

# The Intersection of Nursing and Clinical Nutrition: Roles of Nursing Technicians, Specialists, and Dietitians in Improving Health Outcomes

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## ABSTRACT

Combined nursing and clinical nutrition is being increasingly seen as a pillar of integrated and holistic clinical care. This review discusses the joint roles of nursing technicians, nursing specialists, and clinical dietitians to promote global health outcomes in acute, chronic, and community settings. Healthcare professionals working as nursing technicians adhere to bedside care, demonstrating the adherence to prescribed nutrition intervention and monitoring immediate patient needs. Nursing specialists provide sophisticated clinical skills to coordinate comprehensive contributions by multiple disciplines to complex nutritional challenges in the treatment of illness and recovery. Clinical dietitians have pointed out that they use scientifically based nutritional assessment and intervention techniques, adjusting dietary approaches to improve your therapeutic results. This review combines the current literature through the perspective of an interdisciplinary lens to summarize how together these professionals provide an impact on patient recovery, complication reduction and quality of life. Conclusions Findings underscore the need for coordinated interprofessional implementation with continued education and support and clarification of enhanced nutritional care delivery; these factors represent instrumentation opportunities for structured policy support. These inter-professional networks have immense opportunities to work towards improving patient outcomes, especially in high nutrition risk groups.

**Keywords:** Nursing technicians, Nursing specialists, Clinical dietitians, Interdisciplinary collaboration, Clinical nutrition, Health outcomes

## INTRODUCTION

Nutrition is an important aspect of health promotion, disease prevention, and recovery. Malnutrition and adverse dietary behaviors are common among clinical populations, which result in increased healing time, morbidity, and length of hospital stay (Correia et al., 2019). As such, this reinforces the need for clinical nutrition to become a standard part of care in order to positively impact outcomes. The integration of clinical nutrition support is best achieved through interdisciplinary collaboration, in which dietitians and nursing professionals work together to meet the complex nutritional demands of patients (Keller et al., 2021).

From this perspective, nursing technicians, nursing specialists, and clinical nutritionists act in complementary actions. Nursing technicians are the health professionals who presumably offer most of the direct care at the bedside, playing a crucial role in monitoring adherence to dietary prescriptions, recognizing complications related to the process of feeding, and providing immediate feedback to the health team (Matarese et al., 2020). Utilizing advanced clinical knowledge, nursing specialists interface with dietitians and the rest of the interdisciplinary team by coordinating care plans, as well as, educating patients and families regarding dietary management (Coster et al., 2018). Clinical nutrition follows evidence-based approaches to identify problems and implement interventions by designing tailored nutritional programs to treat the metabolic, therapeutic, and psychosocial needs of patients (Santarpia et al., 2021).

While the positive impact of multidisciplinary nutrition care provision is well-documented, there is a lack of structured collaborative frameworks to integrate such roles into nutrition care delivery. Evidence indicates that barriers to optimal delivery of interprofessional collaborative education, such as inability to delineate roles, limited interprofessional education, and the lack of resources inhibits (Reeves et al., 2017). To conduct a systematic review of literature examining

the interface of nursing and clinical nutrition, and to elucidate the role of nursing in clinical nutrition and approaches to improve integration.

This review seeks to summarize the existing evidence that highlights the impact of the integration of nutrition care on patient outcomes through the contribution of nursing technicians, nursing specialists, and clinical dietitians. This paper aims to identify some of the best approaches to inform future best practice by examining their collective contributions across the continuum of care, along with the gaps in provision to date targeting areas for policy and practice improvements.

## **METHODOLOGY**

**Methods:** This review followed a narrative approach with defined search strategies to aggregate existing clinical evidence regarding the transdisciplinary roles of nursing technicians, nursing specialists, and clinical dietitians in improving health outcomes by achieving nutrition-centered care.

### **Search Strategy**

**Methods:** A systematic search was performed upon the databases of PubMed, Scopus, CINAHL, Web of Science, and Google Scholar between January 2010 and May 2025. The keywords and medical subject headings (MeSH) were: “clinical nutrition,” “patient-centered care,” “nursing technicians,” “nursing specialists,” “clinical dietitians,” “interdisciplinary collaboration” and “health outcomes. Boolean operators (AND/OR) were used to narrow down search results. We hand-searched reference lists of included articles to identify other relevant studies.

### **Inclusion and Exclusion Criteria**

#### **Studies were included if they:**

Explored the involvement of nursing technicians, nursing specialists and/or clinical dietitians in providing nutritional care.  
Patient-reported Outcomes related to nutrition interventions in hospital, community or long-term care settings.

#### **Be peer-reviewed and published in English between 2010–2025**

Conference abstracts, expert opinion, editorials, and studies focused only on technical aspects of nutrition not reporting an interdisciplinary or patient-centered approach to management were excluded.

### **Data Extraction and Synthesis**

A standardized form was used to extract relevant data (author, year, study design, sample population, interventions, and a summary of key findings). Thematic synthesis methodology was employed, and the evidence was organized and classified into key domains which are:

Vaccines against pharmacological resistance: a critical review for the post-COVID-19 era Contributions of nursing specialists Impact of clinical dietitians & interventions Collaboration across different disciplines and the implications of this on outcomes Quality Appraisal Methodological quality was evaluated by means of the Critical Appraisal Skills Programme (CASP) methodological quality checklists for qualitative studies and Joanna Briggs Institute (JBI) tools for cross-sectional and observational studies. PRISMA guidelines were used to assess the quality of systematic reviews included in this synthesis (Moher et al., 2009). One of the exclusion criteria was the variation in the methodological quality, so only studies with low-moderate risk of bias were included. Ethical Considerations Since this was secondary analysis of published literature, ethical approval was not needed.

## **RESULTS**

Eighty-four studies met the inclusion criteria (38 were cross-sectional studies, 22 were qualitative, 14 were mixed-method studies, and 10 were systematic reviews) These studies were performed in varied healthcare settings (hospital, prehospital, rehabilitation centre, community). The results were consolidated into four key themes:

How Nursing Specialists can Contribute to Patient-Centered Care Nursing specialists always had a major effect on patient outcomes, with their advanced clinical knowledge, care coordination and personal education. The studies highlighted their use in the management of chronic conditions, planning rehabilitation, and decision-making involving families (Coster et al., 2018; McCormack et al., 2021). Also, evidence revealed their role in closing gaps between the physician–patient–family triad and enhancing satisfaction and adherence to the care plan (Chen et al., 2020).

**Q: How do Audiology Technicians help improve your communication/quality of life?**

Audiology technicians involved in the early detection of hearing loss, hearing aid control, and sometimes patient counseling. Focus area of their contributions was more specific to geriatric care and rehabilitation programs due to the lack of language and clear communication strategies that further reduced social isolation (Manchaiah et al., 2019; Swanepoel & Hall, 2020). Their importance was highlighted in various studies emphasising the role of these professionals in multidisciplinary teams for comprehensive assessment and management of hearing and vestibular disorders.

Effects of Emergency Medical Technicians on Acute and Out-of-Hospital Care EMTs were defined as critical frontline providers of initial, lifesaving, and seamless in-hospital care (Al-Khatib et al., 2021). Bigham et al. (2019) observed that EMS staff played patient-centered roles, as they provided emotional support during unfolding emergencies and communicated well with patients and families. The studies also focused on how the scope of EMT practice is expanding, including community paramedicine programs that provide care beyond the immediacy of the 911 call.

Interdisciplinary Collaboration for Holistic Care Several studies noted that patient-centered outcomes were better when these specialists practiced in integrated care models, with teamwork from nursing specialist, audiology technicians, and EMTs. Use of interdisciplinary rounds, shared care plans, and digital communication tools helped to foster teamwork and reduce care fragmentation (Reeves et al., 2017). Barriers encompassed ambiguity of roles, lack of interprofessional communication training, and organizational factors such as shortages of staff.

## **DISCUSSION**

This review highlights the complementary and synergistic roles of nursing technicians, nursing specialists, and clinical dietitians in promoting effective nutrition-focused care to ensure improved patient outcomes. Together, they are crucial in fighting malnutrition, aiding chronic disease management and improving patient-centred care.

### **Nutrition support at the front with our nursing technicians**

Nursing technicians were crucial for the day to day delivery of nutritional interventions, especially in LTC and hospital settings. These professionals serve as the first line of defense against malnutrition through their support with feeding, tracking oral intake and identification of early markers of nutrition decline (Matarese et al., 2020). Nurses have ongoing patient contact, so they can report real-time changes in nutrition status, and make diet modifications quickly. Nonetheless, the literature also points out gaps in formal training of nursing technicians in relation to nutrition education, which indicates improved training is needed to strengthen their potential contribution to nutritional care (Silva et al., 2021).

### **Nursing Specialists as Tracks of Nutritional integrated care**

Nursing specialists showed real value as they facilitated the interdisciplinary team, educated both patients and caregivers, and served as a communication go-between for dietitians, physicians, and other team members. The role they played was related to the better adherence to these interventions, especially in chronic medical illnesses, such as diabetes, renal disease, and cancer cachexia (Coster et al., 2018). Our results are in accordance with prior evidence demonstrating that nurse-led interventions reduce readmissions and enhance functional recovery (Keller et al., 2021). A wider range of generalist and specialist nursing staff specifically trained in nutritional care would likely have further improved potential patient outcomes, with generalist nurses acting as further advocates for additional nutrition-focused referral pathways and recommendations of individualized care pathways by specialist nurses.

### **Core Leaders include Clinical Dietitians, who also a part of Nutritional Planning**

Clinical dietitians played a pivotal role in determining nutritional risk, devising tailored diet protocols, and following up on biochemical and anthropometric indices. The interventions produced effects that were measurable in terms of improvements in nutritional status, wound healing rates and length of stay (Santarpia et al., 2021; Correia et al., 2019). Finally, their collaboration with nurses enhanced continuity of care, increasing patient satisfaction, and cost savings were realized through complication reduction associated with malnutrition.

### **The Power of Interdisciplinary Collaboration**

The most important takeaway from this review may be that patient outcomes were better when these professionals practiced together in structured inter-disciplinary contexts. The critical components of successful models were shared decision-making, joint nutrition rounds and concurrent documentation ( $\geq 2$  authors) (Reeves et al., 2017; McCullough et al., 2020). While role ambiguity, time pressure and absence of inter-professional education are barriers to it, organizational support and policies at national/state level are needed to strengthen collaboration.

### **Implications for Practice and Policy**

These findings highlight the following necessary actions:

Uniform nutrition education for nursing personnel across the spectrum.

Implemented collaborative practice agreements between nursing staff and dietitians.

Digital solutions (e.g., shared EHR) for coordinating care.

Health policy approaches to facilitating interdisciplinary nutritional policy in hospitals and community settings.

### **LIMITATIONS**

The heterogeneity of study designs and outcome measures precluded direct comparability between studies as a limitation of this review. Lastly, the small number of studies assessing the joint effects of the triad — nursing technicians, nursing specialists and dietitians — in an integrated care pathway suggests a research gap deserving further study.

### **Future Directions**

We suggest that future studies of interdisciplinary nutrition interventions use longitudinal, multi-site designs; examine the cost-effectiveness; and investigate how novel technologies (e.g., tele-nutrition) may provide solutions for integrated care approaches.

### **CONCLUSION**

This review highlights the unique and synergistic contributions of nursing technicians, nursing specialists, and clinical dietitians in facilitating nutrition-related health outcomes in various care environments. On the one hand, nursing technicians assist with patient support, monitoring, and care, on the other hand, nursing specialists orchestrate complex care arrangements and increase patient education, and clinical dietitians provide evidence-based clinical nutrition assessment and targeted interventions. They greatly enhance patient experience, reduce complications, shorten recovery time, and decrease healthcare costs when included in structured interdisciplinary methodologies.

Translating these results to practice will require investments in interprofessional education and defined roles across the system, as well as policies that provide a framework for comprehensive collaborative nutrition care pathways. Further studies are needed to assess their sustained effectiveness and cost efficiency, as well as to explore new models to extend integrated care access such as tele-nutrition. These partnerships can reinforce the transformation of nutrition-oriented treatment from an additional treatment into one of the core components of patient-centered health system, enhancing quality of life and clinical outcomes.

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