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A ´moving hospital´, is ZGT ready?

An examination of the current state of mind of professionals

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Preface

In front of you lies the thesis entitled: *A 'moving hospital', is ZGT ready? An examination of the current state of mind of professionals.* This thesis forms the final product of the Master's programme Health Sciences and has been performed within ZiekenhuisGroep Twente (ZGT). It was interesting to develop my skills as future Health Scientist by means of a practical setting. Therefore, I would like to thank the people who supported me during this period.

First of all, I would like to thank my supervisors of the University of Twente, Miriam Vollenbroek-Hutten and Bert-Jan van Beijnum, for their assistance during this period. Their feedback supported me in order to achieve this final result.

Second, thanks to my supervisors from ZiekenhuisGroep Twente, Margreet Tinselboer-Ros and Sylva Heilmann. I experienced their interest into my study as supportive. Also, their practical knowledge and contacts within the hospital were helpful. I hope the results of this study will yield a good start for ZGT to become a 'moving hospital'.

Finally, without the effort of all the participating professionals this thesis could not have been completed. A special thanks goes out to all of them, in particular to the professionals of the surgical and the geriatric ward.

I hope you will enjoy reading this thesis.

Lisa Abbink
Vorden, August 2018

Abstract

Background

Patients are little active during their hospital stay and spent most of their time in bed. This low mobility is considered to be related to poor hospital outcomes, such as functional decline, new institutionalizations and even mortality. In contrast with current knowledge, within ZiekenhuisGroep Twente (ZGT) the care for patients is still designed around the bed. Therefore, one of the aims of ZGT is to move towards a 'moving hospital'. Though, the current opinions of professionals with regard to this change remain unclear. The aim of this study is to come up with recommendations for ZGT to become a 'moving hospital' based on the opinions of professionals, with a special focus on the surgical and the geriatric ward.

Method

Professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) of fifteen clinical departments of ZGT were invited to participate in an online questionnaire. The questionnaire consisted of four parts, i.e. general information; association with a physically active hospitalization; opinions regarding mobilization (knowledge, attitude and behaviour); and approaches that can be used to create a 'moving hospital'. SPSS was used in order to analyse the outcomes of the questionnaire. In addition, two focus group sessions were conducted for which the People-Activities-Context-Technology (PACT) approach was used. The focus group sessions took place on the surgical ward (5 North) and on the geriatric ward (4 East). Results were used to develop a scenario of a 'moving hospital' on these wards.

Results

329 professionals participated in the questionnaire. All activities that take place outside the bed are associated with physical activity during hospital admission together with exercises performed on bed. Most professionals consider themselves as primarily responsible for initiating physical activity, however for the execution patients are primarily responsible with a slight difference relative to professionals. Most professionals agree that more attention should be paid to physical activity of patients, by both professionals and patients. Overall, professionals consider themselves as well-known with the topic mobilization, although attitude and in particular behaviour need attention. Regarding attitude, professionals were mainly negative about the increased work that comes with mobilization. In terms of behaviour, nursing staff; supportiveness of leadership; appropriate physicians orders; and interest of family members to help the patient mobilize are main points of improvement. The category of approaches that will fit best to ZGT to become a 'moving hospital' is education, followed by offering training activities, daily schedules and a moving-friendly hospital furnishing. Respectively six and four professionals participated in the focus groups of the surgical and the geriatric ward. Both scenarios focus, besides admission on the ward, on stages prior to admission and both include education and expansion of the currently used card system.

Conclusion

ZGT is definitely ready to make step forward towards a 'moving hospital'. In order to meet the points of attention that emerged as result of this study, ZGT needs to primarily focus on education of patients and their relatives. Awareness can be increased by means of little additional work. For the same purpose, the hospital can expand the currently used card system of the physical therapy department. These steps will form the start towards a 'moving hospital'.

Contents

1. Introduction

During hospital admission, patients spend most of their time in their room as observed during working hours (between 83% (1) and 88% (2) of their time). Of those daytime hours, patients were in general observed in bed for at least half of their time (1-4), even if they were able to mobilize independently (4, 5). Besides, mobility levels of younger patients were as low as those of older aged ones (3). This indicates that patients' mobility is limited during their hospital stay (2-6).

Low mobility is considered to be related to poor hospital outcomes. Patients with a low mobility during hospital admission are more likely to have a decrease in activities of daily living (ADLs) (7, 8), such as bathing, toileting and dressing. Furthermore, these patients are 6.0 times more likely to be transferred to a rehabilitation centre or nursing home compared to patients with a high mobility (8). Finally, patients with a low mobility have a higher chance to die (6, 8). This indicates that low mobility is related to functional decline (7, 8), new institutionalizations (8) and even mortality (6, 8).

Because of the negative outcomes of low mobility, a physically active hospitalization is important (9). Therefore, interventions that stimulate patients to get out of bed (5) or exercise during hospital admission (10) are necessary. Research already showed positive effects of such interventions, as the length-of-stay decreased with 2.4 days (approximately 20%) when conducting a 15- to 20-minutes chair-based group-exercise program together with a focus on daily activities (11). A similar reduction in length-of-stay was shown when patients were sitting out of bed and/or walking within one day after joint replacement surgery (12). In addition, an increase in steps during hospital admission is related to lower hazard of death (6).

It is clear that the interpretation of physical active hospitalization can be very broad, as one of the previous mentioned studies includes exercise (11), but another study includes walking or even sitting out of bed (12). In line with these findings, literature shows that interventions for physical active hospitalization are often heterogeneous and do not always just include exercise (13). Also within Dutch hospitals programs to increase physical activity make their attendance, for example within Universitair Medisch Centrum Utrecht (UMC Utrecht) (14), Leidens Universitair Medisch Centrum (LUMC) (15), Radboudumc (16), Deventer Ziekenhuis (17), Ziekenhuis Gelderse Vallei (18), Isala (19) and Maastricht UMC (MUCM) (20). Programs in these hospitals include various interventions, such as apps, instruction movies (15, 20), common meals (14, 16, 19) or walking routes (14, 16).

Increase physical activity during hospitalization requires a change in the way of working (16). In the development of strategies for such change, it is relevant to involve the ones who actually have to carry out the change. New ways of practice have to fit as much as possible to standard daily routines. An analysis of involved target group, setting and associated facilitators and barriers is therefore one of the steps in the 'Implementation of Change Model' of Grol and Wensing (21). An useful model to examine barriers of professionals is the one of Cabana et al. (22) using knowledge, attitude and behaviour as main subjects. The model contains a sequence which indicates that first knowledge, then attitude and in the end behaviour will be affected before patient outcomes can be affected. Initially, this model was developed to understand adherence with regard to clinical practice guidelines. The outcomes of the model can be used to change physicians practice (22). Nowadays the framework is used in different studies, for example in partner violence (23), but also in early mobilization (24-26).

Hoyer et al. (24) already examined barriers of nurses, physical therapists and occupational therapists with regard to mobilization of patients. Results showed that the statement 'increasing mobilization of my inpatients will be more work for nurses' received the highest barrier score, for both nurses as therapists. Other experienced barriers were the perception of patient's resistance to be mobilized and irregular discussion by healthcare professionals of patient's physical functioning. However, this study had several limitations. One of the limitations was that other professionals than those who have been examined can be concerned with the subject, such as physicians and support staff, and should therefore be included. Besides that, the study focuses on specific hospitals in the United States what doesn't guarantee the generalizability to other hospitals, countries or regions (24) such as the Netherlands.

In contrast with current knowledge, within Ziekenhuisgroep Twente (ZGT) the care for patients is still designed around the patient's bed. Everything a patient needs is within reach, there are no temptations to get out of bed, the bed is the central point in patient care and in the end there is a suboptimal stimulation of care professionals (1). One of the aims of ZGT is therefore to move towards a 'moving hospital'. This is a hospital were patients are stimulated to become physically active as soon and as much as possible during hospital stay. As already mentioned, professionals have an important role in this development. Though, it is unknown what professionals within ZGT associate with a physically active hospitalization of patients and what their current opinions are regarding this change. Besides that, it is unclear which category of approaches to become a 'moving hospital' (based on expert consultation) fits best to ZGT, i.e. offering training activities, education, a moving-friendly hospital furnishing and daily schedules. Due to the long hospitalization and impact within the surgical and geriatric ward of ZGT, the hospital wants to start with the implementation of a physically active hospitalization on these wards. The aim of this study is to come up with recommendations for ZGT to become a 'moving hospital', with a special focus on the surgical and geriatric ward.

The main research question that will be considered in this study is:

- What does ZGT need to become a 'moving hospital' according to professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) of clinical departments?

To give an answer on this research question, four sub-questions are formulated:

1. What do professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) within clinical departments of ZGT associate with a physically active hospitalization of patients when considering activities, responsibility and possible improvement?

2. What are the current opinions considering knowledge, attitude and behaviour of professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) within clinical departments of ZGT regarding patient mobilization?

3. Looking at four categories of approaches to become a ‘moving hospital’, i.e. offering training activities, education, moving-friendly hospital furnishing and daily schedules, which approach fits best to ZGT according to professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) of clinical departments?

4. What will be a suitable scenario according to professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) of the surgical and the geriatric ward within ZGT to make a step forward towards a ‘moving hospital’ at their department?

The first three sub-questions will be examined together by means of quantitative research for which professionals of multiple clinical departments will be invited. Sub-question four will be examined within specific wards, i.e. the surgical ward and the geriatric ward, by means of qualitative research.

2. Theoretical framework

This theoretical framework will provide background information related to this study. First, an overview of a physically active hospitalization will be given. This will include the effects of physical activity during hospital admission, terms and definitions, and interventions to create a 'moving hospital' based on the four categories of approaches. Second, the 'Implementation of Change Model' of Grol and Wensing will be explained, followed by the knowledge, attitude and behaviour framework. The chapter ends with a summary of the provided information and how it will be used in this study.

2.1. Physically active hospitalization

2.1.1. Effects of physical activity during hospital admission

Available evidence can help to ascertain important aspects of a physically active hospitalization. As mentioned before, low mobility can lead to several negative outcomes such as functional decline (7, 8), new institutionalizations (8) and even mortality (6, 8). Therefore, it is important to consider which activities can be executed to translate these negative outcomes into positive ones. Different studies examined the effects of physical activity during hospital admission. An example is the study of Ostir et al. (6) where an increase in step-rate showed a positive effect on survival. An increase of 100 steps in the first 24 hours of hospital admission led to a 2% lower hazard of death two years after discharge. The same increase in the last 24 hours of admission led to a 3% lower hazard of death. Although normal and abnormal ranges of step-rate are lacking (6), walking seems to be an effective activity during hospital admission. By contrast, the study of Guerra et al. (12) showed a decreased length-of-stay not just with walking, but also with sitting out of bed. When patients were sitting out of bed and/or walking within one day after knee or hip joint replacement surgery, their length-of-stay decreased with 1.8 days. However, also in this study a clear measure of the activity lacks, since the study does not give a conclusion about how much activity is sufficient (12). Also within the review of Martínez-Velilla et al. (13) is stated that interventions to increase physical activity are often described globally, what inhibits clear assessment of interventions.

By contrast, Oestergaard et al. (11) examined a combination of multiple clear interventions: tables and chairs were moved from inside to outside the patient's room; an additional chapter which emphasizes the importance of daily activities during hospital admission was added to the patient information folder; dinner was served in a common room; and a 15- to 20-minutes chair-based group-exercise adapted to the ability of patients was conducted. Patients in the intervention group were compared with patients receiving conventional care a year before the intervention. No significant improvements in mobility or muscle strength were found, neither a difference in activity level. However, also within this intervention group the length-of-stay decreased, since it was 2.4 days shorter (11). Although the interventions are explicit, they were examined in combination instead of separately. Interventions in early mobilization are often heterogeneous as stated in the review of Martínez-Velilla et al. (13).

2.1.2. Defining mobilization

In line with previous findings, various interpretations of physical activity during hospital admission exist and different terms are used to refer to the concept. Besides mobility (3, 5, 7-9, 27) variations such as early mobility (24) and early mobilization (12, 26) are used. Also terms as in-hospital exercise (10), activity (2, 6) and physical activity (4) are described. In this study mobilization will be the central term when referring to a physically active hospitalization.

It is important to understand which activities need to be performed by patients to create a physically active hospitalization. In the study of So and Pierluissi (10), walking was for more than two third of the patients seen as exercise during hospital admission, however others also included climbing stairs or gymnastics. In the study of Oestergaard et al. (11) activity included standing and walking and inactivity included sitting and lying. By contrast, the study of Kuys et al. (2) did not only include standing or walking, but also sitting out of bed. In line with these findings, various definitions are present. Brown et al. (27) define low mobility as "being limited to a bed or chair". Hoyer et al. (24) consider mobilizing patients as: "getting a patient out of bed (e.g. sitting out of bed, toileting at bedside or to a bathroom, standing, and ambulation)". Guerra et al. (12) use the definition: "getting out of bed and/or walking as close to the time of surgery as possible". It is clear that the content of mobilization varies and also within ZGT it remains unclear what professionals associate with a physically active hospitalization.

Within this study professionals will be provided with the following definition of mobilization, adapted from Hoyer et al. (24): "Stimulating or assisting patients to get out of bed (e.g. sitting out of bed, toileting at bedside or to a bathroom, standing, and ambulation)". This definition will be used to avoid multiple interpretations of the term mobilization by professionals within this study. Since the association of professionals with a physically active hospitalization will be examined in this study, the concept may change ultimately.

2.1.3. Interventions - categories of approaches

As mentioned before, interventions to increase the activity level of patients already exist. An example of the literature is the study of Oestergaard et al. (11) where the furnishing of hospital rooms was changed, patients were provided with information on physical activity, dinners were served in a common room and group-based exercise programs were executed. The review of Martínez-Velilla et al. (13) also mentioned the use of common dining areas and physical activity rooms. Other examples from literature are posters that can encourage patients to be physically active and the use of walking routes (4). These and other interventions also provide the basis for physically active hospitalization programs within the Netherlands, for example within Universitair Medisch Centrum Utrecht (UMC Utrecht) (14), Leidens Universitair Medisch Centrum (LUMC) (15), Radboudumc (16), Deventer Ziekenhuis (17), Ziekenhuis Gelderse Vallei (18), Isala (19) and Maastricht UMC (MUCM) (20). Based on available interventions and expert consultation with two physical therapists working at ZGT, four categories of approaches were chosen within this study. The categories are as follows: 1. offering training activities, 2. education, 3. moving-friendly hospital furnishing and 4. daily schedules. These approaches will be described below based on available information within literature and Dutch hospitals.

1. *Offering training activities*

Training activities can be provided in various ways. Within LUMC and MUCM applications are offered with individual exercise activities for patients (15, 20). In addition, activity trackers can monitor physical activity (15). Another example is the use of exercise programs, what is already offered within Radboudumc and Isala (16, 19) and also is tested in the study of Oestergaard et al. (11). Finally, within Radboudumc patients can make use of a virtual cycle experience (16).

2. Education

Education is not only meant for patients, but also for relatives. Within Radboudumc, patients and informal caregivers receive information about physical activity (16). Hence, LUMC offers written and digital information on physical activity during hospital admission (15), just like the information folders provided in the study of Oestergaard et al. (11). Another example is the use of posters to encourage patients to be physically active (4). Within a 'moving hospital' patients need to realize the importance of physical activity (14).

3. Moving-friendly hospital furnishing

The hospitals' environment should encourage activity (4). Within Radboudumc colors, texts and art increase the attractiveness of hall and stairways (1, 16). Furthermore, bed sleeves and lounge chairs within Radboudumc result in a less central position of the bed (16). In line with this, chairs and tables were moved outside the patient's room within the study of Oestergaard et al. (11). Finally, various hospitals offer walking routes (14, 16), also within the literature the use of attractive walking destinations is suggested (4). By changing the hospital environment, physical activity can be stimulated (17).

4. Daily schedules

Daily schedules provide information for as well the patient, as informal caregivers as the professional. Within Ziekenhuis Gelderse Vallei schedules provide information about patients' ability to mobilize (18). In addition, Isala and UMC Utrecht advice to wear daily clothes and shoes instead of pyjamas and slippers (14, 19). Furthermore, various hospitals offer common meals (14, 16, 19) also stated as intervention in the study of Oestergaard et al (11).

2.2. The 'Implementation of Change Model'

As mentioned earlier, to increase physical activity during hospitalization a change in the way of working is required (16). In general, there are two reasons to start a change process. The first reasons can be a 'top-down' situation for example recent scientific information. The second reason is a more 'bottom-up' situation for instance the identification of problems in patient care (21). Within this study both reasons are present. The proven effectivity of physical activity is one of the reasons for ZGT to develop a 'moving hospital' ('top-down' situation), together with the observed low mobility of patients and the central position of the bed within ZGT ('bottum-up' situation).

The 'Implementation of Change Model' of Grol and Wensing (figure 1) focusses on implementations which improve patient care and contains seven steps (21), which will be described globally below:

1. Development of proposal for change

Within this step concrete suggestions and goals have to be developed to improve current practice, for example by introducing new routines for practice.

2. Analysis of actual performance/targets for change

This step includes the assessment of the current provided care. Deviations between current care and desired care have to be examined and the most important problems need to be selected.

3. Problem analysis of target group and setting

The problem analysis of target group and setting contains an assessment of the involved setting, the involved target audience and the associated facilitators and barriers, since every situation owns unique characteristics.

4. Development and selection of strategies and measures to change practice

This step is based on the factors examined within the previous steps. With use of the results improvement strategies can be developed or selected.

5. Development, testing and execution of implementation plan

Various aspects are important to plan improvement strategies, for example the distribution of tasks and responsibilities, a planning of time and involvement of the target group.

6. Integration of changes in routine care

To prevent regress, it is important that changes become an integral part of care. This can for example be achieved by use of new measures or recurrence of program components.

7. (Continuous) evaluation and (where necessary) adapting plan.

The main question within this step is as follows: are targets reached? If targets have not been reached, additional opportunities to ensure improvement need to be examined.

The first step is already performed, because ZGT introduced the desire of developing a 'moving hospital'. Therefore, within this study the focus will be on the second to fourth step, since the aim of this study is to come up with recommendations for ZGT to become a 'moving hospital', for which input of professionals will be used. The second step will examine the current way of working on the surgical and the geriatric ward. The sub-questions examined within this study will form the third and a beginning of the fourth step of the model, as the third step will provide information on perceptions of professionals related to a physically active hospitalization and the fourth step includes the development and selection of strategies to change practice (21). As a result of this study multiple recommendations for ZGT to set a step forward towards a 'moving hospital' can be made, which will complete the fourth step of the 'Implementation of Change Model'.

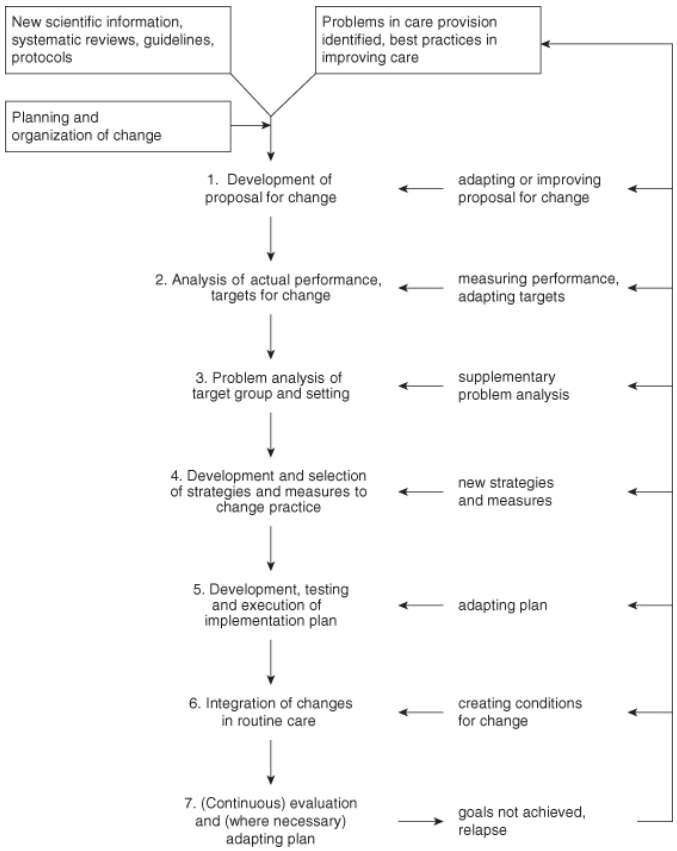

Figure 1: The 'Implementation of Change Model' of Grol and Wensing (21)

2.3. Knowledge, attitude and behaviour framework

Various theories are available in relation to change, for example motivational theories. These theories focus on attitudes, perception and intentions in relation to change. The theory of planned behaviour is one of the most frequently used theories (21). Although it seems a feasible theory in mobilization projects, the clear examination of knowledge lacks. Knowledge is considered as important aspect to examine within ZGT. A behaviour change theory that includes knowledge is the Theoretical Domains Framework (TDF). However, this is an extensive theory as it includes fourteen domains (28) and in this study not every domain seems to be important. Regarding mobilization of patients, barriers related to knowledge, attitude and behaviour were examined previously (24-26). These categories form the basis of the framework of Cabana et al. (22) and seem also to be useful within this study on a physically active hospitalization. Therefore, the framework of Cabana et al. will provide the basis in order to examine the current opinions of professionals within ZGT regarding patient mobilization (related to sub-question two). It is actually developed to understand guideline adherence in physicians. With use of the framework, barriers can be explained and these results can be used to create interventions. In conclusion, it is all related to change practice (22).

The framework of Cabana et al. (22) consists of three main categories: knowledge, attitude and behaviour. It contains a sequence which indicates that first knowledge, then attitude and in the end behaviour will be affected before patient outcomes can be affected, as displayed by means of the arrows. When ignoring the categories knowledge and attitude, the final behaviour change will be less stable. The three main categories can be further classified. Knowledge can be subdivided into familiarity and awareness. Agreement, outcome expectancy, self-efficacy and motivation are classifications of attitude. Behaviour consists of the subcategories: patient factors, guideline factors and environmental factors. A global overview of the framework, adapted from Cabana et al. (22), is displayed in figure 2.

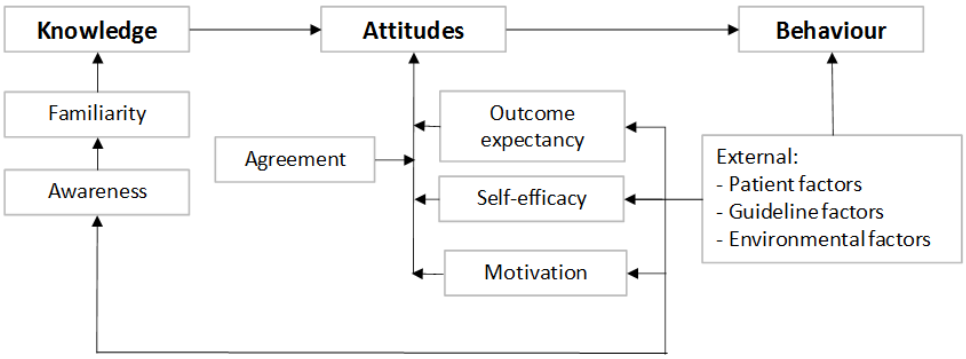

Figure 2: Framework of knowledge, attitude and behaviour adapted from Cabana et al. (22)

2.4. Summary

In summary, within this study mobilization will be the central term when referring to a physically active hospitalization. The following definition of mobilization, adapted from Hoyer et al. (24), will be used: "Stimulating or assisting patients to get out of bed (e.g. sitting out of bed, toileting at bedside or to a bathroom, standing, and ambulation)". The concept may ultimately change, since the activities associated with a physically active hospitalization will be examined within this study. Interventions to create a 'moving hospital' are classified into four categories, i.e. offering training activities, education,

moving-friendly hospital furnishing and daily schedules, based on expert consultation. These categories will be used to consider which approach fit best to ZGT to become a ‘moving hospital’. The ‘Implementation of Change Model’ of Grol and Wensing will be used as background theory to systematically perform this study and within this study and the focus will be on the second to fourth step. Finally, the categories knowledge, attitude and behaviour of the framework of Cabana et al. will form the basis to examine the current opinions of professionals with regard to patient mobilization, related to the second sub-question of this study.

3. Method

This chapter will outline the methods used in this study divided into a quantitative and a qualitative section (also called a mixed methods research (29)). Prior to the description of the study's content, an overview of the initial situation on the surgical ward (5 North) and the geriatric ward (4 East) will be given which forms the second step of the 'Implementation of Change Model'. Second, the quantitative section will be outlined for which a structured questionnaire was used. Third, the qualitative section will be explained. For this purpose, two focus group sessions were conducted focussing on the surgical ward and the geriatric ward. The quantitative and qualitative section together form the third and a beginning of the fourth step of the 'Implementation of Change Model'. This study does not fall under the Medical Research Involving Human Subjects Act (WMO).

3.1. Initial situation

In order to get an overview of the current situation within the surgical and geriatric ward, an informal consultation with the heads of the departments took place. The initial situation is described separately for both the surgical and the geriatric ward.

3.1.1. Surgical ward (5 North)

The ward 5 North within ZGT is a surgical ward, where mainly patients of the specialism gastroenterology are treated. A small part of the inpatients are from the specialism otolaryngology and plastic surgery. The ward contains 36 beds. Approximately 90% of the patients of 5 North will receive surgery. The reaming patients do not receive surgery because of a specific reason, for example an inflammation of intestines or biliary tract. Both elective and emergency patients are treated on this ward, respectively approximately 60% and 40% of the inpatients. The elective patients are scheduled for a surgery by means of a pre-operative screening. Emergency patients enter the surgical ward after visiting the emergency department or the outpatient clinic.

The average age of inpatients ranges approximately from 60 to 80 years. Patients with oesophagus diseases are often of younger age compared to patients with intestinal diseases. Patients with intestinal diseases stay on average between five and seven days on the ward, followed by patients with oesophagus diseases without complications who stay for seven days. However, the same patients with complications stay approximately between fourteen and twenty-one days on the ward. By contrast, patients with appendicitis stay for just one day on average.

Basically, most patients enter the ward actively what means that they are able to walk. Compared to the past, patients enter their bed a half hour before surgery when possible instead of at admission. There are already some interventions available to increase physically activity. A first example is physical therapy what is offered twice a day. Second, an overview of the patient's ability to walk independently is displayed at the bedside by means of a card system (appendix I). In addition, a fast-track protocol is used for intestinal and oesophagus surgeries including the importance of physical activity. However, due to catheters and drains, being physically active is difficult and patients may be anxious.

3.1.2. Geriatric ward (4 East)

The ward 4 East within ZGT is a geriatric ward with two specialisms, i.e. elderly psychiatry and geriatrics. Within this report the focus will be on the geriatric part of the ward, which contains 15 beds.

Patients are mostly admitted to the ward because of acute mental confusion, delirium, inexplicable decline or comorbidity (for example urinary tract infection in combination with heart failure). Hospital admission is often a result of the occurrence of multiple problems. By estimation, 95% of the patients are emergency patients. These patients enter the ward after visiting the emergency department. Only a small part of the patients are elective admitted patients. Patients admitted to the geriatric ward will in general not receive surgery.

Inpatients of the ward are at least 70 years old. Characteristics are age, the presence of comorbidity and the risk of delirium development. Patients stay approximately eleven days on the ward. Most patients enter the ward by bed after visiting the emergency department. Patients who normally live at home are often mobile before admission. Once they have reached their old functional level, a return home is stimulated as much as possible.

Within the geriatric ward multiple intervention are already used to stimulate a physically active hospitalization. The rooms with multiple beds consist of three beds instead of the usual four what results in additional space. Unless there is a contra-indication, every patient is registered for activity therapy. The ward also offers individual and group-based physical therapy and they own a bike labyrinth. Additionally, patients can enjoy lunch in a common room. However, patients are getting tired quickly when offering many activities. Some patients are already little active before admission and fear to fall can be present in elderly patients.

3.2. Quantitative section – questionnaire

To examine the first three sub-questions of this study, a structured questionnaire was used. The content of this quantitative section will be explained below.

3.2.1. Research design

The quantitative study section has a cross-sectional design, as data was collected at a certain point in time. Questionnaires are frequently used in such design (30). The structured questionnaire provides quantitative information with regard to a 'moving hospital', based on the perceptions of professionals.

3.2.2. Study population

Professionals of fifteen clinical departments of both the location Almelo as the location Hengelo were invited to participate in this study section. The following clinical departments were included: 5 North (abdominal/thoracic surgery), 5 East (acute admission ward), 5 South (vascular surgery/gynaecology/urology), 5 West (oncology/gastroenterology), 4 East (geriatrics/elderly psychology), 4 South ((geriatric) traumatology), 4 West (neurology), 3 North (internal medicine), 3 South (pulmonary medicine), 3 West (cardiology), the intensive care unit, the department of pediatrics and the department of psychiatry of ZGT Almelo and the departments A0 (cardiology) and A1 (surgery) of ZGT Hengelo. The dialysis unit, the mother-child department and the birth department were excluded from participation, since these wards treat very specific patient groups.

Professionals of the previous mentioned wards able to participate were: heads of departments, physicians (including medical specialists and physician assistants), nurses, healthcare assistants and therapists (including physical therapists and occupational therapists). All these professionals are

directly or indirectly involved in patients mobilization. The directly involved professionals stimulate or assist patients to leave their bed. The indirectly involved professionals do not directly perform this task, however they have a role in the encouragement of a physically active hospitalization. The entire population was invited to participate, since creating general awareness into a physically active hospitalization was an indirect goal of this study. Therefore, no sampling took place.

3.2.3. Data collection

In order to collect data, a structured questionnaire (appendix II) was composed consisting of four parts: demographic information; association with a physically active hospitalization; professionals' current opinions considering knowledge, attitude and behaviour; and approaches to become a 'moving hospital'.

The first part of the questionnaire gathered demographic information of participants such as gender, age, profession, ward and experience with use of five questions. Available response options had a nominal or ratio measurement level, as they respectively consisted of categories without order or numerical outcomes (29). The five questions of the second part examined what professionals associate with a physically active hospitalization of patients, with a nominal or ordinal measurement level (categories with an order) (29). The third part of the questionnaire examined professionals' current opinions by use of the categories knowledge, attitude and behaviour of the framework of Cabana et al. (22). This part of the questionnaire was largely based on the questionnaire of Hoyer et al. (24), however statements were translated into Dutch and some were removed or partly adapted so that they would fit to ZGT and the professionals participating in the study. Also some knowledge statements were added, partly based on questions of the TDF of the study of Huijg et al. (31). The original questionnaire was distributed among nurses, physical therapists and occupational therapists (24). Within this study, additional professions were invited to participate and therefore participants received statements for directly or indirectly involved professionals based on their function. By use of expert consultation the assumption was made that nurses, healthcare assistants, physical therapists and occupational therapists are directly involved and heads of departments and physicians (including medical specialists and physician assistants) are indirectly involved in patient mobilization. Professionals with another function were asked if they were directly involved in patient mobilization or not. Directly and indirectly involved professionals received 31 or 29 statements, respectively, for which a five-point Likert scale was used with the options strongly disagree, disagree, neutral, agree and strongly agree. Directly involved professionals received seven knowledge statements instead of indirectly involved professionals who received five statements of this category. Both direct and indirectly involved professionals were asked to fill in eleven attitude statements and thirteen behaviour statements. The final part of the questionnaire considered which category of approaches would fit best to ZGT, questioned by means of ranking. Ranking includes a prioritization of outcomes from most important to least important (32). Participants were asked to rank the categories of approaches, i.e. offering training activities, education, moving-friendly hospital furnishing and daily schedules. Subsequently, participants were asked if specific mentioned reasons applied for the category of their first choose or not. These reasons were largely based on aspects important in the implementation of innovations, such as complexity and compatibility (21, 33).

Prior to actual execution of the questionnaire, it was reviewed by two researchers, two physical therapists and one physician in order to check face validity (i.e. does the questionnaire measure what

it needs to measure) (34). Another reasons was to check if the statements of the questionnaire of Hoyer et al. (24) remained the same after translation. The questionnaire was adapted based on the feedback. The members who reviewed the questionnaire were excluded from participation. Before the actual execution, four students were asked to fill in the questionnaire to verify the duration of the questionnaire. They all completed the questionnaire within fifteen minutes, as estimated in advance. Prior to the distribution, heads of departments received an e-mail to announce the questionnaire on their ward, for example by means of the newsletter.

Finally, the online survey tool Qualtrics was used for distribution of the questionnaire. Participants received an invitation by email to participate. The questionnaire was sent to medical specialists and all the other professionals separately, for which two of the same questionnaires were used. Respectively 299 and 871 professionals were invited to participate. Two weeks after the first invitation a reminder was send, since reminders seem to increase the response rate (35). In addition to the reminder, the e-mail invitation included a deadline as this also seem to increase response rates (36). Participants could complete the questionnaire for four weeks. By completing the questionnaire participants agreed with the use of the obtained results. The results were discussed anonymously, what was mentioned within the invitation.

3.2.4. Data-analysis

IBM SPSS Statistics was used in order to analyse the data derived by the questionnaire. Prior to the data-analysis, the data of the two distributed questionnaires was merged in SPSS and partially completed questionnaires were deleted. First, data related to the questions about function and ward were examined since these questions also contained the option 'otherwise, namely…'. Respondents were reclassified to an existing category when possible. The options 'other function' and 'other department' were retained in case reclassification was not possible. The category 'activity therapist' was added as category regarding function. The distribution of directly and indirectly involved professionals was taken into consideration when reclassifying professionals. 'Activity therapists' were indicated as directly involved professionals and the respondents with other functions were divided into one of these two groups based on their own designation. 'OCON' and 'multiple departments' were added as categories regarding department. Hereafter, descriptive statistics were used in order to describe the respondent characteristics derived from the first part of the questionnaire. Frequencies and percentages were used for data about gender, function and department. Age and experience were analysed by use of mean scores and standard deviation.

The second part of the questionnaire, i.e. the association with a physically active hospitalization, was also described by means of descriptive statistics. Activities associated with a physically active hospitalization were examined by means of a multiple response question, therefore a variable set was defined before analysis. The other questions did not require any additional adaptations before analysis. Both overall results and specific results for the wards 5 North and 4 East were analysed by means of frequencies and percentages. The Chi-square test was used to compare results of the specific wards with overall results. In case the Chi-square test did not meet the required conditions, the Fisher's Exact test was used instead. P values <0.05 were considered as statistically significant.

The analysis of the third part of the questionnaire took place for directly and indirectly involved professionals separately. To determine whether the category's items together represented the

categories knowledge, attitude and behaviour, internal consistency scores were calculated by means of Cronbach's Alpha. Prior to this analysis some statements needed to be reverse coded (appendix VI – table 9). Cronbach's alpha scores were interpreted as follows based on the information of George and Mallery (2003): ≥0.9 as excellent, ≥0.8 as good, ≥0.7 as acceptable, ≥0.6 as questionable, ≥0.5 as poor and <0.5 as unacceptable (37-39). Second, the statements of the categories knowledge, attitude and behaviour were analysed individually by means of percentages. The Chi-square test was used to test differences between directly and indirectly involved professionals. In case the Chi-square test did not meet the required conditions, the Fisher's Exact test was used instead. P values <0.05 were considered as statistically significant. Subsequently, reversed coding was used again and the answering options agree and totally agree were together considered as positive, the answering options disagree and totally disagree were together considered as negative and the answering option neutral remained neutral. Thresholds were formulated based on the 'Diffusion of Innovation Theory' of Rogers. This theory of change classifies individuals into innovators, early adopters, early majority, late majority and laggards (21, 40), with a group size of respectively 2.5%, 13.5%, 34%, 34% and 16% (40). Innovators, early adopters and early majority were together considered as positive, late majority as neutral and laggards as negative. This led to the following three thresholds to analyse the individual statements: at least 50% of the professionals needed to be positive; the neutral group of professionals should not exceed the threshold of 34%; and the negative group of professionals should not exceed the threshold of 16%.

The final part of the questionnaire consisted first of all of a rank order question. Data was displayed as missing value in SPSS in case participants did not change anything to the presented rank order. Therefore, these missing values were reclassified with offering training activities as first choice, education as second choice, moving-friendly hospital furnishing as third choice and daily schedules as fourth choice. Analysis took place for data with and without reclassification of missing values. Weights were calculated by means of rank sum weighting, at which an equal distance between the different options is assumed (41). Frequencies and weights were used to calculate the overall rank order. The highest outcome was considered as the most preferred option and the lowest as the least preferred one. Second, reasons for choosing one of the categories as first option were analysed for all the categories. However, the emphasis was placed on the two most preferred categories. For this purpose the three reasons considered as most applicable were analysed, together with the reasons considered as not applicable (≥50%).

3.3. Qualitative section – focus groups

To examine the fourth sub-question of this study, two focus group sessions were conducted which took place on the surgical ward (5 North) and on the geriatric ward (4 East). The content of this qualitative section will be explained below.

3.3.1. Research design

The qualitative section of this study has a cross-sectional design, as two focus group sessions were conducted in order to provide a suitable scenario to set a step forward towards a 'moving hospital' on the surgical and the geriatric ward.

3.3.2. Study population

Since the recommendations for ZGT to become a 'moving hospital' have to fit multiple professionals, the participants within the focus group represented a heterogeneous group of professionals of either the surgical ward or the geriatric ward. Within focus groups homogeneity is often desired, as it decreases group conflicts. However, a heterogeneous group can be sufficient as the interaction between various participants is the intention of the study (42), as it is within this study section. Therefore, a purposive sample was used, what means that participants were not randomly selected but consciously chosen (29). Professionals on both wards were first invited to participate in the focus group by means of an invitation within the newsletter of their ward. Physicians as well as nurses, healthcare assistants, therapists and heads of departments were invited, since these professionals were also invited to participate in the questionnaire. Subsequently, the heads of the departments also asked professionals directly if they were interested to participate in the focus group. A date for the focus group sessions was chosen and the professionals who showed interest to participate were invited. Six professionals of the geriatric ward were ultimately invited, i.e. one head of department, one nurse, two healthcare assistants, one physical therapist and one activity therapist. For the focus group of the surgical ward eight professionals were invited, i.e. two physicians, two nurses, two healthcare assistants, one head of department and one physical therapist. In literature is suggested that a focus group often consists of six to eight participants (42). However, in both focus group sessions two professionals were not able to participate on the selected date.

3.3.3. Data collection

To set a step forward towards a 'moving hospital' on both the surgical ward and the geriatric ward, two focus group sessions were conducted. One of the advantages of a focus group is the possibility of interaction between respondents. Variability in opinions and ideas can be discussed, as well as similarities, also called sharing and comparing (42). This is very important within this study, as a physically active hospitalization requires collaboration of various professionals (24).

The ultimately aim of the focus group sessions was to come up with a scenario to set at step forward towards a 'moving hospital'. The content of the focus group sessions included an examination of criteria of the PACT-framework with use of the results of the questionnaire. PACT stands for people, activities, context and technology and can be used in interactive system design. The framework indicates that people undertake activities in contexts using technology (43). Despite of the fact that the PACT framework is technically-oriented (44), it was used as approach within the focus group sessions. In order to move towards a 'moving hospital', it is important to consider which activities have to be executed, by whom, in which context and if technology can be used to achieve this goal. The focus group sessions were semi-structured, since predefined topics were raised with use of open-ended questions (32). The semi-structured guidebook used within the focus groups is presented in appendix III.

In order to reproduce the discussion, audio-recordings were made for which permission of participants was requested by means of a consent form (appendix IV). This consent form was handed out at the beginning of the focus group, but professionals were already informed about the audio-recording by means of the invitation e-mail. At both focus groups a second person was present in order to monitor time and to make notes with use of a predefined codebook (appendix V). This codebook was developed with use of the predefined topics and the questions of the semi-structured guidebook. This means it

included the previous mentioned main themes: people, activities, context and technology, and the questions related to these categories. The guidebooks with notes of the focus groups sessions were used for data-analysis.

3.3.4. Data-analysis

The focus group sessions resulted in a description of a 'moving hospital' for general patients on both the surgical ward and the geriatric ward. For the final scenario descriptions fictional patients were chosen and the outcomes of the PACT-framework were used in order further outline the scenario. For this purpose the notes taken by the second person were used, together with the audio-recordings. After completion of the scenario by means of the fictional patients, the scenarios were presented to one of the attendees of the focus groups, either a participant or a person who took notes. This was done in order to verify correctness of the presented information. Some minor adjustments were made on basis of these verifications.

4. Results

In this chapter, outcomes of this study will be described. The chapter will start with the results of the questionnaire. Subsequently, the outcomes of the two focus group sessions will be presented.

4.1. Quantitative section – questionnaire

The results of the questionnaire, related to the first three sub-question of this study, will be presented below. Prior to these results, characteristics of the participants will be described.

4.1.1. Participants characteristics

In total, 329 of the 1170 invited professionals completed the questionnaire (28.1%). Of all the medical specialists who received an invitation 17.7% responded (53/299). Of the other professionals, 31.7% completed the questionnaire (276/871). Table 1 gives an overview of respondent characteristics. A large part of the respondents is female. The questionnaire is completed to a large extent by nurses. The smallest respondent group consists of occupational therapists. All the predefined wards include between 1.5% and 10.9% of the total number of respondents. Most respondents are from the intensive care unit, in contrast to the cardiology department A0 which forms the smallest group. In total, 243 professionals are directly involved in patient mobilization (73.9%), compared to 86 professionals who are indirectly involved (26.1%).

4.1.2. Association with a physically active hospitalization

The association with a physically active hospitalization is divided into activities, responsibility and possible improvement and is related to the first sub-question of this study.

Activities

Figure 3 gives an overview of the specific activities professionals associate with physical activity of patients during hospital admission and how often. Laying on bed is only by a small part of the professionals related to a physically active hospitalization. By contrast, walking with or without walking aid is by most of the professionals associated with physical activity. Except the activities laying on bed and sitting on bed, all activities are associated with physical activity of patients during hospital admission according to at least 78.7% of the respondents. With regard to the surgical and geriatric ward no significant differences were found relative to the overall results (appendix VI – table 4).

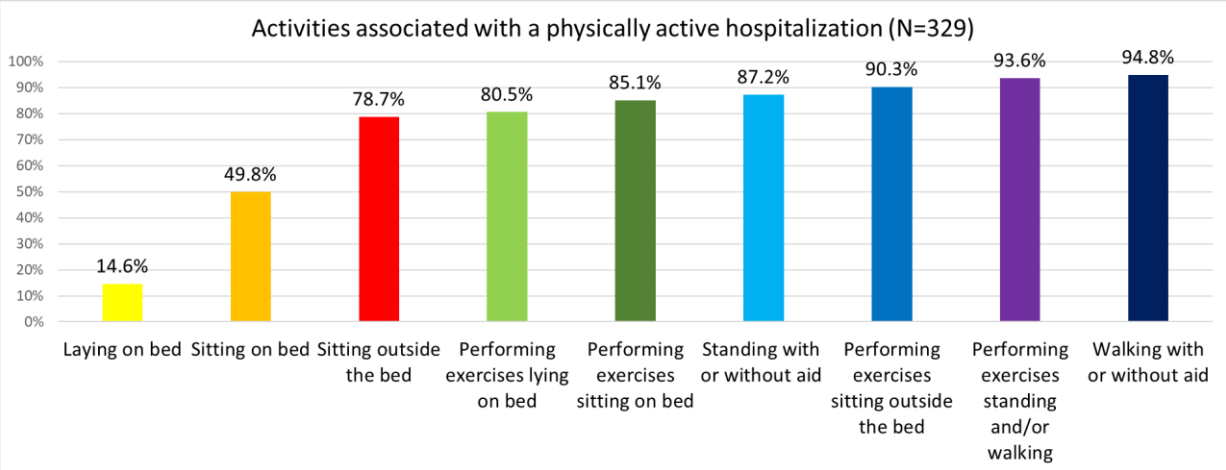

Figure 3: Activities associated with physical activity of patients during hospital admission

Table 1: Characteristics of participants

	N=329
Sex[a]	
Male	67 (21.8)
Female	240 (78.2)
Age, mean (SD)[b]	41.0 (12.0)
Years of experience, mean (SD)[c]	14.3 (10.7)
Function	
Medical specialist[d]	53 (16.1)
Physician[d]	12 (3.6)
Physician assistant[d]	7 (2.1)
Nurse[e]	190 (57.8)
Health care assistant[e]	16 (4.9)
Physical therapist[e]	29 (8.8)
Occupational therapist[e]	3 (0.9)
Activity therapist[e]	4 (1.2)
Heads of department[d]	8 (2.4)
Other function[f]	7 (2.1)
Department	
5 North - abdominal/thoracic surgery	18 (5.5)
5 South - vascular surgery/gynaecology/urology	16 (4.9)
5 West - oncology/gastroenterology	11 (3.3)
5 East - acute admission ward	20 (6.1)
4 South - (geriatric) traumatology	12 (3.6)
4 West - neurology	30 (9.1)
4 East - geriatrics/elderly psychology	16 (4.9)
3 North - internal medicine	29 (8.8)
3 South - pulmonary medicine	10 (3.0)
3 West - cardiology	18 (5.5)
Intensive care unit	36 (10.9)
Department of pediatrics	19 (5.8)
Department of psychiatry	16 (4.9)
A0 - cardiology	5 (1.5)
A1 - surgery	19 (5.8)
OCON	13 (4.0)
Multiple departments	6 (1.8)
Other department	35 (10.6)

Data are presented as N (%) unless stated otherwise.

[a] 22 missing values

[b] 33 missing values

[c] 9 missing values

[d] Directly involved in patient mobilization

[e] Indirectly involved in patient mobilization

[f] 1 professional directly involved in patient mobilization
6 professionals indirectly involved in patient mobilization

Responsibility

Regarding the responsibility for physical activity during hospital admission, most respondents consider professionals instead of patients as primarily responsible for initiating physical activity (figure 4). However, the responsibility for the execution of physical activity is more distributed among professionals and patients. Slightly more than half of the respondents consider patients as primarily responsible for the execution of physical activity compared to others who consider professionals as primarily responsible. When comparing the results of 5 North and 4 East with the overall results no significant differences are present (appendix VI - table 5 and table 6).

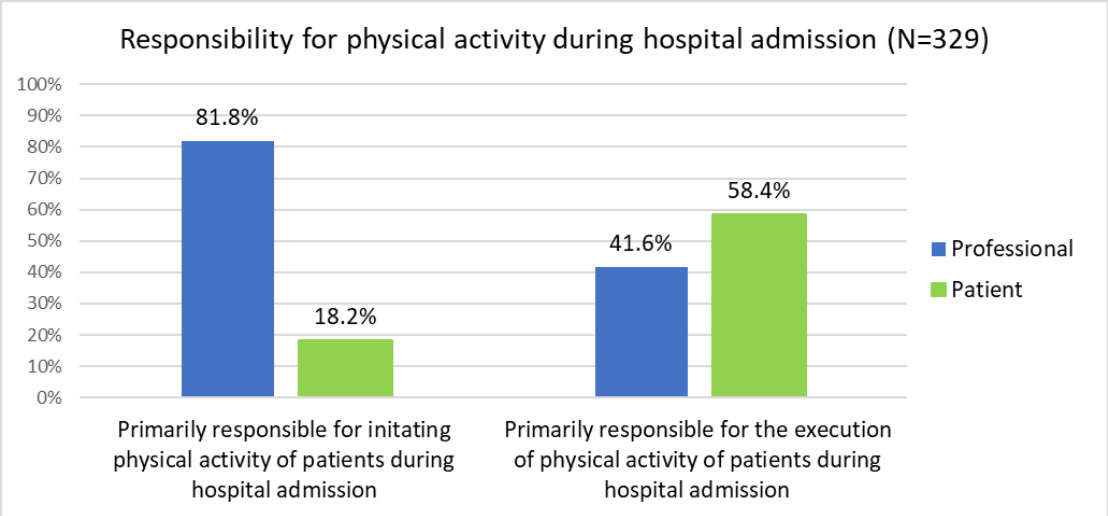

Figure 4: Responsibility for physical activity during hospital admission (N=329)

Possible improvement

As can be seen in figure 5, a large part of the respondents agree with the statement that professionals should pay more attention to physical activity of patients during hospital admission and even a larger part agrees with the statement that patients should pay more attention to it. When comparing the surgical ward and the geriatric ward with the overall results no significant differences are present (appendix VI – table 7 and table 8).

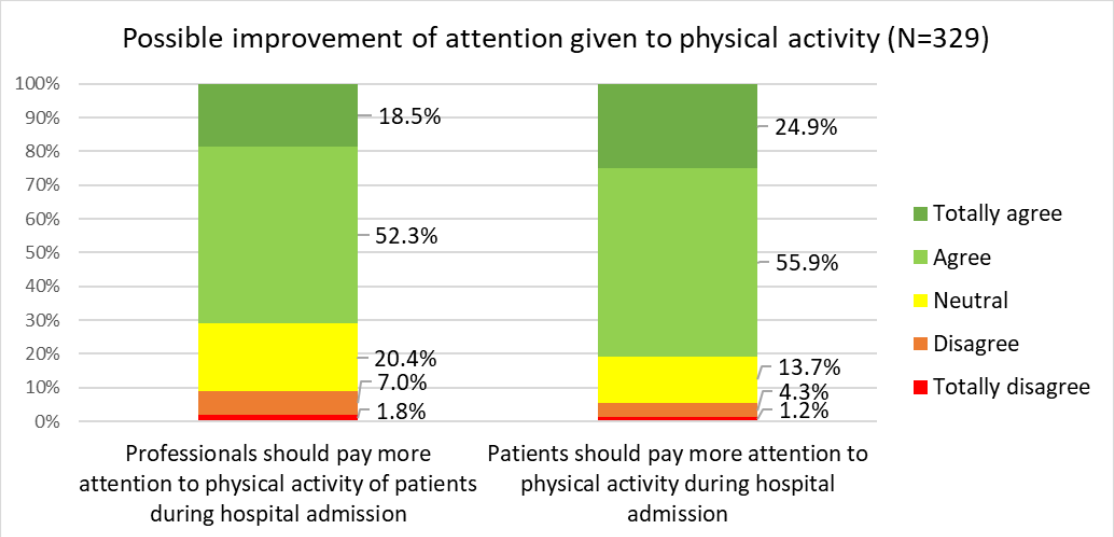

Figure 5: Possible improvement of attention physical activity (N=329)

4.1.3. Knowledge, attitude and behaviour regarding patient mobilization

In order to examine the current opinions of professionals regarding patient mobilization (sub-question two), the knowledge, attitude and behaviour framework was used. To consider whether the individual statements together represented the categories knowledge, attitude and behaviour internal consistency scores by use of Cronbach's Alpha were calculated, which are presented in table 2. Only the Cronbach's Alpha score of the category knowledge of directly involved professionals is acceptable. The other Cronbach's Alpha scores are questionable or even poor in one case. Therefore, the results of categories knowledge, attitude and behaviour are described by means of their individual statements. Professionals are considered as negative, neutral or positive with regard to the statements. Statements with a mark *, are reverse coded before analysis.

Table 2: Internal consistency scores of the categories knowledge, attitude and behaviour by means of Cronbach's Alpha

	Directly involved professionals	**Indirectly involved professionals**
Knowledge	0.782	0.668
Attitude	0.547	0.630
Behaviour	0.613	0.695

Knowledge

Overall, most professionals consider themselves as well-known with the topic of patient mobilization, although some small points of attention are present in both directly (figure 6) and indirectly involved professionals (figure 7). There is one significant difference between directly and indirectly involved professionals, namely at the statement about awareness of content and objectives regarding patient mobilization (appendix VI – Table 9).

Regarding directly involved professionals, all the statements are considered as positive by at least half of them (figure 6). In four cases even 70% of these professionals are positive. However, a remarkable part of the directly involved professionals is negative about the received training and state they need additional training and information about the effects of mobilization. By contrast, at indirectly involved professionals the encouragement of caregivers to educate patients is a point of attention, since the positive threshold is not reached and also the negative threshold is slightly exceeded (figure 7).

Attitude

In terms of attitude, increased work for professionals is the most striking point of attention, in both directly (figure 8) and indirectly involved professionals (figure 9). There is one significant difference between directly and indirectly involved professionals present, namely regarding increased work for physicians (appendix VI – table 9).

A large part of the directly and indirectly involved professionals state that increasing mobilization will be more work for nurses, physical therapists/occupational therapists and healthcare assistants (figure 8 and figure 9). In addition, no clear division is present with regard to the statement that physical therapists or occupational therapists should be the primary care provider with regard to patient mobilization. Figure 9 shows that a remarkable part of the indirectly involved professionals think that caregivers who work on their ward are not sure when it is safe to mobilize their patients. The positive threshold is also only slightly exceeded, what also applies to the attitude of indirectly involved professionals about the confidence of caregivers to mobilize patients.

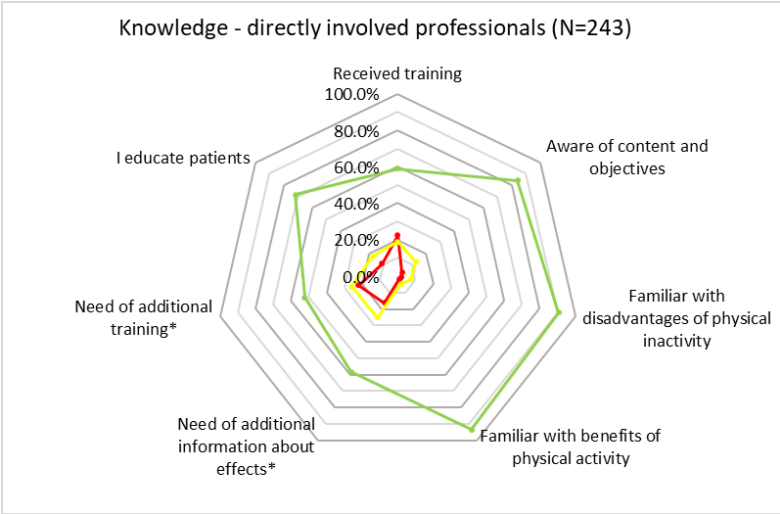

Figure 6: Knowledge – directly involved professionals

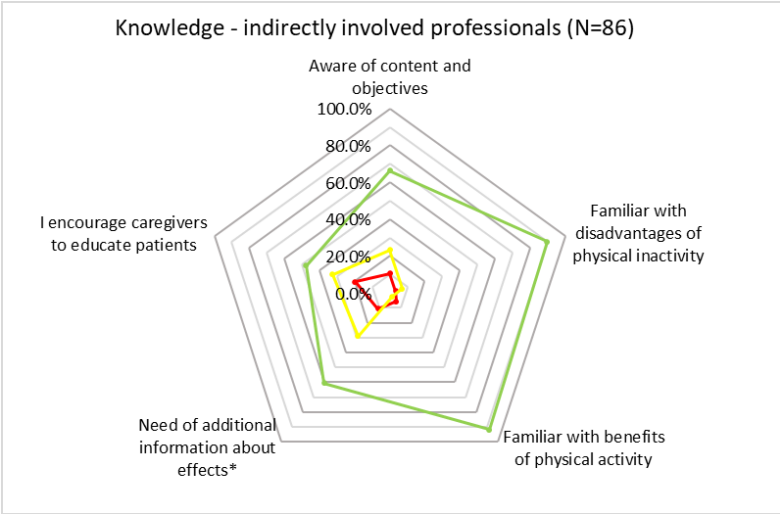

Figure 7: Knowledge – indirectly involved professionals

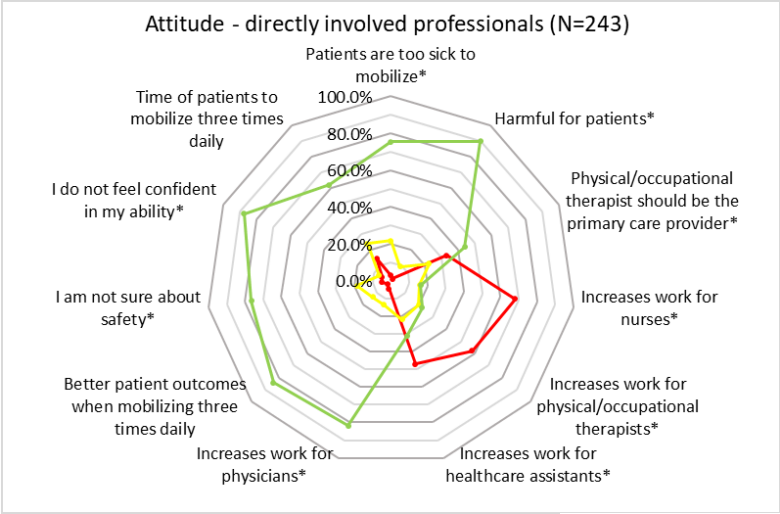

Figure 8: Attitude – directly involved professionals

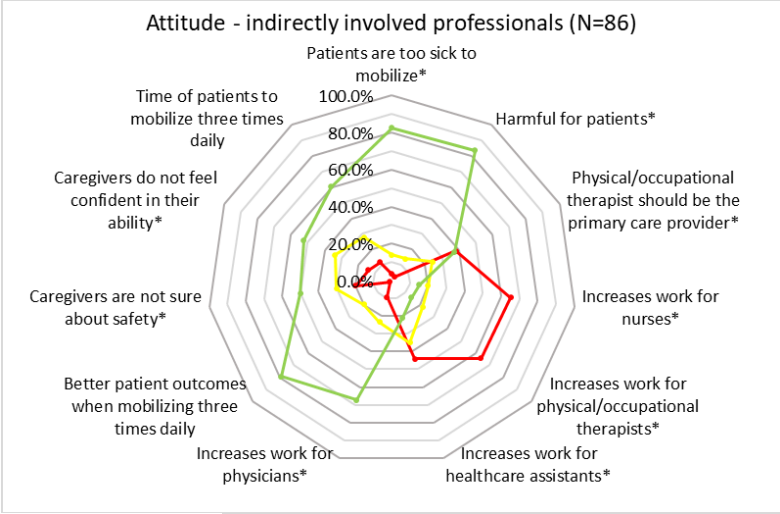

Figure 9: Attitude – indirectly involved professionals

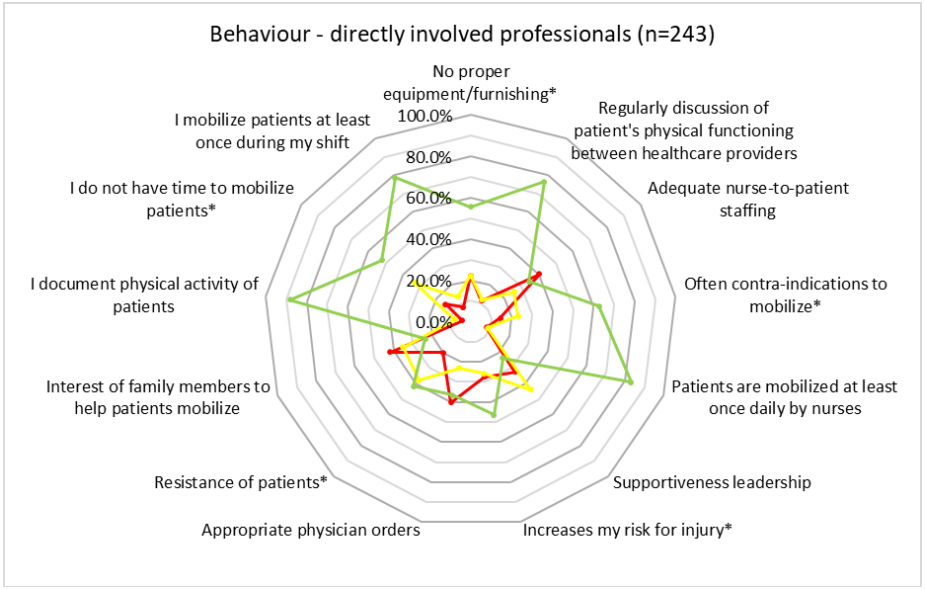

Figure 10: Behaviour – directly involved professionals

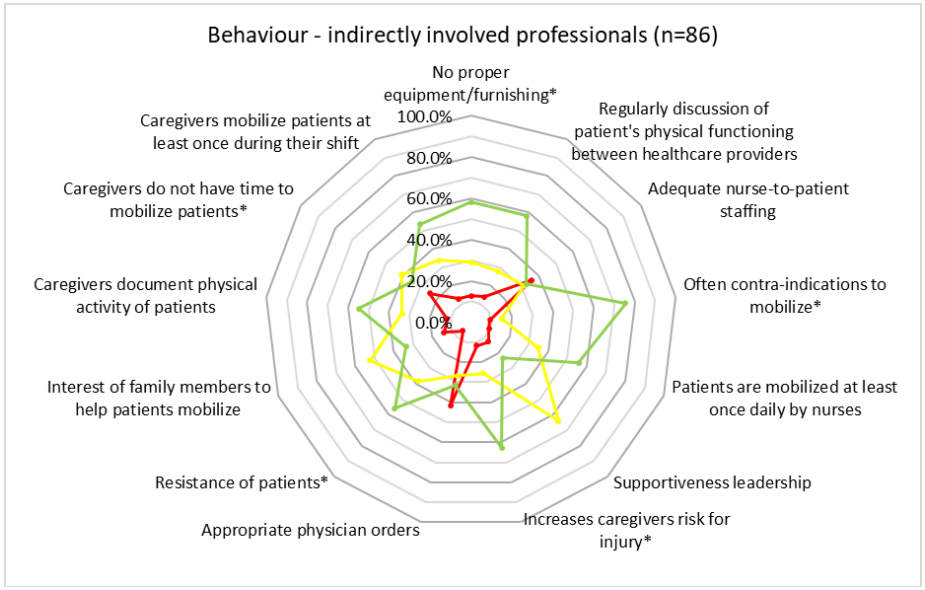

Figure 11: Behaviour – indirectly involved professionals

Behaviour

Compared to the categories knowledge and attitude, more variety is present with regard to behaviour. This also accounts for the comparison between directly and indirectly involved professionals, since six statements differ significantly (appendix VI – table 9). Directly involved professionals show more negative than positive outcomes on four of the thirteen statements being: sufficient presence of nursing staff (adequate nurse-to-patient staffing); supportiveness of leadership; appropriateness of physicians orders; and interest of family members to help the patient mobilize (figure 10). In addition, a remarkable portion of directly involved professionals is negative about the equipment and/or furnishing on their department and state that increasing mobilization will increase their risk for injury, which does not apply to indirectly involved professionals. Also the resistance of patients to mobilize is a point of attention in directly involved professionals, in which indirectly involved professionals are mainly neutral.

Compared to directly involved professionals, indirectly involved professionals are more negative than positive on two of the thirteen statements being: sufficient presence of nursing staff and the appropriateness of physicians orders (figure 11). With regard to the other two statements, i.e. supportiveness of leadership and the interest of family members to help the patient mobilize, a small part is positive and a great part of the indirectly involved professionals is neutral. The latter also accounts for the statement concerning mobilization once daily by nurses. Finally, the statement considering that professionals do not have time to mobilize patients shows that few indirectly involved professionals are positive and a remarkable part is negative, in which directly involved professionals are around the thresholds.

4.1.1. Four categories of approaches to become a 'moving hospital'

Table 3 displays the results of the rank order question examining which of the four categories of approaches to become a 'moving hospital' fits best to ZGT (sub-question three). Overall, professionals consider education as category of approaches that fits best to ZGT, closely followed by the category offering training activities. Daily schedules and moving-friendly hospital furnishing are respectively placed on the third and fourth place with a slight difference between these two categories. Education is also most frequently chosen as first option (N=118). Table 3 displays results with reclassification of missing values, however the rank order remains the same without reclassification (appendix VI – table 10).

Table 3: Ranking of categories of approaches (with reclassification of missing values)

Ranking total N=329						
Rank order[a] / **Categories**	**1 (w=0.4)**	**2 (w=0.3)**	**3 (w=0.2)**	**4 (w=0.1)**	**Total[b]**	**Overall rank order**
Offering training activities	102 (31.0)	104 (31.6)	78 (23.7)	45 (13.7)	92.1 (28.0)	2
Education	118 (35.9)	97 (29.5)	61 (18.5)	53 (16.1)	93.8 (28.5)	1
Moving-friendly hospital furnishing	53 (16.1)	54 (16.4)	115 (35.0)	107 (32.5)	71.1 (21.6)	4
Daily schedules	56 (17.0)	74 (22.5)	75 (22.8)	124 (37.7)	72 (21.9)	3

Data are presented as N (%).

[a] 1 = most preferred option; 2 = second preferred option; 3 = second-last preferred option; and 4 = least preferred option.

[b] calculated by means of frequencies and weights (w).

The three reasons that most apply to professionals who chose education as first option (N=118) are:

1. This option can be deployed short term within ZGT (applies to 94.1% of the professionals).
2. This option fits best to the needs of patients and relatives within ZGT (applies to 92.4% of the professionals).
3. This option will be used most by patients (applies to 89.0% of the professionals).

Other mentioned reasons for choosing education as first option are: education is a prior condition to execution of other categories, by use of education the patient will become responsible, currently patients are unfamiliar with physical activity during hospital admission and education will increase motivation.

By contrast, the two reasons that are considered as not applicable to this category by more than half of the professionals are as follows:

1. This option can be deployed by using volunteers instead of professionals (indicated as not applicable by 73.7% of the professionals).
2. This option requires little or no extra work of professionals (indicated as not applicable by 50.8% of the professionals).

These two reasons are also the two least applicable reasons when considering the other three categories of approaches.

The category education is closely followed by the category offering training activities, which is chosen by 102 professionals as first option. When examining reasons for choosing this category as first option, only the most applicable reason differs compared to the category education. Here, the most applicable reason is that the category offering training activities leads to the best results for the patient (applies to 91.2% of the professionals). The second and third reason applied respectively to 90.2% and 89.2% of the professionals.

4.2. Qualitative section – focus groups

The results of the focus group sessions of the wards 5 North and 4 East, related to the fourth sub-question of this study, will be presented below.

4.2.1. Focus group – surgical ward (5 North)

Six professionals participated in the focus group of the ward 5 North. The group included two physicians, one physical therapists, one head of department, one nurse and one healthcare assistant. Half of the participants were male, the other half female. The participating professionals discussed how the 'moving hospital' could be formed on their ward. With these results a scenario is developed for a general patient who is admitted to the surgical ward, Mr. Jansen.

Content of the focus group in general

One of the main results of the focus group conducted on the surgical ward is that physical activity could be increased by providing an attractive ward. This means that a stay at the ward itself needs to become more attractive than a stay in the room. It would be desirable to set-up two common rooms, one for physical activity and one to consume meals and drinks, ideally in the middle of the department. When patients are able to mobilize, they will not be served anymore. Also the awareness of patients into their own activity level is considered as important, just like compliments provided by professionals and relatives. It should be clear what is expected of patients and their relatives. Professionals consider the

several catheters of patients and the presence of doorsteps on the ward as barriers to mobilize. Based on the previous mentioned information an scenario is developed, which describes the situation of Mr. Jansen from his first visit at ZGT to discharge. It focusses on three points in time, i.e. the first visit at the surgeon, the visit at the pre-operative screening and the stay on the ward. The first two time-points mainly focus on education. The last point in time includes multiple actions, such as the card system (appendix I), education, the attractiveness of the ward and the use of a Fitbit.

Scenario

Mr. Jansen is a 75 year old men who suffers from colon cancer for which he needs surgery. In daily life he is physically active without any help. Mr. Jansen and his wife walk into the hospital to visit the surgeon at the outpatient clinic of surgery. In addition to the usual content of this consultation, the surgeon makes Mr. Jansen and his wife aware about the importance of physical activity during hospital admission by means of a verbal explanation.

Second, Mr. Jansen and his wife visit a nurse of the pre-operative screening at the outpatient clinic in preparation for surgery. Here, they will receive verbal information about the importance of physical activity for the second time. In addition, they get an information folder to take home so that they can read over again what is expected of them.

Subsequently, Mr. Jansen receives surgery. Once back on the ward he lies in bed with a drip and a urinary catheter. The card system at the end of his bed is red, what means he needs help from nurses or physical therapists to mobilize and will be served by healthcare assistants and nurses. Mr. Jansen will be mobilized the same day in order to check his physical functioning. Mrs. Jansen comes to visit her husband in the evening. When she enters the ward, she sees the instructions to be physically active on the walls. She also watches the movie displayed on the ward's television screen, which also emphasizes the importance of physical activity. Mrs. Jansen makes her husband aware of this information. The first day after surgery the card system of Mr. Jansen is changed to yellow, since physical activity is possible and even recommended. This means that he is able to mobilize with support of healthcare assistants or relatives and will not be served anymore. In the middle of the surgical ward two central rooms for patients and their relatives are present, one were physical activity can be performed and one coffee corner/dining area. Mr. Jansen is supported by professionals to consume lunch or meals in the dining area together with other patients. Healthcare assistants or nurses will assist Mr. Jansen to get there and during visiting hours Mrs. Jansen will assist him to the coffee corner. The physical therapists assists Mr. Jansen to the physical activity room, were multiple exercises can be performed for example by means of exercise bikes, a virtual bicycle experience and a Wii. Mr. Jansen is also provided with a Fitbit by a professional of the physical therapy department. The Fitbit is linked to an app, so Mr. Jansen can see how active he actually is. These results will also be available for professionals and relatives, so that they can stimulate Mr. Jansen to be active and to give him compliments about his activity level. At day two after surgery, the card system is changed to green what means Mr. Jansen is able to mobilize independently, as he was before admission. He will only receive support when necessary. He walks to the dining room by himself and a couple times a day he performs exercises in the activity room. He still wears the Fitbit. Mr. Jansen becomes sooner independent and leaves the hospital at an earlier stage without any complications.

4.2.2. Focus group – geriatric ward (4 East)

Four professionals participated in the focus group of the ward 4 East. The group included one nurse, one physical therapists, one activity therapists and one healthcare assistant. All the participating

professionals were female. The participating professionals discussed how the 'moving hospital' could be formed on their ward. With these results a scenario is developed. The scenario describes the situation of Mrs. Bakker.

Content focus group in general

The first result of the focus group of the geriatric ward is that professionals expect patients to wear daily clothes and appropriate footwear and to undertake functional walks, such as to the toilet instead of a commode chair. An important point of attention is the condition of the patient that needs to be taken into account, together with the wish of the patient to be physically active. The condition of the patient can even vary within one day. Relatives have an important role in increasing physical activity, since they need to take care of daily clothes and appropriate footwear and could encourage and assist patients to be physically active. Professionals also consider the consultation between professionals as important and clinical lessons could help in order to create further unity among professionals. One of the mentioned barriers is the distance to walk to the activity room that is placed on another ward. Time is also considered as common problem on the geriatric ward regarding physical activity. The main action of the focus group includes the use of a movie displayed at the central square of the department, together with information provided at admission. The movie takes little to no extra time of professionals, it increases awareness among patients and their relatives and informs them about what is expected. Also an expansion of the card system (appendix I) together with consultation between professionals would be helpful to increase physical activity. With use of this information a scenario is developed for Mrs. Bakker from entering the hospital to discharge to geriatric revalidation care. It focusses on two points in time, i.e. admission at the emergency department and the stay at the ward. The latter includes three main actions: an information movie; the expansion of the card system (appendix I); and consultation among professionals.

Scenario

Mrs. Bakker is a 88 year old woman who lives alone. She has one daughter. Mrs. Bakker receives home care once daily to assist her with washing and dressing. In daily live is able to walk independently with help of a walking aid. One morning, the home care nurses notices that Mrs. Bakker is confused and is not able to stand up and walk. She calls the general practitioner and Mrs. Bakker is sent to the emergency department of ZGT with an ambulance. The daughter of Mrs. Bakker goes with her. At the emergency department the first physical examinations take place and the physician makes notes in the electronic patient record. These notes also include Mrs. Bakker's prior ability to be physically active. It is decided that Mrs. Bakker will be admitted to the hospital. Therefore, Mrs. Bakker (depending on her current condition) and her daughter receive verbal information by the assigned nurse or physician about the importance of physical activity during hospital admission.

In the afternoon, Mrs. Bakker is transmitted to the geriatric ward, where an admission interview takes place between Mrs. Bakker, her daughter and a nurse. In addition to the usual content of this consultation, the nurse informs Mrs. Bakker (depending on her condition and cognition) and especially her daughter about the movie displayed at the central square of the department. This movie provides information about a physical active hospitalization. It includes an explanation of the card system used at the department and what is expected of patients and their relatives. The nurse or healthcare assistant is responsible to turn on the television at the central square during visiting hours. The daughter of Mrs. Bakker also receives an information folder to take home with a reference to the website of ZGT were the movie can be watched as well. Mrs. Bakker is transmitted to her room. The

card system and the end of her bed is red, what means she needs support from nurses or physical therapists to mobilize. Mrs. Bakker's name is written on the card by a physical therapist and the need of a walking aid is also displayed. In the evening the daughter of Mrs. Bakker visits her mother and brings daily clothes and appropriate footwear for her mother with her. The next morning, the nurse assists Mrs. Bakker in her daily clothes, however Mrs. Bakker is stimulated to do it herself as much as possible. The nurse also assists her to undertakes functional walks such as walking to the toilet instead of the commode chair. She performs exercises with supervision of the physical therapist. In the afternoon, a departmental consultation or multidisciplinary consultation between professionals of the department takes place, wherein the ability of Mrs. Bakker to be physical active is discussed for which the card system is used. The desire of Mrs. Baker to be physical active is also taken into consideration. After a few days, within the department consultation is decided that the card system of Mrs. Baker can be changed to yellow by a physical therapist. This means she is able to mobilize with help of healthcare assistants or relatives. The daughter of Mrs. Bakker visits her mother every day and stimulates her to be physically active. She takes Mrs. Baker every day for a little walk on the ward. The situation of Mrs. Bakker improves more quickly, however she still needs some assistance. Therefore she is transmitted to geriatric revalidation care, where she will receive additional treatment to return to her old functional level, which will be reached in an earlier stage.

4.3. Summary

The results of the quantitative section show that professionals associate activities that take place outside the bed as physical activity during hospital admission together with exercises performed on bed. Most professionals consider themselves as primarily responsible for initiating physical activity. For the execution of physical activity patients are primarily responsible with a slight difference relative to professionals. Third, most professionals agree that more attention should be paid to physical activity of patients. Overall, professionals consider themselves as well-known with the topic of patient mobilization, although attitude and in particular behaviour need attention. The category of approaches that will fit best to ZGT is education. Regarding the focus group sessions, both scenarios focus, besides admission on the ward, on stages prior to admission and both include education and expansion of the currently used card system.

5. Discussion

This chapter starts with a discussion of the results of the four sub-questions examined within this study, followed by methodological considerations. To complete the fourth step of the 'Implementation of Change Model', recommendations for practice will be outlined. Finally, recommendations for future research will be presented.

Discussion of the sub-questions

1. What do professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) within clinical departments of ZGT associate with a physically active hospitalization of patients when considering activities, responsibility and possible improvement?

Professionals of ZGT associate sitting out of bed; standing or walking with or without aid; and performing exercises when lying on bed, sitting on bed, sitting out of bed or standing and/or walking as physical activity whereas lying and sitting on bed do not fit to a physical active hospitalization. This is broad which can probably be explained by the fact that individual patients differ in their ability to be physically active. It is largely in line with previous research, as multiple articles consider the importance of the patient being out of bed (2, 12, 24). However, some studies do not consider sitting out of bed as activity (11, 27) and also information about performing exercises on bed as activity lacks. Second, professionals consider themselves as primarily responsible for initiating physical activity of patients. Previous literature already pointed out the importance of encouragement from professionals to increase patients' physical activity (4, 10). A study performed within patients showed that 85% of them considered recommendations of professionals as helpful in order to be active (10). For the execution of physical activity patients are slightly more than professionals considered as primarily responsible. This can probably be explained by the fact that some patients need assistance to mobilize, which is pointed out as barrier to be active in previous research (27). Third, improvement of physical activity within ZGT is definitely possible, as a large portion of the respondents agreed that more attention should be paid to physical activity by both professionals and patients. It is already known that mobility is limited in patients admitted to the hospital (2-6) and the results of ZGT emphasize the need for change. It also stresses the presence of awareness among professionals, which is an important condition to make change possible (21). To conclude, the following definition of mobilization will fit to ZGT: "Stimulating and when necessary assisting patients to get out of bed (i.e. sitting out of bed, standing, walking or performing exercises) or to perform exercises on bed".

2. What are the current opinions considering knowledge, attitude and behaviour of professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) within clinical departments of ZGT regarding patient mobilization?

Of the three examined categories within this study, knowledge is sufficient and only needs little attention, in contrast to the categories attitude and in particular behaviour which will need greater attention. As previously mentioned, behaviour change will be more sustainable if knowledge and attitude are taken into consideration (22), which indicates that ZGT is on the right track. Small points of attention regarding knowledge are: received training; need of additional training; need of additional information; and the encouragement of caregivers to educate patients. Received training was previously mentioned as barrier in the study of Hoyer et al. (24). Regarding attitude, increasing work for nurses, physical and occupational therapists and healthcare assistants is the most striking point of attention and also raised in previous research (24, 26). Unity among professionals is also a point of attention, since no clear overview is present with regard to the statement that physical therapists or

occupational therapists should be the primary care provider in patient mobilization. In previous research, professionals thought nurses were too busy and therefore physical therapist were in a better position to help (27). It suggests that tasks within ZGT are not clear yet. Regarding behaviour, staffing; supportiveness of leadership; appropriate physician orders; and the interest of family members are main attention points, of which the last three were not present in the study of Hoyer et al. (24). Also the presence of proper equipment; risk for injury of professionals; and the resistance of patients need some attention. The great amount of professionals who were neutral regarding behaviour can possibly be explained by the fact that the option 'I don't know' lacked in the questionnaire.

3. *Looking at four categories of approaches to become a 'moving hospital', i.e. offering training activities, education, moving-friendly hospital furnishing and daily schedules, which approach fits best to ZGT according to professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) of clinical departments?*
Education is the category that fits best to ZGT followed by offering training activities, daily schedules and a moving-friendly hospital furnishing. It seems that awareness among patients and their relatives is a number one priority. Previous research already suggested the need to change the expectations of patients from bed rest to physical activity, since 38% of them believed that they had to stay in bed until they felt well again (4). This is in line with another study, where only 29% of the patients believed that they had to exercise during their stay (10). The category education is considered as usable in short-term, what emphasizes the desire to improve physical activity within ZGT at short notice. It is quite remarkable that ZGT's professionals consider a moving-friendly hospital furnishing as category of their last choice. The care for patients is currently designed around the bed and there are no temptations to get out of it (1). Within earlier research among professionals and patients, the first group already stated the lack of chairs and the television which is placed from the perspective of the patient in bed (27). In addition, attractive destinations to walk to are lacking (4). It is probably the category of last choice because this option alone will not stimulate physical activity. By contrast, the categories offering training activities and daily schedules will probably stimulate patients more naturally.

4. *What will be a suitable scenario according to professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) of the surgical and the geriatric ward within ZGT to make a step forward towards a 'moving hospital' at their department?*
A suitable scenario of the surgical ward focusses on three points in time, i.e. the first visit at the surgeon; the visit at the pre-operative screening; and the stay on the ward. Education is important at all the time points and the stay on the ward includes multiple actions, namely use of the card system (appendix I); an increase of the attractiveness of the ward to be physical active; and the use of a Fitbit. Previous studies already used accelerometers to measure activity (5, 6, 9) and one of these studies stated that accelerometers with provision of ranges could increase awareness into activity levels (6). Also the attractiveness of hospital environments, such as common rooms, is previously mentioned as intervention that potentially can increase physical activity (4, 11). The geriatric ward focuses on two points in time: i.e. the admission at the emergency department and the stay at the ward, with also a focus on education at both timepoints. Actions for the ward itself are: a movie to educate patients and their relatives; an expansion of the card system (appendix I); and consultation among professionals. Increasing physical activity requires a multidisciplinary approach, because various professionals are concerned within the care process of patients and have their own responsibilities (24). Although both scenarios differ in their actions, what is probably caused by the different patient groups they treat,

multiple similarities are present as well. Both wards explicit mentioned the importance of education, not only at the ward itself but also provided in earlier stages. Second, the use of the card system (appendix I) was considered in both focus groups. Third, both wards considered a movie as usable. Such a movie is already present in the Netherlands, namely within UMC Utrecht (45).

Methodological considerations

Several methodological considerations can be made based on this study. To begin, two models were central in this study: the 'Implementation of Change Model' of Grol and Wensing and the knowledge, attitude and behaviour framework of Cabana et al. The former was used as guidance to perform this study and the latter for the examination of opinions of professionals regarding patient mobilization related to the second sub-question. The 'Implementation of Change Model' includes the whole implementation process and during this study the model offered a systematic way of working. Although the model contains specific steps, own interpretation of the steps is possible what allows flexibility. However, it takes a lot of time to complete all the seven steps and within this study only the second to fourth step are taken into consideration. Besides, evaluation is displayed as seventh step, although it is of added value during the entire process. Second, the knowledge, attitude and behaviour framework was used to examine opinions of professionals regarding patient mobilization. All three categories seemed to give a better understanding of professionals' opinions with regard to the topic. However, the sub-categories mentioned within the theoretical framework were not used within this study although these categories probably would have provided a more specific overview.

Besides the pros and cons of the included frameworks, the methodology of this study also contains some strengths and limitations. One of the positive points of this study is the large group professionals that participated in the questionnaire, this increases the likelihood a sufficient overview of ZGT as whole and emphasizes the interest of professionals into the topic. A response of 329 professionals was not expected, since the time necessary to complete the questionnaire was quite long and workload is an increasing problem in today's healthcare (46-49). Also the use of qualitative research in addition to quantitative research is a strength, as it provides a better understanding of how to become a 'moving hospital'. The study is broad and comprehensive and the outcomes seems to be useful to set a step forward towards the creation of 'moving hospital'. However, some points of criticism can be made. The examination of knowledge, attitude and behaviour was based on the questionnaire of Hoyer et al., wherein psychometric characteristics were acceptable although further evaluation was recommended (24). Besides, the original questionnaire was adapted to the situation of ZGT. For these two reasons internal consistency scores were recalculated, which were mainly questionable. Nevertheless, results of individual statements were certainly considered as useful and analysis took place by thresholds based on the 'Diffusion of Innovation Theory'. However, some results were present around the thresholds and could have been different in case of other cut-off values. With regard to the rank order question, missing values were reclassified assuming that respondents did not change anything to the presented rank order. It remains unclear if patients agreed with the presented ranking or that they did not respond. However, the overall rank order did not change when reclassifying missing values. In addition, weights with an equal distance were allocated, although these could be different in reality. This could in turn lead to another rank order. To conclude, opinions of participants of the focus groups were similar in general, however saturation could have been increased when the major functions (such as physicians, nurses and healthcare assistants) would have been present in twofold, as the physicians in the focus group of 5 North were.

Recommendations for practice

As a result of this study, multiple recommendations for ZGT to set a step forward towards a 'moving hospital' can be made. This completes the fourth step of the 'Implementation of Change Model': the development and selection of strategies and measures to change practice (21). The recommendations are based on the results of the questionnaire and the focus group sessions, which together formed the third and a beginning of the fourth step of the 'Implementation of Change Model'.

First, ZGT should focus on the education of patients and relatives to increase awareness of the importance of physical activity during hospital admission. This can be achieved by use of multiple interventions: offering verbal explanation performed by a physician when entering the hospital; offering verbal explanation performed by a nurse at admission consultations performed on the ward; a ZGT-wide movie about the topic; information presented in an information folder; and information at the website of ZGT. It is recommended to adapt the information to the situation of ZGT.

Second, ZGT should expand the current available card system (appendix I). Names of patients and aids that patients need to use should be added. The content should be expanded as well, for example by adding stages at which patients will be served and will not be served by professionals. The responsibility of changing the system lies within the department of physical therapy. It is recommended to implement the card systems on every department within ZGT.

Third, ZGT should create uniformity among professionals. It is important that tasks are clear. A suggestion would be to set-up a document with responsibilities for each function group. Clinical lessons on wards can be useful to create uniformity. These can be developed and performed by the specific wards itself. ZGT should also provide additional training for professionals who stated this need.

The change towards a 'moving hospital' will affect the entire hospital. The importance of physically activity needs to be clear everywhere. Besides, it is important to take the presence of increased work into account, since this is considered as one of the main points of attention according to professionals. It is assumed that the above mentioned recommendations will already take these points of attention into account, however additional attention is preferred. Workload is an increasing problem in today's healthcare (46-49) and influences the ability to innovate (50). One of the reasons for this experienced workload is the increase of (new) or more difficult/complex tasks (46, 49). A lack of autonomy has a negative influence as well (47, 50). Examples of measures already taken by hospitals to decrease workload are: more efficiently design of work processes (46, 49) and discussion of experienced workload (46). The Job Demand-Control model of Karasek indicates that a high degree of control at high job requirements is necessary to create active jobs with learning opportunities. Besides, social support has also a positive effect on workload (51, 52). Based on the previous information, it is suggested to increase professionals' autonomy by keeping them involved in the development of a 'moving hospital' and to discuss the process of change regularly.

By means of the above mentioned recommendations, the first four steps of the 'Implementation of Change Model' have been completed. However, step five till seven still need to be performed within ZGT. It includes the following steps: 5. development, testing and execution of implementation plan, 6. integration of changes in routine care and 7. (continuous) evaluation and (where necessary) adapting plan. For now, ZGT should create an implementation plan with clear tasks and responsibilities and start with the implementation of the recommended actions. Since length-of-stay is a positive effect of increased physical activity during hospital admission (11, 12) and is easily available, this indicator can be used to measure effectiveness of changes.

Recommendations for future research

This study is based on the current state of mind of professionals in order to set a step forward towards ZGT as 'moving hospital'. Patients' point of view has not been taken into consideration. Since patients are an important stakeholder with regard to a 'moving hospital', it is recommended to include them in future research. Patients could have an important role in the development and evaluation of the recommended actions such as a movie about the importance of physical activity during hospital admission. For this purpose, the CeHRes-roadmap could be used in which stakeholders participate in the development of eHealth technologies to ensure it fits the ones involved (53). Second, this study only included professionals of clinical departments, however the important role of other professionals emerged in this study. It is therefore recommended to include other professionals, such as the ones of outpatient clinics, as well. Third, the results focus on all the professionals in total, despite of the fact earlier research noticed differences between function groups (24). A suggestion would be to increase the focus on function groups in future research. Finally, the focus groups of this study emphasize the situation on the surgical ward and the geriatric ward. An overall strategy for ZGT can be developed, however the various departments can require some specific additions. Therefore, some deeper research into other departments can be necessary at a later stage. It is important to consider that since ZGT is central to this study, results cannot simply be applied to other hospitals.

6. Conclusion

This master thesis is entitled: *A 'moving hospital', is ZGT ready? An examination of the current state of mind of professionals*, with the main question: *What does ZGT need to become a 'moving hospital' according to professionals (i.e. heads of departments, physicians, nurses, healthcare assistants and therapists) of clinical departments?*

ZGT is definitely ready to make step forward towards a 'moving hospital'. Overall, professionals are well-known with regard to the topic of patient mobilization and are aware of the need for change. In order to meet the points of attention that emerged as result of this study, ZGT needs to primarily focus on education of patients and their relatives. It is good to bear in mind that the change will affect the entire hospital instead of just the clinical departments. Awareness of patients and their relatives can be increased by means of little additional work, what is important as increased work for professionals was considered as one of the main points of attention in this study. For the same purpose, the hospital can expand the currently used card system of the physical therapy department. These steps will increase awareness of the importance of a physically active hospitalization and will form the start towards a 'moving hospital'.

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Appendix I – Card system ZGT

The physical therapy department of ZGT makes use of a card system, which provides information about the patient's ability to walk independently (54). It is displayed in figure 12.

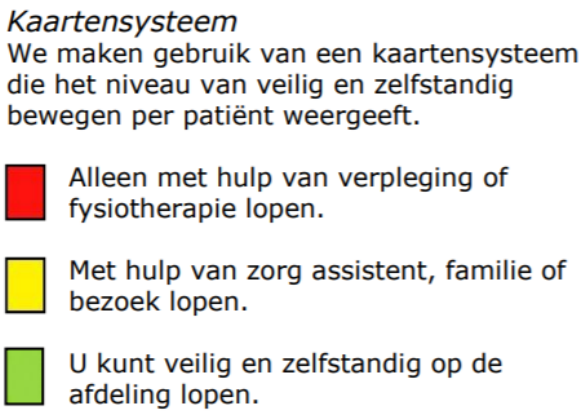

Figure 12: currently used card system of ZGT

Appendix II – Questionnaire

07-05-2018

Beste zorgprofessional van ZiekenhuisGroep Twente,

ZGT wil zich graag ontwikkelen tot een beweegziekenhuis. Dit is een ziekenhuis waarin patiënten gedurende een ziekenhuisopname worden gestimuleerd om lichamelijk zo veel mogelijk actief te zijn. Het is van groot belang inzicht te krijgen in de opvattingen van zorgprofessionals ten aanzien van deze ontwikkeling. Daarom doe ik, als afstudeeropdracht voor de master Health Sciences aan de Universiteit Twente, onderzoek naar deze opvattingen door middel van een vragenlijst. Het onderzoek wordt gedaan in opdracht van ZGT en in kader van het programma 'ZGT-Beweegt!'.

Het doel van de vragenlijst is om inzicht te krijgen in wat zorgprofessionals in verband brengen met het stimuleren van lichamelijke activiteit tijdens een ziekenhuisopname, hoe zorgprofessionals hier tegenover staan en wat ingezet kan worden om van ZGT een beweegziekenhuis te maken. Met behulp van de resultaten zullen vervolgens twee groepsinterviews worden uitgevoerd om uiteindelijk een plan van aanpak voor ZGT op te kunnen stellen.

De vragenlijst bestaat uit vier delen en het invullen duurt ongeveer 10 à 15 minuten. Invullen is mogelijk t/m zondag 3 juni. Met het invullen van deze vragenlijst geeft u akkoord tot het gebruik van de door u ingevulde gegevens. De verkregen resultaten zullen anoniem verwerkt worden. Mocht u vragen of opmerkingen hebben over het onderzoek, dan kunt u contact met mij opnemen via [xxxxxxxx]. Alvast hartelijk dank voor uw medewerking.

Klik op de onderstaande link om de vragenlijst te starten:

Of kopieer en plak de onderstaande URL in uw internetbrowser:

Met vriendelijke groet,

Lisa Abbink
Afstudeerstudent master Health Sciences

Introductie

Welkom bij de vragenlijst.
U kunt de vragenlijst starten door middel van het pijltje.
Veel succes.

Deel 1 - Demografische gegevens

- Wat is uw geslacht?
  a. Man
  b. Vrouw

- Wat is uw leeftijd?
  Invullen door middel van cijfers.

- Wat is uw functie?
  a. Medisch specialist
  b. Arts-assistent (AIOS/ANIOS)
  c. Verpleegkundig specialist
  d. Verpleegkundige
  e. Zorgassistent
  f. Fysiotherapeut
  g. Ergotherapeut
  h. Unithoofd
  i. Anders, namelijk …

- Op welke afdeling bent u werkzaam?
  Bent u niet direct verbonden aan een afdeling of bent werkzaam op meerdere afdelingen, vul dan de afdeling in waar u het grootste gedeelte van uw tijd werkzaam bent.
  a. 5 Noord Almelo
  b. 5 Zuid Almelo
  c. 5 West Almelo
  d. 5 Oost Almelo
  e. 4 Oost Almelo
  f. 4 Zuid Almelo
  g. 4 West Almelo
  h. 3 Noord Almelo
  i. 3 Zuid Almelo
  j. 3 West Almelo
  k. Intensive Care Almelo
  l. Kindergeneeskunde Almelo
  m. Psychiatrie Almelo
  n. A1 Hengelo
  o. A0 Hengelo
  p. Anders, namelijk …

- Hoeveel jaar bent u werkzaam binnen uw huidige functie in een ziekenhuisomgeving?
  Invullen door middel van cijfers afgerond tot een geheel getal.

Deel 2 – Inhoud lichamelijk actieve ziekenhuisopname

- Welke van de onderstaande activiteiten associeert u met lichamelijke activiteit van patiënten tijdens ziekenhuisopname?
  Meerdere antwoorden mogelijk.
  a. Liggen op bed
  b. Uitvoeren van oefeningen liggend op bed
  c. Zitten op bed
  d. Uitvoeren van oefeningen zittend op bed
  e. Zitten buiten het bed
  f. Uitvoeren van oefeningen zittend buiten het bed
  g. Staan met of zonder hulpmiddel
  h. Lopen met of zonder hulpmiddel
  i. Uitvoeren van oefeningen staand en/of lopend

- Wie is volgens u primair verantwoordelijk voor <u>de aanzet tot</u> lichamelijke activiteit van patiënten tijdens ziekenhuisopname?
  a. De zorgprofessional
  b. De patiënt

- Wie is volgens u primair verantwoordelijk voor <u>de uitvoering van</u> lichamelijke activiteit van patiënten tijdens ziekenhuisopname?
  a. De zorgprofessional
  b. De patiënt

- In hoeverre bent u het eens met de volgende stelling:
  Er zou door zorgprofessionals meer aandacht besteed moeten worden aan lichamelijke activiteit van patiënten tijdens ziekenhuisopname.
  a. Zeer mee oneens
  b. Mee oneens
  c. Neutraal
  d. Mee eens
  e. Zeer mee eens

- In hoeverre bent u het eens met de volgende stelling:
  Er zou door patiënten meer aandacht besteed moeten worden aan lichamelijke activiteit tijdens ziekenhuisopname.
  a. Zeer mee oneens
  b. Mee oneens
  c. Neutraal
  d. Mee eens
  e. Zeer mee eens

Deel 3 – Kennis, attitude en gedrag

(Medisch specialisten, arts-assistenten, verpleegkundig specialisten en unithoofden zullen de stellingen aangegeven met i ontvangen. Verpleegkundigen, zorgassistenten, fysiotherapeuten en ergotherapeuten zullen de stellingen aangegeven met een d ontvangen. Wanneer bij functie: 'anders, namelijk…' is ingevuld zal men de onderstaande vraag ontvangen. Wanneer zij hierop antwoorden met 'Ja' zullen zij de stellingen aangegeven met een d ontvangen. Wanneer zij hierop antwoorden met 'Nee' zullen zij de stellingen aangegeven met een i ontvangen.)

- Hoort het direct stimuleren en assisteren van patiënten om uit bed te gaan tot uw takenpakket?
  a. Ja
  b. Nee

Hiervoor heeft u aangegeven welke activiteiten u associeert met lichamelijke activiteit van patiënten. Hierna zullen stellingen aan u worden voorgelegd over het mobiliseren van patiënten. Om de stellingen te beantwoorden willen wij u vragen de volgende definitie van mobiliseren in acht te nemen:

"*Het stimuleren of assisteren van patiënten om uit bed te gaan (bijvoorbeeld zitten buiten het bed, toiletbezoek aan de rand van het bed of in een badkamer, staan en lopen)*".

Per stelling kunt u één van de vijf mogelijkheden invullen: zeer mee oneens, mee oneens, neutraal, mee eens en zeer mee eens. Wanneer er in de stellingen verwezen wordt naar 'mijn patiënten' zal het gaan over patiënten opgenomen op de afdeling waar u werkzaam bent.

	Zeer mee oneens	Mee oneens	Neutraal	Mee eens	Zeer mee eens
• Mijn patiënten zijn te ziek om te mobiliseren.	O	O	O	O	O
• d Ik heb training ontvangen over hoe ik mijn patiënten veilig kan mobiliseren.	O	O	O	O	O
i -					
• Een toename in het mobiliseren van mijn patiënten zal nadelig voor hen zijn.	O	O	O	O	O
• Een fysio- of ergotherapeut zou de primaire zorgverlener moeten zijn wat betreft het mobiliseren van mijn patiënten.	O	O	O	O	O
• Ik ben op de hoogte van de inhoud en doelstellingen van het mobiliseren van mijn patiënten.	O	O	O	O	O
• Ik ben bekend met de nadelen van lichamelijke inactiviteit van mijn patiënten.	O	O	O	O	O
• Ik ben bekend met de voordelen van lichamelijke activiteit van mijn patiënten.	O	O	O	O	O
• We hebben niet de geschikte benodigdheden en/of inrichting om mijn patiënten te mobiliseren.	O	O	O	O	O
• Het lichamelijk functioneren van mijn patiënten wordt met regelmaat besproken tussen zorgverleners van de patiënt (verpleegkundigen, artsen, fysiotherapeuten en ergotherapeuten).	O	O	O	O	O
• Er is voldoende verpleegkundig personeel om patiënten op mijn afdeling te kunnen mobiliseren.	O	O	O	O	O
• Mijn patiënten hebben vaak contra-indicaties om te mobiliseren.	O	O	O	O	O
• Mijn patiënten worden minimaal één keer per dag gemobiliseerd door verpleegkundigen, behalve wanneer er een contra-indicatie is.	O	O	O	O	O

•		Een toename in het mobiliseren van mijn patiënten zal meer werk zijn voor verpleegkundigen.	O	O	O	O	O
•		Een toename in het mobiliseren van mijn patiënten zal meer werk zijn voor fysio- en/of ergotherapeuten.	O	O	O	O	O
•		Een toename in het mobiliseren van mijn patiënten zal meer werk zijn voor zorgassistenten.	O	O	O	O	O
•		Een toename in het mobiliseren van mijn patiënten zal meer werk zijn voor artsen.	O	O	O	O	O
•		Mijn leidinggevende is zeer ondersteunend wat betreft het mobiliseren van patiënten.	O	O	O	O	O
•	d	Het vaker mobiliseren van mijn patiënten verhoogt mijn risico op letsel.	O	O	O	O	O
	i	Het vaker mobiliseren van patiënten verhoogt het risico op letsel van zorgverleners werkzaam op mijn afdeling.	O	O	O	O	O
•		Patiënten die mogen mobiliseren hebben hier meestal een passend voorschrift van de arts voor.	O	O	O	O	O
•		Mijn patiënten willen niet mobiliseren.	O	O	O	O	O
•		Ik heb behoefte aan aanvullende informatie over de effecten van mobilisatie.	O	O	O	O	O
•	d	Ik heb behoefte aan aanvullende training over het mobiliseren van patiënten.	O	O	O	O	O
	i	-					
•		Ik ben er van overtuigd dat mijn patiënten die minimaal drie keer per dag mobiliseren betere uitkomsten zullen hebben.	O	O	O	O	O
•	d	Ik weet niet zeker wanneer het veilig is om mijn patiënten te mobiliseren.	O	O	O	O	O
•	i	Ik denk dat zorgverleners werkzaam op mijn afdeling niet zeker weten wanneer het veilig is om patiënten te mobiliseren.	O	O	O	O	O
•		Familieleden van mijn patiënten willen hen vaak helpen bij het mobiliseren.	O	O	O	O	O
•	d	Ik voel mij niet zeker over mijn bekwaamheid met betrekking tot het mobiliseren van mijn patiënten.	O	O	O	O	O
	i	Ik denk dat zorgverleners werkzaam op mijn afdeling zich niet zeker voelen over hun bekwaamheid met betrekking tot het mobiliseren van patiënten.	O	O	O	O	O
•	d	Tijdens mijn dienst rapporteer ik de lichamelijke activiteit van mijn patiënten.	O	O	O	O	O
	i	Zorgverleners werkzaam op mijn afdeling rapporteren tijdens hun dienst de lichamelijke activiteit van patiënten.	O	O	O	O	O
•	d	Ik heb tijdens mijn dienst geen tijd om mijn patiënten te mobiliseren.	O	O	O	O	O

	i	Zorgverleners werkzaam op mijn afdeling hebben tijdens hun dienst geen tijd om patiënten te mobiliseren.	○	○	○	○	○
•	d	Ik mobiliseer mijn patiënten minimaal één keer tijdens mijn dienst, behalve wanneer er een contra-indicatie is.	○	○	○	○	○
	i	Zorgverleners werkzaam op mijn afdeling mobiliseren patiënten minimaal één keer tijdens hun dienst, behalve wanneer er een contra-indicatie is.	○	○	○	○	○
•	d	Ik geef voorlichting aan mijn patiënten om oefeningen te doen of hun lichamelijke activiteit te verhogen, tenzij er een contra-indicatie is.	○	○	○	○	○
	i	Ik stimuleer zorgverleners werkzaam op mijn afdeling om voorlichting te geven aan patiënten om oefeningen te doen of hun lichamelijke activiteit te verhogen.	○	○	○	○	○
•		Mijn patiënten hebben gedurende hun dag tijd om minimaal drie keer te mobiliseren.	○	○	○	○	○

Deel 4 – Toepassingen

- Hieronder worden vier categorieën met toepassingen beschreven die gebruikt kunnen worden om een beweegziekenhuis te creëren.
  Lees de onderstaande categorieën door.

1. <u>Aanbieden van oefenactiviteiten</u>

Binnen deze categorie zal het aanbieden van oefeningen ten behoeve van lichamelijke activiteit centraal staan. Zo kan er bijvoorbeeld een beweegapplicatie voor iPad of smartphone ingezet worden met oefeningen aangepast aan de mogelijkheden van de patiënt. Ook kunnen activiteitenmeters het beweeggedrag registreren, wat inzicht biedt en als stimulans gebruikt kan worden voor lichamelijke activiteit. Trainingsgroepen onder begeleiding van een zorgprofessional kunnen lichamelijke activiteit stimuleren en ondersteunen. Tot slot kunnen patiënten bijvoorbeeld gebruik maken van een fietslabyrint, een hometrainer gekoppeld aan een tv-scherm, waardoor zij virtueel door een (bekende) omgeving kunnen fietsen.

2. <u>Educatie</u>

Bij de categorie educatie zal voorlichting aan zowel patiënten als naasten centraal staan. Zij ontvangen voorafgaand aan opname bijvoorbeeld een informatiefolder over de invloed van lichamelijk activiteit en hoe dit uitgevoerd kan worden. Deze informatie zal ondersteunend zijn aan de (opname)gesprekken die volgen met de patiënt en naasten. Daarnaast zullen posters en schermen op de gang en tablets op de kamer van de patiënt deze informatie bieden, net als de website van ZGT. Hier kan bijvoorbeeld een introductiefilmpje voor worden gebruikt. Alles is gericht op het vergroten van kennis en het aanscherpen van de verwachtingen van patiënt en naasten.

3. <u>Beweegvriendelijke inrichting van het ziekenhuis</u>

De inrichting van het ziekenhuis zal zich richten op het stimuleren van lichamelijke activiteit van patiënten en tevens van zorgprofessionals. Gangen en trappenhuizen zullen bijvoorbeeld worden voorzien van stimulerende teksten of afstandsaanduidingen. Bedhoezen die overdag het bed zullen bedekken geven het bed een minder centrale positie in de ziekenhuiskamer en comfortabele stoelen

zullen patiënten stimuleren om uit bed te gaan. Daarnaast kunnen binnen het ziekenhuis looproutes worden uitgezet met een aantrekkelijke eindbestemming zoals een koffiehoek.

4. Dagindeling

Een dagindeling voor de patiënt zal zowel informatie bieden voor de patiënt, naasten, als voor de zorgprofessional. Zo kan aan bed bijvoorbeeld informatie geboden worden over de mogelijkheden van de patiënt tot zelfredzaamheid. Patiënten worden gestimuleerd dagelijkse kleding en gedegen schoeisel te dragen in plaats van een pyjama. De arts komt in mindere mate aan het bed en in plaats daarvan gaan patiënten naar de afspraak met de arts toe. Verder kunnen patiënten op bepaalde tijdstippen gezamenlijk eten. Al deze toepassingen zorgen voor een dagindeling waardoor lichamelijke activiteit gestimuleerd wordt.

Welke categorie vindt u het best passen bij ZGT?
Zet de categorieën in de door u gewenste volgorde, met op de eerste plek de categorie die volgens u het best past en op de laatste plek de categorie die volgens u het minst goed past bij ZGT. U kunt de categorieën verslepen met behulp van uw muis.

- Wat is de reden dat u de categorie, die u op de eerste plek heeft geplaatst, het meest passend vindt bij ZGT?
  Geef per reden aan of deze wel of niet van toepassing is.

Ik denk dat deze categorie:

	Niet van toepassing	Wel van toepassing
• het best past bij de behoefte van patiënten en naasten binnen ZGT	O	O
• het minst complex in gebruik is voor patiënten en naasten	O	O
• het meest gebruikt zal worden door de patiënt	O	O
• tot het beste resultaat leidt voor de patiënt	O	O
• het best past bij de behoefte van zorgprofessionals binnen ZGT	O	O
• het minst complex in gebruik is voor zorgprofessionals	O	O
• zorgprofessionals weinig tot geen extra werk oplevert	O	O
• ingezet kan worden door gebruik te maken van vrijwilligers in plaats van zorgprofessionals	O	O
• op korte termijn ingezet kan worden binnen ZGT	O	O
• het beste aansluit bij de huidige werkwijze van ZGT	O	O
• het meest flexibel is en daardoor aangepast kan worden aan individuele afdelingen van ZGT	O	O
• financieel het meest haalbaar is voor ZGT, omdat baten opwegen tegen kosten	O	O
• het best past bij huidige ontwikkelingen in de zorg	O	O

Ik denk dat deze categorie het best past bij ZGT om een andere reden, namelijk …

Afsluiting

- Mocht u vragen en/of opmerkingen hebben dan kunt u dit hieronder vermelden.

U bent aan het einde gekomen van de vragenlijst. Hartelijk dank voor het invullen.

Appendix III – Guidebook focus group

Introductie (5 minuten)

Welkom bij de focusgroep over het beweegziekenhuis gericht op jullie afdeling, afdeling …. Om te beginnen wil ik jullie alvast heel erg bedanken voor deelname aan deze focusgroep. Mijn naam is Lisa Abbink en in opdracht van het ZGT en in kader van de master Health Sciences voer ik onderzoek uit naar de ontwikkeling van een beweegziekenhuis. Dit is een ziekenhuis waarin patiënten gestimuleerd worden om zo snel en zo veel mogelijk lichamelijk actief te zijn. Het onderzoek wordt ondersteund vanuit het programma 'ZGT Beweegt' en de afdeling fysiotherapie. Jullie afdeling is uitgekozen voor de focusgroep, omdat de ligduur van patiënten relatief lang is.

Het doel van deze focusgroep is nagaan hoe het beweegziekenhuis vorm zou kunnen krijgen op jullie afdeling, door middel van een scenario beschrijving. Voor de scenario beschrijving zal de PACT-analyse worden gebruikt. PACT is een afkorting voor Personen, Activiteiten, Context en Technologie. Ook zullen de resultaten van de vragenlijst binnen ZGT worden meegenomen. De uiteindelijke uitkomst van deze focusgroep is een concreet scenario van het beweegziekenhuis op jullie afdeling. Binnen een focusgroep staat het overleg en de discussie met elkaar centraal.

Zoals jullie weten zal de focusgroep opgenomen worden door middel van een audiobestand. Hiervoor hebben jullie een formulier ondertekend. Dit audiobestand zal alleen gebruikt worden om resultaten te kunnen uitwerken en zal na het onderzoek verwijderd worden. Ook is deelname anoniem, wat wil zeggen dat jullie niet herleidbaar zullen zijn bij naam. Om na te kunnen gaan wie wat heeft genoemd tijdens het gesprek wil ik jullie vragen het nummer, welke jullie hebben gekregen, te noemen wanneer je reageert. De focusgroep zal ongeveer een uur tot anderhalf uur in beslag nemen. Ik zal de focusgroep leiden. … is als tweede persoon bij de focusgroep aanwezig om aantekeningen te maken en te tijd te bewaken.

Zijn er op dit moment nog vragen?

Activity (welke activiteiten zijn nodig?) (10 minuten)

ZGT-breed gezien hebben zorgprofessionals geantwoord dat er zowel door zorgprofessionals als door patiënten meer aandacht besteedt zou moeten worden aan lichamelijke activiteit van patiënten. Wat betreft de activiteiten die patiënten zouden moeten uitvoeren om lichamelijke actief te zijn werd aangegeven dat patiënten op zijn minst buiten het bed zouden moeten zitten of anders oefeningen op bed zouden moeten uitvoeren.

- Welke concrete activiteiten zien jullie patiënten op jullie afdeling uitvoeren als het gaat om het verhogen van lichamelijke activiteit en wat is hier voor nodig?
- (Welke concrete activiteiten zouden jullie als professionals kunnen ondernemen om patiënten op jullie afdeling meer actief te laten zijn en wat is hier voor nodig?)

Educatie van patiënten werd gezien als categorie wat het best past bij ZGT om in te zetten in relatie tot een beweegziekenhuis. (Zo nodig op een later moment vragen).

- (Hoe zou de categorie educatie binnen jullie afdeling vorm kunnen krijgen/hoe kun je er voor zorgen dat patiënten geïnformeerd worden over wat van hen wordt verwacht?)

People (wie zijn er betrokken?) (10 minuten)

Volgens de vragenlijst werden zorgprofessionals primair verantwoordelijk gehouden voor de aanzet tot lichamelijke activiteit van patiënten. Voor de uitvoer van lichamelijke activiteit was deze verdeling iets minder duidelijk en werden patiënten iets vaker dan zorgprofessionals primair verantwoordelijk gehouden. Wat betreft de hulp van familieleden werd door een minderheid van de zorgprofessionals geantwoord dat zij vaak geïnteresseerd waren om patiënten te helpen bij mobilisatie.

- Wat is volgens jullie de rol van jullie als zorgprofessional op de afdeling wat betreft het verhogen van lichamelijke activiteit van patiënten tijdens ziekenhuisopname?
- Wat is volgens jullie de rol van patiënten op de afdeling wat betreft het verhogen van lichamelijke activiteit tijdens ziekenhuisopname?
- Wat is volgens jullie de rol van naasten van patiënten op de afdeling wat betreft het verhogen lichamelijke activiteit van patiënten?

Context (in welke context moet het worden geplaatst/hoe kan het uiteindelijk worden uitgevoerd?) (10 minuten)

Er werd vaak aangegeven dat het vaker mobiliseren van patiënten meer tijd zou kosten met name van verpleegkundigen, fysio- en/of ergotherapeuten en zorgassistenten.

- Wat zijn volgens jullie mogelijkheden om patiënten op jullie afdeling meer lichamelijk actief te laten zijn rekening houdend met de tijd van verpleegkundigen, therapeuten en zorgassistenten?

De categorie patiënten verschilt op iedere afdeling:

- Waar moet rekening mee gehouden worden gezien de patiëntengroep op jullie afdeling wanneer men interventies wil inzetten om lichamelijke activiteit te stimuleren?

Technology (wat kan ingezet worden, bijvoorbeeld door middel van technologie?) (10 minuten)

Gezien wat we zojuist besproken hebben:

- Zou technologie gebruikt kunnen worden om de activiteiten vorm te geven?
- Zou de ontwikkeling van een app hulp kunnen bieden en zo ja, op welke manier?

Afsluiting (5 minuten)

Graag zou ik de focusgroep willen afsluiten. Samenvatting scenario beschrijving geven. Hebben jullie aanvullende punten die op dit moment nog belangrijk zijn om mee te nemen? Graag wil ik jullie bedanken voor deelname aan de focusgroep.

Appendix IV – Consent form focus group

Toestemmingsformulier deelname/opname focusgroep

Naam van het onderzoeksproject
Onderzoek beweegziekenhuis

Doel van de focusgroep
Het doel van deze focusgroep is nagaan hoe het beweegziekenhuis vorm zou kunnen krijgen op uw afdeling, door middel van een scenario beschrijving. Hiervoor zullen de uitkomsten van de vragenlijst, die onder medewerkers van ZGT is verspreid, worden gebruikt. Met de uitkomsten van zowel de vragenlijst als de focusgroepen zal uiteindelijk een plan van aanpak voor ZGT worden opgesteld.

Audio-opname
Van de focusgroep zal een audio-opname worden gemaakt, welke gebruikt zal worden om de scenario beschrijving verder uit te werken. De opname zal alleen gebruikt worden door de onderzoeker, zal opgeslagen worden op de werkomgeving van ZGT en zal maximaal 3 maanden worden bewaard.

Vertrouwelijkheid van gegevens
De verkregen gegevens zullen anoniem worden verwerkt. Dit wil zeggen dat u niet herleidbaar bent aan de hand van uw naam. Er zal bij beschrijving van de resultaten verwezen worden naar functie en afdeling.

Vrijwilligheid
Deelname aan de focusgroep is geheel vrijwillig. U kunt als deelnemer uw medewerking aan de focusgroep te allen tijde stoppen zonder opgaaf van redenen.

Toestemmings-verklaring
Met uw ondertekening van dit document geeft aan dat u goed bent geïnformeerd over de focusgroep, de manier waarop de onderzoeksgegevens worden verzameld, gebruikt en behandeld. Indien u vragen had, geeft u bij ondertekening aan dat u deze vragen heeft kunnen stellen en dat deze vragen helder en duidelijk zijn beantwoord. U geeft aan dat u vrijwillig akkoord gaat met uw deelname aan deze focusgroep.

_____	_____	_____
Naam deelnemer	Handtekening	Datum

Appendix V – Codebook focus group

		Barrières	Bevorderende factoren
Personen			
Rol zorgprofessionals			
○ Rol arts			
○ Rol fysiotherapeut			
○ Rol activiteitentherapeut			
○ Rol unithoofd			
○ Rol verpleegkundige			
○ Rol zorgassistent			
Rol patiënten			
Rol naasten			
Activiteiten			
Lichamelijke activiteiten uitgevoerd door patiënten			
Benodigdheden om bovenstaande te kunnen bereiken			

Activiteiten uitgevoerd door professionals			
Benodigdheden om bovenstaande te kunnen bereiken			
Educatie op afdeling			
Context			
Tijd professionals			
Patiëntengroep			
Technologie			
Rol van technologie om activiteit vorm te geven			
Eventuele hulp door middel van app			

Appendix VI – Additional results

Table 4: Activities associated with physical activity of patients during hospital admission according to professionals

Activities associated with physical activity of patients during hospital admission	**Total (N=329)**	**5 North (N=18)**	**P[a]**	**4 East (N=16)**	**P[a]**
Laying on bed	48 (14.6)	2 (11.1)	1.000	0 (0.0)	0.142
Performing exercises lying on bed	265 (80.5)	11 (61.1)	0.067	12 (75.0)	0.531
Sitting on bed	164 (49.8)	8 (44.4)	0.655	5 (31.3)	0.146
Performing exercises sitting on bed	280 (85.1)	14 (77.8)	0.496	12 (75.0)	0.284
Sitting outside the bed	259 (78.7)	17 (94.4)	0.138	12 (75.0)	0.756
Performing exercises sitting outside the bed	297 (90.3)	17 (94.4)	1.000	13 (81.3)	0.214
Standing with or without aid	287 (87.2)	18 (100.0)	0.145	13 (81.3)	0.449
Walking with or without aid	312 (94.8)	18 (100.0)	1.000	15 (93.8)	0.584
Performing exercises standing and/or walking	308 (93.6)	18 (100.0)	0.614	16 (100.0)	0.611
Data are presented as N (%). [a] P values are based on comparison between the specific wards and the overall results (total). P values <0.05 were considered as statistically significant.					

Table 5: Primarily responsible for initiating physical activity of patients during hospital admission

Primarily responsible for initiating physical activity of patients during hospital admission.					
	Total (N=329)	**5 North (N=18)**	**p[a]**	**4 East (N=16)**	**p[a]**
Professional	269 (81.8)	15 (83.3)	1.000	14 (87.5)	0.746
Patient	60 (18.2)	3 (16.7)		2 (12.5)	
Data are presented as N (%). [a] P values are based on comparison between the specific wards and the overall results (total). P values <0.05 were considered as statistically significant.					

Table 6: Primarily responsible for the execution of physical activity of patients during hospital admission

Primarily responsible for the execution of physical activity of patients during hospital admission.					
	Total (N=329)	**5 North (n=18)**	**p[a]**	**4 East (N=16)**	**p[a]**
Professional	137 (41.6)	4 (22.2)	0.102	6 (37.5)	0.743
Patient	192 (58.4)	14 (77.8)		10 (62.5)	
Data are presented as N (%). [a] P values are based on comparison between the specific wards and the overall results. P values <0.05 were considered as statistically significant.					

Table 7: Professionals should pay more attention to physical activity of patients during hospital admission

Professionals should pay more attention to physical activity of patients during hospital admission.					
	Total (N=329)	**5 North (N=18)**	**p[a]**	**4 East (N=16)**	**p[a]**
Totally disagree	6 (1.8)	0 (0.0)	0.737	0 (0.0)	0.231
Disagree	23 (7.0)	2 (11.1)		0 (0.0)	
Neutral	67 (20.4)	2 (11.1)		2 (12.5)	
Agree	172 (52.3)	10 (55.6)		7 (43.8)	
Totally agree	61 (18.5)	4 (22.2)		7 (43.8)	
Data are presented as N (%). [a] P values are based on comparison between the specific wards and the overall results. P values <0.05 were considered as statistically significant.					

Table 8: Patients should pay more attention to physical activity during hospital admission

Patients should pay more attention to physical activity during hospital admission.					
	Total (N=329)	**5 North (N=18)**	**p[a]**	**4 East (N=16)**	**p[a]**
Totally disagree	4 (1.2)	0 (0.0)	0.235	0 (0.0)	0.333
Disagree	14 (4.3)	0 (0.0)		0 (0.0)	
Neutral	45 (13.7)	0 (0.0)		0 (0.0)	
Agree	184 (55.9)	10 (55.6)		9 (56.3)	
Totally agree	82 (24.9)	8 (44.4)		7 (43.8)	
Data are presented as N (%). [a] P values are based on comparison between the specific wards and the overall results. P values <0.05 were considered as statistically significant.					

Table 9: Results of knowledge, attitude and behaviour statements

	Directly involved professionals (N=243)						**Indirectly involved professionals (N=86)**					
	Response options[c]						Response options[c]					P[d]
Statements[a]	1	2	3	4	5		1	2	3	4	5	
Knowledge	**Cronbach's Alpha = 0.782**						**Cronbach's Alpha = 0.668**					
I have received training on how to safely mobilize my patients.	5.8	16.5	18.9	46.5	12.3		-	-	-	-	-	-
I am aware of the content and objectives of mobilizing my patients.	0.8	2.5	12.8	66.3	17.7		2.3	8.1	23.3	43.0	23.3	**0.001**
I am familiar with the disadvantages of physical inactivity of my patients.	1.2	0.8	7.4	53.5	37.0		1.2	2.3	7.0	41.9	47.7	0.244
I am familiar with the benefits of physical activity of my patients.	1.2	0.8	4.5	53.1	40.3		3.5	2.3	2.3	43.0	48.8	0.153
I need additional information about the effects of mobilization.[b]	14.4	44.0	25.1	15.2	1.2		14.0	46.5	29.1	10.5	0.0	0.732
I need additional training on mobilizing patients.[b]	11.9	40.3	25.9	19.8	2.1		-	-	-	-	-	-
Unless there is a contraindication, I educate my patients to exercise or increase their physical activity.	1.2	9.9	17.3	51.9	19.8		-	-	-	-	-	-
I encourage caregivers working on my department to educate patients to exercise or to increase their physical activity.	-	-	-	-	-		2.3	17.4	32.6	41.9	5.8	-
Attitude	**Cronbach's Alpha = 0.547**						**Cronbach's Alpha = 0.630**					
My patients are too sick to mobilize.[b]	13.2	62.1	21.8	2.9	0.0		19.8	62.8	14.0	3.5	0.0	0.270
Increasing mobilization of my patients will be harmful to them.[b]	41.2	48.6	9.1	0.8	0.4		47.7	36.0	14.0	1.2	1.2	0.174
A physical or occupational therapist should be the primary care provider to mobilize my patients.[b]	4.9	39.1	22.6	28.4	4.9		4.7	32.6	24.4	29.1	9.3	0.588
Increasing mobilization of my patients will be more work for nurses.[b]	0.4	16.0	15.6	54.3	13.6		3.5	11.6	19.8	58.1	7.0	0.063
Increasing mobilization of my patients will be more work for physical and/or occupational therapists.[b]	2.1	20.2	19.8	51.4	6.6		3.5	10.5	22.1	54.7	9.3	0.302
Increasing mobilization of my patients will be more work for healthcare assistants.[b]	5.3	25.9	21.8	41.2	5.8		4.7	16.3	34.9	39.5	4.7	0.132
Increasing mobilization of my patients will be more work for physicians.[b]	41.2	40.7	13.6	4.5	0.0		17.4	50.0	23.3	8.1	1.2	**0.000**
I believe that my patients who mobilize at least three times daily will have better outcomes.	0.4	2.1	13.2	58.0	26.3		0.0	1.2	19.8	54.7	24.4	0.660
I am not sure when it is safe to mobilize my patients.[b]	17.3	59.3	18.5	4.1	0.8		-	-	-	-	-	-
I think that caregivers working on my department are not sure when it is safe to mobilize patients.[b]	-	-	-	-	-		9.3	40.7	30.2	19.8	0.0	-
I do not feel confident in my ability to mobilize my patients.[b]	31.7	56.0	7.0	4.5	0.8		-	-	-	-	-	-
I think that caregivers working on my department do not feel confident in their ability to mobilize patients.[b]	-	-	-	-	-		10.5	41.9	33.7	14.0	0.0	-
My patients have time during their day to mobilize at least three times daily.	0.8	13.6	23.9	49.0	12.8		1.2	10.5	27.9	41.9	18.6	0.458

Behaviour	Cronbach's Alpha = 0.613						Cronbach's Alpha = 0.695					
We don't have the proper equipment and/or furnishings to mobilize my patients.[b]	11.1	44.4	22.2	18.1	4.1		17.4	40.7	29.1	10.5	2.3	0.178
The physical functioning of my patients is regularly discussed between the patient's healthcare providers (nurses, physicians, physical therapists and occupational therapists).	0.8	10.7	11.9	65.0	11.5		2.3	11.6	27.9	44.2	14.0	**0.003**
Nurse-to-patient staffing is adequate to mobilize patients on my unit.	7.4	32.9	25.5	30.5	3.7		8.1	27.9	31.4	29.1	3.5	0.842
My patients often have contraindications to mobilize.[b]	7.8	54.7	23.0	14.0	0.4		19.8	55.8	15.1	9.3	0.0	**0.021**
Unless there is a contraindication, my patients are mobilized at least once daily by nurses.	0.4	7.8	8.6	62.1	21.0		0.0	9.3	34.9	44.2	11.6	**0.000**
My leadership is very supportive of patient mobilization.	16.0	16.5	44.0	19.8	3.7		2.3	10.5	64.0	19.8	3.5	**0.003**
Increasing the frequency of mobilizing my patients increases my risk for injury.[b]	11.9	34.6	25.9	23.9	3.7		-	-	-	-	-	-
Increasing the frequency of mobilizing patients increases the risk for injury of caregivers working on my department.[b]	-	-	-	-	-		17.4	45.3	25.6	10.5	1.2	-
Patients who can be mobilized usually have appropriate physician orders to do so.	8.6	31.7	23.0	34.6	2.1		7.0	34.9	26.7	27.9	3.5	0.705
My patients are resistant to mobilize.[b]	4.5	37.4	37.9	19.8	0.4		12.8	43.0	38.4	5.8	0.0	**0.002**
Family members of my patients are frequently interested to help mobilize them.	6.2	35.4	35.0	21.4	2.1		2.3	11.6	52.3	31.4	2.3	**0.000**
I document the physical activity of my patients during my shift.	0.8	3.3	7.8	60.5	27.6		-	-	-	-	-	-
Caregivers working on my department document the physical activity of patients during their shift.	-	-	-	-	-		2.3	9.3	33.7	50.0	4.7	-
I do not have time to mobilize my patients during my shift.[b]	9.1	43.2	32.9	13.6	1.2		-	-	-	-	-	-
Caregivers working on my department do not have time to mobilize patients during their shift.[b]	-	-	-	-	-		8.1	26.7	40.7	20.9	3.5	-
Unless there is a contraindication, I mobilize my patients at least once during my shift.	0.0	7.8	13.6	57.6	21.0		-	-	-	-	-	-
Unless there is a contraindication, caregivers working on my department mobilize patients at least once during their shift.	-	-	-	-	-		0.0	12.8	33.7	46.5	7.0	-

Data are presented as %.

[a] Statements are adapted from Hoyer et al. (24) and some knowledge statements were added based on questions of Huijg et al. (31).

[b] Statements are reversed coded before calculating Cronbach's alpha and interpretation of the individual statements.

[c] 1=totally disagree; 2=disagree; 3=neutral; 4=agree; 5=totally agree.

[d] P values <0.05 were considered as statistically significant.

Table 10: Ranking of categories of approaches (without reclassification of missing values)

Ranking total N=295[a]						
Rank order[b] / **Categories**	**1 (w=0.4)**	**2 (w=0.3)**	**3 (w=0.2)**	**4 (w=0.1)**	**Total[c]**	**Rank order**
Offering training activities	68 (23.1)	104 (35.3)	78 (26.4)	45 (15.3)	78.5 (26.6)	2
Education	118 (40.0)	63 (21.4)	61 (20.7)	53 (18.0)	83.6 (28.3)	1
Moving-friendly hospital furnishing	53 (18.0)	54 (18.3)	81 (27.5)	107 (36.3)	64.3 (21.8)	4
Daily schedules	56 (19.0)	74 (25.1)	75 (25.4)	90 (30.5)	68.6 (23.3)	3

Data are presented as N (%).

[a] 34 missing values.

[b] 1 = most preferred option; 2 = second preferred option; 3 = second-last preferred option; and 4 = least preferred option.

[c] calculated by means of frequencies and weights (w).