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Increased Knowledge, Self-Reported Comfort, and Malnutrition Diagnosis and Reimbursement as a Result of the Nutrition-Focused Physical Exam Hands-On Training Workshop

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THE PREVALENCE OF MALNU-trition is estimated at 30% to 50% of hospitalized adult patients,[1] but only 7% received a diagnosis of malnutrition in 2013.[2] While the diagnosis of malnutrition is lower than the estimates from prevalence studies, this is still double the 3.2% rate of diagnosis from 2010.[3]

In 2010, this gap in identification could be attributed to inconsistent methods for diagnosing malnutrition. As a result, in 2012, the Academy of Nutrition and Dietetics (Academy) and the American Society of Parenteral and Enteral Nutrition (A.S.P.E.N.) published a consensus statement outlining six clinical characteristics to identify and support a diagnosis of malnutrition in adults.[4,5] Each characteristic (ie, energy intake, weight loss, subcutaneous fat loss, muscle loss, fluid accumulation, and reduced functional status as measured by handgrip strength) has a threshold for identification of severe or non-severe (moderate) malnutrition within the context of three etiologies (ie, acute disease or injury-related malnutrition, chronic disease-related malnutrition, and starvation or social/environmental-related malnutrition).[4-6] Serum proteins are not one of the six characteristics because of the recognition that acute-phase proteins (ie, albumin, prealbumin, and transferrin) are more indicative of inflammatory status rather than nutrition status.[1,4-6] Although a low body mass index is part of the World Health Organization criteria for malnutrition,[7] body mass index is not included in the six malnutrition characteristics, as malnutrition can occur at any body mass index in the US population.[4,5] Four of the malnutrition clinical characteristics—subcutaneous fat loss, muscle loss, fluid accumulation, and reduced handgrip strength—require a nutrition-focused physical exam (NFPE).

Despite the importance of using NFPE to identify malnutrition, some registered dietitian nutritionists (RDNs) perceive barriers to performing NFPE. Surveys in the United States have identified barriers, including inadequate education and/or training in performing NFPE skills, concern with time required, lack of confidence or experience, and discomfort with touching patients.[8,9] A survey of RDNs from Australia and New Zealand identified similar barriers and concluded that group training in subjective global assessment, which includes NFPE components, may assist in overcoming these barriers.[10]

Another barrier some RDNs identify is a perception that NFPE is not in their scope of practice.[11] However, NFPE is explicitly mentioned in the scope of practice for RDNs[12] and is part of a comprehensive nutrition assessment, as demonstrated by its inclusion as an assessment domain in the Nutrition Care Process Terminology.[13] Once malnutrition is identified by the RDN or other health care professional, documentation of the supportive evidence, along with the malnutrition diagnosis using appropriate International Classification of Diseases (ICD) codes and related nutrition recommendations are critical to ensure that the diagnosis can follow the patient across care settings through advances in informatics,[14,15] and that intervention can continue beyond the acute care setting. Use of inappropriate ICD-10 codes for malnutrition can provoke scrutiny. A search of the Office of the Inspector General's website for the term malnutrition shows that more than 100 facilities have come under investigation from the Centers for Medicare and Medicaid Services for their use of codes for kwashiorkor and marasmus, which are generally considered diseases of developing countries[16-18] and rarely are appropriate to characterize malnutrition among hospitalized patients in developed countries.

Along with potentially negative impacts on patient outcomes, non-identification or non-documentation of malnutrition results in loss of reimbursement for facilities.[19] Through an interdisciplinary approach, RDNs can perform a nutrition assessment to identify malnutrition, which physicians can review to provide the medical diagnosis of malnutrition documented with an ICD-10 code.[20] The RDN plays a critical role in diagnosing patients with malnutrition so that they can receive a nutrition intervention and reduce the risk of poor outcomes associated with malnutrition.[21]

However, none of this can occur without RDNs performing NFPE. Therefore, the Academy developed the Nutrition-Focused Physical Exam Hands-on Training Workshop to increase the number of RDNs with the skills and confidence to perform NFPE and utilize the malnutrition clinical characteristics. This article describes the NFPE workshop and a pilot test of its efficacy at increasing RDN confidence, appropriate malnutrition diagnosis, and the resulting reimbursement in a single health care system.

WORKSHOP DESCRIPTION

Workshop Development
The workshop materials were developed by experienced clinical RDNs who had implemented NFPE in their own facility, or for research. The workshop was based on their combined experience of lecturing and hands-on teaching and was designed to overcome barriers that they had encountered previously and that were identified in the literature.

Workshop Description
The workshop was designed as a 1-day hands-on workshop that included pre- and post- assessments, lectures, trainer demonstrations, small-group hands-on breakout sessions, and small-group patient rounds to learn, review, and practice NFPE skills. Lecture topics were:

- Malnutrition overview
- NFPE background
- Upper extremities
  - Subcutaneous fat loss
  - Muscle wasting
  - Micronutrient deficiencies/toxicities
- Lower extremities
  - Subcutaneous fat loss
  - Muscle wasting
  - Micronutrient deficiencies/toxicities
- Fluid accumulation
- Functional status
- Case study
- Documentation/coding
- NFPE ongoing support and peer champion review

Lecture topics were presented by two of the trainers. The lectures built on pre-workshop readings and on a webinar that participants were asked to complete in advance of the workshop to give them a foundation in malnutrition diagnosis and NFPE. Workshop participants were encouraged to ask questions and have discussions throughout the day with the NFPE trainers. During the workshop, participants were given copies of the Academy's NFPE Pocket Guide, the book *Nutrition Focused Physical Assessment: Making Clinical Connections,*[22] and a script they could use as a guide while performing NFPE. These materials were referred to throughout the lecture and small groups.

For small-group breakout sessions, participants were divided into groups of five participants and one trainer. Participants performed NFPE on each other while the small-group trainer circulated to provide demonstrations, feedback, and guidance. After practicing each NFPE skill separately, each participant performed the NFPE from head to toe on their trainer in individual case studies.

Small groups then went on patient rounds, during which each participant was able to perform NFPE on actual hospitalized patients. Trainers observed and completed an NFPE skills assessment checklist for each participant, which was provided to the participant at the conclusion of the workshop. The workshop was approved for 9.5 Continuing Professional Education (CPE) credits, which were awarded at the end of the day. After completion of the workshop, RDN participants were referred to as *peer champions.*

Post-Workshop Resources
Ongoing Support. After the workshop, ongoing support was provided by the Academy through consistent, scheduled group conference calls and an online Community of Practice, which was facilitated by the Academy's NFPE program manager. RDNs were encouraged to join in the scheduled group calls or post on the Community of Practice portal for feedback from their peers and the trainers. Topics included questions that arose while performing NFPE; participants' NFPE experiences with patients, families, and/or interdisciplinary staff; and how to interpret, document, and communicate NFPE findings.

Peer Champion NFPE Training. After 4 to 6 weeks of practice at their facility, the peer champions could begin training RDNs at their home facility on the NFPE skills by following detailed peer champion guidelines and using resources provided by the Academy. Some of the resources included a recording of a condensed version of the lecture from the hands-on workshop that was to be viewed by facility RDNs, and an NFPE skills assessment checklist for the peer champions to use during practice and rounds. There was some flexibility in the schedule of the NFPE training conducted by the peer champion, but it was to be completed within 1 year from the workshop date.

Pilot Study Implementation
Site and Trainers. One health system that spans four states in the central United States agreed to host the pilot workshop. Four trainers identified by the Academy led the pilot workshop. All four trainers were RDNs with at least 2 years of NFPE experience and current clinical practice experience, along with presentation and teaching experience. The pilot workshop was conducted in December 2014.

PILOT EVALUATION DESCRIPTION
The evaluation was based on several sources of data, which are described below. The evaluation sought to determine the impact of the in-person, hands-on workshop and the peer champion training model on RDN comfort with and knowledge of NFPE skills, as well as the impact on the health care system through increased diagnosis and reimbursement.

NFPE Workshop Assessments
At the beginning and end of the workshop, RDNs completed a handwritten, multiple-choice assessment evaluating their knowledge of NFPE skills and their comfort with NFPE. The authors evaluated the mean and standard deviation of the pre- and post-assessment scores and comfort scores (on a 5-point Likert scale) through paired t tests. In addition, participants completed a workshop evaluation form that included space for written comments, which were collated and themes identified.

Electronic Surveys
The RDN participants were asked to complete an online survey at four time points: pre-workshop, and 3, 6, and 12 months post-workshop. The survey obtained demographic and clinical practice data regarding use of NFPE and malnutrition diagnosis, as well as barriers to NFPE. The percentage of each response for barriers was compared across time points using χ^2 tests with Bonferroni post hoc tests. Mean Likert scale scores for comfort, knowledge, and importance of NFPE in malnutrition diagnosis were compared using