help my mother ...she is so cognitively impaired.</i></p>	<p>Interpreted as having limited usability for the cognitively-impaired:</p> <p><i>The majority of our cognitively-impaired residents will not use it [general residents' brochure] ...maybe they will read it one time, but then put it away; the brochure is too complicated for them.</i></p>
Suggestions to improve usability	<p>With regard to pictures:</p> <p><i>...in cognitively-impaired residents, maybe pictures alone would be useful.</i></p> <p>Additional information based on experience:</p> <p><i>Before going to the bathroom, you have to prepare everything... it is dangerous if you go when you are wet.</i></p>	<p>Additional information:</p> <p><i>It is unfortunate that there are no exercises recommended that I can do with my mother... however, some hints on how to mobilize her would also be helpful.</i></p>	<p>With regard to pictures:</p> <p><i>... a brochure with pictures alone [for severely cognitively-impaired residents]... simple pictures as in children books</i></p> <p>More comprehensive explanations:</p> <p><i>... family members often ask why measures restricting freedom are not allowed... you should add here that these are legally prescribed.</i></p>

Chapter 6

Positive aspects concerning usability	<p>Interpreted as informative and helpful:</p> <p><i>For me the brochure is meaningful, especially the part about "how to cope when a fall had happened".</i></p>	<p>Interpreted as informative and helpful:</p> <p><i>For people who are not familiar with the topic, I'm sure they [the brochures] are insightful... you have some cues.</i></p>	<p>Interpreted as supporting advice from nursing staff:</p> <p><i>It's really informative for the family members; the things we tell them are also mentioned in the brochure- anti-slip shoes, shorter trousers...</i></p>
New aspects	<p>Information transferred to personal situation:</p> <p><i>The brochure about hip protectors is interesting. After reading that, I can imagine that it would be appropriate for me, even if the effect is small...</i></p>	<p>Unknown knowledge identified:</p> <p><i>You do not really know, what's there. I did not know that alert mattresses existed.</i></p>	
Consequences	<p>Engage with the topic:</p> <p><i>Can I take the brochure with me so that I can look at it again later when I'm in my room?</i></p>	<p>Be prepared:</p> <p><i>It is good to know more, especially when you talk with the nursing staff... you feel better informed...</i></p> <p>Implementing hints:</p> <p><i>The information about the clothes is interesting... I think I need to shorten my mother's trousers.</i></p>	<p>Supports verbal information:</p> <p><i>If only we tell residents about fall prevention, it is not as valuable as when it is delivered in written and verbal forms.</i></p> <p><i>When the family members get the information in addition [to verbal information], they feel more strongly that everything is being done for their resident [to prevent falls].</i></p>

Discussion and conclusion

Discussion

Involving different user perspectives in the evaluation of the fall prevention brochures has proven its worth. Residents and family members focused on both the understandability of the text and pictures as well as the layout and identified information they could use/transfer to their personal situation. Nursing staff, as practical experts in the field of fall prevention, evaluated the brochures more critically and inferred several shortcomings in the information material, identifying incongruities with information they provided verbally.

The residents' and family members' evaluations of the fall prevention information material have shown that the textual information was clearly understood. The readability, as measured with the Amstad Readability Index, corresponded to the recommendations for readability for people with limited health literacy [21]. By extracting information from the brochures, the level of awareness for falls and their prevention was increased in both residents and family members, and they felt more strongly encouraged to address the topic. However, family members felt that there was a lack of information on physical exercises that they could perform with the resident. Because physical exercises for fall prevention need to be individually prescribed on the basis of a physical assessment [51] and adjusted to meet individual needs [52], it was not possible to include instructions to conduct physical exercises. However, the benefits of regular physical exercise and the importance of taking advantage of offers/programs in the nursing home were included in the brochures, as these can motivate older people to engage in physical exercise [53].

Residents, family members and nursing staff all agreed that information material created for cognitively-impaired residents should include only essential pictures. Empirical evidence confirms that cognitively-impaired people can remember stimuli presented as pictures more easily than stimuli presented as words [54]. However, recent research findings suggest that words and pictures should be combined to improve learning in cognitively-impaired people, as they were not able to rely on the distinctiveness of pictures alone [55]. Based on these findings, the pictures in the brochure were simplified and complemented with simple messages, so that the material could also be used to educate residents with moderate or severe cognitive impairments.

In our study, family members did not interpret the numeric data as confusing and found them interesting. These results contrast with those from other investigations [26,27]. However, nursing staff viewed these data critically and were uncertain how to convey information about effect sizes to family members. The communication of effect-sizes is a prerequisite to making evidence-based decisions with patients and families [56]. These concerns possibly reflect the communication style commonly used in nursing homes, which is often paternalistic (“nurses know best”) as opposed to engaging (i.e., with the resident or family member) [57].

Nevertheless, nursing staff positively rated the information material, as it would support information they communicated verbally and facilitate the communication with family members. These important benefits of printed information material have also been identified in other studies [58].

Strengths and limitations

The methods used to gather and analyse the data were discussed during meetings with doctoral students (peer debriefing). As member checking is not meaningful in focus group discussions [59], the moderator summarized the main arguments for confirmation to establish credibility at the end of each focus group discussion. To ensure the reliability of the coding frame, half of the data was blind coded by two researchers [48]. The coefficient of agreement for the double-checked codings was Cohen’s Kappa of 0.911, which indicates nearly perfect agreement [60]. As the codes (segments) were well distributed across the subcategories, it can be assumed that the coding frame was sufficiently differentiated (high-face validity) [48].

One limitation of the study is that the residents who participated in the focus groups had no or only minor cognitive impairments. Nearly 40 percent of nursing home residents in Austria suffer from moderate to severe dementia [61] and, therefore, the sample is not representative for the entire Austrian nursing home population. Although implications for the development of material for cognitively-impaired residents were provided by focus group members, the information material developed for these residents was not evaluated in the corresponding residents’ group.

Conclusions

Evidence- and theory-based information material that involves users in the entire development process resulted in the creation of easily understandable and supportive material for the education of residents and family members. Additionally, residents and family members were encouraged to deal with fall preventive measures actively by extracting information from the brochures. The involvement of all kinds of users in the evaluation of the fall prevention information material also provided several opportunities for improvement, ranging from the elimination of ambiguities in textual or visual information to the development of information material for cognitively-impaired residents. Further research is needed to test the effectiveness of the information material in the context of an educational program on falls and their consequences.

Practical implications

The material created is accessible at: <http://pflgewissenschaft.medunigraz.at/forschung/informationsbroschueren-zu-pflegeproblemen/> and can be used in the nursing home practice for educational purposes. Before using these materials, nursing staff should familiarize themselves with the content of the brochures to be able to provide supportive information verbally. Nurses need to be aware that the information material should be used only as part of an overall resident/patient education strategy, in order to benefit ideally from it.

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Chapter 7

Educational interventions to empower nursing home residents:

A systematic literature review

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Abstract

Purpose of the study: Health education is essential to improve health care behavior and self-management. However, educating frail, older nursing home residents about their health is challenging. Focusing on empowerment may be the key to educating nursing home residents effectively. This paper examines educational interventions that can be used to empower nursing home residents.

Methods: A systematic literature search was performed of the databases PubMed, CINAHL, CENTRAL, PsycINFO, and Embase, screening for clinical trials that dealt with resident education and outcomes in terms of their ability to empower residents. An additional, manual search of the reference lists and searches with SIGLE and Google Scholar were conducted to identify gray literature. Two authors independently appraised the quality of the studies found and assigned levels to the evidence reported. The results of the studies were grouped according to their main empowering outcomes and described narratively.

Results: Out of 427 identified articles, ten intervention studies that addressed the research question were identified. The main educational interventions used were group education sessions, motivational and encouragement strategies, goal setting with residents, and the development of plans to meet defined goals. Significant effects on self-efficacy and self-care behavior were reported as a result of the interventions, which included group education and individual counseling based on resident needs and preferences. In addition, self-care behavior was observed to significantly increase in response to function-focused care and reasoning exercises. Perceptions and expectations were not improved by using educational interventions with older nursing home residents.

Conclusion: Individually tailored, interactive, continuously applied, and structured educational strategies, including motivational and encouraging techniques, are promising interventions that can help nursing home residents become more empowered. Empowering strategies used by nurses can support residents in their growth and facilitate their self-determination. Further research on the empowerment of residents using empowerment scales is needed.

Keywords: health education, older people, empowerment, self-efficacy, self-care activities, self-determination

Introduction

Education is not only important to young people but also a lifelong process. Adult education about several health care topics is essential to improve health care behavior and self-management as well as reduce risky behavior. Such topics include fall prevention, nutrition, and alcohol use [1–3]. According to the World Health Organization, health education not only means conveying verbal or written information but also means promoting the motivation, skills, and confidence of people so that they take action to improve their health [4]. One of the health strategies of the European Union, which supports this aspect of health education, is the empowerment of people [5].

In older people, age-related conditions and the related decline in physical and cognitive functions require that they receive appropriate education to continue living as actively and independently as possible. However, health education in older people, especially in frail, older nursing home residents, is challenging. The first challenge is due to the cognitive decline observed in older people due to aging [6]. According to the results of cognitive psychology research, older people process information more slowly, have less cognitive flexibility (eg, are less willing to alter their judgments), and have lower abilities to think divergently (ie, to generate alternative explanations or solutions). In addition, the working memory capacity and the ability to focus on specific information decline as people age [6]. The second challenge to educating older people is that many prefer not to be actively involved in treatment, self-care, and decision making [7–9]. This preference for the passive role may be their way of avoiding taking responsibility for undesirable events or incorrect decisions [10]. In addition, older people commonly hold the opinion that undesirable events (such as falls) are inevitable and unavoidable [9–11]. Although many older people perform regular physical activity to stay active and have positive attitudes toward personal health care, some of them and especially frail nursing home residents believe that certain interventions (such as bodily exercise) are not effective due to reduced physical ability [12].

For these reasons, a great deal of effort must be invested to support the empowerment of older people to increase their benefits from educational interventions. By becoming empowered, people can enjoy their life to the greatest extent possible on the basis of their own choices [13]. To achieve empowerment, people must obtain knowledge that is related to individual needs and

expectations [14,15] Gibson defined empowerment as: ... *a process of recognizing, promoting and enhancing people's ability to meet their own needs, solve their own problems and mobilize the necessary resources in order to feel in control of their own lives* [16].

Empowerment based-interventions are based on strong guiding principles such as self-determination and autonomy [17]. By providing empowering care, nurses help increase the residents' independence and their feelings of autonomy [18]. The nurses cannot give them these feelings but can support the residents during the process of empowerment [15]. In patient education, therefore, empowerment is both a process and an outcome. During the empowerment process, residents increase their abilities to act autonomously, think critically, and gain an enhanced sense of self-efficacy as a result [19]. Self-efficacy is a strong predictor of self-care behavior, which influences behavior both directly and indirectly by influencing goal setting, outcome expectations, and perception of facilitators and impediments [20].

Although the presence of empowerment care is a significant predictor of the quality of life [21], empowerment of nursing home residents is seldom discussed in research articles [22]. However, focusing on empowerment may be the key to educating nursing home residents effectively. To the best of our knowledge, no systematic review is currently available that describes educational interventions used to specifically empower nursing home residents. A recent review was published on person-centered care in aged-care facilities, where a focus was placed on interventions to enhance residents' autonomy, choices, sense of personal control, independence, and interactions, but staff training, organizational changes, and the creation of a positive atmosphere were primary goals rather than resident education [23].

Therefore, the aim of this research was to identify educational interventions that could be used to empower nursing home residents. The following research questions are asked: which educational interventions are used in intervention studies to empower nursing home residents and how effectively do educational interventions empower nursing home residents?

Methods

To answer the research questions, a systematic literature search was performed. The PubMed, CINAHL, CENTRAL, PsycINFO, and Embase databases were screened to select articles that had been published during this century (from January 1, 2000 to April 1, 2016), selecting current studies that had been written in English or German. The search was limited to clinical trials (eg, clinical trials, controlled clinical trials, and randomized clinical trials) in order to target intervention studies. Search terms (shown in Table 1) were used with truncations and the Boolean operators OR (horizontal terms) and AND (vertical combinations). The outcome terms were based on outcome measures that focused on empowerment in patient education [14–19].

In addition, a manual search of reference lists of selected papers and reviews on the topics of empowerment and patient education [6, 23–25] was performed to identify additional relevant articles. To identify gray literature, a search was conducted in the SIGLE and Google Scholar to a page depth of 12, using the keywords empower, self-efficacy, self-determination, autonomy, and resident.

Table 1: Search terms used in the database searches

People of interest	Residents, older people, older adults, elderly
Intervention	Educate, inform, train, instruct
Outcomes	Knowledge, self-efficacy, self-determination, autonomy, self-care behavior, self-care activity, self-management, mastery, empower
Setting	Nursing home, “Residential Facilities” (MESH)

Criteria for considering studies: inclusion and exclusion criteria

In order to be included, studies had to meet the following criteria:

- Included older people (from 65 years on)
- Addressed residents living in nursing homes or similar long-term institutional settings
- Described any educational intervention that implied that information was provided, and/or motivation, skills, and confidence necessary to take action to improve health were fostered [4]

- Focused on outcomes related to empowerment through patient education, and specifically, on its influence on knowledge, self-efficacy, self-determination, autonomy, self-care behavior, self-care activity, self-care management, independency, mastery, empowerment, and outcome expectations.

According to the types of studies identified through the literature review, an additional focus was placed on intervention studies (clinical trials) to investigate the effects of educational interventions on outcomes related to empowerment. Studies were excluded if they were carried out in hospitals, institutions for mentally disabled people, or in community-dwelling populations. Studies that were conducted in mixed settings (eg, nursing homes and day centers) were excluded if it was not possible to extract data about the population of interest. Studies that described outcomes that were not explicitly related to empowerment, such as compliance with treatment or physical parameters (eg, grip strength), and that did not consider self-care or independency were also excluded [24]. Interventions that could be used to empower or educate (nursing) staff exclusively were considered to be beyond the scope of this review and were excluded.

Assessment of potential bias with regard to the studies included

Two authors assessed the quality of the included studies independently. Disagreement was resolved by consensus. Intervention studies with a control group were assessed using the Critical Appraisal Worksheet for Therapy Studies [26]. The level of evidence was assigned according to the Oxford Centre for Evidence-Based Medicine (OCEBM) Levels of Evidence Working Group (Table 2) [27]. To appraise case-series studies, the Three-Minute Checklist was used [28]. There is no unity in the classification of case series (also called time series). According to Melnyk and Fineout-Overholt, they belong to quasi-experimental designs (intervention studies) [29]; in contrast, Chan and Bhandari assign them to observational studies [28]. Because they are mentioned in the evidence hierarchy of the OCEBM Levels of Evidence Working Group, case series were handled as intervention studies in this review and not excluded [27].

Table 2: Levels of evidence [27]

Level 1 ^a	Systematic reviews of RCTs
Level 2 ^a	RCTs or observational studies with dramatic effects
Level 3 ^a	Non-randomized controlled trials
Level 4 ^a	Case series
Level 5 ^a	Mechanism-based reasoning

Note: ^a Level may be downgraded on the basis of study quality. Data from CEBM. Available from: <http://www.cebm.net/index.aspx?o=5653.27>

Abbreviation: RCTs, randomized controlled trials.

Data extraction and synthesis

Data were extracted about the design, participants, type of intervention (including the application of the intervention), control of the intervention, outcome measures, and the duration of the study, using the Cochrane Review data extraction method, from each intervention study included [30].

The results of the studies were grouped according to the main empowering outcomes identified, and the effects were presented as P-values (if possible). Only outcomes referring to empowerment were considered in the results of intervention studies. As the interventions were expected to be heterogeneous, results were described narratively.

Results

A total of 427 studies were identified as a result of the systematic database search. In addition, four studies were identified by screening the reference lists of the included studies and reviews. The SIGLE and Google Scholar search did not lead to the identification of additional relevant articles. After removing duplicates, 258 articles were excluded on the basis of their titles and abstracts because they did not address the research question or inclusion criteria. The full texts of the remaining 26 articles were examined in detail, eleven of which fulfilled the inclusion criteria. One study was subsequently excluded because no data on group comparison were presented in the results and the “before”-

and-“after” comparison data described were not traceable [31]. In total, ten studies were included that directly addressed the research question.

A flow diagram of the study selection based on the PRISMA statement [32] is presented in Figure 1.

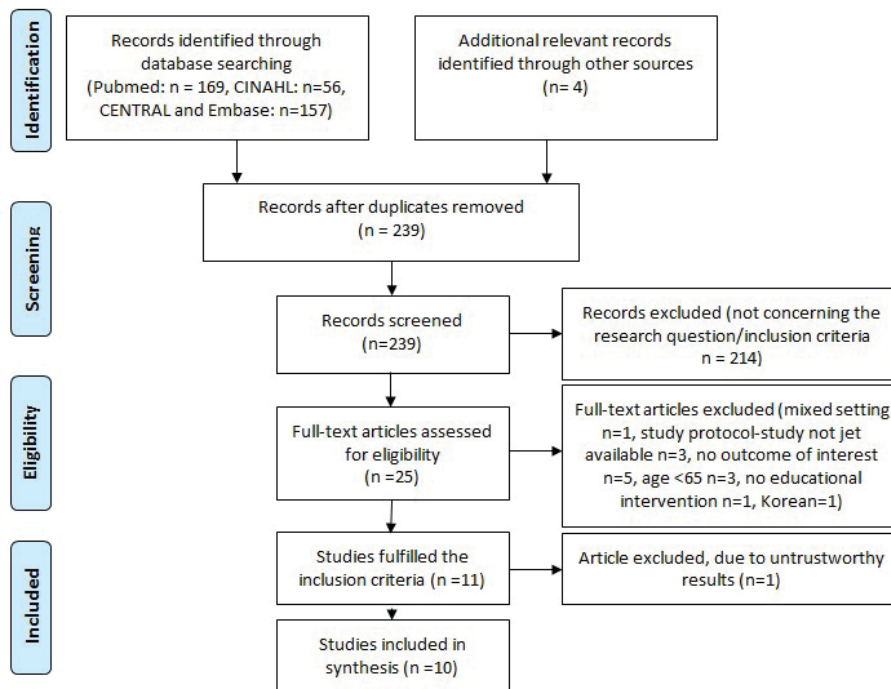


Figure 1: Flow diagram of study selection

Characteristics of the included studies

Of the ten intervention studies, seven were randomized controlled trials. Four of the studies used cluster randomization [33–36], another three used individual randomization [37–39], and three were quasi-experimental studies: a clinical controlled trial without randomization and two case-series studies [40–42]. Seven studies had been conducted with residents living in nursing homes [33,37–42], and three, in assisted living facilities and residential care homes [34–36].

The sample size ranged from 21 to 1,042 residents. The majority of the residents included in the studies were female (between 64 and 93), and the mean age of the participants ranged from 77 to 88 years, with the exception of the study by Bonanni et al. [42] where no mean age was described.

In nearly all trials, residents with cognitive impairments (including mild stages of dementia) were included [33,35–39,41,42]. The interventions were performed every day (integrated into nursing daily practice), one to two times a week, or five times over a 3-month period, and were made for periods of 3 weeks to 12 months.

Educational interventions to empower residents

The interventions performed were all complex and differed to varying extents but also shared similarities. In two interventions, interactive group education sessions were held to provide knowledge on disease and self-management strategies [39,40]. These were supported by customized counseling based on needs and preferences. In the group sessions described by Park et al. [40], personal experiences were also discussed.

In three studies, restorative care interventions were used to educate residents, and in one study, function-focused care interventions [33,34,41,42]. These interventions, which used motivational strategies, were designed to help residents attain and maintain their highest possible functional and physical status. In the intervention published by Resnick et al. [33], for example, residents were encouraged to do simple tasks by themselves, such as getting into bed. Enough time was given to perform the tasks, give step-by-step cues on how to do them, and when needed, to guide the residents to facilitate their independent activity.

Motivational strategies such as positive feedback, motivational self-management tips, and motivational interviews were also core concepts of other interventions [39,40]. Another strategy that was commonly used was goal setting on the basis of residents' needs and motivation levels and the development of an individually tailored plan to meet the goals [33–36,39–41]. Park et al. [40] also identified barriers that hindered the action plan. Problem-solving skill training, helping residents identify problems, set goals, and solve problems in small steps, and training in reasoning strategies were main interventions used

by Williams et al. [35] to promote the self-care level. Acquired reasoning strategies were applied during everyday situations and included scanning information, reading aloud, underlining or highlighting key information, and breaking information into smaller pieces [35]. The interventions provided by Andresen et al. [37] were based on the residents' individual wishes, and therefore, difficult to extrapolate.

Printed educational material was used in addition to verbal education in three studies, and in two studies, posters were placed in the residents' rooms to act as reminders and motivators [33–35,40,41]. Most interventions were carried out by nursing staff. In the restorative care interventions as well as the function-focused care interventions, an emphasis was placed on educating nursing staff about motivational techniques based on self-efficacy and supplying nurses with specific training to support the nursing staff while introducing motivational interventions [33,34,41,42]. A multi-professional approach, whereby the interdisciplinary team, residents, and families were educated, was used in the study by Resnick et al. [34]. In one study, the intervention was also delivered by occupational therapists [36]. The short descriptions of the studies included are given in Table 3.

Quality of the intervention studies included

According to the levels of evidence [27], six studies were assigned as Level 2 studies, two as Level 3 studies, and two as Level 4 studies. The quality of the included studies, which included control groups, is reported in Table 4, and the quality of the case-series studies, in Table 5.

The randomization of residents/clusters to the groups was described in all Level 2 studies. In two studies, randomization was conducted by the use of computer-generated random numbers, and in the others, by statistician-generated random numbers and by lot [35–37,39]. Resnick et al. [33,34] did not describe how the randomization was conducted. Allocation concealment was described in the studies of Sackley et al. [36], Andresen et al. [37], and Park and Chang [39].

Table 3: Description of the included studies (in alphabetic order)

Study	Design	Participants	Intervention	Description of the intervention	Application of the intervention	Control Intervention	Main Outcomes (Measurement)	Duration of the study
Resnick et al. [33]	Cluster-randomized controlled trial	<p><i>Setting:</i> 12 nursing homes, USA</p> <p><i>Sample size:</i> N=486 (IG=256, CG=231)</p> <p><i>Sample:</i> mean age 83.8 years (SD 8.2), 80.0% female, mean MMSE 20.4 (SD 5.3)</p>	Restorative Care	<p>Primarily nursing staff received education on Restorative Care, including motivational techniques based on self-efficacy to motivate residents.</p> <p>Restorative Care Interventions: using techniques based on self-efficacy to change behavior (eg. ask or encourage residents to do simple tasks). Motivation/encouragement for functional activities (poster placed in the residents' rooms, short- and long-term goal setting).</p>	Integrated into nursing daily practice	Usual care, no information about Restorative Care	Residents' performance of ADLs (Barthel Index), quality of life (Dementia Quality of Life Instrument), self-efficacy (Self-Efficacy for Functional Ability scale), outcomes expectations (Outcomes Expectations for Functional Ability scale)	12 months

Resnick et al. [34]	Cluster-randomized controlled trial	Setting: 4 assisted living facilities, USA Sample size: N=171 (IG=93, CG=78) Sample: mean age 87.7 years (SD 5.7), 80% female, mean MMSE 23.2 (range 11-30)	Function Focused Care	Primarily focused on educating nursing staff about motivational strategies and ways to incorporate Function Focused Care in routine care. Education provided for interdisciplinary team, residents and families using educational materials and adult-learning techniques. Goal setting based on assessment, communication with team and residents' input. Motivational techniques to achieve goals and engage residents.	Integrated into nursing daily practice	Educational session on Function Focused Care for nursing staff including education material (excluding information on motivational techniques)	Physical activity (ActiGraph®), physical function (Barthel Index, Tinetti Scale), residents' beliefs about function and physical activity (Self-Efficacy for Functional Activity scale, Outcome Expectations for Exercise Scale), depression (Geriatric Depression Scale), resilience (Resilience Scale)	12 months
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Williams et al. [35]	Cluster-randomized controlled trial	Setting: 13 assisted living facilities, USA Sample size: N=89 (IG=29, CGI= 28, CG II=32) Sample: mean age IG 86 years (SD 5.9), CG I 83 years (SD 10.5), CG II 86 years (SD 4.8), 67.4% female, mean MMSE 25.3	Reasoning Exercise in Assisted Living	Training and practice in reasoning and problem-solving skills to promote self-care level. Reasoning strategies were subsequently applied to everyday situations. In addition, a framework for successful problem-solving was introduced which included problem identification, goal setting and problem-solving in small steps. Training materials were handed out in a workbook format.	Two times a week for three weeks.	CG I (VITA-MIN-placebo intervention): Education on a neutral health topic CG II: No Treatment	Skills in everyday problem solving (Every Day Problems Test for Cognitively Challenged Elders), self-care competencies (Direct Assessment of Functional Status)	6 months
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Sackley et al. [36]	Cluster-randomized controlled trial	<p>Setting: 228 care homes, United Kingdom</p> <p>Sample size: N=1042 (IG=564, CG=474)</p> <p>Sample: mean age 82.9 years (SD 9.2); 64% female, mean MMSE IG 13.6 (SD 9.5), mean MMSE CG 13.2 (SD 9.0), history of stroke or transient ischemic attack</p>	Occupational therapy intervention	<p>Assessment of functional activities, patient-centered goal setting and sessions with occupational therapists, where personal ADLs were trained. Environmental adaptations, according to therapist's professional opinion, to promote safe and effective practice of ADLs. Workshops for care home staff, which focused on facilitating residents' functional activity, mobility and use of adaptive equipment, were also offered.</p>	<p>Therapist sessions depended on the residents' wishes and goals (mean 5 sessions per resident, median duration 30 minutes) for three months.</p>	Usual care without occupational therapy	<p>Functional activity in ADLs (Barthel Index), mood (Geriatric Depression Scale-15), mobility (Rivermead Mobility Index), health related quality of life (Euro-QoL EQ-5D-3L questionnaire)</p>	12 months
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Andersen et al. [37]	Individual randomized controlled trial	<p>Setting: 9 nursing homes, Denmark</p> <p>Sample size: N=50 (IG=28, CG=22)</p> <p>Sample: mean age IG 84.4 years, CG 83.5 years, 70% female, physical frailty</p>	Individual training to enhance perceived autonomy	Interviews on individual needs/ desires handed over to the staff. Staff was called upon to plan care/ intervention programs according to residents' wishes (eg, ADLs, mobility, social/ mental or creative activities).	Initial interview to assess needs/ desires, then interventions integrated into nursing home activities for 12 weeks	Usual care	Perceived autonomy sub-dimension in the Measure of Actualization of Potential test)	24 weeks
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Vinsens et al. [38]	Individual randomized controlled trial	<p>Setting: 4 nursing homes, Norway</p> <p>Sample size: N=98 (IG=48, CG=50)</p> <p>Sample: mean age 85.7 years (SD=8.2), 76% female, mean MMSE 12.5 (no SD), 90% incontinent</p>	<p>Training program with physical activity and ADL training</p>	<p>Training program in groups or individual, when needed, was provided by physiotherapists and occupational therapists from outside the nursing homes. Personal treatment goals were elicited for each resident.</p>	<p>Group and individual training for 3 months. No data on the duration or frequency.</p>	<p>Usual care</p>	<p>Functional status related to toilet habits (degree of dependency), urinary incontinence (24-hour pad-weighting test)</p>	3 months
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Park & Chang [39]	Individual randomized controlled trial	Setting: nursing home, South Korea	Health coaching self-management program	Group education, group exercises and individual counselling for goal setting. Group education focused on providing knowledge on disease and management strategies and motivating self-management behaviors. A group exercise was provided separately from the group education. Individual counselling and goal setting was based on residents' needs and motivation.	Once a week group health education (1h), group exercises (1h) and individual counselling (20 minutes) for eight weeks.	Usual care	Self-management behavior, self-efficacy and health status (Chronic Disease Self-Management Program Questionnaire)	8 weeks
		Sample size: N=50 (IG=25, CG=25)						
		Sample: mean age 77.6 years (SD=6.5), 79% woman, at least two chronic diseases (72% stroke, 14% Parkinson's disease, 14% dementia)						

Park et al. [40]	Clinical controlled trial (without randomization)	Setting: nursing home, South Korea	Group education and individual counseling on self-management	Education based on individual needs and preferences. Group education focused on providing adequate knowledge and motivating self-management. Sessions were interactive including the discussion of personal experiences. Customized counselling focused on the developing of strategic plans for lifestyle changes. Used strategies were motivational interviewing, barrier identification, additional education on the topics and guiding problem-solving.	Once a week group education (60 minutes) and individual tailored counselling (30 minutes) for eight weeks.	Usual care	Blood pressure, self-care behavior (Scale of Self-Care Behaviour of Hypertension), exercise Self-efficacy (Self-Efficacy for Exercise Scale Medication adherence)	8 weeks
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Resnick et al. [41]	Case series	Restorative Care	<p>Setting: nursing home, USA</p> <p>Sample size: N=21</p> <p>Sample: mean age 88.4 years (SD 4.9), 93% female, mean MMSE 23.0 (SD 4.3)</p>	<p>Educating and encouraging residents and nursing assistants. Nursing assistants attended educational sessions or received educational material. Restorative Care activities for residents consisted of individual goal setting with residents, verbal encouragement, posters with benefits of RC in residents' room, visual cues to motivate task performance.</p>	<p>Integrated into nursing practice for 4 months</p>	<p>No control intervention</p>	<p>Self-efficacy (Self-Efficacy for Functional Ability scale), patient's performance of activities (Barthel Index), quality of life (Dementia Quality of Life Instrument), outcome expectations for functional ability (Outcome Expectations for Functional Ability scale)</p>	4 months
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Bonanni et al. [42]	Case-series	Setting: nursing home, USA	Restorative Care	Implementing Restorative Care nurses (n=6 for a 148-bed facility). Residents program included ADL training, range of motion, balance and strength training, transfer and mobility training and splint use.	Not clear; program lasted between 6 and 20 weeks (on average 12)	No control intervention	Ability to perform ADLs, locomotion and walking, indicators of depression, bowel and bladder incontinence, contractures, falls (all outcomes were measured with the Minimum Data Set)	6 months
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SD=standard deviation, IG=intervention group, CG=control group, MMSE=Mini-Mental State Examination, ADL= activity of daily living

The baseline characteristics of the intervention and control groups were comparable in four Level 2 studies [33,36,37,39]. In the study by Williams et al. [35], significant differences between the groups were found in one primary outcome (Every Day Problems Test for Cognitively Challenged Elders score), but these were controlled in analysis models that were used to examine change over time. Significant differences with regard to the outcomes expectations and number of diagnoses were detected in the study by Resnick et al. [34]. According to authors, the results did not differ when the outcomes had been controlled.

In all Level 2 studies, there was no indication that participants in different groups received additional treatments apart from the interventions. In the study conducted by Andresen et al. [37], the authors mentioned that it might be challenging for the staff to distinguish participants from one another in terms of intervention, which may have biased the results.

The analyses were conducted according to an intention-to-treat paradigm in several trials, but a comprehensible description of how the paradigm was performed was only available in two trials [34,37]. The data analyses described in the remaining studies were designated as per-protocol analyses, since no descriptions of the intention-to-treat paradigm were made, and the dropouts were evidently not included in the follow-up analyses [33,35,36,38,39]. Blinding of the outcome assessor was described in four trials [33,36,37,39].

The study by Park et al. [40] was assigned as a Level 3 study because no randomization was conducted. As there were no dropouts from this study, an intention-to-treat analytical method is presumed to have been used. The study by Vinsnes et al. [38] had to be downgraded due to the presence of several serious flaws, such as the fact that no baseline characteristics were illustrated.

There were several limitations to the study by Bonanni et al., such as the lack of information about the inclusion and exclusion criteria and the number of residents included in the outcome analysis [42].

Table 4: Quality of the included studies with control groups (including levels of evidence)

Internal validity of the therapy studies [26]	Resnick [33]	Resnick [34]	Williams [35]	Sackley [36]	Anderson [37]	Park [39]	Park [40]	Vinsens [38]
Was the assignment of patients (clusters) to treatments <u>randomized</u> ?	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Were the groups <u>similar</u> at the beginning of the trial?	Yes	No ^a	No ^b	Yes	Yes	Yes	Yes	Unclear
Other than the allocated treatment, were groups treated equally?	Yes	Yes	Yes	Yes	Yes ^c	Yes	Yes	Yes
Were all patients who entered the trial accounted for, and were they analyzed in the groups to which they were randomized?	No	Yes	No	No	Yes	No	Yes	No
Were measures <u>objective</u> or were the patients and clinicians ' <u>blinded</u> ' to the treatment received?	Yes	Unclear	Unclear	Yes	Yes	Yes	No	Unclear
Levels of Evidence [27]	2	2	2	2	2	2	3	3 ^d

^a Baseline of significant differences (although authors stated that results did not differ once controlled). ^b Baseline group differences, but controlled using analytical models examining change over time. ^c The control group may also potentially have received the intervention. ^d Level of evidence downgraded due to serious flaws in the study.

Table 5: Quality of the case-series studies included (including levels of evidence)

The three-minute checklist [28]	Resnick [41]	Bonanni [42]
Clear study objective/question	Yes	Partially
Well-defined study protocol	Yes	Partially
Explicit inclusion and exclusion criteria for study participants	Yes	No
Specified time interval for patient recruitment	No	No
Consecutive patient enrolment	Unclear	Unclear
Clinically relevant outcomes	Yes	Yes
Prospective outcome data collection	Yes	Yes
High follow-up rate	No	Unclear
Levels of Evidence [27]	4	4

Effects of the interventions

Empowering outcomes addressed in the intervention studies could be categorized into self-efficacy, self-care activities/management/behavior, autonomy, and outcome expectations.

Self-efficacy could be significantly improved by interventions that included interactive group education and individually tailored counseling based on needs and preferences [39,40]. The restorative care and function-focused care interventions had no significant effects on residents' self-efficacy [33,34,41].

Outcomes according to self-care were those most commonly examined in the intervention studies. These could also be significantly improved by group education and individual counseling, and in addition, self-care competencies and skills in everyday problem-solving improved significantly by conducting reasoning exercises and training in problem-solving [35,39,40]. A long-term effect on physical function in activities of daily living (ADLs) could be detected as a result of function-focused care interventions, but the effect did not immediately take place after providing the intervention [34]. Bonanni et al. [42] reported an improvement in the performance of ADLs during the 3- and 6-month follow-up, but no P-value was stated. No significant improvement in self-care was observed as a result of restorative care interventions, occupational therapy

intervention, and physical activity and ADL training designed to enhance independency in toilet habits [33,36,38,41].

Neither perceived autonomy nor outcome expectations could be significantly improved by any educational intervention [33,34,37,41]. The main results of the interventions are presented in Table 6.

Discussion

Only a few studies could be identified that described educational interventions to empower nursing home residents, citing mainly good-to-moderate evidence. However, despite the low number of studies identified, meaningful preliminary findings can be summarized. The results of our findings are shown in Figure 2 in the form of preliminary recommendations.

Several intervention studies of good quality demonstrated that older nursing home residents can be effectively educated to achieve significant effects, mostly with regard to outcomes related to self-care behavior. Effective interventions were quite variable, but all interventions were (at least in part) individually tailored, interactive, continuous (ie, not conducted at a single time point), encouraging, and motivational. These seem to be the most important and effective strategies to use when educating older residents.

One core strategy that was used in several studies was to motivate and encourage residents. Providing positive feedback can strengthen the residents' personal resource and reduce barriers that hinder their mastery of a task or independence [24]. Qualitative studies have shown that many nursing home residents lack confidence to do tasks by themselves, and that positive reinforcement is needed [9,10]. In order to be able to motivate and encourage residents, nurses must be themselves motivated and empowered [43]. Education of the nursing staff on motivational and encouraging techniques was part of the intervention studies by Resnick et al. [33,34].

Table 6: Results of intervention studies included according to empowerment outcomes (ranked by levels of evidence)

Intervention	Self-efficacy	Self-care activities/behavior/management	Autonomy	Outcome expectations
Individual training to enhance perceived autonomy [37]			Perceived autonomy: no significant improvement (no P-value)	
Health coaching self-management program [39]	Self-efficacy: significant improvement between groups by time (P = 0.036)	Exercise behavior: significant improvement between groups by time (P<0.001)		
		Cognitive symptom management: significant improvement between groups by time (P = 0.044)		
		Mental stress management: significant improvement between groups by time (P = 0.047)		
Restorative Care [33]	Self-efficacy: no significant improvement (no P-value)	Performance of ADLs: no significant improvement 4- or 12-month follow up: (each time point P = 0.51)		Outcome expectation for functional ability: no significant improvement (no P-value)

<p>Function Focused Care [34]</p>	<p>Self-efficacy: no significant improvement (no P -value)</p>	<p>Physical Function in ADLs: significant lower decline at 12-month follow up (P = 0.01), no difference at 4-month follow up (P = 0.49)</p>	<p>Outcome expectation for functional ability: no significant improvement (no P -value)</p>
<p>Occupational therapy intervention [36]</p>	<p>Functional activity in ADLs: no significant improvement at 3-, 6- and 12-month follow ups (P = 0.48, P = 0.99, P = 0.58)</p>	<p>Self-care competencies: significant improvement post-intervention (P<0.01)</p>	<p>Skills in everyday problem solving: significant improvement post-intervention (P<0.01) and at 3-month follow up (P<0.01)</p>
<p>Reasoning Exercise in Assisted Living [35]</p>	<p>Exercise self-efficacy: significant improvement (P = 0.003)</p>	<p>Self-care behavior: significant improvement (P = 0.005)</p>	
<p>Group education and individual counselling on self-management [40]</p>			

<p>Training program with physical activity and ADL training [38]</p>	<p>Independency in toilet habits : no difference between groups (no P-value)</p>	<p>Outcome expectation for functional ability: no significant improvement (P = 0.92)</p>
<p>Restorative Care [41]</p>	<p>Self-efficacy for functional activities: no significant improvement (P = 0.43)</p>	<p>Performance of ADLs: no significant improvement (P = 0.08)</p>
<p>Restorative Care [42]</p>	<p>Performance of ADLs: improvement 3- and 6-month follow ups (no P-value, at 6-month follow-up, 33% of residents had improved scores)</p>	

Abbreviation: ADL, activity of daily living.

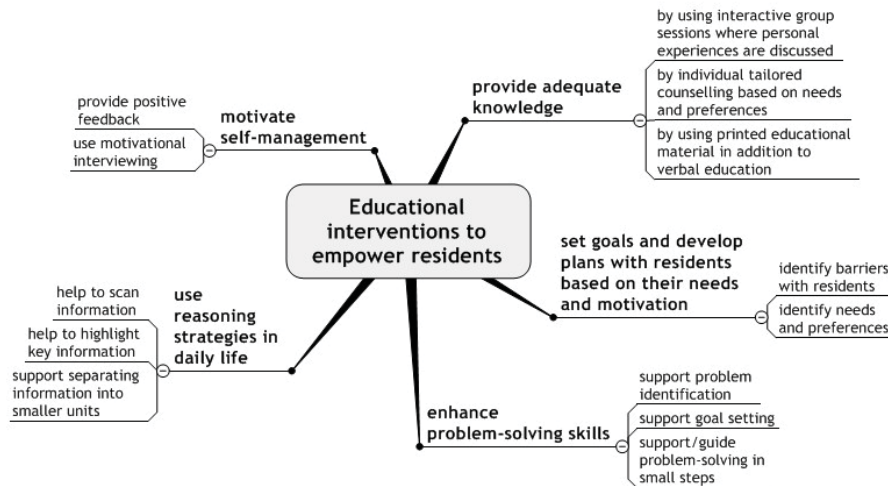


Figure 2: Summary of effective educational interventions to empower nursing home residents

However, these motivational and encouraging techniques alone cannot significantly improve self-efficacy, as the studies by Resnick et al. [33,34] have shown. By additionally setting individually tailored goals and developing strategic plans with residents based on their needs, significant improvement in self-efficacy could be reached [39,40]. This combination of strategies may be crucial to affect self-efficacy. Although the high-quality study by Andresen et al. [37] did not report significant effects on perceived autonomy, the study showed that older nursing home residents are able to clearly express wishes. Gaining insight into the older patients' needs, priorities, and experiences is also mentioned and of high importance in reviews on principles of learning in older people [6,24,25]. A fundamental skill that nurses should develop, in order to ensure resident-centeredness according to Hage and Lorensen, is to be able to listen to the older people and be willing to respect their experiences, values, interests, and goals [24]. This requires nurses to treat all residents as equal, an ascribed behavior of nurses [44]. Providing resident-centered care, in turn, can positively impact the nurses' job satisfaction and work conditions [23].

Interventions that were integrated into daily life had less significant outcomes than interventions that were based on regular meetings, including group ses-

sions. The more highly structured approach may lead to more benefits for residents, as recent patient education research on diabetes and anaphylaxis has shown [45,46]. Group sessions, in addition, can stimulate communication and support feelings of social belonging, which facilitate empowerment [47]. However, we note that trials with the more highly structured interventions had shorter follow-ups, and no long-term effects were generated. Therefore, the long-term effects of these interventions are still unclear.

In three studies, printed educational materials were used in addition to verbal education. By the provision of different types of education (printed information, verbal education), older persons' learning skills can be matched [25]. This requires analyses of the learning styles/strategies of older people to be conducted during the educational process.

None of the included studies measured empowerment using a scale that had been specifically developed for this task, although such scales are available, six of which are generic and one of which has been designed especially for older people [17,18,48,49]. Furthermore, none of the studies investigated the effects of educational interventions on overall knowledge. This is interesting because attainment of knowledge has been a primary outcome of educational interventions reported for other population groups [50]. Knowledge that helps people meet their needs, expectations, or preferences is seen as fundamental to becoming empowered [51]. As the mean age of the participants in the studies was high, and several studies included cognitively impaired residents, knowledge tests were perhaps not considered appropriate for the target group. Instead, the studies focused on skills, competences, and independency in ADLs.

The level of evidence in the studies included ranged between 2 and 4. Interestingly, the high-quality studies more frequently achieved significant results than studies with lower quality [38,41]. The improved scores in the ADL performance in the study by Bonanni et al. [42] must be interpreted with caution because there were several flaws in the study design. The majority of the included studies were cluster-randomized trials, with facilities as clusters. There was no indication that the participants in the different groups were treated differently apart from the allocated interventions. However, because no information on the "usual care" or the level of standardization of care in the partici-

pating facilities was given, differences in the residents' perception of the care received may have influenced the outcomes.

Neither the occupational therapist visits, which were described in a high-quality study by Sackley et al. [36] nor the individual training to enhance autonomy in the very high-quality study performed by Andresen et al. [37] resulted in observable empowerment. The intervention schedule used in the study by Sackley et al. [36], with mean five sessions over 3 months, could have been too infrequent for the frail nursing home residents, many of whom were cognitively impaired and severely depressed. In the study by Andresen et al. [37], no significant differences in the main outcome, perceived autonomy, were detected between groups, and this may have been due to problems encountered in distinguishing participants from one another in terms of the intervention.

Limitations

Some limitations may have influenced the interpretation of these reported results. On the basis of the available evidence, no consensus on the outcomes of empowerment could be reached. During this study, we used the empowering outcomes described by Heikkinen et al., Gibson, Aujoulat et al., Falkner, and Anderson and Funell [14–19]. This list of terms may be further extended in future studies. According to the core principles of empowerment, self-care activities or self-care management should only be considered to be relevant outcomes of empowerment if they result from a process of self-determination, whereby residents choose their own goals and strategies to reach these goals [17]. Although the residents' could help choose their goals in most of the intervention studies, the degree of self-determination needed to reach these goals was not measured in these studies. Therefore, it is still unclear whether enhanced self-management skills lead to enhanced empowerment.

Conclusion and recommendations

Empowerment is as fundamental to people of all ages as dignity and contributes to successful learning in older nursing home residents. Individually tailored, interactive, continuous, and clearly structured educational strategies, including group education, individual counseling, and the use of motivational and encouragement techniques, may effectively help nursing home residents

become more highly empowered. Preliminary findings have shown that empowering strategies used by nurses can support residents in their personal growth and facilitate their self-determination. Educational interventions can be more effectively adapted to meet residents' needs by analyzing the learning styles/strategies of older people. Further research on empowerment in the nursing home environment is needed. In particular, empowering scales should be used, and correlations between outcomes and measures of empowerment, such as self-determination, should be more carefully assessed.

Disclosure

The authors report no conflicts of interest in this work.

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Chapter 8

General discussion



General discussion

The overall aim of the doctoral thesis was to assess the availability and quality of information material, develop high-quality information material and evaluate newly developed information material from the users' perspectives (residents, family members and nursing staff). In the following chapter, the main results of the thesis will be summarised and discussed, and a critical evaluation of the methods used will be presented. Finally, recommendations for nursing practice and future research will be given.

Summary of the main results

The findings of the **first study** indicated that information material is often not made available to patients and their families in Austrian institutions. The surveyed Dutch hospitals and nursing homes had more information material than the Austrian ones with regard to all examined nursing care problems (pressure ulcers, malnutrition, incontinence and intertrigo). Information material was available in almost every participating Dutch hospital on the topics of pressure ulcers (98%) and malnutrition (95%), which was significantly different from the availability of information material on these topics in Austrian hospitals (20% and 27%, respectively). Dutch nursing homes had significantly more information material on the topic of pressure ulcers than Austrian nursing homes (68% and 10%, respectively). However, even when information material was available at an institution, it was not handed out to the patients/residents and members of their families in two-thirds of the wards in both countries.

In the **second study**, the quality of Dutch and Austrian fall-prevention information material was investigated. The results, measured with the EQIP scale (0-100 points), showed that information material in Dutch hospitals had significantly higher mean EQIP global scores than information material from Austrian hospitals (54 versus 41 points, respectively). The quality of the information material available in nursing homes did not significantly differ between the two countries (57 versus 53 points, respectively). Information material that was available in Austrian nursing homes and addressed the topic fall prevention in nursing homes had the lowest mean EQIP global score (39 points). Subscale analyses indicated that most shortcomings were in the dimensions content and identification data, whereby information on sources of data, patient involvement and financial support was generally lacking.

The **third study** focused on the exploration of users' and caregivers' needs and expectations with regard to fall prevention information and showed that the needs and expectations of the residents and family members differed greatly. Residents wanted short and concise information that included the most important facts about the mitigation of external fall risks and behavior after fall events. In addition, they expressed the feelings that falls were inevitable and that they would be unable to do anything to prevent them. In contrast, family members wanted to receive detailed information about different kinds of fall prevention strategies and be actively involved in fall prevention. Nursing staff emphasized the need to inform family members of the fact that falls are not always preventable. These results demonstrate that different users need different information material. Furthermore, the results indicated a need for nursing care interventions to empower nursing home residents.

In the **fourth study**, the information material was evaluated from the residents', family members' and nursing staffs' perspectives with regard to its understandability and usability. The results showed that residents and family members had no difficulties understanding the material. The layout was also identified as supportive to the learning success of residents and family members. Nursing staff detected some ambiguities and incongruities in the existing nursing care practices. With regard to usability, the information material was found to be informative, helpful and motivational.

In the **fifth study**, a systematic review was conducted to evaluate the educational interventions used to empower nursing home residents. Educational interventions identified were group education sessions, individual tailored counseling sessions, motivational and encouragement strategies, goal setting with residents and the development of plans to meet defined goals. Significant effects on self-efficacy and self-care behavior were reported as a result of the interventions, which included interactive group education and individual tailored counseling based on the residents' needs and preferences. In addition, self-care behavior was observed to significantly increase in response to function-focused care and reasoning exercises. Effective interventions were all individually tailored, interactive, continuous (conducted at several time points), encouraging and motivational. Additionally, to pass education on to residents, an emphasis was placed on teaching nursing staff specific motivational and encouraging techniques through several effective studies.

Discussion of the main results

Availability and quality of information material

The results of the first and second study showed that information material is not available with regard to several nursing care problems by default in Austrian and Dutch hospitals and nursing homes, with the exception of information material on pressure ulcers and malnutrition in Dutch hospitals. In addition, the availability of such materials does not guarantee their use. The results of **study one** showed that even if information material was available at the institution, it was used in only one-third of the wards. Similar results had been reported by Cashin et al. [1], who stated that although the majority of nurses were aware of the existence of information material, 46% did not use it during consultations, and 40% did not recommend it during consultations. During general practitioner consultations, information material is also not routinely provided to patients [2], although patients would like health professionals to provide and clarify such materials [3].

The lack of use of information material may be due to the fact that many materials are of low quality, and the informational content often does not match the clinical practice [4-7]. To some extent, the use of information material also depends on the individual nurse. Kääriäinen and Kyngäs [8] found that more experienced nurses use information material more often, and nurses who spent more time on patient education have more access to up-to-date information material. Nurses' beliefs and knowledge are important factors that influence all patient educational activities [9]. These aspects need to be taken into consideration when planning educational interventions.

Availability and quality of information material: country comparison

Dutch hospitals and nursing homes had more information material available than Austrian institutions with respect to all examined nursing care problems. Dutch fall prevention information material had higher quality-scores, especially in the subdomain 'content'. The great efforts made in recent decades to emphasize patient education in Dutch organisations [10-12] may have influenced the availability and quality of these materials. In Dutch hospitals, special coordinators for patient education are responsible for the organization of this education and the development of information material [12]. Such structures do not exist in Austria. This means that there is no official responsible

person for patient education present in Austrian hospitals. However, there is still room for improvement in the quality of Dutch information material as well. For example, no graphs were included in nearly three-quarters of Dutch fall prevention information materials. Studies have shown that people with low levels of health literacy, in particular, pay more attention to and more efficiently recall health information when graphs are presented in close association with the written text [13].

Shortcomings for both countries were found in the EQIP scales' domain *identification data*. For example, information on funding was not provided in the materials. This information is important, because funding sources can influence the content of the information presented [14]. Not a single piece of fall prevention information material from Austria or the Netherlands stated if and how patients/residents were involved or consulted during the development of the materials. This implied that the users' perspectives were not taken into account during the development of these information materials.

User involvement in the development and evaluation of information material

In the present thesis, users were involved at two points in time: at the beginning, to explore their needs and expectations, and at the end, to evaluate the information material.

Needs and expectations of users regarding fall prevention information material

Residents expressed few needs and expressed little interest with regard to fall prevention information. This is surprising, because falls are part of the everyday life of nursing home residents [15,16]. Residents argued that falls were inevitable and unavoidable. Similar results were found when older people living in the community were interviewed [17]. This negative perception regarding the benefit of fall prevention intervention is problematic, because residents' personal perception influences their intentions to participate in fall prevention interventions [18-20]. Moreover, nursing staff also had concerns with regard to the effectiveness of several fall prevention interventions in their nursing home population. They argued, for example, that physical interventions were useless, due to residents' cognitive declines. Additionally, these beliefs may have influenced residents' attitudes.

Family members, unlike residents, expressed many needs and expectations with regard to fall prevention information and wanted to be actively involved in fall prevention. In addition to receiving practical tips, family members were interested in the effectiveness of fall prevention information including effect sizes. This information is part of the main content of evidence-based information material [21,22] and must be obtained to make informed decisions [23]. Research has showed that family members often see themselves as the advocate of the resident and feel responsible for decision-making and communicating between residents and nursing staff [24].

The nursing staff members' recommendations included only a few important points about residents' information material and comprehensive information for family members. They recognized that the information needs differed and that one piece of information material could not address all information needs. However, the influence of their personal beliefs regarding the uselessness of many fall prevention interventions is a serious matter, in particular because the meaningfulness of these fall prevention interventions has been scientifically proven [25-30]. Nurses may have reacted in this way to avoid additional work loads. Research had showed that nurses in nursing homes experience high levels of physical and emotional strain and suffer from work-related exhaustion [31]. Furthermore, nursing staff were concerned about giving family members too much information. They felt solely responsible for the care of and decision-making for the older people. This could be explained by the rather paternalistic communication style common to the nursing home, which often prevails among nursing home staff [32]. However, such a communication style is not in line with evidence-based practice [33] and is not in agreement with shared decision-making [34]. Residents'/families' participation in decision-making in nursing care is regarded as a prerequisite for good clinical practice [23].

Users' evaluations of information material

In contrast to other findings on the evaluation of information material [4,35,36], residents and family members had no difficulties understanding the materials. The motivational messages encouraged residents and family members to engage in fall prevention. Yardley et al. [36] reported that some fall prevention information provokes anxiety in older people. Therefore, the motivational messages are integral to empowering people [31,34,35].

The results reported in the international literature have shown that the revision of information material based on users' evaluations led to improvements with regard to the layout, language and more relevant practical information [37]. During this user evaluation, ambiguities were also detected, and suggestions for improvement were provided by residents, family members and nursing staff. This feedback was of great value during the revision of the information material to make it more user-oriented.

Interventions to empower residents in patient education

To support the implementation of the fall prevention information material, a focus was placed on empowering interventions in patient education in **study five**. Motivation and encouragement were strategies that were frequently used to empower nursing home residents. This is especially important in fall prevention, because many older people do not feel as though they can actively do something to prevent falls, as the results of **study three** and another investigation had shown [17]. In the most studies discussed in the review in **study 5**, nurses verbally provided motivation and encouragement. However, it is also recommended to include motivational statements [38] and encouraging messages [39] in written information material. The motivation and encouragement of residents can only be performed by motivated and encouraged nursing staff. Several interventions identified in the systematic review focused on the education of nursing staff, in addition to the education of residents, to help them provide motivational nursing care.

To increase self-efficacy in nursing home residents, motivation and encouragement were not enough. Effective interventions were additionally planned, continuously and structured (e.g., in group- and individual-tailored sessions). This was contrary to real nursing care practice, where education is mostly done in an unplanned and spontaneous way [9]. Also, it has been recommended to introduce information material in a planned manner in the context of patient education [40]. Handing out information material only has minor beneficial effects on the users [41].

Another important strategy that was used to support empowerment was goal setting together with residents based on their needs. Setting goals in a negotiated manner was also found to be an effective teaching strategy for use with patients living in the community or in hospital settings [42]. The results of the study conducted by Andresen et al. [43] showed that nursing home residents

were able to clearly express wishes and goals. For the effective implementation of this strategy, nurses must listen to residents and be willing to respect their experiences, values, interests and goals – both fundamental skills for nurses [44].

Methodological reflection - strength and limitations

In this chapter, a critical reflection on the methods used in this doctoral thesis will be presented, focusing on the main strengths and limitations of the studies that have to be considered while interpreting the results.

Strengths of the studies conducted

An overall strength of the thesis was that a comprehensive picture of the development process of information material has been provided which can help other developers take the various developmental steps into account.

The main strengths of the individual studies are described below:

Study 1:

1. The standardized measurement, which included a comprehensive standardised questionnaire and a standardized procedure, ensured the determination of valid data and allowed the authors to compare data between nations.

Study 2:

1. The inclusion of all Austrian and Dutch hospitals and nursing homes as well as the intensive efforts to increase the response rate led to the collection of large samples from both countries (in total: 239 hospitals and 382 nursing homes).
2. The evaluation of each piece of information material by two researchers independently of one another, and the development of assessment rules to evaluate the materials ensured the reliability of the assessment. The high intra-class correlation coefficients (ICC = 0.98 for Austrian and 0.88 for Dutch materials) confirmed the inter-rater reliability.

Study 3 and study 4:

1. The focus group discussions which were held separately with residents, family members and nursing staff allowed the comparison of the different needs and expectations.
2. Consistency is an important quality criterion in qualitative content analysis [45]. This was the focus of both studies in that an appropriate part of the data was categorized independently by two coders. The level of agreement among the double-checked codings was high in both studies (e.g., Cohen's Kappa = 0.911 in Study 4).
3. The results from the various nursing homes that participated were similar (nearly all codes in the coding frame were retrieved from the respective other transcripts), which indicates that a valid coding frame and data saturation is present.

Study 5

1. The systematic approach taken to identify, select, critically appraise and analyse studies ensured that the methods were replicable and resulted in the production of meaningful findings regarding the effectiveness of empowering interventions.
2. The comprehensive literature search also included sources that enabled the identification of grey literature. This diminished the probability of publication bias.

Limitations of the studies conducted

Study 1:

1. In the secondary data analysis, the data was restricted to the nursing care problems in the questionnaire. Therefore, no information on the availability and distribution of information material regarding fall prevention could be gathered in study one.
2. The low participation rate of Austrian hospitals and nursing homes (N=50) in comparison to Dutch ones (N=379) limits the representativeness of the sample for Austrian hospitals and nursing homes.

Study 3 and study 4:

1. A convenience sample of residents, families and nursing staff took part in the focus group discussions. Therefore, a sampling bias toward par-

ticipants that were more interested in fall prevention cannot be excluded.

2. In study four, only two focus group discussions with each constituted group, instead of the three focus groups recommended for product development [46], were conducted which possibly influences the results.

General methodological reflection

To **measure the quality** of fall prevention **information material** from Austria and The Netherlands, the Ensuring Quality Information for Patients (EQIP) scale [47] was used in **study 2**. The EQIP scale is a psychometrically tested tool with appropriate concurrent- and criterion-related validity and good inter-rater reliability [47,48]. Although the tool was chosen in a justified manner, important domains such as *Motivation or Actionability* are missing. From a current perspective, these domains are of special importance and should be considered during the development of materials created to empower people. More recently published tools include these domains [38,39] and adding them would valorise the results.

To explore needs and expectations and evaluate the information material, **focus group discussions** were conducted as part of **studies 3** and **4**. Focus group discussions are influenced by group dynamics, and positive dynamics encourage participants to question one another's responses, elicit clarification and explore caveats to each other's statements [49]. In the present thesis, focus group discussions were deliberately held separately with residents, family members and nursing staff to avoid artificially introducing power disparities, as recommended by Krueger and Casey [46]. Other researchers (e.g., Fage-Butler [50]), however, recommend the use of a multidisciplinary focus-group format for the development of information material, in which various people are included (patients, clinicians, researchers). This arrangement is thought to elicit the patients' perspectives more effectively. In one publication, a multidisciplinary focus group format was used to develop information material [51]. The multidisciplinary focus group format led to the creation of tensions related to power disparities among the researchers, clinicians and patients [51]. This result supports the choice of the monodisciplinary focus group format as part of this research.

Currently, no consensus has been made on the **outcomes of empowerment**. Therefore, the outcomes used to identify intervention studies were defined

based on selected articles on empowerment in **study 5**. Certain empowering outcomes may be absent from the list of terms used and this list of terms may be expanded in future studies.

Recommendations for future research

The findings of this research support the following recommendations for future research:

Develop a comprehensive tool to measure the quality of information material

There is no tool available that can be used to appraise information material which includes all postulated quality criteria for information material. Recently published tools include important domains with regard to empowerment [38,39], but do not address quality criteria with regard to identification data (e.g., user involvement during the development). In turn, quality criteria with regard to identification data have been included in formerly used tools [48,52]. As many tools are available, the existing tools may be supplemented with missing domains and tested for their psychometric properties. This would allow researchers and health care professionals to evaluate information material using one comprehensive tool.

Examine the effectiveness of fall prevention information material

In the context of this thesis, fall prevention information material was investigated with regard to its usability and understandability. The effectiveness of this information material in the context of patient education was not a focal point. Therefore, additional experimental research is needed to examine the effects of the information material on knowledge, fall protective behaviour and falls and injuries due to falls.

Focus on supporting empowerment in nursing homes

Little research has been conducted on empowerment in nursing home residents. Although tools to assess empowerment in older people are available [53], no study could be identified in which such a tool was used. Furthermore, several empowering outcomes (e.g., self-determination, knowledge) were not addressed in a single intervention study. Therefore, further research on ways to support empowerment in nursing home residents is needed, especially the

use of empowerment tools and directing empowering outcomes such as self-determination.

Recommendations for nursing practice

The studies revealed three areas of potential improvement in nursing practice, which support the following recommendations for nursing practice:

Use high-quality, information material for patient education

The provision of different learning styles (verbal and written information) is of great importance, in order to match person individual learning skills [54]. Therefore, information material that describes nursing care problems should be both made readily available in hospitals and nursing homes and actively used in the education of patients/residents and their families. It is of the utmost importance that the quality of the information material used is high. Nursing professionals must have appropriate skills so that they can critically assess information material and distinguish between high- and low-quality materials. Additional education for nurses in patient education would allow them to gain these skills.

Integrate empowering interventions when implementing information material in the context of patient education in nursing homes

Because residents often do not feel empowered enough to prevent falls, empowering interventions should be considered as supplementary strategies when implementing the information material in the context of patient education. These interventions can include, for example, motivating and encouraging residents to contribute to their care. Residents must be actively involved in self-education. This can be supported, for example, by giving step-by-step cues to help them perform tasks or return demonstrations. Patients should be educated on an individual basis according to their personal needs. The content of the information material may be individualized by placing individual messages in free spaces and using only the material that is relevant for the particular resident. Goal setting together with residents can help ensure that individual needs will be met. In summary, the implementation of patient education in nursing home residents requires a structured, planned process, whereby different strategies are combined including face-to face communication and the provision of written information.

Empower and motivate nursing staff

To effectively offer education to patients, nursing staff need to feel motivated and empowered. If nurses do not feel empowered, it is impossible for them to empower others [55]. Educating nurses to increase their motivation and enable them to empower residents were basic components of several empowering interventions that were detected in study five. Nurses' personal beliefs regarding the uselessness of some fall prevention interventions have contributed to the fact that Austrian nursing home nurses do not always feel encouraged and motivated to educate patients about fall prevention. Therefore, the respective health institutions need to provide nurses with strategies that will help them feel empowered and motivated enough to conduct fall prevention interventions and, in turn, encourage residents to contribute to their own care.

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Chapter 9

Summary



Summary

The overall aim of this doctoral thesis was to assess the availability and quality of information material, develop high-quality information material and evaluate newly developed information material from the perspectives of the residents, family members and nursing staff.

The **first chapter** provides background information on information material in the context of patient education and describes the theoretical framework of the thesis. Additionally, the aims of the individual studies and the outline of the thesis are described.

In the **second chapter**, the methodological aspects used in studies 1 to 5 are presented in a tabular overview.

Chapter three includes a description and comparison of the availability and distribution of information material with regard to several nursing care problems (pressure ulcers, malnutrition, incontinence and intertrigo) in Austrian and Dutch hospitals and nursing homes. A secondary data analysis of multi-centre, cross-sectional surveys performed in 2010 and 2011 was conducted. Head nurses and nurses performed data collection using standardized questionnaires and in a standardized manner. A total of 50 Austrian and 379 Dutch hospitals and nursing homes took part in the survey. With regard to the nursing problems examined, more materials were available from Dutch hospitals and nursing homes than in these facilities in Austria. The difference between the countries was significant for the nursing care problems of pressure ulcers (74% versus 16%) and intertrigo (14% versus 2%). However, even when information material was available, it was not distributed to patients/residents and their families in two-thirds of the wards in both countries. Based on the results of this study, a need for information material that address nursing care problems in Austria and, furthermore, a need to investigate the quality of existing information material were identified, as this aspect could have influenced the distribution of information material in both countries.

Chapter four illustrates the quality of fall prevention information material which was available in Austrian and Dutch hospitals and nursing homes. A comparative descriptive study design was used to evaluate the information material. The information material (n = 77) was independently evaluated by two assessors using the 36-item Ensuring Quality Information for Patients

(EQIP) scale. The results showed that the information material available in Dutch hospitals had significantly higher mean EQIP global scores than the information material available in Austrian hospitals (54 versus 41 points out of 100 possible points). The quality of the information material available in nursing homes did not significantly differ between the two countries (57 versus 53 points out of 100 possible points). Information material that was available in Austrian nursing homes and addressed the topic of fall prevention in nursing homes achieved the lowest mean EQIP global score (39 points out of 100 possible points). Subscale analyses indicated that the greatest shortcomings were in the dimensions content and identification data, with generally lacked information on sources of data, patient involvement and financial support. The low quality of Austrian fall prevention information material in nursing homes indicates that there is a need for new development of such information material.

In **Chapter five**, the needs and expectations of nursing home residents, family members and nursing staff with regard to fall prevention information material were explored and compared. Focus groups were separately carried out with 25 residents, 12 family members and 14 nursing staff from three randomly selected nursing homes. Qualitative content analysis was used to analyse the data using a concept-driven coding frame. The results showed that that needs and expectations of residents and family members differed greatly. Residents only wanted to be informed about how to deal with extrinsic fall risks and learn coping strategies that could be use after a fall event. In addition, they expressed the feeling that falls are inevitable and felt unable to do anything to prevent them. In contrast, family members wanted to receive detailed information about different kinds of fall prevention strategies and be actively involved in fall prevention. The nursing staff felt it was of special importance to stress that not all falls are preventable even if preventive measures are taken. Because the needs and expectations of the users differ substantially, one piece of information material cannot cover all postulated criteria and different types of information material must be presented to residents and family members. Furthermore, the results indicated that nursing care interventions are needed to empower nursing home residents.

Chapter six describes the evaluation of the newly developed fall prevention information material on the basis of its understandability and usability from the users' perspectives. A qualitative study was conducted with focus groups of targeted users (residents, family members and nursing staff). A content analy-

sis using a concept- and data-driven coding frame was used for data analyses. A total of 32 participants participated in six focus group discussions. Residents and family members had no difficulties understanding the information material and tried to apply the content to their individual situations. Nursing staff noted some ambiguities and incongruities with respect to their nursing care practice. By involving users in the development of information material, this had a high acceptance rate and motivated users to address the topics.

Chapter seven includes an illustration of the preliminary findings on educational interventions that can be used to empower nursing home residents. A systematic literature review was conducted by searching several databases, reference lists and sources to identify grey literature. Two authors independently appraised the quality of the studies found and assigned levels of evidence. The results of the studies were grouped according to the most important empowering outcomes and described narratively. The main educational interventions used to empower nursing home residents were group education sessions, individually-tailored counseling, strategies to improve motivation and encouragement, goal setting with residents and the development of plans to meet defined goals. Significant positive effects on self-efficacy and self-care behavior were reported as a result of the interventions, which included interactive group education and individually-tailored counseling based on residents' needs and preferences. Self-care behavior could be significantly increased by function-focused care and reasoning exercises. Effective interventions were all customized, interactive, continuous (conducted at several time points), encouraging and motivational. The results of the review showed that focusing on empowerment contributes to successful learning in older nursing home residents.

In **chapter eight**, the results of the studies are briefly summarised and the main results are discussed. Additionally, a critical overview of the methods applied is given. Finally, recommendations for nursing practice and future research are stated.

Chapter 10

Zusammenfassung



Zusammenfassung

Das übergeordnete Ziel dieser Doktorarbeit war es, die Verfügbarkeit und Qualität von Informationsmaterialien zu überprüfen, qualitativ hochwertige Informationsmaterialien zu entwickeln und diese neu entwickelten Informationsmaterialien aus Sicht von BewohnerInnen, Angehörigen und Pflegepersonen zu evaluieren.

Das **erste Kapitel** bietet Hintergrundinformationen zu Informationsmaterialien und PatientInnenbildung und beschreibt den theoretischen Rahmen der Arbeit. Des Weiteren werden die Ziele der jeweiligen Studien angeführt und eine Übersicht über die Doktorarbeit gegeben.

Im **zweiten Kapitel** werden verwendete methodische Aspekte der Studien 1 bis 5 in einer tabellarischen Übersicht dargestellt.

Kapitel drei beschreibt und vergleicht die Verfügbarkeit und Aushändigung von Informationsmaterialien zu ausgewählten Pflegeproblemen (Dekubitus, Mangelernährung, Inkontinenz und Intertrigo) in österreichischen und niederländischen Krankenhäusern und Pflegeheimen. Eine sekundäre Datenanalyse von multizentrischen Querschnittstudien, aus den Jahren 2010 und 2011, wurde durchgeführt. Die Daten wurden von Pflegedienstleitungen und diplomierten Pflegekräften mit standardisierten Fragebögen und in standardisierter Art und Weise erhoben. Insgesamt nahmen 50 österreichische und 379 niederländische Krankenhäuser und Pflegeheime an der Erhebung teil. In Bezug auf die untersuchten Pflegeprobleme zeigte sich, dass Informationsmaterialien häufiger in niederländischen Krankenhäusern und Pflegeheimen verfügbar waren als in Österreichischen. Der Länderunterschied war signifikant für die Pflegeprobleme Dekubitus (74% versus 16%) und Intertrigo (14% versus 2%). Jedoch wurden, auch wenn Informationsmaterialien vorhanden waren, diese in zwei-drittel der Abteilungen nicht ausgehändigt, sowohl in Österreich als auch in den Niederlanden. Basierend auf den Ergebnissen dieser Studie, wurde der Bedarf zur Entwicklung von Informationsmaterialien zu Pflegeproblemen in Österreich aufgezeigt. Darüber hinaus wurde dargestellt, wie wichtig es wäre, die Qualität von Informationsbroschüren zu prüfen, da diese möglicherweise die Aushändigung von Informationsmaterialien in beiden Ländern beeinflusst hat.

Kapitel vier zeigt die Qualität, von in österreichischen und niederländischen Krankenhäusern und Pflegeheimen verfügbaren Informationsmaterialien zum Thema Sturz, auf. Zur Evaluierung der Informationsmaterialien wurde ein vergleichendes, beschreibendes Studiendesign verwendet. Informationsmaterialien (n=77) wurden von jeweils zwei ForscherInnen, unabhängig voneinander, mit der 36-Item Skala *Ensuring Quality Information for Patients* (EQIP) bewertet. Die Ergebnisse zeigten, dass Informationsmaterialien, die in niederländischen Krankenhäusern verfügbar waren, signifikant höhere EQIP Gesamtdurchschnittswerte erreichten, als Informationsmaterialien die in österreichischen Krankenhäusern verfügbar waren (54 versus 41 von insgesamt 100 möglichen Punkten). Die Qualität von in Pflegeheimen verfügbaren Informationsmaterialien unterschied sich nicht signifikant zwischen den Ländern (57 versus 53 von insgesamt 100 möglichen Punkten). Die niedrigsten EQIP Gesamtdurchschnittswerte erreichten Informationsmaterialien, die in österreichischen Pflegeheimen verfügbar waren und Sturzprophylaxe in Pflegeheimen adressierten (39 von insgesamt 100 möglichen Punkten). Auswertungen der Subskalen zeigten, dass es die größten Mängel in den Dimensionen *Inhalt* und *Identifikationsdaten* gab, wobei Angaben zu den verwendeten Quellen, zur PatientInnenbeteiligung und zur finanziellen Unterstützung generell fehlten. Die niedrige Qualität von Informationsmaterialien in österreichischen Pflegeheimen zeigte die Wichtigkeit der Entwicklung neuer Informationsmaterialien auf.

In **Kapitel fünf** wurden Bedürfnisse und Erwartungen von PflegeheimbewohnerInnen, Angehörigen und Pflegepersonen hinsichtlich Informationsmaterialien zur Sturzprophylaxe, erkundet und verglichen. In drei zufällig ausgewählten Pflegeheimen wurden Fokusgruppendifkussionen, jeweils separat mit 25 BewohnerInnen, 12 Angehörigen und 14 Pflegepersonen, durchgeführt. Zur Datenanalyse diente eine qualitative Inhaltsanalyse mit einem konzeptgestützten Kodierahmen. Die Ergebnisse zeigten, dass sich Bedürfnisse und Erwartungen von BewohnerInnen und Angehörigen stark unterschieden. BewohnerInnen wollten lediglich Informationen zum Umgang mit externen Sturzrisiken und Informationen zu Bewältigungsstrategien nach einem Sturzereignis. Darüber hinaus, äußerten sie das Empfinden, dass Stürze unvermeidbar sind und sie außerstande sind etwas gegen Stürze zu tun. Im Gegensatz dazu wollten Angehörige umfassende Informationen über verschiedene Möglichkeiten der Sturzprophylaxe und aktiv in Sturzprophylaxe miteinbezogen werden. Pflegepersonen empfanden es als besonders wichtig zu erwähnen, dass, auch

wenn präventive Maßnahmen gesetzt werden, nicht alle Stürze vermeidbar sind. Da es sich im Rahmen dieser Studie herausstellte, dass die Bedürfnisse und Erwartungen der unterschiedlichen AnwenderInnen stark variieren, können in einem Informationsmaterial nicht alle geforderten Kriterien enthalten sein und unterschiedliche Informationsmaterialien für BewohnerInnen und Angehörige sind nötig. Des Weiteren wiesen die Ergebnisse darauf hin, dass Pflegeinterventionen gesetzt werden müssen, um PflegeheimbewohnerInnen zu *empowern*.

Im **Kapitel sechs** wird die Evaluierung der neu entwickelten Sturzinformationsmaterialien, hinsichtlich Verständlichkeit und Anwendbarkeit, aus der Perspektive der AnwenderInnen, beschrieben. Eine qualitative Studie mit Fokusgruppen, bei denen die adressierten AnwenderInnengruppen teilnahmen (BewohnerInnen, Angehörigen und Pflegepersonen), wurde durchgeführt. Die Daten wurden mittels qualitativer Inhaltsanalyse, bei der ein konzeptgestützter und datengestützter Kodierrahmen verwendet wurde, ausgewertet. Insgesamt nahmen 32 TeilnehmerInnen an sechs Fokusgruppendifkussionen teil. Die BewohnerInnen und Angehörigen hatten keine Schwierigkeiten die Informationsmaterialien zu verstehen und versuchten die Inhalte auf ihre eigne Situation zu übertragen. Pflegepersonen bemerkten einige Doppeldeutigkeiten und Abweichungen zu ihrer eigenen Pflegepraxis. Es zeigte sich, dass die Einbeziehung der AnwenderInnen bei der Entwicklung von Informationsmaterialien, zu einer hohen Akzeptanz und Motivation sich mit dem Thema auseinanderzusetzen, führen.

Kapitel sieben zeigt erste Ergebnisse zu Schulungsmaßnahmen auf, die gesetzt werden können, um PflegeheimbewohnerInnen zu *empowern*. Es wurde eine Systematische Übersichtsarbeit, bei der in zahlreichen Datenbanken, Referenzlisten und Quellen zur Identifizierung grauer Literatur, recherchiert wurde, durchgeführt. Die Qualität der gefundenen Studien wurde von zwei AutorInnen unabhängig voneinander eingeschätzt und die Studien wurden mit einem *Evidencelevel* versehen. Die Studienergebnisse wurden nach bedeutenden Ergebnissen, in Bezug auf *Empowerment*, eingeteilt und narrativ beschrieben. Schulungsmaßnahmen die am Häufigsten verwendet wurden, um PflegeheimbewohnerInnen zu *empowern*, waren Schulungseinheiten in Gruppen, individuell zugeschnittene Beratung, motivierende und ermutigende Maßnahmen, Zielsetzung gemeinsam mit BewohnerInnen und die Entwicklung von Plänen um gesetzte Ziele zu erreichen. Signifikant positive Effekte

auf die Selbstwirksamkeit und das Selbstversorgungsverhalten konnten durch Maßnahmen erreicht werden, die interaktive Schulungen in Gruppen und individuell zugeschnittene Beratung, basierend auf Bedürfnissen und Präferenzen von BewohnerInnen, beinhalteten. Das Selbstversorgungsverhalten konnte durch funktionsorientierte Pflege und Übungen zum logischen Denken signifikant gesteigert werden. Wirksame Maßnahmen hatten gemeinsam, dass sie individuell zugeschnitten, interaktiv, kontinuierlich (an mehreren Zeitpunkten durchgeführt), ermutigend und motivierend waren. Die Ergebnisse der Übersichtsarbeit haben gezeigt, dass der Fokus auf *Empowerment* zum erfolgreichen Lernen älterer PflegeheimbewohnerInnen beitragen kann.

In **Kapitel acht** werden die Ergebnisse der Studien kurz zusammengefasst und die Hauptergebnisse diskutiert. Des Weiteren wird ein kritischer Überblick über die verwendeten Methoden gegeben. Abschließend werden Empfehlungen für die Pflegepraxis und für weitere Forschung gegeben.

Chapter 11

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Chapter 11

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Chapter 12

Curriculum vitae



Curriculum vitae

Daniela Schoberer (formerly Bachner) completed her training as a professional nurse at the general nursing school in Graz. Afterwards she worked in the Geriatric Health Centres of the City of Graz in nursing practice and management for several years. During this time, she attended courses on Evidence-based Nursing at the German Centre of Evidence-based Nursing in Wittenberg, Germany.

From 2004 to 2010, she pursued and obtained, next to working part-time in the Geriatric Health Centres, her bachelors' and masters' degree in nursing science at the Medical University of Graz.

In 2010 she was offered a position as a nurse in an Evidence-based Nursing section at the University Hospital in Graz, where she was responsible for the development of a national clinical practice guideline. At the same year, she started to work as an external lecturer at the Institute of Nursing Science at the Medical University of Graz.

In 2011 she started her doctoral studies while participating in the Doctoral Programme in Nursing Science at the Medical University Graz (Austria), the Maastricht University (The Netherlands) and the Charité-Universitätsmedizin Berlin (Germany). Her research focus is on patient education.

Since 2013 Daniela Schoberer has been working on a regular basis as a senior lecturer at the Institute of Nursing Science at the Medical University of Graz. Her particular teaching focus is on Evidence-based Practice.

In 2015 she attended a course on *Empowering Patient Education* at the University of Turku, Finland. Since that time, *Empowerment* became an additional focus in her research and teaching.

Daniela Schoberer was a board member of the Grazer Society of Nursing Science and worked as a trainer in advanced courses for Evidence-based Nursing in Wittenberg/Germany. Additionally, she gave training courses for Evidence-based Practice and Clinical Practice Guidelines in various health care institutions. Daniela Schoberer has been involved several times in the organisation of the European Doctoral Conference in Nursing Science (EDCNS) and was awarded the Congress Award Graz for organising the 13th EDCNS, held in Graz 2012. Since 2014 she has been a scientific council of the Albert Schweitzer Institute of Geriatrics and Gerontology.

Chapter 13

List of publications and presentations



List of publications and presentations

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