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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**

**Aims**: The purpose of this study is to provide a comprehensive understanding of how nursing nutritional care is provided in hospitals. This will be achieved by examining the nursing care practices and investigating the attitudes and experiences of healthcare professionals from other disciplines on patient involvement in nutritional care.

**Background**: The incidence of malnutrition among hospitalized patients remains elevated. The crucial contribution of nurses in recognizing and managing malnutrition is a vital component of the fundamental principles of healthcare. Nurses have a crucial role in delivering the highest quality of nutritional treatment within the hospital setting. To effectively combat malnutrition, it is necessary to employ a systematic nursing approach and involve patients in an active role.

**Design**: A multicentre qualitative investigation employing ethnographic observations and focus groups

**Methods**: An investigation was carried out to directly monitor the provision of nutritional care in two nursing wards. The nurses and inpatients were closely observed, and the collected data was analyzed thematically using the principles of care framework. Following that, a total of six focus groups were conducted on three nursing wards, involving nurses, dietitians, and nutrition assistants (n = 34). The data underwent analysis utilizing open, axial, and selective coding techniques. The study was reported using the COREQ guidelines.

**Results**: Over a period of 54 days, which is approximately 183 h, a total of 39 nurses were monitored in two medical wards. By observing nurses and patients, three actions in nutritional care delivery were identified: (1) screening and evaluation to determine if patients are at risk, (2) creating nutritional care plans, and (3) monitoring and evaluating outcomes while planning for the transition of care. Furthermore, the focus groups highlighted obstacles, enablers, requirements, and anticipated outcomes for the most effective delivery of nursing nutritional care.

**Conclusion**: The current research offers insights into the challenges associated with providing nursing nutritional care. There is a scarcity of patient involvement in the nutritional treatment process. Effective solutions based on empirical evidence are necessary to enhance the knowledge and abilities of nurses and patients in order to actively engage in the management of (mal)nutrition.

**Relevance**: The results of this investigation are utilized to create a nursing nutrition intervention aimed at maximizing patient involvement in the management of malnutrition.

**Patient or public involvement**: Throughout the investigation, individuals did not participate in the observations of care or interviews. The researchers monitored the administration of nutritional care in medical wards as passive participants. Nurses, nutrition assistants, and dietitians were solicited for feedback on the transcripts of the interviews during the focus groups.

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

**Introduction**

Ensuring the basic care requirements of patients is crucial for achieving optimal safety, recuperation, and good experiences in any healthcare environment (Kitson et al., 2019). There is a growing focus on the manner in which foundational care is administered in everyday settings (Richards et al., 2018; Zwakhalen et al., 2018). The International Learning Collaborative, an organization established to investigate the reasons behind the inadequate provision of fundamental care in healthcare systems, has verified that the delivery of fundamental care remains inconsistent. In intricate healthcare environments, the essential aspects of treatment may be disregarded as a result of the pressing demands of acute care. Consequently, patients may be neglected and nurses may hesitate to voice their concerns (Feo & Kitson, 2016; Kitson et al., 2019).

Nutrition is a significant aspect of care integration and one of the physical elements in the Fundamentals of Care paradigm (Kitson, 2018). Malnutrition remains prevalent among hospitalized medical patients, with a prevalence rate of 47% and an incidence rate of 30% (van Vliet et al., 2020). Furthermore, according to van Vliet et al. (2020), a significant 82% of patients admitted to the hospital continue to experience malnutrition during their stay. Hospital malnutrition is linked to extended hospital stays, heightened morbidity and death rates, elevated rates of readmission, and diminished quality of life (Uhl et al., 2021). Due to the adverse patient outcomes, the cost of providing care for malnourished patients is higher compared to well-nourished people (Curtis, 2017).

Nurses play a crucial role in identifying, preventing, and treating malnutrition. Various screening techniques have been developed to detect people who are at risk of malnutrition in the early stages. In the Netherlands, the malnutrition universal screening instrument (MUST) and the short nutritional assessment questionnaire (SNAQ) are commonly used to evaluate the risk of malnutrition. Despite the significant influence on patients' well-being, nutritional treatment remains a secondary concern for nurses. Prior studies have identified various challenges faced by nurses in providing adequate nutritional care. These challenges include time constraints, insufficient knowledge about malnutrition, limited use of screening tools, and inadequate communication and documentation of nutritional information. These findings were reported by Bonetti et al. (2017), Halvorsen et al. (2016), Kawasaki et al., 2018). Nurses play a crucial role in facilitating patient engagement in healthcare by actively involving them in decision-making and treatment processes. The current state of knowledge about the attitude and behavior of nurses towards patient involvement in (mal)nutritional care is unclear. The impact of challenges in providing nutritional care on nurses' ability to encourage patient engagement in nutritional care is not well understood. Health information technology is a promising invention that can be used to involve patients in their hospital care and healthcare professionals in their interdisciplinary teamwork. Roberts et al. created a technology-driven intervention that enables patients to actively engage in their nutritional care while in the hospital. This intervention involves using bedside computers to order meals, track food intake, and evaluate nutritional goals directly within the electronic food-service system. (Roberts et al., 2020, 2021). Hence, the involvement of patients in nursing nutritional care holds promise and warrants attention in future endeavors to mitigate malnutrition.

The installation of nutritional care for hospitalized patients by nurses can be regarded as a multifaceted intervention, with multiple components that interact with each other. It encompasses a range of outcomes and necessitates distinct behaviors from both the providers and recipients of the intervention (Craig et al., 2013). Healthcare personnel encounter various categories of hospital inpatients, each with varied levels of nutritional risk, such as low risk (well-nourished), medium risk (at risk for malnutrition), or high risk (malnourished). In order to address malnutrition in nursing, a systematic strategy is necessary to establish a comprehensive nutritional intervention. This may involve changing behavior patterns for both patients and nurses. (Roberts et al., 2020; van Belle et al., 2018; van Noort et al., 2020). The study utilizes the Medical Research Council framework (Craig et al., 2013) and the Intervention Mapping approach to create and modify an intervention using theoretical, empirical, and practical knowledge (Kok et al., 2016).

The process of Intervention Mapping will be implemented to create a nursing nutrition intervention specifically designed for patients who are hospitalized. Subsequently, this intervention will be evaluated in

a controlled study. To initiate the development of an intervention, the initial step is constructing a 'Logic Model of the Problem', as detailed in this article. The objective of this study was to acquire understanding of the present methods employed by nurses in delivering nutritional care and to examine the attitudes and experiences of the multidisciplinary team about patient involvement in nutritional care.

**Methods**

**Study Design:**

An ethnographic study, employing qualitative methods such as observations and focus group interviews was conducted. An academic teaching hospital employed a focused ethnographic method to obtain insight into the everyday delivery of nursing nutritional care and patient participation in malnutrition within the hospital context. This approach involved direct observation of care. Ethnographic designs are employed in nursing research to examine the attitudes and practices associated with nursing care (Conroy, 2017; van Belle et al., 2020). Observation is regarded essential in focused ethnography since it offers the optimal opportunity to see participants' behavior within the genuine setting of the real world (Cruz & Higginbottom, 2013). Following the observations, focus group interviews were conducted at medical wards in an academic teaching hospital to obtain a more comprehensive understanding of the obstacles and factors that aid healthcare professionals in delivering nursing nutritional care and promoting patient participation in (mal)nutrition care. Dietitians and nutrition assistants were involved in the focus groups to integrate their perspectives on the nurse's role. Additionally, to gain a more comprehensive viewpoint, another focus group was conducted in a surgical ward at a remote hospital. The focus groups utilized a hermeneutic phenomenological technique to delve deeper into the experiences, attitudes, and perspectives of healthcare professionals as they interacted with one another, surpassing just observations. Focus groups offer the advantage of generating data through the collective sharing of participants' experiences. This allows for the development of interventions that are based on shared attitudes, specifically regarding nursing practice and patient involvement in (mal)nutrition care (Bradbury-Jones et al., 2009). The research investigation was carried out in accordance with the principles outlined in the Declaration of Helsinki and the regulations set forth in the Personal Data Protection Act. The Radboudumc Human Ethics Committee Arnhem en Nijmegen evaluated the protocol and determined that the study was not subject to the Medical Research Involving Human Subjects Act (WMO) (Reference 2017–3468). The study provides comprehensive descriptions of the research techniques, adhering to the EQUATOR Guidelines, including the COnsolidated criteria for REporting Qualitative research (COREQ). See supplementary File S1.

**Setting:**

Between April 2017 and February 2018, a study was undertaken in an academic teaching hospital in the Netherlands to gain an in-depth comprehension of nursing nutritional care and patient engagement. This involved directly observing care on two medical nursing wards, specifically a gastrointestinal ward and a geriatric ward. In both wards, the room capacity ranged from one to four beds. In addition, the geriatric unit was equipped with a communal living/dining room to facilitate social interactions and communal meals. Registered nurses with either a vocational or bachelor degree provided treatment for the patients. In all wards, nutrition assistants were employed in the hospital meal service, with the responsibility of delivering food and drinks for six meals per day. The nutrition assistants operated in two shifts, starting at 7:00 and ending at 20:00, and possessed a secondary or vocational degree. A dietician served as a part of the interdisciplinary team responsible for providing dietary treatment to patients. During the observations, the researchers took on a passive role and observed nurses and nursing assistants as they carried out their regular work and provided nutritional care to patients. The purpose of this was to observe the behavior of both the nurses and the patients in relation to nutritional treatment. (Conroy, 2017; Cruz & Higginbottom, 2013). The observations were carried out by two teams of proficient researchers, overseen by the primary author (GB), who had training in qualitative research. The initial observation session was carried out by three female BSc nursing students in the gastroenterology ward (AZ, ED, TR), while the subsequent observation period involved three BSc nursing students (two male, one female) and one female MSc nursing student in the geriatrics unit (FL, WB, YB, HF). Every student underwent training in observation techniques as part

of their Graduate program, namely through a module called Qualitative Research. The students were unfamiliar with the individuals who took part.

**Focus group interviews**

In order to provide a more comprehensive understanding, supplementary focus group interviews were conducted in two medical wards and one surgery ward at both an academic hospital and a rural hospital from March 2018 to May 2019. Two interviews were conducted at each ward. The interviews took place in the geriatrics ward immediately following the observations, and in the internal medicine ward in addition to the gastrointestinal ward. In order to enhance the scope of the study, a surgical unit in a rural hospital was also incorporated. Both hospitals offered inpatients a six-meal-daily food service. The team consisting of nurses, nursing students, nutrition assistants, and dietitians were interviewed to gather their insights on the obstacles and aids they encountered in providing patient-centered nursing nutritional care for the prevention and treatment of malnutrition in the hospital. The primary author (moderator) collaborated with a registered nurse who was completing her Masters in Nursing Sciences (HF) to create the focus group interview questions. The moderator is a clinical dietitian who has expertise in working in hospitals, providing nutrition education, and conducting research initiatives. The second moderator is a nurse (HF) who has expertise in the nursing home environment. In addition, three students from the BSc nursing program (HZ, FM, SF) provided assistance during the focus groups. The project leader, who is listed as the fifth author, is an experienced senior researcher and registered nurse with a background in both hospital settings and research projects. The researchers (GB, HF, GH) were knowledgeable with the nutritional care process and the duties of nurses in the multidisciplinary team. The focus groups were conducted in a designated meeting room within the nursing ward, where the participants were provided with refreshments such as coffee or tea accompanied with cake. Each interview was overseen by a moderator and an assistant, who aimed to foster an inclusive environment and encourage the exchange of personal insights.

**Participants:**

In order to qualify for participation in the study, both healthcare professionals and patients had to be at least 18 years of age. To conduct ethnographic observations of the nursing nutritional care process, we obtained a general informed consent from the ward administrators. This allowed us to shadow nurses and watch the nutrition process in patient rooms. Nurses and patients were notified through informational letters, with one specifically addressed to nurses and another to patients. At the beginning of each shift, the researcher requested verbal consent from registered nurses to witness their work, and also obtained permission from patients to be present in the room and observe the nutritional care operations. Both nurses and patients had the option to decline participation. Additionally, if a nurse deemed it unsuitable to supervise the nutritional care procedure in a patient's room due to the severity of their illness or cognitive issues, it was not carried out. The unit managers of the nursing wards selected nurses, nursing assistants, nutrition assistants, and the ward nutritionist to participate in the focus group interviews. Following verbal agreement, they were given written informed consent prior to their involvement.

**Data collection procedures:**

**Observations**

Throughout the observations, the viewpoints of both nurses and patients were utilized to get insights into the daily procedures of nutritional care provision. To obtain a comprehensive understanding of nutritional treatment, observations were conducted over the entire week, from Monday to Sunday, between the hours of 7:00 am and 9:00 pm. The researchers operated in four-hour shifts, with two hours dedicated to shadowing nurses and two hours allocated to studying ward rooms and hospital eating settings. They adopted the role of passive observers and refrained from asking questions or intervening in order to prevent any impact on daily activities (Conroy, 2017). In order to organize the observations, we utilized an observation guide that was derived from previous observations conducted by Conroy and Van Belle et al. (Conroy, 2017; van Belle et al., 2020). The handbook was developed using Kitson's Person-Centered Fundamentals of Care methodology, as outlined by Kitson in 2018. Observations were made on the three dimensions of the framework, namely psychosocial, relational, and physical. Only the aspect of nutritional care, specifically the act of eating and drinking, was analyzed using the code "eating and drinking." Refer

to supplemental File S2 for additional information. The field notes documenting the observations were transcribed immediately following the completion of each observation. These notes contained detailed information about the environment, nursing interventions, behaviors, and communication related to the delivery of nutritional care.

**Focus group interviews:**

A structured interview protocol was designed using the main subjects outlined in Box 1. The multidisciplinary team on each ward was initially questioned as a group, comprising of four to six nurses, one dietitian, and one nutrition assistant. The interview lasted for 60 minutes. A follow-up interview of 30 minutes was conducted with a group of four to six nurses to further explore the topics related to nursing nutritional care that were mentioned in the initial interview. The interviews were structured according to Finch and Lewis' hypothesis (Finch & Lewis, 2004). The moderator commenced by providing a clear elucidation of the purpose of the study and the interview. They then requested the participants to introduce themselves and proceeded to direct the interview, fostering an animated debate and ensuring that all aspects outlined in the interview guide were covered. The audio recordings of all focus group interviews were made using a Sony IC recorder model ICD-UX70.

**Observations:**

Initially, a trio of researchers (AZ, ED, TR) performed the analysis of data obtained from the gastroenterological ward. Three researchers (FD, WB, YB) examined the data on the nutritional care procedure from the geriatrics ward. In order to achieve data saturation, a registered nurse (HF) conducted additional observations in the geriatric ward and analyzed the data from all of these observations. This analysis was used to create the interview guide for the focus groups, in collaboration with the first author. The observations were initially encoded and linked to the themes of the principles of care framework. Subsequently, we proceeded to incorporate the subject of 'sustaining nourishment and hydration' (consumption of food and beverages) into the overarching themes of the nutritional care process by employing the algorithm developed by Guenther et al., as outlined in Table 1 (Guenter et al., 2015).

**Focus groups:**

The transcripts of the focus groups were distributed to the participants for their input. The interviews underwent analysis using open, axial, and selective coding techniques. The first author and four nurses (HF, HZ, FM, SF) analyzed the data in an iterative procedure. The interview transcripts were independently coded by the nurses and then discussed with the first author (supervisor) to achieve a consensus on the final codes. The user's text can be rephrased as follows: The user described and conceptualized significant aspects related to experiences and attitudes towards nurse nutritional care and patient engagement. These aspects were then categorized and summarized into thematic codes and overall categories.

## Results

### Participant features

### Observations

Observations were made of the delivery of nutritional treatment by nurses in the hospital wards for a period of 54 days, totaling 183 h. At the gastroenterology ward, a total of fifteen registered nurses were observed. Out of these, seven nurses held a vocational degree and eight nurses held a bachelor's degree. Twenty-four registered nurses were observed at the geriatrics ward. Out of the total number of nurses, five possessed a vocational degree whereas the remaining nurses held a bachelor's degree.

### Focus groups

A total of six focus group interviews were conducted, including a total of 34 participants. The initial focus group interviews at each location lasted for 65, 69, and 72 minutes, respectively, in the geriatrics, internal medicine, and surgical wards. The subsequent focus group interview lasted for 26, 49, and 53 minutes. Table 2 displays the features of the participants.

**Observations:**
The observations revealed that the nurse nutritional care practice consisted of three main activities: (1) screening and evaluation to determine those at risk, (2) developing nutritional care plans, and (3) monitoring and evaluating outcomes while planning for the transition of care.

**Table1 The nutrition care algorithm**

| | Themes | Nurse Action |
|---|---|---|
| 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 | Nutritional 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 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. |

**Screening**:
Upon admission, nurses routinely inquire about any allergies, dietary restrictions, and registered dietary preferences, which are then recorded in the electronic patient file. Frequent interruptions were consistently

seen to impede nurses' workflow, resulting in delays in the assessment and registration of nutritional findings. The utilization of the Malnutrition Universal Screening Tool (MUST) for assessing the risk of malnutrition in patients was solely observed in the gastrointestinal ward. The MUST was incorporated into the computerized patient record. In the geriatrics ward, all patients were deemed to have a high susceptibility to malnutrition. Consequently, the nurses were no longer responsible for screening patients within 24 hours of arrival. A comprehensive protocol outlined the nutritional interventions that should be administered to the patient, including: (1) conducting biweekly weight measurements, (2) assessing protein intake, weight, and nutritional issues at specific intervals throughout the patient's hospital stay, and (3) providing the hospital's high protein menu along with a standardized prescription for an oral nutritional supplement to be taken once daily.

**Monitoring**:
Food intake registration in the electronic patient files was often witnessed on both wards, carried out by both nurses and nutrition helpers either immediately after meals or at a later period during the day. The vast majority of contact regarding food and fluid consumption occurred through digital means, and there was minimal observation of discussions between nurses and nutrition aides regarding patients' food intake. The protein intake was assessed by nurses at the geriatrics ward, who collectively decided to do so during their nightshift. If protein intake fell below 50% of the recommended nutritional goal and/or if tube feeding was necessary, the nutritionist was contacted to provide dietary counseling. The nurses frequently observed barriers that hindered food intake, such as discomfort, dental issues, or delirium, and promptly took appropriate measures. As an illustration, a dentist was visited upon hospital admission for certain patients experiencing pain due to tooth issues. The presence of delirious behavior occasionally had an observable adverse effect on food consumption. In order to alleviate restlessness in patients, nurses employed various strategies such as accompanying the patient on walks or escorting them back to the dining area to provide them with a beverage.

**Table 2 Features of the participants per focus group per nursing ward**

| | Geriatrics (n = 13) | Internal medicine (n = 10) | Surgery (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*)<br>Hospital<br><br>Ward | <br><br>13 (3–20)<br>8 (2–13) | <br><br>9 (3–18)<br>8 (1–8) | <br><br>10 (5–20)<br>4 (2–8) |

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

**Responsibilities**

Nutrition assistants were tasked with providing food and beverages to patients and advising them about the various menu options, while considering any dietary restrictions as necessary. Nurses had the responsibility of providing instructions to patients and nutrition helpers regarding the permissible dietary intake for patients. Frequently, they utilized written notes to communicate their dietary specifications.

The predominant actions performed by nurses in nutritional care were conducting physical examinations such as ostomy care and weighing, as well as administering tests or treatments such as diabetes care and tube feeding (re)placement. Communication and education were commonly noted. For instance, providing patients with guidance on their dietary regimen or educating them on the significance of nutrition and promoting consumption of food and beverages.

**Mealtime assistance**

Mealtime help was predominantly witnessed in the geriatrics unit and rarely in the gastrointestinal ward. Patients gathered in the dining area, where the nutrition aides had cultivated a homely ambiance. The provision of meals was facilitated by nurses and nutrition helpers, with the exception of one instance where a volunteer was involved. Certain patients required assistance with their meals and beverages, a service provided by the nurses who dedicated their time to aid them. Nurses diligently monitored the posture of patients while they were eating. Frequently, it was noted that they would verify if the patients were maintaining an upright posture directly in front of the table, with food and beverages easily accessible. Nurses ensured that patients who were confined to their rooms and had to consume their meals in bed were positioned in an upright posture before to eating. They also provided instructions to the nutrition assistants regarding the patient's readiness to eat.

Relatives or informal caregivers were present nearly every day and assisted patients in communicating with nurses and doctors. Certain patients had an inability to independently consume food or beverages, necessitating assistance that was frequently provided by their family or informal caregivers. The nurses did not request it, but rather it was presumed that family or informal caregivers would provide this aid.

**Medication rounds**

It was noted on both wards that medication rounds were scheduled to coincide with mealtimes, resulting in patients receiving their medication while they were eating. Occasionally, patients ingested their medication promptly alongside meals and beverages. Mealtimes were occasionally interrupted by physical exams or therapeutic procedures, such as initiating an intravenous drip or conducting blood tests.

**Dietary counselling**

Approximately 50% of the individuals in the gastroenterological department who were at risk of malnutrition were recommended to consult a dietician for nutritional counseling. However, the dietitian's presence in the hospital was only sporadically monitored. A nurse specialist was frequently observed on the gastrointestinal ward. The nursing specialist had the responsibility of overseeing the administration of parenteral nutrition and made visits to several patients for parenteral nutritional therapy. Patients receiving home parenteral nutrition, who were hospitalized, were responsible for changing their own parenteral nutrition bags, while a nurse specialist monitored their progress. Patients admitted to the geriatrics ward were given a standardized diet that was high in energy and protein. This diet included oral nutritional supplements and meals with high protein content, which were served by nutrition aides and nurses. There was no evidence of dietary counseling being provided by the nutritionist in this ward.

**Collaboration**

The observation of care coordination for the establishment of nutritional objectives was made during the interaction between nurses and nutrition assistants in the processes of food registration and mealtime assistance. Both disciplines recorded the intake in the computerized patient file, provided support to patients during mealtimes, and assessed the patients' food and fluid intake. During the daily medical rounds and weekly multidisciplinary meetings, the healthcare professionals often inquired about the patients' dietary state. The effectiveness of nutrition interventions was assessed during the sessions, using data from the electronic patient files that recorded food intake.

**Missed care**

Patients on both wards were regularly weighed according to a procedure, with some patients being weighed more frequently than others. Patients were consistently weighed on multiple occasions, always by nurses. Instances of neglected care were also noted. Multiple times, nurses intended to measure the patient's weight but failed to complete this assignment. Furthermore, the patient failed to consume the offered meals on multiple times, and this omission was not documented in the electronic patient record. During one-third of the observations, the recording of food/fluid intake was inadequate, and the nurse lacked knowledge about the patient's true food consumption.

**Transition of care**

Upon release, the letter to the general practitioner often lacked information regarding food intake and/or nutritional interventions. The nursing transmission letter outlined the nutritional care plan for patients receiving home-based nursing care or those admitted to nursing facilities.

**Focus group**

The introductory questions for the focus groups served as a clear focal point for the conversation regarding the nurses' involvement in nutritional care. All participants agreed that nursing nutritional care is a complex intervention. They also expressed their experiences of facing difficulties in providing optimal nutritional care due to various variables. They emphasized that providing customized care is a crucial method for achieving the patient's nutritional objectives. The focus groups revealed three distinct themes: (1) obstacles and (2) enablers in the delivery of nutritional care in nursing, and (3) the requirements and anticipations for patient involvement in nutritional care.

**Screening**

Participants expressed the challenge of accurately identifying patients with nutritional care needs upon arrival. They observed that nutritional risk screening is frequently overlooked during the assessment interview. Lack of awareness on malnutrition and cognitive issues were identified as obstacles to the accuracy of nutritional risk screening and assessment. During the discussion in the geriatrics ward, it was noted that while the protocol indicates that every patient is highly susceptible to malnutrition, the participants believed that not all patients actually had a nutritional care issue.

**Mealtime assistance**

Participants highlighted the obstacle that numerous patients required aid in consuming food and beverages, and only nurses were authorized to provide assistance to patients. Consequently, nurses experience a high level of work demands during meal periods. Additionally, the participants encountered a significant rate of staff turnover among nutrition assistants in their departments, as well as a lack of adequate understanding about individualized nutritional care. Nurses depend on nutrition aides to educate patients about various choices available on the menu, employing ingenuity and encouraging patients to consume food and beverages while considering any dietary limitations.

**Monitoring**

The participants engaged in a discussion regarding the brief duration of hospitalization, with limited emphasis on the provision of nutritional support. Severely ill patients are at a higher chance of their condition worsening and being moved to critical care wards. As a result, there is a stronger emphasis on addressing immediate medical issues and a lower priority placed on providing nutritional treatment. A few participants noted that they frequently lacked the opportunity to acquire a comprehensive understanding of their patients' nutritional consumption. Another challenge in the practice of nutritional treatment was the joint obligation of nurses and nutrition aides in recording food consumption. The participants unanimously agreed that the nurse has the ultimate responsibility for monitoring nutritional status and relies on the competencies of nutrition assistants. The utilization of typically inexperienced flexible workers hinders effective communication in the delivery of nutritional treatment. Everyone who participated agreed that paying attention to dietary care is crucial. Options like as on-the-job learning, instruction by specialists, and e-learning were suggested to enhance knowledge in nursing nutritional care.

**Dietary counselling**

The involvement of dietitians was identified as a factor that promotes nutritional care. The nurses in the surgery and internal medicine wards observed that the process of consulting with the nutritionist after risk screening was efficient and convenient using the electronic pathway. The dietitian's constant presence at the ward made them immediately accessible to nurses. In the geriatrics ward, a protocol was implemented for nutritional treatment, with little involvement from the dietician. Nurses expressed a desire to visit the dietitian more frequently in order to address nutritional issues in greater depth.

**Electronic patient files**

This tool is widely recognized for its comprehensive functionality and user-friendly interface, making it easier for professionals from different disciplines to collaborate. The inclusion of food and fluid intake registration in electronic files was identified as an innovative approach to delivering nutritional treatment. This practice enhances the ability to generate rapid summaries of a patient's nutritional status and facilitates improved evaluation of outcomes. Conversely, the users found the intricacy of the program for recording food and hydration intake to be bothersome and time-consuming. As per the participants, the number of activities required to accurately record food intake and generate summaries is prone to errors and missing data.

**Food Services**

The participants noted that creating a pleasant atmosphere during mealtime and encouraging communal dining helped to improve patients' eating habits. As a result, some wards introduced shared lunch and dinner sessions, which were met with enthusiasm by the participants. The majority of participants recognized the significance of high-quality food catering. However, they also identified the scheduled timeslots and limited availability of meals outside of these timeslots as a drawback. All healthcare professionals agreed unanimously on the necessity of patient involvement in nutritional care. The participants deliberated several strategies to encourage patients and informal caregivers to actively engage in patient involvement.

**Self-monitoring**

The participants advocated for streamlined food documentation in the electronic medical records, along with a patient engagement tool. Patients or family members can actively register their food intake and play a more proactive part in nutritional care.

**Answers**

The initial step was recognizing and understanding the nutritional condition and potential risk factors of patients and/or informal caregivers. One way to accomplish this is by collecting dependable data on the nutritional condition and food consumption of patients upon admission and periodically throughout their hospitalization. The participants also observed the prioritization of nutritional care. Although patients have a brief hospital stay and experience more acute care issues, nurses, nutrition assistants, and dietitians can actively engage patients in discussing nutritional care difficulties. This will enable nurses to effectively coordinate appropriate interventions during the patient's hospitalization and beyond release.

## Discussion

The current investigation conducted a comprehensive analysis of the delivery of nursing nutritional care in hospitals, as well as a multidisciplinary examination of attitudes and experiences related to nutritional care delivery and patient involvement in addressing malnutrition. Through the observation of nurses and patients, we have identified three key actions in the delivery of nutritional care: (1) screening and assessment to determine those at risk, (2) development of nutritional care plans, and (3) monitoring and evaluating outcomes, as well as planning for the transition of care. Three themes were observed in the shared experiences: The study aimed to explore the factors that hinder or support good nutritional care provided by nurses, dietitians, and nutrition assistants. Additionally, it aimed to understand the requirements and expectations of patients in regards to their participation in nutrition care. This was done through focus groups involving these healthcare professionals.

Nutritional care delivery, an essential care requirement, constitutes only a fraction of the duties and responsibilities that nurses undertake throughout a complete day of care provision (Kitson et al., 2019). For our research, we had to carefully watch 54 days and 183 hours of essential care delivery in order to collect

enough data on nursing nutritional care until it reached saturation. The recruitment was enhanced by the substantial sample size and the incorporation of various medical nursing wards. The observations were enhanced by the collaboration of the experienced junior and senior researchers. However, the evaluation of nutritional care delivery was limited to the viewpoint of medical specialists in the nursing units. As a result of obstacles in recruiting, we were unable to observe the implementation of nutritional care on a surgical unit. The study examined the viewpoints of healthcare professionals such as nurses, dietitians, and nutrition assistants on nutritional care delivery and patient participation in (mal)nutrition care. However, it did not include the perspective of medical doctors. The education and clinical practice of (younger) doctors often overlooks and disregards the importance of patient nutrition (Frost & Baldwin, 2021). Regrettably, our study was unable to incorporate the participation of a medical doctor or a junior doctor in the focus groups. The current research provided valuable insights into the everyday routines and experiences associated with the shared responsibility of food registrations. The nurses assumed ultimate responsibility for maintaining the food records and determining the patient's nutritional status based on their assessment of the patient's food consumption. Nevertheless, nurses relied on nutrition assistants who were instructed to aid in these registrations. Shared responsibilities and mutual expectations can result in overlooked registrations, incomplete records, and disturbed communication. Both parties anticipate that the other will complete the necessary documentation and engage in discussions on patient intake. The study conducted by Marshall et al. examined the practices of health professionals in nutritional treatment and reported comparable results. The researchers also discovered a distinct separation of responsibilities in nutrition care among various healthcare experts. However, they observed that these specialists worked independently of each other rather than together.

The findings of the present research revealed that nurses frequently had disruptions while providing nutritional treatment, and patients were frequently interrupted during their mealtimes. Additional vulnerabilities in providing appropriate nutritional care include inadequate food documentation, insufficient support during meals, medication administration coinciding with mealtimes, and limited attention to the patient's dietary needs during care transitions. The lack of emphasis on nutritional care, particularly in addressing acute care issues and overcoming organizational obstacles in food service and menu planning, was identified as a significant factor contributing to the neglect of nutritional care and the acceptance of interrupted mealtimes. The literature contains comparable conclusions, with multiple research indicating that nurse nutritional care is frequently neglected in clinical practice. Marshall et al. (2019) identify competing job demands as a significant issue and challenge to providing appropriate nutritional care for nurses. Furthermore, Kalisch et al. (2009) found that essential aspects of nutritional care, such as screening, assessment, and giving feeding assistance, are frequently overlooked in nursing care. An observational study conducted by the Missed treatment Study Group revealed that the malnutrition risk assessment within 24 hours after admission is frequently overlooked in nutritional treatment. This assessment is highly susceptible to staffing levels and workload (Recio-Saucedo et al., 2021). In a qualitative study, Laur et al. outlined how nurse nutritional care may be enhanced by giving priority to organizational issues. Emphasizing the needs and preferences of patients, safeguarding designated meal times, and ensuring the availability and ease of access to food are factors that contribute to the improvement of nutrition care (Laur et al., 2017).

Throughout the present research, nutritional care is described as a multifaceted intervention. Initially, nutritional care delivery may appear to be a simple form of care. However, with closer examination of clinical practice, it becomes evident that nutritional care involves multiple interconnected elements at both the organizational and personal levels (Craig et al., 2013). The hospital dining service operates as a separate business unit from the medical departments and is either outsourced to a professional catering sector or managed internally. Effective provision of high-quality meal services necessitates coordination among nursing staff, management, and nutrition-related care workers. Among these, nurses play a pivotal role as they have the most direct interaction with patients and maintain a comprehensive understanding of their care needs (Marshall et al., 2019). The administration of nutritional care in nursing is a difficult undertaking that requires nurses to be adaptable and driven in order to prioritize nutrition amongst a demanding workload and obligations (Eide et al., 2015). The patient's physical and psychosocial well-being and their

motivation to engage in nutritional treatment are essential aspects of fundamental care. Nurses consistently adapt and prioritize care requirements in their communication with patients and healthcare professionals. The involvement of patients in healthcare is a significant development that necessitates healthcare professionals to possess new skills in actively encouraging and motivating patients and their family caregivers to participate in goal setting, treatment, and therapy, such as nutritional care (Al-Adili et al., 2022; Tobiano et al., 2015). In our study, we discovered that there were common obstacles to patient engagement in nutritional treatment. This was judged to be a challenging task to accomplish. However, all healthcare professionals acknowledged the significance of enhancing patient involvement in nutritional care.

Technology is integrated throughout all healthcare institutions, enabling users to utilize their expertise and precision to operate various devices. With regards to nutritional care, the implementation of digital food registration had both positive and negative consequences. Although it provides a comprehensive assessment of patients' dietary intake, it is a laborious process for users. Food registers in the patient record are occasionally difficult to locate or concealed within the system. In our study, the food registration process for admitted patients was perceived as a significant drawback, since it was deemed overly challenging or time-consuming to utilize. Consequently, nurses were compelled to accept incomplete information. The delineation of responsibilities for completing food records was not consistently defined in protocols, and several healthcare workers were tasked with managing the patient's dietary intake. A study conducted by Braga Azambuja et al. in the literature examined the correlation between food consumption surveys (patient reports) and nursing records, revealing varying levels of concordance. According to Braga Azambuja et al. (2015), patients who consumed more than 75% of their prescribed intake showed a strong correlation between their self-reported survey and the nursing record. However, for patients who had a reduced oral intake of less than 50%, the correlation was only moderate to low. Collaboration between nurses and patients is crucial in the monitoring, regulation, and documentation of dietary consumption. Data-driven healthcare is an encouraging advancement in clinical care. This has the potential to mitigate the laborious and intricate management of care delivery. For instance, literature demonstrates that continuous monitoring of vital signs in both clinical and non-clinical settings is possible and may offer advantages in terms of patient outcomes and cost-effectiveness (Downey et al., 2018). In the field of nursing nutritional care, the implementation of self-monitoring or sensor approaches to track food and hydration consumption could serve as a proactive measure in preventing malnutrition among hospital patients (Roberts et al., 2020; Roberts et al., 2021).

Therefore, it is crucial to prioritize the education of patients and their families of the negative effects of malnutrition and to encourage their active involvement in nutritional care throughout their hospital stay (Roberts et al., 2017). An intervention led by nurses can serve as a creative and effective solution by educating both nurses and patients about malnutrition. This intervention also encourages patients to actively participate in discussions about specific nutritional issues, monitor their food intake, and set goals for weight and performance management. It is preferable for this intervention to take place as early as possible during hospitalization, and ideally even before admission if feasible. The research conducted by Van Noort et al. demonstrated the feasibility and efficacy of patient education and involvement in prehabilitation with malnutrition before to surgery (van Noort et al., 2020).

**Limitations**

There are certain constraints in the present investigation. The success of this study relied heavily on the active participation of junior researchers, specifically BSc and MSc Nursing students, who collected observational data on the nutrition care process and contributed to the focus group interviews. Although the researchers received training in qualitative research as a requirement to conduct observations or focus groups, their individual work experiences may have influenced the findings. To mitigate this impact, a methodology and an interview guide were developed to enhance the coherence of the observational and interview data. Furthermore, the selection of participants primarily relied on convenience sampling, and there was a lack of information regarding the reasons for nonparticipation. While the sample size and features of the participants are well specified to evaluate the diversity of opinions, there is still a possibility

that individuals may make unjustified comments. Furthermore, we could only solicit input from participants regarding the transcripts immediately following the focus group interviews, rather than on the research findings. Hence, we exclusively give the researchers' interpretations of the participants' meanings and views.

**Conclusion**

The present research provides a comprehensive analysis of how nutritional care is provided in hospitals, including an examination of the elements that affect care delivery and the attitudes of nurses. The goal is to enhance nursing nutritional care and involve patients in the process of addressing malnutrition. Explanations are proposed to elucidate why including nursing nutritional care into the core aspects of care delivery is challenging, as well as why nutritional care is prone to being overlooked. The study revealed that patient involvement in the nutrition care process was infrequent. Nurses are well-positioned to play a pivotal role in promoting and facilitating the involvement of patients and healthcare professionals in the provision of nutritional care for malnutrition. Nurses and patients need knowledge and training to implement evidence-based interventions for patient participation in nutritional care. Nurse-led interventions are necessary to educate both nurses and patients about malnutrition. These interventions should also encourage patient involvement in identifying, preventing, and treating malnutrition. A prerequisite for the development of these treatments is the collaborative creation with patients, nurses, and all healthcare professionals who are involved in nutritional care.

**Relevance To Clinical Practice**

The results of this qualitative study are utilized to create a sophisticated intervention that seeks to enhance nursing nutritional care in the hospital and promote greater patient involvement in the prevention and treatment of malnutrition. This qualitative study provided us with valuable information regarding the obstacles and factors that contribute to the provision of effective nutritional treatment in the hospital setting. The study identified that the performance and attitudes of nurses play a crucial role in the creation and practicality of a nurse-led intervention aimed at addressing malnutrition. In addition to the patients' viewpoints on patient involvement, the nurses' viewpoints in this study offered a logical framework of the issue. This framework serves as the initial phase of the intervention mapping protocol, which is utilized to create and execute the intervention. The second phase involved doing a systematic review to identify nursing nutrition interventions that are supported by evidence and can effectively assist patients with malnutrition in enhancing their nutritional intake, nutritional status, and clinical outcomes. The combination of these three views will serve as the foundation for the conceptualization of the intervention.

**CONFLIC T OF INTEREST**

The authors declare that they have no conflict of interest.

**DATA AVAIL ABILIT Y STATEMENT**

The data supporting the findings of the current investigation can be obtained from the corresponding author upon a reasonable request.

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