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Factors influencing the delivery of nutritional care by nurses for hospitalised medical patients with malnutrition; a qualitative study

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Abstract

Objectives: To describe an insight into nursing nutritional care delivery in the hospital from the perspectives of observed nursing care and an exploration of multidisciplinary attitudes and experiences with patient participation in nutritional care.

Background: The prevalence of malnutrition in hospitalised patients continues to be high. Nurses' essential role in the identification and treatment of malnutrition is an important aspect of the fundamentals of care. Nurses have a key role in providing optimal nutritional care in the hospital. A systematic nursing approach, combined with an active role for patients, is required to effectively counteract malnutrition.

Design: A multicentre qualitative study using ethnographic observations and focus groups.

Methods: Direct observation of nutritional care was conducted on two nursing wards; nurses and inpatients were observed; and data were thematically analysed based on the fundamentals of care framework. Subsequently, six focus groups were held on three nursing wards with nurses, dietitians and nutrition assistants ($n = 34$). Data were analysed using open, axial and selective coding. The COREQ guidelines were used for reporting the study.

Results: During 54 days, representing 183 h, 39 nurses were observed in two medical wards. Three activities in nutritional care delivery were identified from observing nurses and patients: (1) screening and assessment/at-risk determination, (2) nutritional care plans and (3) monitoring and evaluating outcomes and transition-of-care planning. In addition, the focus groups identified barriers, facilitators, needs and expectations for optimal nursing nutritional care delivery.

Conclusions: This study provides an understanding of the difficulties in the delivery of nursing nutritional care. Patient participation in the nutritional care process is rare.

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Evidence-based strategies are required to improve the knowledge and skills of nurses and patients to participate in (mal)nutrition care.

Relevance: The findings of this study are used for the development of a nursing nutrition intervention to optimise patient participation in (mal)nutrition care.

Patient or public contribution: During the study, patients were not involved with the observations of care and/or with the interviews; the researchers observed the nutritional care delivery at medical wards acting as passive participants. Nurses, nutrition assistants and dietitians were after the focus groups asked for feedback on the transcripts of the interviews.

KEYWORDS

fundamentals of care, hospital, malnutrition, nursing nutritional care, patient participation, qualitative study

1 | INTRODUCTION

Meeting the fundamental care needs of patients is essential for optimal safety, recovery and positive experiences within any healthcare setting (Kitson et al., 2019). There is increasing attention to the way in which fundamental care is delivered in practice (Richards et al., 2018; Zwakhalen et al., 2018). The International Learning Collaborative (an organisation set up to understand why fundamental care fails to be provided in our healthcare systems) confirmed that fundamental care is still delivered inconsistently. In more complex healthcare settings, the fundamentals of care can be overlooked due to acute care demands, patients are still being ignored and nurses are afraid of speaking up (Feo & Kitson, 2016; Kitson et al., 2019).

Nutrition is an important subject of integration of care and one of the physical dimensions in the Fundamentals of Care framework (Kitson, 2018). Among hospitalised medical patients, malnutrition is still common with a prevalence of 47% and an incidence of 30% (van Vliet et al., 2020). In addition, 82% of inpatients remain malnourished during their hospital stay (van Vliet et al., 2020). Hospital malnutrition is associated with prolonged length of stay, increased hospital morbidity and mortality, high re-admission rates and low quality of life (Uhl et al., 2021). Because of these negative patient outcomes, care for malnourished patients is more expensive than for well-nourished patients (Curtis, 2017).

Nurses have an important role in the identification, prevention and treatment of malnutrition. To identify patients at risk of malnutrition at an early stage, multiple screening tools have been developed. In the Netherlands, common tools to assess the risk of malnutrition are the malnutrition universal screening tool (MUST) and the short nutritional assessment questionnaire (SNAQ). Despite the impact on patients' health, nutritional care still is not nurses' first priority. Previous research found that nurses experienced difficulties in performing good nutritional care due to time pressure, lack of knowledge about malnutrition, lack of usage of screening instruments and poor communication and documentation of nutritional information (Bonetti et al., 2017; Halvorsen et al., 2016; Kawasaki et al., 2018). Nurses also have an important role in patient participation in healthcare; they endeavour to involve patients in decision-making and treatment. When focusing on malnutrition, the attitude and behaviour of nurses regarding patient participation in (mal)nutritional care are unknown. It is unclear how the difficulties in nursing nutritional care influence nurses' performance in stimulating patients to participate in nutritional care. The use of health information technology is a promising innovation in care to engage patients in their hospital care and healthcare professionals in their interdisciplinary collaboration. For example, Roberts et al. developed a technology-based intervention facilitating patient participation in hospital nutritional care by ordering meals, monitoring food intake and assessing nutritional goals directly in the electronic foodservice system through bedside computers (Roberts et al., 2020, 2021). Therefore, the role of patients in nursing nutritional care has potential and should be addressed in further efforts to reduce malnutrition.

> **What does this paper contribute to the wider global clinical community?**
>
> - This paper gives an insight into current practices of nursing nutritional care delivery in the hospital.
> - We provide an understanding of the difficulties in the delivery of nursing nutritional care and patient participation in the nutritional care process.
> - The paper presents an exploration of opportunities for nurses to strengthen their key role in patient involvement and multidisciplinary collaboration of (mal)nutrition care.

Nursing nutritional care for hospitalised patients can be considered a complex intervention, with several interacting components, varied outcomes and different behaviours required to deliver or receive the

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intervention (Craig et al., 2013). Healthcare professionals face different groups of hospital inpatients, and different classes of nutritional risk, e.g. low risk (well-nourished), medium risk (at risk for malnutrition) or high risk (malnutrition). The development of a complex nursing nutritional intervention to counteract malnutrition requires a systematic approach while both patients and nurses may have to change behaviour routines (Roberts et al., 2020; van Belle et al., 2018; van Noort et al., 2020). In our project, the Medical Research Council framework (Craig et al., 2013) and the Intervention Mapping approach are used to develop and adapt an intervention based on theoretical, empirical and practical information (Kok et al., 2016). All steps of Intervention Mapping will be conducted to develop a nursing nutrition intervention for hospitalised patients, and this will be tested in a controlled study. The first step to develop an intervention is to create a 'Logic Model of the Problem', which is described in this article. The aim of this study was to gain insight into nurses' current practice in nursing nutritional care delivery and to explore multidisciplinary attitudes and experiences with patient participation in nutritional care.

2 | METHODS

2.1 | Study design

A qualitative study, using ethnographic observations and focus group interviews, was performed in two hospitals in the Netherlands between April 2017 and July 2019. First, in an academic teaching hospital, a focused ethnographic approach, using direct observation of care was used to gain insight into daily nursing nutritional care delivery and patient participation in malnutrition in the hospital setting. Ethnographic designs are used in nursing research to study beliefs and practices in relation to nursing care (Conroy, 2017; van Belle et al., 2020). Observation is considered integral to a focused ethnography because it provides the best opportunity to view participants' behaviour in the context of the real world (Cruz & Higginbottom, 2013).

After the observations, focus group interviews were performed at medical wards in an academic teaching hospital to gain a more in-depth knowledge about experienced barriers and facilitators of healthcare professionals in nursing nutritional care delivery and patient participation in (mal)nutrition care. Dietitians and nutrition assistants participated in the focus groups to incorporate their views on the nurse's role. And, in order to explore a broader perspective, another focus group was performed on a surgical ward in a rural hospital. The focus groups were based on a hermeneutic phenomenological approach and aimed to go beyond observations and to learn more about the experiences, attitudes and views from the perspective of healthcare professionals interacting with each other. The advantage of focus groups is that the group jointly creates data by sharing the experiences of the participants, which leads to an intervention developed based on shared attitudes, in this case about nursing practice and patient participation in (mal)nutrition care (Bradbury-Jones et al., 2009).

The study was conducted according to the Declaration of Helsinki and the Personal Data Protection Act. The protocol was assessed by the Radboudumc Human Ethics Committee Arnhem en Nijmegen, the committee decided that the Medical Research Involving Human Subjects Act (WMO) did not apply to this study (Reference 2017–3468). Detailed methods are reported with attention to the EQUATOR Guidelines: the COnsolidated criteria for REporting Qualitative research (COREQ). See supplementary File S1.

2.2 | Setting

2.2.1 | Observations

To obtain in-depth insight into nursing nutritional care and patient participation, direct observation of care was conducted on two medical nursing wards (a gastroenterology and a geriatric ward) in an academic teaching hospital in the Netherlands between April 2017 and February 2018. On both wards, the room size was one to four beds. The geriatric ward was also furnished with a living/dining room for social purposes and shared mealtimes. Patients were cared for by registered nurses with a vocational or bachelor degree. On both wards, nutrition assistants worked in the hospital meal service, responsible for 6-meals-daily food and drink delivery. The nutrition assistants worked in two shifts from 7.00 until 20.00 o'clock and had a secondary or vocational degree. A dietitian was a member of the multidisciplinary team for patients who needed dietary treatment. During the observations, the researchers acted as passive participants, observing nurses and nursing assistants in their daily work and the nutritional care delivery to patients, to view the nurses' and patients' behaviour with regard to nutritional care (Conroy, 2017; Cruz & Higginbottom, 2013). The observations were conducted by two teams of trained researchers, under the supervision of the first author (GB), who was trained in qualitative research. The first observation period was conducted by three female BSc nursing students at the gastroenterology ward (AZ, ED, TR) and the second observation period by three (two male, one female) BSc nursing students and one female MSc nursing student at the geriatrics ward (FL, WB, YB, HF). All students were trained in observation techniques through a module Qualitative Research integrated into their Graduate program. None of the students was familiar with the participants.

2.2.2 | Focus group interviews

To gain knowledge from a broader perspective, additional focus group interviews were carried out on two medical wards and one surgery ward in an academic and a rural hospital between March 2018 and May 2019. Two interviews were held at each ward. In the academic hospital, the interviews were conducted in the geriatrics ward (directly after the observations) and internal medicine ward (additional to the gastroenterology ward). And, a surgical ward in a rural hospital was also included in order to broaden the perspectives in the study.

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The food service of both hospitals was a six-meal-daily food choice for inpatients. The multidisciplinary team of nurses, nursing students, nutrition assistants and dietitians were interviewed to capture their experienced barriers and facilitators in patient-centred nursing nutritional care to prevent and treat malnutrition in the hospital. The first author (moderator) developed the focus group interview questions together with a registered nurse finalising her Masters in Nursing Sciences (HF). The moderator is a clinical dietitian with experience in the hospital setting, nutrition education and research projects. The second moderator is a nurse (HF) with experience in the nursing home setting. Furthermore, three students of the BSc nursing (HZ, FM, SF) assisted in the focus groups. The project leader (fifth author) is a senior researcher and registered nurse, with experience in the hospital setting and research projects. The researchers (GB, HF, GH) were familiar with the nutritional care process and nurses' responsibilities in the multidisciplinary team. The focus groups were arranged in a meeting/lecture room at the nursing ward, and the participants were offered coffee/tea with cake. Each interview was chaired by a moderator and an assistant, who tried to promote an open atmosphere and sharing of personal experiences.

2.3 | Participants

To be eligible to participate in the study, the healthcare professionals and patients were 18 years or older. For the *ethnographic observations* of the nursing nutritional care process, a general informed consent by the ward managers was used to gain permission to shadow nurses and to observe the nutrition process in patient rooms. Nurses and patients were informed by information letters, one for nurses and one for patients. At the start of each shift, verbal permission was sought from registered nurses to be shadowed during their work and patients were asked for permission by the researcher to sit in the room to observe the nutritional care processes. Nurses and patients were able to refuse participation, neither was the nutritional care process observed in case the nurse found it inappropriate to observe in the patient's room, because of disease severity or cognitive problems. For the *focus group interviews*, nurses, nursing assistants, nutrition assistants and the ward dietitian were recruited by the unit managers of the nursing wards and asked to participate. After verbal consent, they were provided written informed consent before participation.

2.4 | Data collection procedures

2.4.1 | Observations

During the observations, the perspectives of both nurses and patients were used to get insights into the daily routines of nutritional care delivery. In order to get a complete insight into nutritional care, the observations took place across all weekdays between 7:00 am and 21:00 pm. The researchers worked in shifts of four hours each (two hours shadowing nurses, two hours observing ward rooms and hospital dining settings). They acted as complete observers and did not ask questions nor did they intervene to avoid affecting daily practice (Conroy, 2017). To structure the observations, an observation guide was adopted from prior observations by Conroy and Van Belle et al. (Conroy, 2017; van Belle et al., 2020). The guide was based on Kitson's Person-Centered Fundamentals of Care framework (Kitson, 2018). Data on the three dimensions of the framework (i.e., psychosocial, relational and physical) were observed and only the topic nutritional care (keeping you fed and hydrated) was analysed based on the code eating and drinking. See supplementary File S2 for details. The field notes of the observations were transcribed directly after finishing the observation and consisted of rich data on the setting, nursing actions, behaviours and communication regarding nutritional care delivery.

2.4.2 | Focus group interviews

An interview guide was developed based on the key topics described in Box 1. On each ward, the multidisciplinary team was interviewed first in a group, consisting of four to six nurses, one dietitian and one nutrition assistant. The duration of the interview was 60 min. A second interview of 30 min was held with four to six nurses to deepen the subjects regarding nursing nutritional care discussed in the first interview. The structure of the interviews was guided by Finch and Lewis' theory (Finch & Lewis, 2004). The moderator started with an explanation of the aim of the study and the interview, asked the participants to introduce themselves and subsequently led the interview generating a lively discussion and ensuring that all topics of the interview guide were discussed. All focus group interviews were audio recorded (Sony IC recorder ICD-UX70).

2.5 | Data analysis

Data collection and data analysis were an iterative process performed by the research team. All data were transcribed directly after the observations or focus group interviews and analysed thematically using ATLAS.ti version 8.0.34.

2.5.1 | Observations

First, three researchers (AZ, ED, TR) conducted the analysis of data from the gastroenterological ward. Three researchers (FD, WB, YB) analysed the nutritional care process data from the geriatrics ward. To ensure data saturation, a registered nurse (HF) performed additional observations on the geriatric ward and analysed the data of all observations to design the interview guide for the focus groups together with the first author. The observations were first coded and connected to the topics of the fundamentals of care framework. The next step was to code the topic 'keeping you fed and hydrated'

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(eating and drinking) into the themes of the nutritional care process using the algorithm of Guenther et al. see Table 1 (Guenter et al., 2015).

2.5.2 | Focus groups

The transcripts of the focus groups were shared with the participants for feedback. The interviews were analysed using open, axial and selective coding and interpreted in an iterative process by the first author and four nurses HF, HZ, FM, SF. Open coding of the interview transcripts was done by the nurses independently and discussed with the first author (supervisor) to reach a consensus for the final codes. Meaningful parts describing experiences and attitudes with nursing nutritional care and patient participation were defined and conceptualised into thematic codes and summarised into overall categories.

BOX 1 Topics of the focus group interviews.

Introducton:

1. What is, according to you, nursing nutritional care?
2. What do you think about the nursing nutritional care delivery in your unit?

Key questions:

3. What are contributing factors for you to adequately perform nursing nutritional care in your unit?
4. What are in your experience obstructing factors to perform adequate nursing nutritional care in your unit?
5. Which role(s) would you see for patients and/or families in nursing nutritional care delivery?
6. What would you like to improve or innovate in the multidisciplinary nutritional care delivery in your unit?

Ending:

7. How did you experience this interview?
8. Do you have any comments or additions that we can take into account?

3 | RESULTS

3.1 | Participant characteristics

3.1.1 | Observations

Nursing nutritional care delivery at the medical wards was observed over 54 days, representing 183 h. At the gastroenterology ward, fifteen registered nurses were shadowed; seven nurses had a vocational degree and eight a bachelor degree. At the geriatrics ward, 24 registered nurses were shadowed. Five nurses had a vocational degree and all others a bachelor degree.

3.1.2 | Focus groups

Six focus group interviews were held including 34 participants. The duration of the first focus group interviews in each site was 65, 69 and 72 min (respectively, geriatrics, internal medicine and surgery ward) and the second focus group interview 26, 49 and 53 min. The characteristics of the participants are shown in Table 2.

3.2 | Observations

The observations identified that the performance of nursing nutritional care practice included three activities: (1) screening and

TABLE 1 The nutrition care algorithm

	Themes	Nurse actions
Step 1	Nutritional screening	Within 24 h of admission to identify those at risk for malnutrition (screening and at-risk determination); communicate findings with the dietitian.
Step 2	Nutrition assessment	Check for trouble chewing, swallowing disorders, weight history, height and weight measurement, skin integrity, edema, electrolyte abnormalities, hand-grip strength (have the patient squeeze your hand; the dietitian performs a more in-depth nutritional assessment.
Step 3	Malnutrition diagnosis	Based on two characteristics out of: weight loss, inadequate energy intake, muscle mass loss, subcutaneous fat loss, fluid accumulation, reduced hand-grip strength.
Step 4	Intervention	Nurses play a key role in the implementation of the nutrition care plan; a statement of the nutritional goals and monitoring and evaluation parameters, the most appropriate administration route for nutrition therapy, nutrition access method, anticipated duration of therapy, and training and counselling goals and methods.
Step 5	Monitoring	Monitor on a continual basis the patient's nutritional status, nutrition goals and safety and efficacy of interventions.
Step 6	Outcome assessment	Evaluate and update the nutritional care plan. Communicate the patient's nutritional care plan during care transitions.

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assessment/at-risk determination, (2) nutritional care plans and (3) monitoring and evaluating outcomes and transition-of-care planning.

3.2.1 | Theme 1. Screening and assessment/at-risk determination

Screening

On admission nurses always asked patients for the presence of allergies/diets and registered dietary requirements in the electronic patient file. It was regularly observed that nurses were interrupted in doing their job, which caused a delay in the assessment/registration of nutritional results.

> *The nurse becomes acquainted with the patient during the interview on admission and asks for the patient's diet and menu choice.* (*Day 42, observer 6*).
>
> *After weighing the patient, the nurse calculates the protein requirement and finds out that the malnutrition screening is incomplete. Immediately, the nurse performs the screening and completes the task.* (*Day 39, observer 6*).

The use of the MUST to screen patients for malnutrition risk was only observed in the gastroenterology ward. The MUST was integrated into the electronic patient file. At the geriatrics ward, all patients were considered to be at high risk of malnutrition. Therefore, the task to screen patients within 24 h of admission was omitted from nurses' responsibility. A multidisciplinary protocol described the nutritional interventions the patient should receive: (1) weighing patients twice weekly, (2) evaluating protein intake, weight and nutritional problems on fixed moments during hospital admission and (3) offering the high protein menu from the hospital food service together with a standard prescription of an oral nutritional supplement once a day.

Monitoring

The registration of food intake in the electronic patient files was frequently observed on both wards, performed by both nurses and nutrition assistants either immediately after mealtime or later on the day.

> *The nutrition assistant verifies the patient's food and fluid intake.* (*Day 7, observer 2*).
>
> *The nurse asks what the patient has eaten and drunk. The patient tells everything humorously, they make a lot of jokes. The nurse report the patient's intake in the digital patient file.* (*Day 6, observer 1*) *For example, the nurse reports in the field 'morning intake': the patient ate 1 dish of semolina porridge and drank 1 glass of water or, the patient ate everything of what was provided.* (*Day 34, observer 5*).

Almost all communication about food and fluid intake took place digitally, and discussion between nurses and nutrition assistants about patient's food intake was little observed. Nurses evaluated the protein intake; at the geriatrics ward, it was agreed to do that during their nightshift. When protein intake was less than 50% of the nutritional goal and/or tube feeding was needed, the dietitian was consulted for dietary counselling. Barriers impairing food intake, like pain, dental problems or delirium, were frequently noted by the nurses and action was taken. For example, a dentist was consulted during hospital admission for some patients with pain from dental problems. And delirious behaviour had sometimes a visible negative impact on food intake. When patients were restless, nurses diverted attention by for example

TABLE 2 Characteristics of the participants per focus group per nursing ward

	Geriatrics	Internal medicine	Surgery
	(*n* = 13)	**(*n* = 10)**	**(*n* = 11)**
Nurses / Dietitians / Nutrition assistants, n (%)	11/1/1 (84/8/8%)	9/1/0 (90/10/0%)	8/1/2 (73/9/18%)
Male / Female, *n* (%)			
Focus group 1	0/7 (0/100%)	2/4 (33/67%)	1/5 (17/83%)
Focus group 2	0/6 (0/100%)	0/4 (0/100%)	1/4 (20/80%)
Age, *mean* (*sd*)	41.8 (17.5)	35.2 (14.0)	36.0 (15.1)
Education V/B, *n* (%)	5/8 (38/62%)	0/10 (0/100%)	6/5 (55/45%)
Working hours per week, *mean* (*sd*)	29.5 (4.6)	32.4 (3.8)	29.1 (7.0)
Working experience in years, *median* (*IQR*)			
Hospital	13 (3–20)	9 (3–18)	10 (5–20)
Ward	8 (2–13)	8 (1–8)	4 (2–8)

Abbreviations: B, bachelor degree; IQR, interquartile range; sd, standard deviation; V, vocational degree.

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walking with the patient or bringing the patient back to the dining room and offering a drink.

3.2.2 | Theme 2. Nutritional care plan

Responsibilities

Nutrition assistants were responsible for the provision of food and drinks and for informing patients about the different menu's, taking into account diet restrictions where appropriate. Nurses were responsible to instruct patients and nutrition assistants about what a patient was allowed to eat. They often used written notes with dietary requirements.

> ***Patient 1:*** *Diet/intake; protein-energy rich diet. Protein requirement 77 gram.*
>
> ***Patient 2:*** *Provide and evaluate oral nutritional supplement (1 daily). Food and fluid registration.*
>
> ***Patient 3:*** *Provide and evaluate oral nutritional supplement (1 daily). Food and fluid registration.*
>
> ***Patient 4:*** *Protein intake 50/75%. Stimulate protein enriched menu* via *nutrition assistant. Food registration not necessary. To discuss: risk for malnutrition.*
>
> ***Patient 5:*** *Monitor fluid intake. Stimulate to drink (1,5 litre per day).*
>
> ***Patient 6:*** *Protein intake 50/75%. Stimulate protein enriched meals. Oral nutritional supplement twice daily. (Day 26, observer 4).*

The most frequently observed activities of nurses in nutritional care were physical exams (e.g., ostomy care, weighing) and tests or treatment (e.g., diabetes care and tube feeding (re)placement). Communication and education were also frequently observed. For example, instructing patients about their diet or informing them about the importance of nutrition and stimulating eating and drinking.

Mealtime assistance

Mealtime assistance was mainly observed in the geriatrics ward and hardly in the gastroenterology ward. Patients ate together in the dining room where the nutrition assistants had created a domestic atmosphere. The serving and assistance with the meals were provided by nurses and nutrition assistants and, in one case, a volunteer. Some patients needed help to eat or drink, which was offered by the nurses, who took time to assist. Nurses paid active attention to the sitting position of patients during mealtimes. It was often observed that they checked if the patients were sitting up straight and right in front of the table with food and drinks within reach. For patients who had to stay in their rooms and eat their meals in bed; nurses made sure they sat upright before eating and instructed the nutrition assistants when the patient was ready to eat.

> *The nurse walks the patient to the dining room and assists the patient during the meal. The nurse takes time for it and asks the patient if the meal tastes well and if the temperature is not too hot. (Day 35, observer 5).*
>
> *The nurse observes that the patient is eating in lying position and helps the patient to sit straight up in bed to eat in the right position. (Day 25, observer 4).*

Family members or informal carers were around almost every day and supported patients in communication with nurses and physicians. Some patients were not able to eat or drink on their own and the help they needed was often offered by the family/informal care. It wasn't observed that nurses asked for it, it seemed that it was assumed that this assistance would be provided by family/informal carers.

> *The patients meal is ready and stands on the bedside table. There is no further communication with the family member who is present at mealtime. (Day 23, observer 4).*

Medication rounds

It was observed, on both wards, that medication rounds were scheduled during mealtimes resulting in patients receiving their medication while they were eating. Sometimes patients took their medication with food and drinks immediately. Physical exams or treatment procedures, for instance starting an intravenous drip or taking blood tests, also sometimes interrupted the mealtimes.

> *The nurse administers an eyedrop during breakfast; the patient is eating breakfast in bed while receiving the medication. (Day 31, observer 5) During breakfast, a hospital lab employee takes a blood sample of the patient. (Day 33, observer 5).*

Dietary counselling

In the gastroenterological ward, about half of the patients at risk of malnutrition were referred to a dietitian for nutritional counselling, though the presence of the dietitian at the ward was only occasionally observed. The presence of a nurse specialist was observed repeatedly on the gastroenterology ward. The nurse specialist was responsible for the management of parenteral nutrition and visited several patients for parenteral nutritional care. Patients

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with home parenteral nutrition, who were admitted to the hospital, kept being responsible for changing the parenteral nutrition bags and the nurse specialist checked the patients' proceedings. Patients admitted to the geriatrics ward received a standardised energy and protein-enriched diet, including oral nutritional supplements and high protein (in-between) meals, provided by nutrition assistants and nurses. Dietary counselling by the dietitian was not observed on this ward.

3.2.3 | Theme 3. Monitoring and evaluating outcomes and transition-of-care planning

Collaboration

The coordination of care to ensure nutritional goals are set was observed when nurses interacted with nutrition assistants in food registration and assistance during mealtimes. Both disciplines registered intake in the electronic patient file, offered assistance to patients during mealtimes and evaluated food and fluid intake with the patients. During the daily medical rounds with physicians and during the weekly multidisciplinary meetings with physicians and other healthcare professionals the nutritional status of the patients was a routine question. Nutrition interventions were evaluated during the meetings, based on the results of the registration of food intake in the electronic patient files.

The nurse asks if the nutrition assistant could get some food for a patient who did not have breakfast yet. The nutrition assistant is taking care for it. (*Day 54, observer 4*).

Multidisciplinary meeting: "Patient 1: current length of stay 1,5 day; intravenous fluid, has low food and fluid intake, further anamneses yet to do. Patient 2: Low food and fluid intake for a long time already. We should probably accept it and wait for details about treatment options. Patient 3: Low intake, also at home, used often only alcoholic consumptions. Accept patient's lifestyle habits. Malnutrition: oral nutritional supplement once a day, also at home. Inform family and ask for more nutritional supplementation." (*day 28, observer 4 and 6*).

Missed care

On both wards, patients were protocollary weighed on a weekly basis and some patients were weighed more frequently. It was multiple times observed of patients being weighed, always by nurses. Missed care was also observed. On several occasions, nurses planned to weigh the patient but did not fulfil this task. Also, on several occasions, the patient did not eat the provided food and this was not reported in the electronic patient record. In one out of three observations, the registration of food/fluid intake was incomplete and the nurse had no insight into the patient's actual food intake.

The medical doctor asks what the intake was of the patient. The nurse answers: 'moderate' and announces that there is little insight in the food and fluid intake. (*Day 33, observer 5*).

The medical doctor asks for the fluid intake of the patient according to the order in the digital patient file. Though, the nurse did not know the patient's fluid intake and will verify it. (*Day 25, observer 4*).

Transition of care

At discharge, information about food intake and/or nutritional interventions was rarely included in the letter to the general practitioner. For patients with home-based nursing care or who were admitted to nursing homes the nutritional care plan was described in the nursing transmission letter.

3.3 | Focus groups

The introduction questions for the focus groups provided a direct focus for the discussion about the nurses' role in nutritional care. The participants were unanimous in their perception that nursing nutritional care was a complex intervention and they shared their experiences that it is difficult to provide optimal nutritional care due to multiple factors. They emphasised that tailored care is a key way to reach the patient's nutritional goals. The focus groups identified three themes (1) barriers and (2) facilitators in nursing nutritional care delivery and (3) needs and expectations for patient participation in nutritional care.

3.3.1 | Theme 1. Barriers in nursing nutritional care delivery

Screening

Participants mentioned that it is difficult to identify the patients with nutritional care demands upon admission. They noted that nutritional risk screening is often forgotten during the assessment interview. Unawareness about malnutrition and cognitive problems were mentioned as barriers to the reliability of nutritional risk screening and assessment. In the geriatrics ward, it was further discussed that, on one hand, the protocol states that every patient is at high risk of malnutrition; on the other hand, the participants believed that not every patient had an actual nutritional care problem.

"We don't distinguish between the patients who have a good nutrition intake and the patients who do not." FG 1.1.

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Mealtime assistance

Participants mentioned the barrier that many patients needed assistance with eating and drinking and only nurses were allowed to assist patients. Therefore the workload of nurses often peaks at mealtimes. Also, participants experienced a high turnover of nutrition assistants in their wards and insufficient knowledge about personalised nutritional care. Nurses rely on nutrition assistants to inform patients about different options in the menu, being creative and stimulating patients to eat and drink while taking into account any diet restrictions.

> *"Unfortunately, the nutrition assistants are not allowed to assist with the meals. I can understand why, but I wish they could."* FG 2.2 *"There are regularly new nutrition assistant colleagues who follow the protocol from the foodservice, but they lack the competence of customization of the intervention that these patients need."* FG 2.1.

Monitoring

Participants discussed the short length of hospital stay with low focus on nutritional care. The risk of deterioration of severely ill patients and transfer to critical care wards leads to a greater focus on acute problems and lower prioritisation of nutritional care. Some participants mentioned that they often did not have time to gain insight into the nutritional intake of their patients. Another difficulty in nutritional care practice was the shared responsibility of nurses and nutrition assistants in the registration of food intake. Participants were unanimous in their opinion that the nurse is ultimately responsible for monitoring nutritional status and rely on nutrition assistants' competencies. The deployment of frequently inexperienced flex workers complicates good communication in nutritional care delivery.

> *"Sometimes, at the end of my shift, I don't know what my patients' food intake was."* FG 1.1 *"At eight o'clock you ask the nutrition assistant if she has insight into the intake of the patient."* FG 1.2.

3.3.2 | Theme 2. Facilitators in nursing nutritional care delivery

The participants were unanimous that it is important to have attention to nutritional care. Learning on the job, education by experts and e-learning were mentioned as options to improve knowledge in nursing nutritional care.

Dietary counselling

The collaboration with dietitians was mentioned as a facilitator in nutritional care. The nurses in the surgery and internal medicine wards noted that consultation with the dietitian after risk screening was fast and easy through the electronic pathway. The dietitian was easily accessible to nurses through their frequent presence at the ward.

> *"The dietitian is highly involved into our department; easily approachable and accessible, to inform each other about interventions or nutritional risk* (*FG 3.1*).

At the geriatrics ward, nutritional care was established by protocol and the dietitian less involved; nurses mentioned that they would like to consult the dietitian more often to be able to discuss nutritional problems in detail.

Electronic patient files

This application is unanimously mentioned as being complete in its function and usability and facilitates a multidisciplinary collaboration. Food and fluid intake registration in the electronic files was mentioned as an innovation for nutritional care delivery because it increased the possibility to create quick overviews in patient's nutritional status and improved outcome evaluation. On the other hand, the complexity of the application to register food and fluid intake was mentioned as annoying and time-consuming. According to the participants, the amount of actions to register food intake in the right place and to generate overviews is vulnerable to mistakes and incomplete data.

> *"The electronic patient record is so complicated that it is not easy for nurses to register the food intake."* FG 1.1.

Food service

Mealtime ambiance and eating together were mentioned by the participants to stimulate patients to eat better, a joint lunch and dinner were implemented in some wards and the participants were enthusiastic about the intervention. High-quality food catering was also noted by most participants as important, though the fixed timeslots and the low availability of meals outside these timeslots were still a disadvantage.

3.3.3 | Theme 3. Needs and expectations for patient participation in nursing nutritional care

The healthcare professionals were unanimous in their opinion about the need for patient participation in nutritional care. They discussed different approaches to stimulate patients and informal caregivers in patient participation.

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Self-monitoring

The participants called for simplified food records in the electronic patient files with a tool for patient participation. Whereby patients or family actively can register their intake and have a more active role in nutritional care.

> *In my opinion the digital patient file should be easy to use and visible, but also that not only the nurse should have insight, but also the patient. FG 2.1.*

Awareness

Self-awareness about the nutritional status and nutritional risk factors of patients and/or informal caregivers was considered a starting point. This could be achieved by gathering reliable information about nutritional status and nutritional intake on admission and again at set timepoints during the hospital stay. The prioritisation of nutritional care was also noted by the participants. Despite the short length of hospital stay and increased acute care problems, patients can be actively stimulated by nurses, nutrition assistants and dietitians to discuss nutritional care problems with nurses. This will facilitate nurses to organise the right interventions during the hospital stay and postdischarge.

> *"It would help me if you (dietitian and nutrition assistant) would have a weekly meeting with us to discuss the patients' nutrition. That would be a reminder to me." FG 3.1.*

4 | DISCUSSION

This study provided an in-depth insight into how nursing nutritional care is delivered in the hospital and a multidisciplinary exploration of attitudes and experiences with nutritional care delivery and patient participation in malnutrition. We identified three activities in nutritional care delivery from the perspective of observing nurses and patients: (1) *screening and assessment/at-risk determination*, (2) *nutritional care plans and* (3) *monitoring and evaluating outcomes and transition-of-care planning*. We identified three themes in shared experiences: (1) *barriers and* (2) *facilitators for optimal nursing nutritional care and* (3) *needs and expectations for patient participation in (mal)nutrition care* from the perspective of nurses, dietitians and nutrition assistant participants in focus groups.

Nutritional care delivery, a fundamental care need, is only one part of nurses' tasks and responsibilities in a full day of care delivery (Kitson et al., 2019). In our study, we needed to observe 54 days and 183 h of fundamentals of care delivery before the data on nursing nutritional care was saturated. The recruitment was strengthened by the large sample size and the inclusion of different medical nursing wards. And the observations were strengthened by the collaboration between the trained junior and senior researchers. On the other hand, the performance of nutritional care delivery was explored only from the perspective of medical specialties in the nursing wards. Due to recruitment barriers, we were not able to observe the nutritional care delivery on a surgical ward. Also, the experiences and attitudes regarding nutritional care delivery and patient participation in (mal)nutrition care identified in this study, reflected the perspectives of the healthcare professional nurses, dietitians and nutrition assistants without the perspective of the medical doctor. Patient nutrition is not a focus and often neglected in education and clinical practice of (junior) doctors (Frost & Baldwin, 2021). In our study, we did not manage to include a medical doctor or a junior doctor in the focus groups.

This study gave insight into the daily practice and experiences with shared responsibilities of food registrations. Nurses felt ultimately responsible for the food records and the risk determination of the patient's nutritional status based on the assessment of intake. However, nurses were dependent on nutrition assistants who were ordered to assist in these registrations. Joint responsibilities and expectations can lead to forgotten registrations, incomplete records and disrupted communication; both parties expect from each other to fill in the records and discuss the patients' intake. A qualitative study of health professional practices in nutritional care by Marshall et al. described similar findings. They also found a clear division of roles in nutrition care by different health professionals but altogether working in an isolated manner with each other and not collaboratively (Marshall et al., 2019).

The results of this study showed that nurses were often being disturbed during nutritional care delivery and patients were interrupted during mealtimes. Other vulnerabilities in optimal nutritional care were incomplete food records, failed mealtime assistance, scheduled medication intake during mealtimes and little focus on the patient's diet during the transition of care. Low priority of nutritional care with a focus on acute care problems and organisational barriers in food service and menu planning was mentioned as important causes of missed nutritional care and reasons why interrupted mealtimes were accepted. In the literature are similar findings described, several studies suggest nursing nutritional care is regularly left undone in clinical practice. First, competing work priorities for nurses are mentioned by Marshall et al. as a key theme and interrelated barrier to optimal nutritional care (Marshall et al., 2019). Second, Kalisch et al. reported nutritional care items like screening, assessment and providing feeding assistance are regularly being missed in nursing care (Kalisch et al., 2009). This was also seen in an observational study from the Missed Care Study Group, and they showed the malnutrition risk assessment within 24 h of admission as a common missed nutritional care item and sensitive to staffing levels and workload (Recio-Saucedo et al., 2021). Finally, Laur et al. described in a qualitative study how nursing nutritional care could be improved by prioritising organisational themes. Patient-centered care, protecting mealtimes and the availability and access to food are facilitators in optimising (mal)nutrition care (Laur et al., 2017).

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Nutritional care is in our study mentioned as a complex intervention. At first sight, nutritional care delivery does not seem very complicated care, but when looking more closely into clinical practice, nutritional care has several interacting components on an organisational and personal level (Craig et al., 2013). Firstly, the hospital meal service is another business unit than the medical departments or is purchased from a professional catering industry. The provision of high-quality meal services requires coordination between nursing staff, management and nutrition-related care personnel, with nurses having the most contact with patients and keeping a continuous overview of the patient's care demands (Marshall et al., 2019). Nursing nutritional care delivery is also complex because nurses should be flexible and motivated to prioritise nutrition in a full task list and responsibilities (Eide et al., 2015). The patient's well-being and willingness to participate in nutritional care are physical and psychosocial dimensions of fundamental care, and nurses continuously tailor and prioritise care demands in their communication with patients and healthcare professionals. Patient participation is an important evolution in healthcare and requires new competencies of healthcare professionals to actively invite and stimulate patients and family caregivers to take their role in goal setting, treatment or therapy, e.g., nutritional care (Al-Adili et al., 2022; Tobiano et al., 2015). In our study we found similar barriers, patient participation in nutritional care was little observed and described as being difficult to achieve while the importance of improving patient participation in nutritional care was mentioned by all healthcare professionals.

The use of technology is embedded in all healthcare facilities and can invoke the knowledge and precision of users to work with many different systems. Regarding nutritional care, the digital food registration was a blessing and a curse. While it yielded a full overview of patients' nutritional intake, it is a time-consuming handling for users. In the patient record, food registers are sometimes hard to find or tucked away in the system. In our study, this was seen as a huge disadvantage in the food registration of admitted patients and was experienced as too difficult or too time-consuming to use, resulting in nurses accepting incomplete records. The responsibility for the completion of the food records was not always clearly described in protocols and different healthcare professionals were responsible for the administration of the patient's intake. In the literature, an evaluation of food intake registrations by Braga Azambuja et al. showed that the agreement between food intake surveys (patient reports) and nursing records varied. Patients with >75% intake scored a good agreement between their survey and the nursing record and in patients with a decreased oral intake (<50%) the agreement was moderate to low (Braga Azambuja et al., 2015). It is important that nurses and patients collaborate in the observation, control and record of food intake. A promising development in clinical care is data-driven healthcare. This could possibly counteract the time-consuming and complex administration of care delivery. For example, in the literature, it is shown that continuous vital signs monitoring of clinical and non-clinical patient outcomes is feasible and might be beneficial and cost-effective (Downey et al., 2018). In nursing nutritional care, the monitoring of food and fluid intake based on self-monitoring or sensor techniques could be the next step to prevent hospital malnutrition (Roberts et al., 2020; Roberts et al., 2021). Thereby, more attention should be given to educate patients and families on the consequences of malnutrition and to invite them to participate in nutritional care during their hospital journey (Roberts et al., 2017). A nurse-led intervention could be an innovative and practical solution when it educates nurses and patients about malnutrition, on the one hand, and it stimulates them in patient participation, on the other hand, for example, to take an active role in discussing specific nutritional problems, monitoring food intake and goal-setting in weight and performance management, preferably as early as possible during hospitalisation and when possible already before (planned) admission. The study by Van Noort et al. showed that patient education and participation in prehabilitation with malnutrition before surgery is feasible and effective (van Noort et al., 2020).

5 | LIMITATIONS

This study has some limitations. Firstly, this study was highly dependent on the effort of junior researchers (BSc and Msc Nursing students) to gather the observational data on the nutrition care process and from their contribution to the focus group interviews. Despite training in qualitative research as prerequisite for the researchers to carry out the observations or focus groups, the individual work experiences of the research team may have influenced the findings. This effect was minimised by preparing a protocol and an interview guide in order to improve the consistency of the observational and interview data. Secondly, participant selection was mostly based on convenience sampling, and (reasons for) nonparticipation was not reported. The likelihood of participants making unsupported statements exists though the sample size and characteristics of the participants are well described to assess the diversity of perspectives. Thirdly, we were only able to ask for feedback from participants on the transcripts directly after the focus group interviews and not on the research findings. Therefore, we present only the researchers' interpretations of the participants' meanings and perspectives.

6 | CONCLUSION

This study provides an insight into the nutritional care delivery in the hospital and an understanding of factors influencing care delivery and attitudes of nurses to optimise nursing nutritional care and to involve patients in the nutrition care process of malnutrition. Explanations are suggested why nursing nutritional care is difficult as an integrated part of the fundamentals of care delivery and why nutritional care is easy to be missed. Patient participation in the nutrition care process in this study was shown to be rare. Nurses are

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in the ideal position to have a crucial role in the encouragement of patients and healthcare professionals to activate and collaborate in the nutritional care for malnutrition. Evidence-based strategies in patient participation regarding nutritional care require the knowledge and training of nurses and patients. There is a need for nurse-led interventions to educate nurses and patients in malnutrition, on the one hand, and to stimulate them in patient participation in the identification, prevention and treatment of malnutrition, on the other hand. Prerequisite for the development of these interventions is a co-creation with patients, nurses and all healthcare professionals involved in nutritional care.

7 | RELEVANCE TO CLINICAL PRACTICE

The findings of this qualitative study are used for the development of a complex intervention aiming to optimise nursing nutritional care in the hospital and to increase patient participation in the prevention and treatment of malnutrition. This qualitative study gave us insight into barriers and facilitators for optimal nutritional care in the hospital. The performance and attitudes of nurses found in this study are key elements for the development and feasibility of a nurse-led intervention to counteract malnutrition. Together with the patients' perspectives on patient participation, the nurses' perspectives in this study provided us a logic model of the problem, the first step of the intervention mapping protocol used to develop and implement the intervention. The second step was a systematic review to identify evidence-based nursing nutrition interventions, which are useful in helping patients with malnutrition to improve nutritional intake, nutritional status and clinical outcomes. These three perspectives together will be the basis of the conceptualisation of the intervention.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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