

Research Note**Enhancing the Skills and Competencies of Nutrition and Dietetics Students in the Philippines to Manage COVID-19 by Reinforcing Hospital Practicum Programs**

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ABSTRACT *Background:* Undergraduate students of Nutrition and Dietetics (ND) in the Philippines are required to complete 600 hours of the hospital dietetics practicum program in the senior year. However, training hours allotted to the management of highly infectious diseases like COVID-19, are minimal. The current health situation necessitates a review of the undergraduate hospital practicum to enhance relevant skills and competencies. This study aimed to improve the existing hospital dietetics training or undergraduate hospital practicum by the inclusion of learning outcomes that would enhance skills and competencies of the students to manage COVID-19. *Methods:* In this qualitative study, individual interviews of Registered Nutritionist-Dietitians (RNDs) in selected dietary departments and focus group discussions (FGDs) with the Chief Dietitians were used as the main methods of data collection. Results from the interviews and FGDs were used as the basis for an addendum to the hospital dietetics practicum manual that was recommended to the Council of Heads and Deans of Nutrition and Dietetics (CODHEND). *Results:* Interviews and FGDs substantiated the key challenges that the student affiliates encountered during the practicum and the innovations the dietary departments implemented to address the limitations in operations due to the COVID-19 pandemic. The proposed addendum to the practicum manual included recommendations for the; (1) patient care unit, particularly on the communication systems between admitted and discharged patients and the dietetics team; (2) food service and administration department, specifically on the standardization of the protocol for procurement, handling, and storage of the supplies for the dietetics department for the continued operations of COVID wards; and, for (3) the education and research unit, specifically for developing appropriate materials and on the execution of nutrition education sessions and online nutrition consultations. *Conclusion:* Inclusion of the recommended learning outcomes and activities in the current hospital practicum of BSND students in the context of the COVID-19 pandemic was seen to be essential in ensuring that students are equipped with related knowledge and skills to provide quality nutritional care even during unprecedented health situations.

Keywords Hospital Dietetics Practicum, COVID 19 Education

INTRODUCTION

The COVID-19 pandemic significantly altered global health systems. Frontliners, particularly Nutritionists-Dietitians (NDs), were expected to provide essential nutritional care to COVID-19 patients. However, BSc Nutrition and Dietetics students in the Philippines, prior to the pandemic were trained mostly on how to manage non-communicable diseases (NCDs). Management of infectious diseases was not given much emphasis. At present, significant changes in the implementation of the hospital dietetics practicum are needed to ensure that students are prepared to manage unprecedented situations like pandemics.

Objectives: The study aimed to enhance the existing hospital dietetics practicum to include additional learning outcomes in the hospital practicum manual designed to equip BSND students with the necessary knowledge and competencies to manage situations like COVID-19. Specifically, the study was also able to:

1. Identify measures employed by nutrition and dietetics department of hospitals to address COVID-19;
2. Combine the findings from the preliminary survey and consultative meetings in the existing hospital dietetics practicum program; and
3. Create the addendum for the hospital dietetics practicum manual

METHODS

Ethical clearance application: All volunteers who participated in the study gave written informed consent to the protocol, which was approved by the College of Home Economics - Research Ethics Committee (CHE-REC), University of the Philippines, Diliman, Quezon City (Reference # CHE-REC 2021-002).

Study Design: This qualitative study gathered data through interviews and FGDs. These methods enabled the researchers to have a deeper understanding of the processes and modifications employed by nutrition and dietetic departments in tertiary hospitals in the Philippines that enabled them to manage patients and dietetic services during the COVID-19 pandemic. The measures taken by institutions in dealing with the COVID-19 situation

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were used as the basis for the additional learning outcomes.

Study Site: The study was conducted at the Department of Food Science and Nutrition (DFSN), College of Home Economics (CHE), University of the Philippines, Diliman Quezon City, as spearheaded by the Breastmilk Research Laboratory in collaboration with the DFSN-CHE Nutrition Clinic. The interviews and FGDs were coursed

through remote platforms such as Google Meet and Zoom.

Study Participants: Participants of the study were selected based on the criteria outlined in Table 1. The study used purposive sampling to achieve the study objectives. Tertiary hospitals were selected based on the following criteria: a) should be a COVID-19 referral hospital; b) should be in places with high recorded cases of COVID-19; and c) should be accepting BSND dietetic interns.

Table 1. Criteria for selecting participants in phases 1 and 2 of the study.

Study period	Inclusion criteria	Exclusion criteria	Withdrawal criteria
Phase 1 (Individual RND interview)	a. RND should be employed in a hospital in moderate to high-risk sites of COVID-19 as classified by DOH b. RND should be employed in level 3 training hospital c. RND should be employed in hospitals that serve as referral centers for COVID-19 patients d. RND should be employed in hospitals that accept BS Nutrition and Dietetics student affiliates	RND, who is at most 1 month, employed in the selected hospital	RND who feels/decides to discontinue his/her participation in the study for any particular reason
Phase 2 (Focus group discussion with Chief RNDs)	a. RND should be employed in a hospital in moderate to high-risk sites of COVID-19 as classified by DOH b. RND should be employed in level 3 training hospital c. RND should be employed in hospitals that serve as referral centers for COVID-19 patients d. RND should be employed in hospitals that accept BS Nutrition and Dietetics student affiliates	RND who is at most 1 month employed in the hospital	RND who feels/decides to discontinue his/her participation in the study for any particular reason

For phase 1, the participants for the in the individual interviews were RND staff from the selected hospitals. For phase 2, participants were the chief dietitians of the eligible hospitals.

During the recruitment, formal letters were sent both directly to the dietitians and their institution for approval to conduct the study. Among the identified hospitals, Phase 1 of the study included RNDs from four hospitals in the National Capital Region (NCR), one hospital in Visayas, and one hospital in Mindanao. A total of nine RNDs were interviewed in Phase 1. Phase 2 of the study included the chief dietitians from two hospitals in NCR and one hospital in Visayas. A total of four chief dietitians participated in the focus group discussion of the study.

Study Proper: In phase 1 of the study, individual RNDs from eligible hospitals were interviewed remotely via Google Meet and Zoom. The interview covered the following topics: 1) safety practices for on-site duty; 2) presence/absence of online consultations; 3) changes in the menu/meal planning for admitted COVID and non-COVID patients; 4) changes in the food service department in terms of meal preparation; and 5) changes in the management of hospital and dietary services.

For phase 2 of the study, FGDs were conducted among the chief dietitians of the selected hospitals. The FGD covered the COVID-19 related skills and

knowledge needed by the students to achieve the learning objectives from the academe. Similar questions were also asked from the staff RNDs to validate the results of phase 1.

For the terminal phase, the researchers presented the results to the Board members of the Council of Deans and Heads of Nutrition and Dietetics (CODHEND) for the discussion, approval, and incorporation of the addendum to the existing hospital dietary practicum manual. CODHEND is an organization composed of the deans and heads of schools in the Philippines offering Nutrition and Dietetics. It is the organization responsible for ensuring that the recommended curriculum would be adopted by educational institutions offering BSND programs, as well as monitor the program’s conduct in each educational institution to maintain excellent standards in Nutrition and Dietetics education (1). One of its goals is to provide activities that will upgrade and maintain the quality of professional education in nutrition and dietetics for global competitiveness. The meeting with CODHEND took place on May 6, 2022, through an online platform (Zoom).

RESULTS AND DISCUSSION

Based on the interviews with the RNDs and the FGDs among chief dietitians, the identified key challenges were grouped into three major

categories: patient care; food service and administration; and education and research.

Patient Care: For the patient care category, it was seen that the communication systems for the admitted and discharged COVID-19 patients were significantly affected. Due to the pandemic, RNDs had limited interaction with patients and relied heavily on the charting system of the hospital. This became a challenge in the conduct of sound nutritional assessment and counseling of the patients. Similarly, this challenge has been observed among discharged patients wherein the RNDs are only limited to interacting with the relatives and caretakers instead of the patients themselves. In addition to the communication systems, another major change that the pandemic brought to the current practicum is the shift to remote platforms, and this led to students to work on sample case studies instead of observing and managing actual patients.

For the recommendations, the researchers suggest that students be asked to assist in the development of a more digitized and centralized communication system both for the monitoring of admitted patients and monitoring of discharged patients. To address the concern of using sample case studies, the research team recommends that students be included to provide support for the actual healthcare team even by simply allowing them to document the delivery of nutritional care to minimize their risk of becoming infected. This practice will allow students to become better acquainted with the role of NDs in the overall management of patients with COVID-19, or with other infectious diseases.

Food Service Administration: For the food service administration, the change seen in the usual protocol was in the preparation for procurement, handling, and storage of supplies that were specifically added due to the COVID-19 pandemic. These additional supplies included provision of disposable utensils, bottled water, and oral fluid nutritional supplements (nutritionals) for some of the hospitals. The research team proposes that students develop a standardized protocol for the food service section which considers changes for the tray line procedures and the need for additional supplies for COVID/infectious diseases wards. Students should be guided on how to adjust the procurement, storage and handling of the identified additional supplies for these wards.

Education and Research: For the education and research unit, the identified challenge was preparing audience-sensitive and audience-appropriate education materials and lecture plans on nutrition and infectious diseases. As a recommendation, the researchers propose that students be exposed to selecting their target audience and preparing appropriate nutrition education tools for their seminars and webinars. Also, the researchers suggest that the online nutrition consultations be conducted only after both the institutions and students have undergone the necessary training for conducting remote activities. Current systematic reviews have arrived at the conclusion that online consultations, or telemedicine, are found to be effective as they increase efficiency in health services and technical usability. Telemedicine

interventions that were found effective in reducing health service use included vital sign monitoring at home with telephone follow-ups, computerized education programs, and home monitoring of diabetes patients. Technical reliability of online consultations was also found satisfactory in the home monitoring of heart failure patients (2). Aside from increased efficiency and reliability, patients were found to be more inclined to participate in online consultations as it cuts down on the travel time needed to get follow-ups with their healthcare providers (3). These identified advantages of online consultations appear to be a significant reason for introducing and adapting to digitized systems for healthcare which includes nutritional care.

Table 2 summarizes the proposed addendum as recommended by the research team. The addendum includes recommended intended learning outcomes, teaching-learning activities, major activities/teaching aids, assessment tasks, and evaluation tools categorized into the main three areas: a) patient care; b) food service administration; and c) education and research.

During the discussion with CODHEND, the Board panel approved and accepted the addendum for immediate inclusion in the existing hospital dietary practicum manual for BSND students, which will be available for publication in AY 2022-2023. Studies conducted in the US (4,5), Australia (6), and Norway (7), have shown that there was a decrease in the quality of education and internships during the pandemic as perceived by ND students. The pandemic has impacted not only the developing countries, but even the more economically developed countries. The lack of face-to-face rotations and the limited learning tools that were made available due to the abrupt shift to remote learning during the pandemic has affected the quality of training given not only to ND students but even to other healthcare professions. The unforeseen need for rapid transfer from the traditional to the use of remote platforms for all learning activities presented compulsory modifications for the hospital dietitians, clinical instructors, and learners. One of the challenges faced during the use of remote learning was addressing student assessment as certain factors had to be considered, such as pandemic-related anxiety that might have had negative effects on the student's academic performance; the effect of economic and resource differences between students, and the capability of instructors to effectively deliver high-quality instructions remotely (8). Some students who were able to experience remote learning found that the non-traditional method raised the pressure among students as they were expected to learn things on their own, not considering the gaps in the resources available (9). Consequently, students enrolled in the sciences, such as in the fields of biology and chemistry, and those that needed to conduct experiments, found that remote learning can be entirely limiting as it interferes with the opportunity to debate, deliberate, and discuss with their professors and classmates, and the learning of practical and clinical work (10,11).

Table 2. Summary of the addendum recommended by the research team for inclusion to the existing BSND hospital practicum manual

PROPOSED ACADEMIC ACTIVITIES FOR THE HOSPITAL PRACTICUM OF BSND STUDENTS				
INTENDED LEARNING OUTCOME (ILO)	TEACHING-LEARNING ACTIVITIES (TLA) (e.g lecture/ videoclip)	MAJOR ACTIVITIES/ TEACHING AIDS	ASSESSMENT TASK (Recitation/ quiz/ exam)	EVALUATION TOOL
A. PATIENT CARE				
1. Develop a communication system including the healthcare group of an admitted patient - Evaluate the efficiency and efficacy of the current communication system implemented in the institution - Propose an improvement plan for the communication system in the institution to include all members of the health care group of a patient	A. Hospital care plan - Orientation on the healthcare group of a patient B. Charting - Orientation on reading patient’s medical charts - Practice charting for nutrition-related concerns of the patient C. Nutrition innovation and technology - Assess the current communication system implemented in the institution for the healthcare group of a patient - Develop an automatized communication system for the healthcare group of the patient	A. Documentation (Charting) B. Guide on writing a project plan	A. Actual charts for patients B. Learning log C. Project plan for communication system development	Rubrics for Project Plan
2. Modify the monitoring and follow up system for out-patient individuals and patients released from hospital - Organize an automatized user-friendly monitoring and follow up system for out-patient individuals and patients released from hospital	A. Nutrition innovation and technology - Propose a monitoring and follow up system B. Nutrition surveillance - Monitor the changes in the nutritional status of the individuals	A. Nutrition Care Plan B. Guide on writing a project plan	A. Monitoring plan for the patient B. Project plan for monitoring and follow up system	Rubrics for NCP Rubrics for Project Plan
3. Prepare and present a case study based on an actual patient diagnosed with COVID-19 with and without comorbidities	A. Prepare a case study of a specific patient in the affiliated hospital B. Present the case study that includes the nutrition-related pathophysiology and the application of Nutrition Care Process (NCP) to the dietitians of the affiliated hospital	A. Case study format B. Evidence-based information about the case patient C. Nutrition Care Process (nutrition assessment tool, nutrition care plan) D. Diet list/handouts E. Clinical Nutrition Pocket Guide	A. Nutrition Care Process (NCP) application B. Personalized diet plan C. Oral case presentation D. Written case report	Rubrics for Oral Presentation Rubrics for Written Report
B. FOOD SERVICE ADMINISTRATION				
1. Assist in the preparation for procurement and receiving of dietary department supplies	A. Participate in the preparation of procurement list for the dietary department taking into account the specific	A. Diet list B. Procurement forms C. Receiving and storage protocols	A. Learning log	Rubrics for learning log

PROPOSED ACADEMIC ACTIVITIES FOR THE HOSPITAL PRACTICUM OF BSND STUDENTS				
INTENDED LEARNING OUTCOME (ILO)	TEACHING-LEARNING ACTIVITIES (TLA) (e.g lecture/ videoclip)	MAJOR ACTIVITIES/ TEACHING AIDS	ASSESSMENT TASK (Recitation/ quiz/ exam)	EVALUATION TOOL
	considerations for COVID ward B. Assist in the receiving and storage of procured items for the dietary department			
C. EDUCATION AND RESEARCH UNIT				
1. Devise a set of nutrition materials for educating patients regarding COVID-19 and infectious diseases both in remote setup and onsite	A. Create nutrition education materials regarding the prevention of COVID-19 virus transmission and infection, ways to address when one gets the virus, and what to do during treatment	A. Instructional materials	A. Actual instructional materials output B. Learning log	Rubrics for nutrition education materials
2. Conduct a Nutrition education session about COVID-19 and infectious diseases on one population group in the out-patient department	A. Design a learning plan for the selected target group B. Create instructional materials for the nutrition education session both for remote platform and onsite C. Conduct an actual nutrition education session with the selected target group	A. Instructional plan for nutrition education session B. Instructional materials for nutrition education session	A. Actual instructional materials output B. Actual nutrition education session	Rubrics for instructional plan and materials Rubrics for the conduct of nutrition education session Post-evaluation from attendees
3. Conduct a webinar or a seminar for the staff of the institution regarding infectious diseases such as COVID-19, typhoid, cholera, small pox, and AIDS	A. Design a learning plan for the selected target group B. Create instructional materials for the nutrition education session both for remote platform and onsite C. Conduct an actual nutrition education session with the selected target group	A. Instructional plan for nutrition education session B. Instructional materials for nutrition education session	A. Actual instructional materials output B. Actual nutrition education session	Rubrics for instructional plan and materials Rubrics for the conduct of nutrition education session Post-evaluation from attendees
4. Participate in an online nutrition consultation dealing with various nutrition concerns	A. Conduct an actual consultation by practicing NCP	A. NCP B. Assessment forms for e-nutrition consultation	A. Actual assessment B. Actual conduct of e-nutrition consultation	Rubrics for NCP

To maintain the excellence of Nutrition and Dietetics programs, hospital practicums should be able to maximize the use of remote learning to adapt accordingly. Kaup and colleagues in 2020 stated that shifting to remote platforms has encouraged students to be more inclined to problem-solving, critical thinking, and self-directed learning. It also allows more flexibility in the learning process, as learning materials can be given in advance and students will be able to go through the courses at the pace that they deem effective for their own learning. Online learning and training have also made distance education possible as experts from different places may still be able to conduct synchronous

sessions, which involve online studies and live chats with the students (12). These identified benefits of online learning can be used as an advantage to continuously provide quality education and training for BSND students despite unprecedented health situations. The adaptability of the education system and training practices to varied challenging health situations help ensure that students get the competencies needed for entry-level jobs as they enter the workforce amidst such situations. As cited by Rogus et. al, the pandemic has encouraged the academe and other learning institutions to reinforce additional strategies, including redesigning assignment formats, changing grading and late work

policies, and providing additional resources to students. Similarly, hospital training programs delivered during pandemics should still be able to provide realistic scenarios for ND students despite limitations to mobility (13).

CONCLUSION

The pandemic has forced the practice of healthcare to evolve in the Philippines. Accordingly, the skills, knowledge, and competencies of future healthcare professionals, particularly of Nutritionist-Dietitians, need to be strengthened in preparation for similar future scenarios. COVID-19 may not be the only pandemic that future healthcare professionals will face, which is why it is imperative that students are presented with activities that will provide them with relevant skills to adapt. Integrating the academe's onsite learning into more innovative and digitized systems will benefit not just BSND students but also the entire healthcare team and the patients themselves.

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