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LOMA LINDA UNIVERSITY
School of Allied Health Professions
in conjunction with the
Faculty of Graduate Studies

Nutrition Students' Perception of OSCE & its effect on Perceived
Readiness to Clinical Placement

by

Elaf Farahat

A Dissertation submitted in partial satisfaction of
the requirements for the degree
Doctor of Philosophy in Rehabilitation Science

December 2014

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Each person whose signature appears below certifies that this dissertation in his/her opinion is adequate, in scope and quality, as a dissertation for the degree Doctor of Philosophy.

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ABBREVIATIONS

OSCE Objective Structured Clinical Examination

SP Standardized Patient

ABSTRACT OF THE DISSERTATION

Exploring Students' Perception of OSCE & Perceived Readiness to
Clinical Placement

by

Elaf Farahat

Doctor of Philosophy, Rehabilitation Sciences

Loma Linda University, December 2014

Dr. Gail Rice, Chairperson

Objective: Explore nutrition and dietetic students' perception of the educational value of Objective Structured Clinical Examinations (OSCE) and to examine the change in their perceived readiness to practice after completing three OSCEs.

Participants: Students from the Schools of Public Health (SPH) and Allied Health Professions (SAHP) enrolled in Medical Nutrition Therapy course, mean age 26.6 ± 5.4 years, 95% females (n=37).

Methods: Mixed-method sequential exploratory design. Three focus group discussions (11 participants) were conducted as part of the qualitative phase to elicit themes related to perception of OSCE as an education tool. In the quantitative phase, a pre-post test design was used to explore the change in students' perceived readiness after completing 3 OSCEs that included reading related article, watching a video, reviewing patient's chart, counseling a standardized patient, charting, and discussing findings with other healthcare professionals and finally self reflecting. Students answered Perceived Readiness for Dietetic Practice (PRDP) questionnaire before and after OSCE completion.

Statistical Analysis: Interpretative Phenomenological Analysis (IPA) was used to analyze qualitative data. The PRDP score changes over time were examined using

Wilcoxon Signed-Rank test. A Mixed Factorial Analysis of Variance (ANOVA) examined changes in PRDP subscale scores between SAHP and SPH students over time.

Results: Both qualitative and quantitative strands showed high levels of acceptability of OSCE and improved readiness to clinical placement. Most of the students (76%) students found OSCE to be superior to medical center experience and 78% agreed that collaboration with other health care professionals helped prepare them for the dietetic role. Five major themes emerged from the data to describe the student's perceptions of the OSCE include bridge to clinical practice, a comprehensive learning tool, realistic experience, student challenges and curriculum considerations. OSCE significantly improved students' mean readiness to practice their role as clinical dietitians (4.9 ± 2.5 vs. 5.8 ± 1.9 , $p = 0.03$). There was a significant improvement in the professional role $p = 0.04$ and charting $p = 0.01$. Students improved in all the areas, however, not all areas reached statistical significance.

Conclusion: The OSCE experience improved student's perceived clinical skills. It can provide a realistic and holistic patient experience for dietetic students to develop their patient evaluation and counseling skills.

CHAPTER ONE

INTRODUCTION

History of Simulation

Simulation goes back to 1928, when Edwin Link built the first blue box flight trainer in his father basement in New York. The success of this simulation led the U.S. military to purchase six Link trainers in 1934, this number dramatically increased during World War II.^{1,2} Simulation has gained popularity in the medical field a few decades later when Barrows and Abrahamson used simulated patients in clinical neurology to evaluate their students' performance in 1964.³ And in 1968, simulation was used to train students to perform pelvic examination.⁴ Simulated/Standardized patients (SP) can include "real or simulated patients who have been coached to present a clinical problem".² Barrows³ explained that the term standardized patient replace simulated patients and it's viewed as a term describing both, simulated and real patients who have been coached to carry out a specific scenario. Therefore, standardized patient (SP) will be the term used.

In 1975, Harden et al. took simulation to the next level and created the Objective Structured Clinical Examination (OSCE) for undergraduate medical students.⁵ OSCE is "an approach to the assessment of clinical competence in which the components of competence are assessed in a well-planned or structured way with attention being paid to objectivity".⁶ Harden's OSCE was comprised of 16 stations, each was five minutes long, half of those included simulated patients and other half was written stations about their encounter with the SP. Students were then graded on both parts. Although this was one of a kind assessment tool, it was criticized for not being observed by the examiner.⁵ This shortcoming was later corrected by videotaping OSCE sessions, allowing the examiner

and student to evaluate performance. Now, almost all OSCEs are videotaped for examiners to observe and for students to self-reflect. Although this may cause discomfort, students reported the experience outweighed the discomfort of being videotaped.⁷ A randomized controlled study that compared three teaching methods found that observing self-videos are best for learning communication and mannerism skills; it focused students' attention to strengths and weaknesses in their communication style and mannerism. For example it allowed students to notice their gestures, how fast they are talking and so on.⁸

As the importance of simulation was recognized, it started growing from an average of 2.1 studies per year from 1975 to 1984, to an average of 61.5 studies per year in the past decade. In 2002, OSCE was described as the 'gold standard for clinical assessment'⁹ and in 2004, it became part of the US Medical Licensing Examination (USMLE step II) that all senior medical students must take. OSCE is now used in more than 50 countries worldwide and in various disciplines including nutrition and dietetics.⁹

Simulation in Nutrition

Simulation hasn't been as popular in nutrition and dietetics as it is in nursing and medicine. However, in 1985, Russell et al. used SP to assess clinical skills in undergraduate nutrition students. It is through their simulation experience that they were able to detect the strengths and weaknesses of their students and furthermore, the curriculum.¹⁰ A decade later Computer Assisted Instruction tutorial (CAI) was used to improve clinical reasoning skills in nutrition students, which simulated data on a patient with cardiovascular disease. This program was designed to practice clinical reasoning

skills that would be used in real patient setting. CAI was positively accepted and enjoyed by the student. It also increased students' confidence during supervised practice, led to higher grades and facilitated meeting clinical experience objectives. Although the CAI improved clinical reasoning skills, it didn't address counseling and communication skills to improve patient care.¹¹

The first OSCE in nutrition and dietetics was developed in 1998 to assess dietetic students' discrete skills. It was composed of six stations (four video-taped active, two passive stations) and included 18 interns and five new graduate dietitians from Louisiana Tech University. This OSCE tested counseling, screening, assessment, documenting, assessing for tube feeding and personnel management skills. 43% of participants strongly agreed and 39% agreed that OSCE format is good for evaluating performance. 39% agreed that OSCE offered adequate time for majority of tasks, while 39% disagreed. This encounter was also videotaped to provide feedback and promote self-reflection.¹² Nutrition students positively accepted simulation¹¹⁻¹⁶ and reported that anxiety was diminished throughout the testing period and reported that the immediate feedback from SP was one of the strongest assets of OSCE which improved communication and counseling skills.^{7, 13, 17, 18}

Many nutrition programs use role-play to practice communication and counseling skills. OSCE was found to be more realistic^{2, 14, 19, 20} and effective when compared to role-play from the students perspective.¹⁴ In another study, students reported "It felt like a real situation, better than the hospital visit".¹⁸ As a matter of fact, general practitioners weren't able to detect SP from real patients when visiting their clinic.²⁰

OSCE in nutrition students was found to predict their weaknesses prior to entering

clinical placement, allowing them and their instructors to improve those areas,^{13, 21, 22} OSCE can also boost students confidence^{11, 23, 24} suggesting this may improve their readiness for clinical placement.

Clinical training placement for dietetic students and interns had become increasingly difficult as the number of students rise and the number of clinical sites remains unchanged. Preceptors spend a mean of three to five hours observing interns during the first three weeks of clinical placement.²⁵ In April 2009, the Academy of Nutrition and Dietetics (AND) reported that out of 4,120 applicants, only 50% were matched to internships.²⁶ Either increasing the number of clinical sites or number of students at each site, finding a substitute for clinical placement, or increasing student training will reduce the burden on clinicians during clinical placement.

The Accreditation Council for Education in Nutrition and Dietetics (ACEND) sets the accreditation standards that ensure the quality and continued improvement of nutrition and dietetics education programs in North America. ACEND has five main competencies for the Registered Dietitian (RD) which includes Scientific and evidence base of practice, professional practice expectations, clinical and customer services, practice management and use of resources and finally, support knowledge. This is further broken down to make it a total of thirty-eight competencies. In the 2012 standards for dietetic program in nutrition and dietetics, ACEND guidelines require programs to use multiple educational approaches, this may be role-play, and problem based learning or even simulation. It also suggests that in order to gain competencies, actual setting may be replaced by simulated experience in a didactic setting; however, conducting a scientific research to prove its validity and reliability is preferred. Simulation was defined as

‘education or training that imitates real situations or processes when actual experiences are unavailable, prohibitively dangerous, expensive or inconvenient to allow students to learn in real-world setting’.²⁷

Advantages of OSCE

OSCE was found to have great advantages in various fields, including medicine, nursing and nutrition. This can be broken down to benefit to students, schools and professors, clinical sites and the public.

Students

- Prepares students for real clinical problems in less threatening and intimidating setting, and allows students to make mistakes which are not acceptable in real patient setting.³
- Students receive immediate feedback and corrective action.^{2, 3, 7, 16, 17, 28}
- Students practice communication skills with difficult patients.³
- Improves counseling skills.^{8, 15, 17}
- Improves students’ confidence.^{11, 23, 24}
- Examines tests’ skills that cannot be evaluated otherwise, such as clinical, technical, discrete and practical skills.²⁹
- Exposes students to rare cases they might not have otherwise experienced. A study found that regional hospitals had limited case of liver disease, human immunodeficiency virus (HIV), Total Parenteral Nutrition (TPN) and lower gastrointestinal problems. A study found that there were no HIV cases at major

teaching hospitals and only specialized hospitals had patients eating disorder cases.²⁵

Teachers/Schools

- Ensures meeting specific goals and objectives.
- Engages qualities of reality while controlling exposure and tailor it to specific objective and learning goals.^{2, 3, 19}
- OSCE may indicate weaknesses or strengths of the educational program, allowing for curriculum evaluation.³⁰
- Increases the effectiveness and relevance of other teaching experiences.²⁸
- Exposes students to cases that may not be available otherwise such as ethical problems and cultural competencies.²⁸
- Ensures all students get exposed to same academic experience.
- Reduces exam variability due to using wide range of examiners.^{2, 22}
- Increases students' and teachers' enthusiasm.²³
- Provides basis for choosing applicants for advanced training.¹⁹
- May be used as a formative assessment, which helps identifying weaknesses, allowing constructive feedback and correction.³¹
- May be used as a summative evaluation for an overall judgment on students' competence and qualification.¹⁹
- A SP assessment can be available anytime throughout the day and at any place (e.g. school, clinic, hospital) and can be done when real patients cases do not exist at a specific facility.¹⁹

Clinical Sites

- Improves students' skill development and reduces teaching burden on clinicians.^{21, 28}
- Simulation may substitute placement experience.²⁸
- Identify students' weakness prior to clinical placement and improve it prior to clinical placement.^{13, 21, 22}

Public

- Protects the public from malpractice and incompetent clinicians.¹⁹
- Meets public expectation of self-regulation.¹⁹
- Creates clinicians with better communication skills and cultural competency.³⁰
- Simulates scenarios that may be distressing for real, ill patients.²
- No risk to real patients.

Disadvantages of OSCE

OSCE had been criticized for being stressful to students and instructors,²² it suggested that scores of a test may not accurately reflect students ability as repetitious demands may fatigue the student.³² It was also criticized for being labor-intensive and expensive.^{2, 9, 12, 19, 22} However, studies reported that the experience compensated the limitations due to its unique benefits and ability to test skills that cannot be evaluated otherwise.⁹ Suggestion to reduce these limitations is using volunteers to be SP, share space with other departments, and reduce refreshment costs.⁹ Some studies used senior

nutrition students, or students from different departments such as first year marriage and family therapy.¹⁷ Some argued that OSCE don't mimic real life situations, and it undermines holism because it breaks down cases into small segments rather than viewing a patient as a whole.^{22,33} However, other studies had found that OSCE provides opportunity for nursing students to realize nursing care in a holistic manner.³⁴

Scoring the OSCE

Various methods of scoring have been used with simulation, in some cases patients and/or examiner evaluates students against a checklist, which may ask about communication or interpersonal skills, performing a specific task, or asking specific questions. Some checklist may include yes or no questions, while others may include a 3, 5, or 6-point likert scale. In addition to that some may replace that with global rating, whereas others choose to include both.^{9, 17, 31}

Global rating includes questions that ask about the overall impression on the student-patient encounter, such as 'If given the choice in the future, I would chose this dietitian as my personal dietitian", or 'I would recommend the dietitian to one of my family members'.

There has been increased evidence that global ratings are as reliable as checklist.^{29, 35} It is suggested that checklist may be more appropriate for practical and technical skills stations, whereas global ratings may be more appropriate for testing communication skills.²⁹

Validity and Reliability

Some studies suggested there is no evidence that OSCE provides greater validity than traditional assessment.^{6, 32} A study comparing four hours testing time in different test formats, found that multiple-choice questions (MCQ) had the highest reliability followed by short essay, OSCE and finally oral examination.³⁵ MCQ had higher reliability due to the large number of items that can be easily tested and marked in a short period of time.^{19,} ³⁵ However, good MCQs are difficult to write and writer tend to avoid some topics, such as ethical problems or cultural ambiguities,¹⁹ It also cannot test communication skill. Also, MCQ are mostly used as summative assessment to grade students performance whereas OSCE can be used as a summative and formative assessment which helps identifying weaknesses, allowing for constructive feedback.³¹

Counseling simulated patients under supervision was found to be as reliable as counseling real patients.¹⁹ OSCE had been found to be valid and reliable when used in the original format 15-20, five-minute stations.³³ A meta analysis was conducted to review the reliability of OSCE using 188 alpha values from 39 studies, the overall alpha across stations was 0.66 (95% confidence interval [CI] 0.62-0.70); the overall alpha within station across items was 0.78 for scales within stations (95% CI 0.73-0.82) but as low as 0.66 across stations.⁶

In the field of nutrition, performing OSCE in third year undergraduate dietitian before and after clinical placement was found to reliably predict clinical skills when compared to performance on clinical placement,²¹ and it can also reliably assess general counseling skills.^{15, 17}

Some of the methods suggested to increase reliability included increasing the number of items on a communication scale which may simply produce redundancy by increasing the reliability estimate without gaining any real precision in measurement.⁶ But the most cited way to increasing validity of OSCE was increasing the number of stations and test length,^{6, 22, 35} and it would be also helpful to use two examiners to reduce bias.⁶ Some studies suggested that seven cases per domain are required for a satisfactory validity,²³ while others suggested 10 stations over 3-4 hours to achieve reliability of about 0.9.¹⁹ Because clinical competence is very complex and there are mixed reviews regarding validity and reliability of OSCE, using a variety of testing methods may better predict competencies. Combining multiple OSCE stations that include standardized patients, MCQ, essay writing and self-reflection can produce higher validity and reliability and overall greater learning experience.

Research Questions

- 1- Can OSCE improve nutrition and dietetic students' perceived readiness to clinical placement?
- 2- What is the nutrition and dietetic students' perception of the educational value of the OSCE?

Significance of the Study

Simulation has not gained as wide an acceptance in nutrition and dietetics education as in other disciplines. A limited number of studies in nutrition have been published since the first study in 1985.¹⁰ These studies have found, as have studies in other disciplines, that simulation increases students' confidence,²² improves their

communication and counseling skills,^{18,7} and can predict their clinical skills and identify weaknesses prior to clinical placement.^{13, 21, 22} Many of these studies originated in Great Britain,^{13, 15, 22} Australia²¹ and Canada¹⁶ where health care systems and dietitian competencies differ from the United States, and thus it is unclear whether findings are transferable to North American programs. Not only were the studies carried out in different settings, but they also did not address major ACEND competencies, such as cultural issues, emerging trends, and inter-professional communication.

This study will bridge the gap between classroom and clinical settings and improve students' confidence and readiness to clinical placement. OSCE will help identify students' weaknesses and correcting them prior to clinical placement. This study will also improve clinical competencies including raising cultural awareness and functioning as part of a multidisciplinary team. It will also encourage students to self-reflect and identify weaknesses and set learning goals. This will subsequently reduce the burden on clinical sites and preceptors, which will allow more facilities to accept greater number of interns.

Definitions of Terms

The following definitions are provided to ensure uniformity and understanding of these terms throughout the study.

Objective Structured Clinical Examination (OSCE)

The association of standardized patient educators defined OSCE as a station or series of stations designed to assess performance competency in individual clinical or other professional skills. Stations are carefully structured and designed to be easily

reproducible. Learners are evaluated via direct observation, checklists, and learner presentation or written follow-up exercises. The examinations are generally summative but may involve feedback. Stations tend to be short, typically 5-10 minutes, but can be longer.

Simulated/Standardized Patients

The association of standardized patient educators defined Standardized/Simulated Patients as individuals who are trained to portray a patient with a specific condition in a realistic, standardized and repeatable way (where portrayal/presentation varies based only on learner performance). SPs can be used for teaching and assessment of learners including but not limited to history/consultation, physical examination and other clinical skills in simulated clinical environments. SPs can also be used to give feedback and evaluate student performance.

CHAPTER TWO

OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) IMPROVES PERCEIVED READINESS FOR CLINICAL PLACEMENT IN NUTRITION AND DIETETIC STUDENTS

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Key Words: Nutrition, Simulation, Standardized Patients, Readiness, Clinical Placement

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Abstract

Background: It's increasingly difficult to provide adequate clinical training for new dietetics graduates. Internships are difficult to obtain, and often present challenges to over-burdened clinicians. Dietetic students obtain clinical experience through visiting patients and viewing their charts in hospital settings but rarely counseling them.

Objective: To examine the change in nutrition and dietetic students' perceived readiness to practice after completing three Objective Structured Clinical Examinations (OSCE).

Design: Pre-post test design.

Participants: Students from the Schools of Public Health (SPH) and Allied Health Professions (SAHP) enrolled in Medical Nutrition Therapy course, mean age 26.6±5.4 years, 95% females (n=37).

Interventions: Thirty-seven students completed first three weeks of the laboratory section of the course at the medical center, followed by three weeks of OSCE. OSCE stations included chart review, counseling a Standardized Patient, and discussing findings with other healthcare professionals. Students answered Perceived Readiness for Dietetic Practice (PRDP) questionnaire before and after the OSCE.

Main Outcome Measures: PRDP scores with its subscales: readiness, professional role, communication, interaction, charting, referral and self-reflection.

Statistical Analysis: PRDP score changes were examined using Wilcoxon Signed-Rank test. A Mixed Factorial Analysis of Variance (ANOVA) examined PRDP subscale scores of SAHP vs. SPH students.

Results: OSCE significantly improved students' mean readiness to practice their role as clinical dietitians (4.9 ± 2.5 vs. 5.8 ± 1.9 , $p = 0.03$). There was a significant improvement in the professional role $p = 0.04$ and charting $p = 0.01$. Students improved in all areas, however, not all areas reached statistical significance. 76% students found OSCE to be superior to medical center experience and 78% students agreed that collaboration with other health care professionals helped prepare them for the dietetic role.

Conclusion and Implication: The OSCE experience improved student's perceived clinical skills. The OSCE format can provide a realistic patient experience for dietetic students to develop their patient evaluation and counseling skills.

Introduction

It is increasingly difficult to provide adequate clinical training for new dietetics graduates. Internships are difficult to obtain, and often present challenges to overburdened clinicians. In April 2009, the Academy of Nutrition and Dietetics, reported that out of 4,120 applicants, only 50% were matched to internships.^{1,2} Providing better-prepared and more confident graduates may help to make the transition from academic to real-life practice easier and less stressful.

Dietetic students obtain clinical experience throughout their academic program largely through visiting patients and viewing patient charts in hospital settings. Problems that typically occur with this model include lack of standardization, inconsistencies in opportunities for counseling, gaps in topic coverage, and vast differences in the level of supervision and the quality of instruction. The Accreditation Council for Education in Nutrition and Dietetics (ACEND), which sets the accreditation standards to ensure quality and continued improvement of the nutrition and dietetics education programs worldwide, recognizes these problems, and suggests the use of multiple educational approaches, including role-play, problem-based learning and simulation which may enable clinical education to ameliorate these problems.

ACEND defines simulation as “education or training that imitates real situations or processes when actual experiences are unavailable, prohibitively dangerous, expensive or inconvenient to allow students to learn in a real-world setting.”³ Simulation is widely used in the fields of medicine, nursing and allied health professions to teach and test skills that may be difficult to provide to all students in a uniform manner in a less

standardized setting.⁴ Simulation is also a valuable tool for evaluating curriculums and educational interventions.⁵

A particularly valuable form of simulation is the Objective Standardized Clinical Examination, (OSCE), which in 2002 was described as the “gold standard for clinical assessment,”⁵ and in 2004 became part of the United States Medical Licensing Examination (USMLE step II). OSCEs are now used in more than 50 countries worldwide and in various disciplines, including nutrition and dietetics.⁵

Simulation has not gained as wide an acceptance in nutrition and dietetics education as in other disciplines. A limited number of studies in nutrition have been published since the first study in 1985.⁶ These studies have found, as have studies in other disciplines, that simulation increases students’ confidence,⁷ improves their communication and counseling skills,^{8,9} and can predict their clinical skills and identify weaknesses prior to clinical placement.¹⁰⁻¹² Many of these studies originated in Great Britain,^{10, 11, 13} Australia¹² and Canada¹⁴ where health care systems and dietitian competencies differ from the United States, and thus it is unclear whether findings are transferable to North American programs. Not only were the studies carried out in different settings, but they also did not address major ACEND competencies, such as cultural issues, emerging trends, and interprofessional communication.

It is common for students to experience anxiety, lack of confidence and insecurity when they advance from academic to real life practice, a phenomenon known as transition shock.¹⁵ In other settings, it has been shown that exposing students to simulation throughout their academic experience can improve their confidence, prepare them to interact with real patients, bridge the gap between classroom and clinical settings

and promote clinical application of knowledge, thereby alleviating transition shock.

Nutrition students reported that anxiety during simulation was diminished over the testing period.^{8-10, 16} In addition, most nutrition students positively accepted simulation^{7-10, 13, 14, 17, 18} and reported that the immediate feedback from standardized patients (SP) was one of the strongest assets of OSCEs,^{8,9} improving communication and counseling skills.

The aim of this study was to examine the effect of using OSCEs to improve nutrition and dietetic students' perceived readiness for clinical placement. We hypothesized that exposing students to simulation throughout their academic experience improves their confidence, prepares them to interact with real patients and bridges the gap between classroom and clinical settings, thus improving their sense of readiness for clinical work.

Methods

Study Design

The study was a pretest, posttest design. Data were drawn from surveys that were given to students before and after exposure to OSCE and follow-up interviews. The Loma Linda University Institutional Review Board approved all study protocols. All students enrolled in the course signed the consent form to use their data in this study.

Participants

The Students

A total of 37 students with a mean age of 26.6±5.4 years, enrolled in a Medical Nutrition Therapy (MNT) course in the Spring of 2014 at Loma Linda University (LLU). Thirty-five students were females. All the students were enrolled in the Nutrition and

Dietetics program, which is accredited by ACEND, and trains students to meet the eligibility requirements for the Registered Dietitian (RD) examination upon graduation. This program has two emphases, the first is Public Health Nutrition composed of School of Public Health (SPH) students; the second is an emphasis on MNT composed of School of Allied Health Professions (SAHP) students. Table 1 shows students' distribution in the two schools. Fourteen (38%) students had previous interactions with patients, including volunteering at hospitals, or working in a hospital setting as a diet technician, nutritionist, massage therapist, or phlebotomist. Only one student in the School of Public Health completed a supervised practice rotation prior to starting this course. None of the students had previous encounters with Standardized Patients (SPs) or simulation.

Table 1: Educational Level of Students by School (n=37)

School	Degree	n (%)
SAHP	BS Nutrition	4 (11)
	BS/MS Nutrition & Dietetics	5 (14)
	MS in Nutrition & Dietetics	6 (16)
SPH	MPH Nutrition	20 (54)
	DrPH Nutrition	2 (5)

SAHP: School of Allied Health Professions; SPH: School of Public Health; BS: Bachelor of Science; MS: Masters of Science; BS/MS: combined Bachelor and Master of Science degree; MPH: Master of Public Health; DrPH: Doctorate of Public Health.

The Standardized Patients (SPs)

The Association of Standardized Patient Educators defines SPs as individuals who are trained to portray a patient with a specific condition in a realistic, standardized and

repeatable way (where portrayal/presentation varies based only on learner performance).¹⁹ For each of the three OSCE cases, six paid actors were recruited by the Clinical Skills Education Center. SPs were matched to the cases by age group and Body Mass Index, and were trained by experts to present a specific case.

The Health Care Professionals (HCPs)

The Registered Nurses, Speech and Language Pathologist and Social Workers were graduate and post-graduate students and faculty members. The HCPs were trained by experts to present a specific case and provided with scripted questions to ask of students.

Instruments

The Objective Structured Clinical Examination (OSCE)

The OSCE lab began with a 15-minute orientation, which described the process, the movement from station to station, and how students should perceive their role as a professional dietitian. The stations included the following: 1) 15-minute chart review, 2) 20-minute SP encounter, 3) 25-minute charting, 4) 10-minute health care professional interaction, 5) 25-minute article reading and answering related questions, 6) 20-minute video observation of a dietitian interacting with a patient, 7) 40-minute debriefing. Students were required to watch their SP encounter at their own convenience and answer questions designed to promote self-discovery and goal setting

The OSCE labs were planned to reinforce the topic that was taught in the class that week. Students were randomly divided via automatic assignment into three groups with a leader who guided them to their stations. Groups started at three different points of

the OSCE and rotated to assure that everyone completed all stations at the same time. The first group started with a chart review, another group started with reading the article and the third group started with observing a recorded video of a registered dietitian counseling a patient. Each week the groups started at a different point, allowing all three groups to experience each sequence. Five-minute breaks were allotted after the active stations to allow the SP and health care professional to complete the evaluation forms.

OSCE Cases

Each SP case focused on a (1) primary nutritional problem, (2) secondary nutrition problem, (3) religious/cultural diversity, (4) delivering respectful, science-based answers to consumer questions concerning emerging trends, and (5) referring and discussing the case with another health care professional. The cases were developed based on real patients by a team of experienced, practicing RDs.

Perceived Readiness for Dietetic Practice (PRDP) Questionnaire

The research team developed this questionnaire to measure the students' perceived readiness and confidence in applying major competencies that are required by ACEND. The questionnaire consisted of two sections. The first section included questions on a 10-point scale rating students perceived readiness to perform the professional dietetic role, from "not ready"(0) to "very ready" (10). The second section was composed of six subscales, containing a total of 16 items. This section used a 4-point Likert scale with end points "not confident" (1) to "very confident" (4). Six RDs and three students reviewed and answered the pilot survey assessing content validity and three questions were consequently reworded for improved content and clarity.

Pre and Post-test Survey

The Pretest questionnaire included questions on demographics, academic program, previous degrees, and previous patient and simulation exposure. The Posttest questionnaire included rating the realism of the OSCE experience, health care professional collaboration, recommendation for OSCE to continue to be used as a lab and comparing the hospital and OSCE lab experiences, an open ended question to further explain the chosen lab preference is also included.

Grading

All evaluation forms were created by the research team. After completing the OSCE, students had access to their video recording and the written evaluation/feedback forms from the SP, RD and health care professionals. Students received scores on each section, which were formative and did not factor in the course grade. The SP evaluated students' counseling skills, including interpersonal and interaction/communication skills, and two global rating questions. These questions were rated on a 5-point scale with 1 being unacceptable and 5 being outstanding. The RD observed the video recordings and assessed whether the students asked specific questions and made specific recommendations. The course instructor evaluated the charting on each case similar to the evaluation used in the hospital setting. The health care professional assessed the students' communication and inter-professional skills. Students were also required to observe their own video recordings, answer questions for self-reflection, identify strengths and weaknesses and establish goals for improvement.

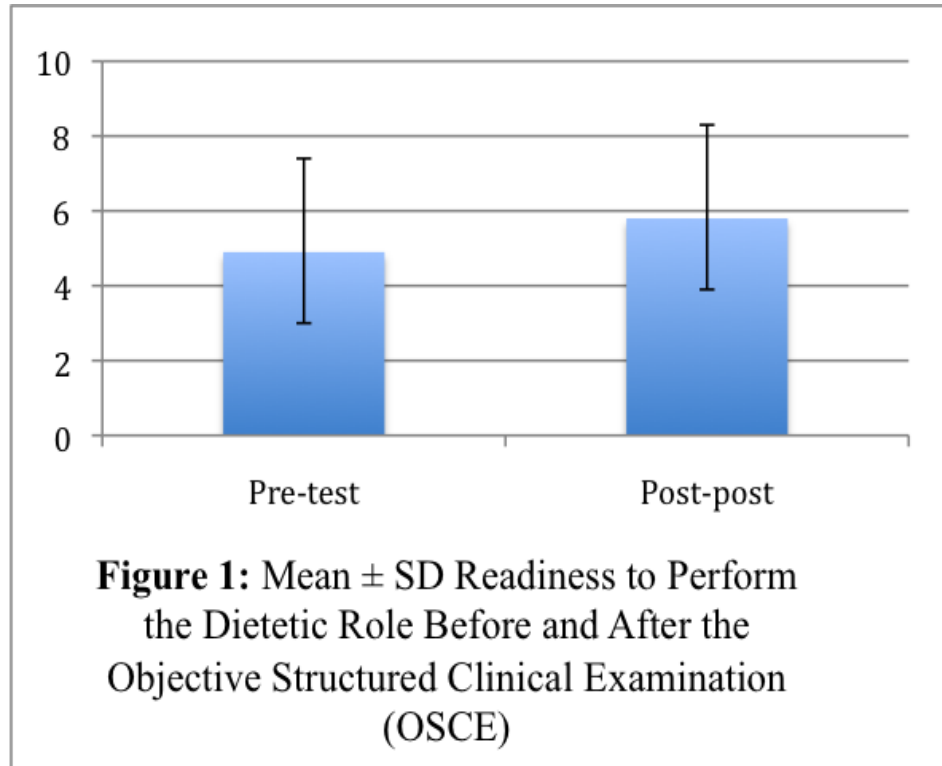
Intervention

Traditionally, the laboratory portion of the nutrition course would provide opportunities for students to visit the hospital. Students could ask patients questions, but they are not permitted to counsel them. A group debriefing followed to discuss the different cases that students encountered. Students individually submitted their charting to the clinical instructor, which was graded by the instructor.

During Spring 2014, the students attended the hospital the first three weeks of the course, and the following three weeks they completed three OSCEs at the Clinical Skills Education Center. The final three weeks, students returned to the hospital. Students signed the consent form, agreed to be video-recorded and completed the PRDP questionnaire prior to starting the OSCE, and answered it again after completing the last OSCE on week 6.

Statistical Analysis

Data were summarized using frequencies for categorical variables and means and standard deviations for quantitative variables. Baseline characteristics were compared between the SAHP and SPH students using independent t-test and chi-square test for independence. Improvement in PRDP scores was examined using the Wilcoxon Signed-Ranks test. Improvement in PRDP subscales by the emphasis was examined using Mixed Factorial Analysis of Variance (ANOVA). The level of significance was set at $p \leq 0.05$.



Results

The prominent finding of the study is shown in Figure 1. Students' perception of their readiness improved after three OSCE experiences, 4.9 ± 2.5 vs. 5.8 ± 1.9 , $P=0.03$.

Improvement in the individual items with greatest improvement in assessing nutrition status of individuals, groups and population in variety of setting, $p=0.01$, and planning and implementing nutrition intervention, $p<0.01$. Also, significant improvement was seen in the following two items: applying leadership skills, $p=0.03$ and diagnosing nutrition problems, $p=0.02$ (Table 2). There were significant differences in the improvement between the two emphases in their professional roles $p=0.01$, and charting skills $p=0.02$ (Table 3).

Twenty-eight (76%) students found OSCE to be superior to the hospital setting. Twenty-nine (81%) of the students would like to see OSCEs continuing as part of their program, five students (14%) were neutral about it, whereas two students (6%) did not recommend for it to continue. Thirty-four (92%) students rated the OSCE to be realistic. Twenty-nine (78%) students agreed that collaboration with other health care professionals helped prepare them for the dietetic role.

Table 2: Improvement in the Individual Items of the PRDP Questionnaire

		Pre-test	Post-test	
A.	Readiness to perform dietetic role *	4.9±2.5	5.8±1.9	
B.	Professional role	Prioritizing patient care needs [#]	2.6±1.0	2.9±0.7
		Applying leadership skills to achieve desired outcome in various groups*	2.5±0.9	2.9±0.7
		Using evidence based guidelines, systematic reviews and scientific literature	2.7±0.7	3.0±0.7
	Communication	Communication with healthcare professional [#]	2.6±0.9	3.0±0.9
		Communicating with Dietitians and supervisors	3.1±0.7	3.2±0.8
		Demonstrating active participations, teamwork and contributions in group setting	3.2±0.7	3.3±0.6
	Patient interaction	Using effective education and counseling skills to facilitate behavior change [#]	2.6±0.9	2.8±0.7
		Communicating with patients from diverse population, (such as being familiar with various cultural foods and habits)	2.5±0.9	2.7±0.7
		Delivering respectful, science-based answers to consumer questions concerning emerging trends	2.6±0.9	2.8±0.8
	Charting	(A) Assessing nutrition status of individuals, groups and populations in a variety of settings where nutrition care is or can be delivered **	2.5±0.8	3.0±0.6
		(D) Diagnosing nutrition problems and creating (PES) statement *	2.5±0.8	2.9±0.7
		(I) Planning and implementing nutrition intervention **	2.3±0.9	2.8±0.7
		(M&E) Monitoring and evaluating problems, etiologies, signs and symptoms and the impact of interventions on the nutrition diagnosis	2.4±0.9	2.7±0.8
	Referral	Referring clients and patients to other professionals and services when needs are beyond individual scope [#]	2.6±0.9	2.9±0.9
Being familiar with the roles of other health professions and how they interact with my job [#]		2.4±0.9	2.7±1.1	
Self-reflection	Performing self-assessment and developing personal goals and objectives	3.1±0.6	3.1±0.6	

**P≤0.01, *P≤0.05, # P≤0.1

Wilcoxon Signed-Rank test

Table 3: Changes in PRDP Scores by School Over Time

PRDP Subscale	SAHP		SPH		Between groups P-value
	Pr-test Mean (SD)	Post-test Mean (SD)	Pr-test Mean (SD)	Post-test Mean (SD)	
Professional Role *	8.6 (1.3)	9.4 (1.2)	7.4 (2.5)	8.4 (1.6)	0.01
Communication	9.3 (2.0)	9.7 (2.5)	8.6 (1.9)	9.3 (1.8)	0.3
Patient Interaction	7.9 (2.2)	8.5 (2.1)	7.5 (2.5)	8.2 (1.9)	0.55
Charting **	11.0 (3.0)	12.0 (1.9)	9.0 (2.6)	10.6 (2.4)	0.02
Referral #	5.2 (1.3)	6.0 (1.9)	4.9 (1.8)	5.4 (1.9)	0.35
Self-reflection	3.1 (0.6)	3.1 (0.8)	3.1 (0.7)	3.2 (0.4)	0.67

PRDP: Perceived Readiness for Dietetic Practice; SAHP: School of Allied Health Professions; SPH: School of Public Health

**P≤0.01, *P≤0.05, # P≤0.1

Mixed Factorial Analysis of Variance (ANOVA)

Discussion

Students expressed satisfaction with the OSCE experience overall, stating that it allowed them to try different counseling strategies. Consistent with previous findings, students enjoyed the feedback they received from the dietitian and the SPs^{8, 9, 20} which allowed for specific goal setting and improvement following each OSCE experience. One student's comment on the reason for OSCE being definitely superior was "*1) direct feedback/ evaluation allowed for greater goal setting and improvement following each OSCE lab experience, 2) Debriefing offered valuable learning experience via conversation about the case, something lacking in medical center labs, 3) Felt less pressure in OSCE lab due to patient actor- I was more comfortable trying different strategies knowing it would not be affecting the health of an actual patient.*" On the other

hand, another student's comment on the reason for OSCE being slightly inferior "OSCE certainly allows for learning, but I prefer to learn quickly and from actual experience and observation rather than simulation" another one commented "In some ways I feel the OSCE gives us more education on how to properly treat patients. Whereas the LLUMC lab we don't really have instructions on how to treat a patient. However, I do like the real life experience of being at the LLUMC"

Students recommended that OSCEs be continued in the program. One student wrote "*I enjoyed this experience more because it was much more realistic than simply asking patients a list of questions at the medical center*". Only one student found OSCE to be definitely inferior to the medical center, that student wrote, "*Real life experiences with real life patient cannot be simulation successfully. After nearly six months of hospital visit. This just seemed like a waste of time and the money I paid for tuition. Very scattered and unorganized from start to finish.*" However, 92% of the students found OSCE to be a realistic experience. Another student wrote "*It was more of a realistic patient experience than LLUMC because we worked on a patient alone from start to finish. The opportunity to practice nutritional counseling was much more realistic in terms of giving us the opportunity to practice being a clinical RD-- in the hospital we ask simple questions but do not have the freedom to discuss dietary issues*".

Our study had several strengths. To our knowledge, this is the first study that asked students in a nutrition and dietetics program to compare the learning experience in an OSCE setting using standardized patients, to the standard approach of a hospital setting. We also had 100% response rate, even though students were given the choice to opt out without affecting their academic performance or relationship with the instructor.

Another possible advantage is in the improvement observed regardless of the academic level and prior experience.

We anticipated challenges from various sources for this study. Our original study design was to have an experimental and a control group, with half of the students participating in the real patient laboratory experience at the hospital and the other half attending the OSCE labs utilizing SP. The institutional review board rejected this plan with the response that it was not fair to the control group, given the strong bias from the literature favoring the OSCE experience. Based on this recommendation, our study was changed to a before versus after design.

We also anticipated resistance to change from faculty given the amount of initial development to implement the OSCE. When initiating OSCE for the first time, the preliminary groundwork requirements demand generous amounts of time and skillful collaborations. The appropriate clinical cases are to be developed in conjunction with knowledgeable clinical dietitians who currently work with patients to ensure accuracy in details and the reflection of current clinical practice; the standardized patients must be recruited and trained, staff must then develop individualized detailed schedules that integrate the schedules of the students, the SPs, the HCPs and the OSCE staff; training materials must be prepared for the SPs and the HCPs to review, and debriefing questions must be generated. OSCE will also require funds to pay for increased expenses as well as ongoing support from the faculty involved in teaching the various classes to be willing to revise the curriculum and syllabi materials. There were just some of the barriers to overcome in order to implement the OSCE. Coordinating all of these clinical experiences with the course director to sequence the lab and didactic portions of the course was also

essential and required great skill and diligence. The support from the Clinical Skills Education Center, which is accredited by the Society for Simulation in Healthcare and has been using standardized patient methodology since 1992, was invaluable in the design and implementation of the OSCE labs.

We expected some resistance from students, given the higher anxiety that comes from interviewing and being observed on video, as well as viewing their own videos. Despite potential anxiety, students valued the experience. One student stated, *“I definitely enjoyed the role playing and learned a lot from it. It was very freeing to talk with an actor, knowing that we could truly practice a role we have not mastered yet.”* Another indicated, *“OSCE improved my self-efficacy in many areas of the profession. It challenged me more to understand the MNT in real life and seek the best treatments. Interacting with other professionals helped me understand the different roles of health professionals I will be interacting with in the future.”*

The limitations of our study include the fact that while we asked students for their perceptions, their actual behavior, while recorded on video for the student to review, was not measured. The simulation experience was limited in scope—it was just three half-day experiences. It occurred relatively early in the students’ experience. It occurred during just one course with relatively limited sample size. We did collect additional data in the form of focus group interviews, which will be analyzed. All students did not take advantage of the opportunity to study their individual videotapes for self-reflection, which may explain the lack of improvement in the self-reflection subscale. Comments from the health professionals consulted were rich with possible follow-up. One of the registered nurses wrote *“I really appreciated the opportunity to look at this case from*

the prospective of another profession, it was a good learning experience for me”, similarly, a speech therapy student commented *“the simulation lab consult with the dietitian students was so informative and I had a blast doing it!!! It felt so real and I learned quite a bit as I got my first taste of co- treatment. This would be a great venture to include as part of our classes in the future- the practicality of it all made it come alive!!”* Nutrition students indicated that this portion of the simulation experience was tremendously valuable to them in increasing their awareness of the importance of coordinating their efforts with other members of the health care team and needs further study. We were only able to include nurses, speech therapists, and social workers. In the future, including other health professionals such as student physicians and physician assistants would be desirable.

Our initial question asked, “Would supplementing hospital experience with simulation in the form of OSCEs increase perceived readiness for clinical placement”? The PRDP questionnaire results supports this concept. OSCE provides specific benefit to supplement the traditional approach. Most students responded well to a simulated patient experience in a safe environment. Faculty might potentially find that OSCE is able to reduce the teaching burden and come to view the student OSCE experience (and the preparatory effort) as most helpful to their curriculum goals, rather than a burden to be endured.

Implication for Research and Practice

OSCEs may be tailored to either teach or assess specific course goals; it may also be adjusted to the students’ level. For example, an OSCE for junior students can include a station where students calculate patient’s anthropometrics, whereas for senior students, a

station to calculate tube feeding or Total Parenteral Nutrition (TPN) may be added. OSCEs may also be used in various courses such as Nutrition Assessment, Medical Nutrition Therapy (MNT), or Nutrition Counseling. OSCEs may also be used as a formative assessment to teach new skills or a summative assessment to evaluate students' knowledge, as on final examinations. The portion of the research that involved consultation with other health professionals holds promise of further study.

A common drawback to using OSCEs is the cost of hiring SPs. This might be mitigated by using volunteers from the community, such as seniors or teens after school, students from acting schools, and adults from various community programs. SP roles could also be developed for students to embrace and take a turn as a patient for other students to observe and counsel. Tufts University School of Medicine has done this with excellent results.²¹

Some dietetic programs may have little or no access to university simulation centers. In this case, a classroom could be set up as a make-shift patient room or an outpatient clinic and a camera or even a cell phone could be used to record the encounter. In addition, OSCEs may also be used as qualification exams to enter a program. It may also be used to assess students prior to accepting them to an internship or a clinical rotation. In the future, OSCE may be included in national examinations, such as the Registered Dietitian Examination to test clinical skills in a standardized and objective matter, as it is presently done with medical students.

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CHAPTER THREE

**NUTRITION STUDENTS' PERCEPTION OF THE EDUCATIONAL VALUE OF
A FORMATIVE OBJECTIVE STRUCTURED CLINICAL EXAMINATION
(OSCE)**

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Abstract

Background: Objective Structured Clinical Examinations (OSCEs) are a valuable teaching tool in various disciplines including nutrition and dietetics. OSCEs increase students' confidence, improve their communication and counseling skills, and can predict clinical strength and identify weaknesses prior to clinical placement.

Objective: Explore the impact of three OSCEs on nutrition and dietetic students using qualitative content analysis so as to inform the future development and evaluate the use of this type of formative assessment.

Design: Phenomenological study.

Participants: Eleven female students enrolled in a Medical Nutrition Therapy course from school of Allied Health Professions and Public Health with mean age 27.5 ± 7.0 years.

Procedure: Three focus groups ranging from 2 to 6 participants, were conducted after the completion of three OSCE sessions.

Data Analysis: Two independent reviewers used Interpretative Phenomenological Analysis (IPA) to analyze verbatim transcriptions.

Results: Five themes emerged: Bridge to Clinical Practice, A Comprehensive Learning Tool, Realistic Experience, Student Challenges, and Curriculum considerations.

Conclusion: OSCE is an accepted tool by nutrition and dietetic students and provides a memorable comprehensive learning experience. Students found OSCEs to be more realistic and authentic than hospital visits, and the interprofessional activities made the experience more holistic. The lack of preparation was the most challenging part of OSCE. The OSCE improved students' confidence, bridged the gap to clinical placement, and students recommended to continue using it as part of the curriculum.

Introduction

The Objective Structured Clinical Examination (OSCE), developed by Harden¹ in 1975 to assess undergraduate medical students skills, is now the gold standard for clinical assessment² and is widely used in many disciplines. OSCE is defined as “a station or series of stations designed to assess performance competency in individual clinical or other professional skills. Stations are carefully structured and designed to be easily reproducible. Learners are evaluated via direct observation, checklists, learner presentation or written follow-up exercises.”³ OSCEs generally use two types of patients in the examination, either high fidelity mannequins or Standardized Patients (SP). SPs are described as “individuals who are trained to portray a patient with a specific condition in a realistic, standardized and repeatable way.”³ Formative OSCEs utilizing SPs provide a safe learning experience, and SPs and faculty can provide specific feedback on learners’ skills.

The OSCE has been shown to be a valid and reliable assessment tool largely because of its objectivity and identical scenarios that all students experience.^{4,5} The value of OSCE is found in its ability to teach and assess skills that aren’t otherwise possible,¹ such as application of knowledge, communication, and counseling skills. It can simulate scenarios that may be distressing for real patients,⁶ creating a safe environment where students can freely learn without causing detriment to real patients.^{6,7} It improves students’ confidence and in some disciplines⁸⁻¹⁰ prepares them for their role as clinician before starting their clinical placement.^{1,7,8,11} When compared to other traditional assessment methods, OSCE is more memorable, and incorporates greater integration and application of knowledge when compared to traditional memorization.^{1,11} OSCE benefits are not limited to students; it enables instructors to customize the scenarios to meet

specific teaching objectives and receive feedback that improves instruction and enthusiasm for teaching.¹⁰ Furthermore, program directors can use OSCEs to evaluate the curriculum and student learning outcomes.²

In the field of nutrition, OSCE may increase student confidence,¹² improve communication and counseling skills,^{13,14} as well as predict clinical skills and identify weaknesses prior to clinical placement.^{5, 15-19} To our knowledge, there are no studies that examined the experience of nutrition students who had undergone OSCE as part their academic course and how they perceived its educational value. Therefore, the aim of this study was to explore the impact of three OSCE experiences with nutrition and dietetic students for future development and to evaluate the use of this type of formative assessment.

Methods

Sample and Recruitment

Thirty-seven students completed three OSCEs as part of a Medical Nutrition Therapy course. Degrees varied from Bachelors of Science, Master of Science, Master of Public Health and Doctor of Public Health. The OSCE included the following stations: 1) 15-minute chart review, 2) 20-minute Standardized Patient (SP) encounter, 3) 15-minute charting, 4) 10-minute interaction with a health care professional, 5) 25-minute reading of an article and answering related questions, 6) 20-minute video observation of a dietitian interacting with a patient, 7) 40-minute debriefing. Students were invited to watch their SP encounter at their own convenience and answer questions designed to promote self-discovery and goal setting.

All the students who completed the OSCE were invited by the department secretary (via email) to participate in the focus groups to learn about their perceptions of the experience and benefits of the OSCE. Eleven students (30%) with mean age 27.5 ± 7.0 years participated in three focus groups. These groups were scheduled on three separate occasions to accommodate student schedules. The first group included 6 students from the School of Allied Health Professions, 4 of them were enrolled in BS program and 2 in the MS program. The second group included 2 MPH students from School of Public Health and last group included 2 MPH students and 1 DrPH student.

Study Design and Data Collection

This phenomenological study explored nutrition students' perception of OSCE after completing three OSCEs. This method was chosen over others because of the nature of our research in attempting to develop in-depth description of human experience.²⁰ Focus groups were used specifically to encourage students to talk openly. The facilitator engaged each participant at an experiential level in the discussion process.

Upon approval by the Loma Linda University Institutional Review Board, data were collected from three focus groups within a week after OSCE completion. Each focus group ranged from 40-60 minutes. Participants consented to participate in the focus group. Confidentiality was assured and students understood that participation was voluntary and wouldn't affect their grade or relationship with course instructors. Eight questions were developed by the research team after a thorough review of the literature (Table 1).

Table 1. Focus group interview questions about perception about OSCE experience presented to 11 students in three focus groups.

1. Briefly tell me about your experience in the OSCE?
 - a. What did you like best about the OSCE? Can you give me an example?
 - b. What did you find most difficult? Can you give me an example?
2. Tell me how you felt in regards to preparation for this experience?
3. What was the most important learning point for you in the OSCE?
4. Which OSCE station was most helpful to you in regards to learning?
5. If you were inviting a friend to participate in the OSCE, what would you say about it?
6. What suggestions, if any, do you have in regards to tailoring OSCE for nutrition students?
7. Suppose that you were in charge and could make one change that would make the program better, what would you do?
8. Have we missed anything?

Data Analysis

Data was summarized using descriptive statistics. Audiotapes from the three focus groups were transcribed verbatim by one of the researchers into 52 typed pages. The transcriptions of interviews were coded and analyzed based on Interpretative Phenomenological Analysis (IPA) described by Smith et al.²⁰ IPA is a qualitative research approach committed to the examination of how people make sense of their experiences. The transcript was independently read and re-read by two of the authors. Comprehensive and detailed interpretative notes and comments were written on the margin of the transcript. The authors discussed their similarities and differences and engaged in analytical dialogue to confirm codes. The authors independently grouped the emergent themes based on commonalities and then together, developed a concept map of how the themes fit together. Where discrepancies arose, they were reviewed and discussed until consensus was reached. Concept mapping was used to identify five themes.

Results

Five major themes emerged from the data to describe the student's perceptions of the OSCE. : 1) Bridge to Clinical Practice, 2) A Comprehensive Learning Tool, 3) Realistic Experience, 4) Student Challenges, and 5) Curriculum Considerations (Table 2).

Bridge to Clinical Practice

Students found that OSCE improved their confidence, counseling skills, ability to self-reflect and prepared them for their role as a clinical dietitian, a role that they would be assuming after graduating.

“I really really liked interacting with the actor and assuming a role that someday we are going to fulfill, rather than being thrown to this role when we graduate, we can now practice it and to feel it out.”

Students appreciated the ability to practice that role in a safe environment, where they could practice their counseling skills and try out new techniques without being afraid of harming a real patient. One student described OSCE,

“An opportunity to practice in which you cannot fail”

All the students agreed that the OSCE enabled them to self-reflect, discover their strengths and weakness, and learn from their mistakes. This level of reflection can help students to self-assess and prepare them to be critical thinkers and leaders in practice.

“I honestly was like a deer in the headlights I didn't even know where to begin ... but I also thought it was beneficial because I was able to look back and say I could have said this or that. ...although that was the most intimidating it was the most beneficial.”

As such several students emphasized how they valued playing a leadership role in the interaction with the patient and other health care provider. Students enjoyed fulfilling

Table 2. Themes and highlights of qualitative content analysis

Themes	Highlights	Illustrative quotes
Bridge to Clinical Practice	Improved confidence	“I think it gave us a lot more confidence in case we are thrown in that scenario in our rotations”
	Encouraged self reflection	“I honestly was like a deer in the headlights, I didn’t even know where to begin ... but I also thought it was beneficial because I was able to look back and say I could have said this or that, although that was the most intimidating, it was the most beneficial”
	Student were the authoritative figure	“We were the dietitian, and we had the ability to just feel it out and feel comfortable making mistakes and just being able to go for it”.
	Learned to prioritize nutrition problem	“When we look at the charts we have to prioritize what is the most important, and so we go in there and we talk to the patient and I would know what to ask first”
	Practice motivational interview	“We give the patients all this information, but what if they have little to no inspiration? How do we take clients and truly lead them to that next step? Get them to totally embrace the information were trying to give them?”
Comprehensive learning tool	Holistic experience	“It enabled us to have a more whole idea of the patient and we can treat the patient from all angles”
	Debriefing	“I learned the most afterwards, its analyzing what happened about the actual interaction”
	Article	“I really liked that I have never been able to read about very controversial topics and being able to discuss them”
	Interprofessionalism	“We never had to...interact with interdisciplinary professionals I mean that is huge, we never ever talked to the charge nurse or anything like that and its nice”

	Watching video	“I actually liked the videos because there is mannerisms and small techniques that we can learn from other health professionals”
Realistic	Realistic	“They [SPs] presented themselves in a very real way, so it was really nice to have an authentic experience”
Student Challenges	Lack of preparation Lack of knowledge	“I really felt frustrated that I didn’t know everything that I should know in order to give the best treatment to the patient”
	Confusion of OSCE process	“I was a little confused when I got there, but after the first time, you know how it’s going to go”
Curriculum considerations	Provide case information prior to OSCE	“Maybe going back to preparing us ahead of time instead of just having the debriefing at the end. Maybe at the beginning telling us - this is the type of patient, especially if it’s going to be first year students that don’t have all the knowledge”
	Prepare Standardized Patient	“I don’t know if there is a way we can standardize that all [SP] give feedback or you can tell them say one constructive thing just to even the playing field a little bit because that’s not really fair if a student has a patient that’s going to be really harsh and nit-picky and then I have a patient that’s really nice”
	Continue video, but reduce to 5 minutes	“I think 5 to 7 minutes long and also more instructional would be beneficial”
	Have health care professional describe roles	“I think some coaching would be good as well from professionals”

the role of an actual dietitian instead of the role of a student, which is what they do when they visit the hospital setting. The opportunity to have an authoritative role and interact with a patient seemed to lead them to care more about the patients, which is why they thought the hospital experience was not as viable in comparison to the OSCE. At the OSCE, students felt that they were helping the patient towards meeting specific goal and that they made a difference. Also, students were more serious at the OSCE. The experience of independently role-playing a dietitian was valuable to the students. One of the students commented on the benefits of OSCE:

“If we hadn’t done this we would have gone to our rotations never having counseled a patient ever, whether they are a real patient or not a real patient it doesn’t matter, we never had to sit down be the authoritative figure that were supposed to be and ... interact with interdisciplinary professionals I mean that is HUGE, we never ever talked to the charge nurse or anything like that and ... its nice.”

Students commented that they learned many counseling skills including prioritizing nutritional problems. They realized the need to actively listen to what patients are saying and address motivational level of the patient, an area that has been discussed in class but not applied. They found that they were able to practice their counseling skills, and try out new techniques without worrying about harming the patient. Students appreciated the human interaction and ability to counsel patients for an extended period of time. One student commented,

“What I gained a lot from this [OSCE] was just the interacting and how important it is to connect with the client and even if I didn’t say the right thing they were still benefited somehow ... just the contact the human interaction I think was extremely valuable even if I didn’t say everything you know perfectly”

As part of each OSCE, the student had to communicate with different health care professionals, including a nurse, speech therapist and social worker. The students found

this interaction improved their interprofessional skills and further prepared them to be part of a multidisciplinary team. All the students valued the interaction and agreed that it prepared them for the role as dietitians.

A Comprehensive Learning Tool

The combination of reading an article, counseling a patient and teach him/her on specific nutrition problems, debriefing afterwards and receiving feedback was found to offer a comprehensive teaching tool that is more memorable and practical, in a short amount of time. A student commented:

“Putting together everything that you have learned in classes to put in one interaction, I guess in a more useful way”

The OSCE encouraged students to integrate and immediately apply information they learned in class. Students were surprised at how much they had learned in their course without being aware, partly due to the teaching and counseling opportunity of the OSCE.

“It [OSCE] really helped for MNT [Medical Nutrition Therapy], I was like oh I know this, and I know this, I was surprised on how much I did know”

Students reported that it was a holistic experience allowing them to review a case from start to finish. Incorporating another healthcare professional added to the holism as well.

“It enabled me to have a more whole idea of the patient and we can treat the patient from all angles so I think to me I learned a lot”

When students were asked which station had the greatest learning, all three focus groups agreed that most of the learning happened in the debriefing because it connected all the pieces together and gave them something to take home. Debriefing also taught

students different treatment approaches that helped learning the thinking process and improved their analytical skills.

“Being able to talk through the case afterwards, and making notes of the things I missed that I should’ve done, or realized, oh I’m stronger in this area when it comes to counseling was really helpful”

Although students liked the OSCE experience, they didn’t want it to replace the hospital visits, recommending that half the laboratory section to be the OSCE format. Students related that the value in visiting the hospitals is in getting familiar with a hospital setting, patient’s room, the electronic charting system and how to find the information in it. However, the hospital was criticized for the lack of feedback, which is provided at the OSCE from the SP, the faculty, healthcare professional and the students’ self-evaluation, which helped students learn from their mistakes.

Surprisingly, students criticized the hospital for being unrealistic when compared to OSCE because it doesn’t mimic their actual role to be performed after graduating, one commented:

“At the hospital when we interact with the patient it’s not for real, they know it, we know it, and we’re asking them questions that aren’t as relative”

Students indicated that the hospital doesn’t provide a holistic experience. While debriefing after hospital visit also occurs, students briefly discuss everyone’s cases whereas at the OSCE, one case is being discussed in detail, and all students can relate it to it and participate in the discussion. A student commented that she felt like a burden at the hospital, whereas at OSCE, she was working with the SP towards a solution and treatment plan.

“What stood out the most between the hospital and the OSCE is that we all have the same patients more or less, everyone interpreted their training a little differently but when we go to the hospital we all come back with completely

unique patients so we learn these little factoids and these really unconnected ways ... When we are doing it this way [OSCE] we all learn that fundamental fact at the same time and we can discuss it and we can analyze it and get our opinions and that's huge"

Multiple OSCEs were found to be necessary to provide an effective learning experience, a student commented:

"One [OSCE] was a complete failure - you learn from the next one, but then you go back to counseling another patients - you get to take that experience elsewhere."

All the students reported a positive experience with OSCE, and not only did they want it to continue as part of their program but also to be part of other courses as well

"I could almost argue that there could be a place tailored to any class that we take with practicum hours attached ... something like this would be beneficial to working with people and actually using the skill."

Realistic Experience

Most of the students found the SP interaction to be a more realistic, authentic experience than class visits to the hospital where they had limited interaction with the patients. In fact, some students forgot that the patient was an actor, although they were informed during the class, students commented:

"They weren't real patients, but they were actors, so they presented themselves in a very real way, so it was really nice to have an authentic experience."

"It seems intimidating, but in reality, it's much more of a practical learning experience that's really beneficial."

Though most felt this way, one student shared that she felt the SP was unrealistic, as the SP asked several questions in order to make the students provide the information she was supposed to provide to effectively counsel the patient.

Student Challenges

Though the students felt the OSCE was valuable, they noted several challenges. All of the students in the focus groups agreed that a lack of knowledge and preparation was the most frustrating part of the OSCE. Most students had never heard of the term OSCE or standardized patients before this encounter. As this was the first OSCE experience, and although it was explained prior to starting, some students were confused on not knowing what exactly was expected, and the flow of the stations. Students, however, reported that most of the confusion was resolved after the first OSCE.

The lack of knowledge involved walking in to work with a patient and only having a few minutes to review the chart and prepare for the interaction. Students disliked the feeling of not knowing what to tell the patient. This caused fear and frustration especially in the beginning as noted by one student who commented:

“I really felt frustrated that I didn’t know everything that I should know in order to give the best treatment to the patient”

When another student was asked if she also felt the same way (unprepared): “Yes, but I realized as a first year student, this is something that is kind of normal, so, I didn’t worry too much about that because I’ll continue to learn and grow in these areas.”

Students commented that OSCE was challenging but nonetheless constructive. They also commented that anxiety occurred at first, mainly due to “*fear of the unknown.*” They reported that anxiety went away after the first OSCE. There was an adjustment process for the students to understand and feel comfortable with the purpose of the OSCE and its design.

An interdisciplinary experience was specifically incorporated into the OSCE. Prior to this experience, however, the students had little to no interaction with other disciplines as part of their program. Some of the students found interacting with another

healthcare professional to be intimidating because they didn't feel prepared for it and didn't understand the role of the other healthcare professional.

A final challenge noted by students involved the perception of the SP's knowledge regarding the role of the dietitian. One student was concerned that the SP kept asking about medication and questions that were more appropriate for the doctor. Though noted as a challenge by the student, this indeed is a common situation that many dietitians will encounter in their practice.

Curriculum Considerations

Most of the students indicated that three OSCEs were an adequate number to teach and prepare nutrition students for their role, however, three participants suggested to increase it to five OSCEs (out of a 10 week quarter) in order to allow them to visit the hospital five times as well. Students preferred to have OSCE in the beginning of the quarter rather than the end when they have many deadlines to meet. They found station timing to be adequate, except for one student, who thought more time was needed for patient interaction. Students also suggested observing video should be limited to 5 minutes only and should include more coaching and guidance. Students recommended to continue OSCE as part of the nutrition program and to incorporate it into other courses such as nutrition counseling. Comments revealed that going through the station that required reading the article before interacting with the patient helped them prepare for the interaction. Discussions revealed that knowing the case ahead of time would increase the student's sense of preparedness. Although some students recommended receiving handouts prior to the patient encounter, it is a more comprehensive learning experience

for students to create their own handouts to provide during their counseling session.

Students also found that watching the video of a registered dietitian counseling a patient very useful

“I really liked that the study included very relevant topics that addresses people concerns like gluten free diet, juicing and special diets like halal and I learned a lot from these articles”

Another student said, “I actually liked the videos because there is mannerisms and small techniques that we can learn from other health professionals.”

In regards to improving students’ interprofessional skills, students suggested having a health care professional perform a presentation to discuss their roles and how they interact with dietitians at the work site, which will help them to prepare for the interaction with a multidisciplinary team. Also, since most of the SPs are used to being actors in scenarios to teach and assess medical students, adequate training for SPs is needed to understand the role and scope of practice of nutrition and dietetic students.

When students were asked whether they preferred having OSCE earlier or later in the program, they found OSCE to be extremely helpful in improving their confidence before starting their clinical rotations, one student answered:

“This is perfect, right before rotations, I think it gave us a lot more confidence in case we are thrown in that scenario in our rotations because we don’t know what to expect for rotations either”

Discussion

The aim of this study was to explore and understand the impact of a three OSCEs experience on nutrition and dietetic students. We found that it provided a comprehensive learning experience that increased the students’ confidence and perceived readiness for their clinical role as dietitians. This is consistent with other qualitative studies with

midwife students, which found that OSCE improved their confidence and prepared them for practice.^{8,21} Another study conducted with nursing students in Korea found OSCE increased students' awareness of inner capabilities which improved their motivation, confidence and creativity.²²

The comments of the students revealed OSCE to provide a realistic, authentic experience when compared to the hospital setting. This was surprising since OSCE is commonly criticized for being unrealistic²³⁻²⁵ with textbook cases that don't mimic real life situations,^{6,24,26} although most of these studies were with mannequins rather than SPs. A study which included 442 general practitioners who were consulted by four SPs throughout a four-month period at their private clinic found that general practitioners couldn't distinguish the SP from real patient.²⁷

Interestingly, one of the most common themes in other studies included anxiety associated with OSCE^{18,23,26} which may be due to grading,²² the use of mannequins,^{25,23} or being video recorded.²⁶ In our study, anxiety occurred in the first OSCE mostly due to "fear of the unknown" which was resolved afterwards. Some studies suggested using a mock²³ or trial²¹ OSCE to practice can reduce anxiety before the actual OSCEs. Based on the findings of this study, the first OSCE can serve as a trial to understand the process, and the following OSCEs can be used to learn and assess students' performance.

Interprofessional Education occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care.²⁸ Although it is fairly a new approach in nutrition education, the present study found that students positively accepted and appreciated interacting with other disciplines. Similarly, a study involving students from nutrition and physical therapy interacting with one another found

that interprofessional education was deeply appreciated, and improved communication skills and respect within disciplines.²⁹ A cross sectional Australian attitudinal study of students from seven different disciplines that answered the Readiness for Interprofessional Learning Scale (RIPLS) questionnaire, found nutrition and dietetics students had the highest scores in team working, attitude towards shared learning and perceived benefit of collaboration.³⁰ These findings suggest that nutrition students are ready for interprofessional learning and there is a vital need to include it in the nutrition and dietetic curriculum.

Our students reported that OSCE was a valuable learning experience where they learned new information in a short period of time without realizing how much they had learned. This is no surprise since Dales' cone experience suggests that students retain 10% of the information read, but by discussing information as in debriefing, students retain 50% of the information, and on top of that, teaching others, such as patients, enables them to retain 90% on the information. However, a recent literature review paper has suggested avoiding using this pyramid in medical education due to the lack of agreement on the percentage of learning retention.³¹

To our knowledge, this is the first study to look into the experience of nutrition and dietetic students who had recently undergone an OSCE experience. Another possible unique contribution of this study, is that our student sample included students from various academic levels ranging from bachelor level students to doctoral degree candidate and also included students from two different emphases: Allied Health and Public Health.

Limitations

This study utilized a convenience sample and was conducted with one small cohort in a single university; nevertheless, it may serve as the base for more consideration on the function of OSCE in nutrition education.

Conclusion

OSCE has been found to have a favorable outcome on nutrition students' education, such as improving their confidence, communication and counseling skills and predicting strengths and weaknesses. This study suggests that OSCE is a positively accepted teaching tool and that it is viewed as an incredibly valuable and realistic learning experience. The provision of interprofessional communication adds cooperative partnerships and holism to the OSCE and thus realistically improves students' skills and prepares them for clinical placement. Adequate student and SP preparation prior to OSCE is also found to be essential to enrich the learning experience.

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CHAPTER FOUR

DISCUSSION

The aim of this study was to explore nutrition and dietetic students' perception of the OSCE and test whether three OSCEs can improve students' readiness to clinical placement using a mixed method research in an attempt to facilitate a more comprehensive picture of the situation.

The present study found the OSCE to not only be a positively accepted educational tool but also incredibly valuable from the students prospective. Students expressed satisfaction with the OSCE experience overall, stating that it improved their confidence, prepared them for clinical practice, allowed them to try different counseling strategies and new techniques without being afraid of harming a real patient. One student described OSCE as "*an opportunity to practice in which you cannot fail*". These findings are consistent with other qualitative studies in midwife students, which found that OSCE improved their confidence and prepared them for practice.^{36, 37} Another study conducted with nursing students in Korea found that OSCE to increase student awareness of inner capabilities which improved their motivation, confidence and creativity.³⁸

It appeared that feedback was one of the perceived assists of the OSCE, this was similar to previous findings where students enjoyed the feedback they received from the dietitian and the SPs,^{7, 18, 30} which allowed for specific goal setting and improvement following each OSCE experience.

When comparing the two laboratory experiences. Students criticized the hospital for being unrealistic because it doesn't mimic their actual role that they would be doing after graduating. Students commented, "*At the hospital when we interact with the patient,*

*it's not for real, they know it, we know it, we're asking them questions that aren't as relative". This was surprising since the OSCE, rather than hospital setting, is commonly criticized as being unrealistic³⁹⁻⁴¹ and having textbook cases that don't mimic the real life situation.^{2, 41, 42} In our study, 92% of the students found OSCE to be a realistic experience. A study included 442 general practitioners were consulted by four SP throughout a four months period at their private clinic and found that general practitioners couldn't distinguish the SP from real patient.²⁰ One student's comment on the reason for OSCE being definitely superior to the hospital experience was "1) *direct feedback/ evaluation allowed for greater goal setting and improvement following each OSCE lab experience, 2) Debriefing offered valuable learning experience via conversation about the case, something lacking in medical center labs, 3) Felt less pressure in OSCE lab due to patient actor- I was more comfortable trying different strategies knowing it would not be affecting the health of an actual patient.*"*

While 76% of the students found OSCE to be superior to medical center experience, the rest found it to be inferior to hospital visits; this was mainly due to personal preference rather than inadequacies in the OSCE experience. A student's comment on the reason for OSCE being slightly inferior was "*OSCE certainly allows for learning, but I prefer to learn quickly and from actual experience and observation rather than simulation*" another one commented "*In some ways I feel the OSCE gives us more education on how to properly treat patients. Whereas the LLUMC lab we don't really have instructions on how to treat a patient. However, I do like the real life experience of being at the LLUMC*".

Although most of the students liked the OSCE experience, they didn't recommend for it to completely replace the hospital visits and they preferred that half of the laboratory section be in the OSCE format. Students stated that the value in visiting the hospital is in getting familiar with the hospital setting, patients' rooms, the electronic charting system and how to find the information in it. However, the hospital experience was criticized for the lack of feedback, which is provided at the OSCE from the SP, the dietitian, healthcare professional and the students' self-evaluation. Students also indicated that the hospital doesn't provide a holistic experience. While debriefing occurs after the hospital visit, students briefly discuss everyone's cases in a short period of time, whereas at the OSCE, one case is being discussed in details and all students can relate it to it and participate in the discussion. One student commented, *"What stood out the most between the hospital and the OSCE is that we all have the same patients more or less, everyone interpreted their training a little differently but when we go to the hospital we all come back with completely unique patients so we learn these little factoids and these really unconnected ways and we are supposed to write them and remember them later. When we are doing it this way [OSCE] we all learn that fundamental fact at the same time and we can discuss it and we can analyze it and get our opinions and that's huge"*. Another student stated that at the hospital, she felt like she was a burden on the sick patients rather than helping them.

As part of the OSCE, each week, the student had to communicate with a different health care professional, including nurses, speech therapists and social workers. interprofessional education occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care.⁴³ Although it is fairly a

new approach in nutrition education, the present study found that interacting with other health care professionals was positively accepted and improved their interprofessional skills and further prepared them to be part of a multidisciplinary team. All the students valued the interaction and agreed that it prepared them for the role as dietitians. One student said, *“We never had to interact with interdisciplinary professionals I mean that is HUGE, we never ever talked to the charge nurse or anything like that and it’s nice”*, another student commented *“OSCE improved my self-efficacy in many areas of the profession. It challenged me more to understand the MNT in real life and seek the best treatments. Interacting with other professionals helped me understand the different roles of health professionals I will be interacting with in the future.”* Similarly, a study involved students from nutrition and physical therapy interacting with one another found that interprofessional education was deeply appreciated, improved communication skills and respect within disciplines.⁴⁴ A cross sectional Australian attitudinal study of students from seven different disciplines that answered the Readiness for Interofessional Learning Scale (RIPLS) questionnaire, found nutrition and dietetics students had the highest scores in team working, attitude towards shared learning and perceived benefit of collaboration.⁴⁵ These findings suggest that nutrition students are ready for interprofessional learning and the need to include it in nutrition and dietetic curriculum is vital. Comments from the health professionals consulted were rich with possible follow-up. One of the registered nurses wrote *“I really appreciated the opportunity to look at this case from the prospective of another profession, it was a good learning experience for me”*. Similarly, a speech therapy student commented *“the simulation lab consult with the dietitian students was so informative and I had a blast doing it!!! It felt so real and I*

learned quite a bit as I got my first taste of co- treatment. This would be a great venture to include as part of our classes in the future- the practicality of it all made it come alive!!” Nutrition students indicated that this portion of the simulation experience was tremendously valuable to them in increasing their awareness of the importance of coordinating their efforts with other members of the health care team and needs further study. In this study, we were only able to include nurses, speech therapists, and social workers. In the future, including other health professionals such as student physicians and physician assistants would be desirable.

Our study had several strengths. To our knowledge, this is the first study that asked students in a nutrition and dietetics program to analyze their OSCE experience as well as to compare the learning experience in an OSCE setting using standardized patients, to the standard approach of a hospital setting. We had 100% response rate, even though students were given the choice to opt out without affecting their academic performance or relationship with the instructor.

We anticipated challenges from various sources for this study. Our original study design was to have an experimental including a control group, with half of the students participating in the real patient laboratory experience at the hospital and the other half attending the OSCE labs utilizing SP. The institutional review board rejected this plan with the response that it was not fair to the control group, given the strong bias from the literature favoring the OSCE experience. Based on this recommendation, our study was changed to a pre-test post-test design.

We also anticipated resistance to change from faculty given the amount of initial development to implement the OSCE. When initiating OSCE for the first time, the

preliminary groundwork requirements demand generous amounts of time and skillful collaborations. The appropriate clinical cases were to be developed in conjunction with knowledgeable clinical dietitians who currently work with patients to ensure accuracy in details and the reflection of current clinical practice; the standardized patients needed to be recruited and trained, staff must then develop individualized detailed schedules that integrate the schedules of the students, the SPs, the HCPs and the OSCE staff; training materials must be prepared for the SPs and the HCPs to review, and debriefing questions must be generated. OSCE will also require funds to pay for increased expenses as well as ongoing support from the faculty involved in teaching the various classes to be willing to revise the curriculum and syllabi materials. Coordinating all of these clinical experiences with the course director to sequence the lab and didactic portions of the course was also essential and required great skill and diligence. The support from the Clinical Skills Education Center, which is accredited by the Society for Simulation in Healthcare and has been using standardized patient methodology since 1992, was invaluable in the design and implementation of the OSCE labs.

We expected some resistance from students, given the higher anxiety that comes from interviewing and being observed on video, as well as viewing their own videos. Anxiety is one of the most common themes in other studies^{18, 40, 46} which has been reported due to grading,³⁸ use of mannequins,^{25,40} or being video recorded.⁴⁶ Our study indicated that anxiety occurred in the first OSCE mostly due to “fear of unknown” which resolved afterwards. Some studies suggested using a mock⁴⁰ or trial⁴⁷ OSCE to practice can reduce anxiety before the actual OSCEs. This study found that the first OSCE can be used as a trial to understand the process, and the following OSCEs can be used to learn

and assess students' performance. Despite potential anxiety, students valued the experience.

The limitations of our study included our small sample size cohort from one university; nevertheless, it can be the base for more consideration on function of OSCE in nutrition education. Another limitation include the fact that while we asked students for their perceptions, their actual behavior, while recorded on video for the student to review, was not measured. The simulation experience was limited in scope—it was just three half-day experiences. It occurred relatively early in the students' experience. It occurred during just one course with relatively limited sample size. All students did not take advantage of the opportunity to study their individual videotapes for self-reflection, which may explain the lack of improvement in the self-reflection subscale.

Our initial question asked, “Would supplementing hospital experience with simulation in the form of OSCEs increase perceived readiness for clinical placement”? The PRDP questionnaire results supported this concept. OSCE provided specific benefit to supplement the traditional approach. Most students responded well to a simulated patient experience in a safe environment. Faculty might potentially find that OSCE may reduce the teaching burden and come to view the student OSCE experience (and the preparatory effort) as most helpful to their curriculum goals, rather than a burden to be endured.

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For the following questions, rate your level of confidence in the following categories:

		Very confident	Confident	Neutral	Not confident
Professional Roles					
1	Prioritizing patient care needs				
2	Applying leadership skills to achieve desired outcome in various groups				
3	Using evidence-based guidelines, systematic review and scientific literature				
Communicating with Health Professionals					
4	Communicating with other healthcare professionals (Nurse, speech therapist, social workers...)				
5	Communicating with other Dietitians, such as supervisor				
6	Demonstrating active participation, teamwork and contribution in group setting				
Patient interaction					
7	Using effective education and counseling skills to facilitate behavior change				
8	Communicating with patients from diverse population, (such as being familiar with various cultural foods and habits)				
9	Delivering respectful, science-based answers to consumer questions concerning emerging trends				
Charting					
10	(A) Assessing nutrition status of individuals, groups and populations in a variety of settings where nutrition care is or can be delivered				
11	(D) Diagnosing nutrition problems and creating problem, etiology, signs and symptoms (PES) statement				
12	(I) Planning and implementing nutrition intervention (include prioritizing the nutrition diagnosis, formulating a nutrition prescription, establishing goals and selecting and managing interventions)				
13	(M&E) Monitoring and evaluating problems, etiologies, signs and symptoms and the impact of interventions on the nutrition diagnosis				
Referral					
14	Referring clients and patients to other professionals and services when needs are beyond individual scope				
15	Being familiar with the roles of other health professions and how they interact with my job				
Self-reflection					
16	Performing self assessment and developing personal goals and objectives				

Thank you!

Perceived Readiness for Dietetic Practice (PRDP)

Post-test

From the following questions, please choose the most appropriate answer.

1. To which group are you assigned?

A (Monday)

B (Thursday)

2. To which school are you enrolled?

School of Public Health

School of Allied Health Professions

3. Rate how ready you feel at the present time to perform the professional dietetic role. 0 is not ready, 10 would be extremely ready.

0 1 2 3 4 5 6 7 8 9 10

4. Rate how realistic your encounter with Standardized Patient was. 0 is extremely unrealistic, and 10 would be extremely realistic

0 1 2 3 4 5 6 7 8 9 10

5. In your opinion, did collaborating with other healthcare professionals help you prepare for your professional dietetic role?

Strongly
disagree

Disagree

Undecided

Agree

Strongly agree

6. Would you like for the Objective Structured Clinical Examination (OSCE) to continue being part of your curriculum? 0 is extremely negative and 5 would be extremely positive.

0 1 2 3 4 5

7. Choose the OSCE sequence your preferred the most.

- Review patient's chart- interacting with standardized patient – interacting with health professional– charting- reading article- watching RD recording.
- Reading article- review patient's chart- interacting with standardized patient – interacting with health professional– charting- watching RD recording.
- Reading article- watching RD recording- review patient's chart- interacting with standardized patient – interacting with health professional– charting
- The sequence of OSCE didn't make a difference.

IF ENGLISH IS YOUR SECOND LANGUAGE. Answer questions 8, 9 and 10.

8. What's your first language? _____

9. Do you think the language difference affected your performance on OSCE?

No Yes. Please describe _____

10. Do you think the cultural differences affected you performance on OSCE?

No Yes. Please describe _____

11. Compare the two laboratory experiences 1) Simulation lab, 2) Medical Center lab as to their perceived value in preparing you for the role as professional dietitian.

- The OSCE was **definitely inferior** to the LLUMC labs
- The OSCE was **slightly inferior** to the LLUMC labs
- The OSCE was **definitely superior** to the LLUMC labs
- The OSCE was **slightly superior** to the LLUMC labs

Please explain your answer for question 11.

For the following questions, rate your level of confidence in the following categories:

		Very confident	Confident	Neutral	Not confident
Professional Roles					
1	Prioritizing patient care needs				
2	Applying leadership skills to achieve desired outcome in various groups				
3	Using evidence-based guidelines, systematic review and scientific literature				
Communicating with Health Professionals					
4	Communicating with other healthcare professionals (Nurse, speech therapist, social workers...)				
5	Communicating with other Dietitians, such as supervisor				
6	Demonstrating active participation, teamwork and contribution in group setting				
Patient interaction					
7	Using effective education and counseling skills to facilitate behavior change				
8	Communicating with patients from diverse population, (such as being familiar with various cultural foods and habits)				
9	Delivering respectful, science-based answers to consumer questions concerning emerging trends				
Charting					
10	(A) Assessing nutrition status of individuals, groups and populations in a variety of settings where nutrition care is or can be delivered				
11	(D) Diagnosing nutrition problems and creating problem, etiology, signs and symptoms (PES) statement				
12	(I) Planning and implementing nutrition intervention (include prioritizing the nutrition diagnosis, formulating a nutrition prescription, establishing goals and selecting and managing interventions)				
13	(M&E) Monitoring and evaluating problems, etiologies, signs and symptoms and the impact of interventions on the nutrition diagnosis				
Referral					
14	Referring clients and patients to other professionals and services when needs are beyond individual scope				
15	Being familiar with the roles of other health professions and how they interact with my job				
Self-reflection					
16	Performing self assessment and developing personal goals and objectives				

Thank you!

APPENDIX B

SCHEDULE OF THE OSCE FOR EACH GROUP

Time	Group 1 n= 7	Group 2 n= 7	Group 3 n= 7
9:00-9:05	Orientation		
9:05-9:10	Orientation		
9:10-9:15	Orientation		
9:15-9:20	chart review	Read article	Read article
9:20-9:25	SP-interaction	Conference room B	Conference room A
9:25-9:30			
9:30-9:35	Break	chart review	Observe recording
9:35-9:40			
9:40-9:45	HCP-interaction	SP-interaction	Conference room A
9:45-9:50			
9:50-9:55	Break	SP-interaction	Break
9:55-10:00			
10:00-10:05	Charting	SP-interaction	chart review
10:05-10:10			
10:10-10:15	Conference room A	Break	chart review
10:15-10:20			
10:20-10:25	Read article	HCP-interaction	SP-interaction
10:25-10:30			
10:30-10:35	Conference room A	Charting	SP-interaction
10:35-10:40			
10:40-10:45	Read article	Conference room B	Break
10:45-10:50			
10:50-10:55	Observe recording	Observe recording	HCP-interaction
10:55-11:00			
11:00-11:05	Conference room A	Conference room B	charting
11:05-11:10			
11:10-11:15	Break	Break	Hallway
11:15-11:20			
11:20-11:25	Debriefing	Debriefing	Debriefing
11:25-11:30			
11:30-11:35	Room 2226	Room 2226	Room 2226
11:35-11:40			
11:40-11:45	Room 2226	Room 2226	Room 2226
11:45-11:50			

APPENDIX C

CASE ONE

Patient Name – Michael Cooper
Dumping Syndrome

Nutrition Consultant: Susan Lewis, MPH, RD, CLT

Pam Short, RN, CNSC

Dottie Gibson, RD, CNSD

Case Author: Elaf Farahat, PhD(c), MS, RD

Patient Interaction Setting – Outpatient clinic setting, 20 minutes history taking and education.

Case Primary Objectives:

- 1) Assess nutritional needs for a patient post Roux-en-Y gastric bypass presenting with dumping syndrome.
- 2) Identify patient's history, paying close attention to high simple sugar intake, which aggravates dumping syndrome.

Case Secondary Objectives:

- 1) Identify patient's religious and cultural food practices
- 2) Discuss case with a Physician Assistant (PA)
- 3) Deliver respectful, science-based answers to consumer questions concerning emerging trends (Gluten-free diet).

SECTION 1:
Information for the Nutrition Student

Instructions to the Student

Setting: Walk-In Clinic

You are receiving a consult request from the patient's physician: Michael Cooper underwent Roux-En-Y gastric bypass surgery on 03/10/2014 due to obesity and pre-diabetes. He's complaining of nausea, vomiting, and abdominal pain right after eating, and after about 2 hours, he starts getting anxious, a little confused and hungry. Please, educate the patient on appropriate diet and preventive measures. Then, communicate your findings and recommendations with the Registered Nurse.

You have 20 minutes to obtain patient's history and make appropriate dietary recommendations. View attached chart for additional information.

COOPER, MICHAEL
MR# 0029048000123
DR: Webber, James

Gender: Male
DOB: 08/22/1979
Age: 34 Y/O

Service Date: 04/28/2014 08:00
Service: OP-BARIATRIC

Nursing Note:

04/28/2014

Scott, Norah (RN)

Vital Signs: Weight (04/09/2014)=95.45 kg, Height 5'9"

Temp (Degrees C): 36.8 (36.6-37.3), HR (bpm): 81 (78-96), Respiration (breaths/min): 16 (12-18), SBP (mmHg): 115 (115-145), DBP (mmHg): 62 (62-88), MAP (mmHg): 82 (82-111), SpO2 (%): 98 (97-100)

COOPER, MICHAEL	Gender: Male	Admit Date: 03/10/2014 18:00
MR# 0029048000123	DOB: 08/22/1979	Discharge Date: 03/12/2014 16:40
DR: Webber, James	Age: 34 Y/O	Service: IP SURGERY- GI

Discharge Note:
03/12/2014 06:39

Physician:
Webber, James (MD)

Admission/Discharge Dates:

- **Admission Date:** 03-10-2014
- **Discharge Date:** 03-12-2014

Discharge Attending:

- **Webber, James (Attending):** MD (A), Surg: Bariatric

Primary Care Provider/Other Provider:

- **Webber, James (Attending):** MD (A), Surg: Bariatric
- **Newton, Ellie (Physician Assistant):** PA, Surg: Bariatric

DC Diagnosis:

1. **OBESITY**
2. **PRE-DIABETES**
3. **OBSTRUCTIVE SLEEP APNEA**

Procedures:

- **Procedures:** 03/10 Roux-en-Y gastric bypass

HPI/Hospital Course:

- **Brief HPI/Hospital Course by Diagnosis:** 34 y/o male, with past medical history of obesity, prediabetes and obstructive sleep apnea with no other medical history. He was admitted for Roux-en-Y gastric bypass surgery. Patient had the surgery on 3/10/2014 and moved to recovery room. After Patient had Upper GI test, which showed no leaks, he was started on sips of water. Patient tolerated sugar-free clear liquid diet and was advised to start full liquid diet at home. Cooper was discharged with four abdominal surgical incisions. He was given wound care instructions. Patient was told to follow-up with MD and RD at the outpatient bariatric clinic.

Physical Exam on Day of Discharge:

- **Vital Signs:** Weight (04/09/2014)=113.6 Kg, Height 5'9"
Temp (Degrees C): 36.8 (36.6-37.3), HR (bpm): 81 (78-96), Respiration (breaths/min): 16 (12-18), SBP (mmHg): 115 (115-145), DBP (mmHg): 62 (62-88), MAP (mmHg): 82 (82-111), SpO2 (%): 98 (97-100)
- **Physical Exam:** Neuro: alert & oriented, motor and sensory grossly intact.
HEENT: Pupil equal, round, and reactive to light. Sclera anicteric.
Cardiology: Regular rate and rhythm without appreciable murmur rub or gallop.
Pulmonary: Clear to auscultation bilaterally, without appreciable wheeze.
Abdomen: Soft, no tenderness to palpation, no distention, no rebound or guarding.
Extremities: 2+ radial pulse bilaterally. No clubbing, cyanosis, or edema.
Musculoskeletal: Move all extremities.
Wound: Four surgical incisions on abdomen.

Braden scale: 19

COOPER, MICHAEL MR# 0029048000123 DR: Webber, James	Gender: Male DOB: 08/22/1979 Age: 34 Y/O	Admit Date: 03/10/2014 18:00 Discharge Date: 03/12/2014 16:40 Service: IP SURGERY- GI
--	---	---

Discharge Type and Core Measures:

- **Discharge Type:** Standard
- **Smoking Status:** never smoker

Discharge Note:

03/12/2014 06:39

Webber, James (MD)

Discharge Instructions:

- **Discharge Disposition:** Home.
- **Condition at discharge:** Stable.
- **Diet at Discharge:** Full liquid diet. Using high protein meal replacement shakes, high protein soups. No caffeine, carbonated beverages, no alcohol, no beverages with sugar.
- **Activity on discharge:** Activity as tolerated, no swimming, no outdoor activities until further notice. No heavy weight lifting, no vigorous exercise.
- **Equipment:** None.
- **Additional wounds care instructions:** Please keep abdominal surgical incisions dry, do not get wet.
- **Additional instructions for the patient:** If you have fever, increased pain or redness around wound go to ER
- **Work, School and Driving Restrictions:** No work until cleared by MD
No driving while taking pain medications

Discharge Medications

- Tylenol tablets (crushed) of 1000mg every six hours as needed
- Multivitamin, chewable twice a day two servings/day or 1 serving specially formulated bariatric supplement
- Vitamin B12 sublingual B12 lozenges 500 mcg daily
- Calcium citrate 1500 mg/day, divided doses (~500mg/dose), separate from iron by 2-3 hours - chewable
- Iron, 30 mg, if not in MVM – chewable
- Pepcid 10mg chewable tablets twice a day
- Actigall 300mg tablet twice a day for six months
- Colace or MOM

Blood Thinners:

No

Follow Up Appointments:

Follow up with your primary care provider.

An appointment has been made with bariatric clinic on 03/17/2014 at 09:00 AM

Other Instructions Health Care Team

Nursing:

The patient left the hospital: Walking.

COOPER, MICHAEL	Gender: Male	Admit Date: 03/10/2014 18:00
MR# 0029048000123	DOB: 08/22/1979	Discharge Date: 03/12/2014
DR: Webber, James	Age: 34 Y/O	16:40
		Service: IP SURGERY- GI

The patient was accompanied by: Mother.

Medication information sheets were provided for: All discharge medications

On discharge the patient and or family: Verbalized understanding of post-hospital plans.

Copies of discharge instructions given with medication information were provided.

Electronic Signatures:

Webber, James (MD)(signed_03-12-2014 09:39)

Authored: Admission/Discharge Dates, Attending Attestation, Note Finalization

Co-signer: Admission/Discharge Dates, Providers, Discharge Diagnosis/Procedures/Hospital Course/Patient Data, Physical Exam on Day of Discharge, Discharge information /Instructions/Core Measures, Authorship Disclaimer.

Newton, Ellie (PA) (signed_03-12-2014 06:39)

Authored: Admission/Discharge Dates, Providers, Discharge Diagnosis/Procedures/Hospital

Course/Patient Data, Physical Exam on Day of Discharge, Discharge information /Instructions/Core Measures, Authorship Disclaimer

Spear, Tom (Pharmacist) (signed 03-12-2014 04:39)

Authored: Admission/Discharge Dates, Discharge Information/Instructions/Core Measure

Walker, Mary (Registered RN) (signed 03-12-2014 05:39)

Authored: Admission/Discharge Dates, Other instructions-Health care Team

Collected 03/08/2014

Sodium, Plasma	137		[135-145 MEQ/L]
Potassium, Plasma	3.9		[3.3-4.8 MEQ/L]
Chloride, Plasma	102		[101-111 MEQ/L]
CO2, Plasma	31		[25-34 MEQ/L]
Electrolyte Balance	7		[2-12 MEQ/L]
Glucose	150	H	[70-115 MEQ/L]
HGBA1C	6.2%	H	
BUN, Plasma	10		[8-26 MG/DL]
Creatinine, Plasma	0.7		[0.5-1.3 MG/DL]
Calcium, Plasma	8.4		[8.4-10.2 MG/DL]
Phosphorus, Plasma	4.4		[2.5-4.6 MG/DL]
C Reactive Protein, Plasma	0.6		[0-0.7 MG/DL]
Prealbumin	40		[18-45 MG/DL]
Protein, Total Plasma	5.7		[6.1-8.2 G/DL]
Albumin, Plasma	4.9		[3.2-5.5 G/DL]
Bilirubin, Total Plasma	<0.1		[0.0-1.4 MG/DL]
Bilirubin, Direct Plasma	<0.1		[0.0-0.2 MG/DL]
Alkaline Phosphatase, plasma	36		[26-110 IU/L]
AST, Plasma	16		[8-40 IU/L]
ALT, Plasma	15		[0-60 IU/L]
Total Vitamin D	50		[30-150 NG/ML]
White blood cell count	10.0		[4.0-10.5 THOUS/MCL]
RBC	4.80		[3.70-5.00 MILL/MCL]
Hemoglobin	13.5		[11.5-15.0 G/DL]

Collected 03/24/2014

Sodium, Plasma	137	[135-145 MEQ/L]
Potassium, Plasma	3.9	[3.3-4.8 MEQ/L]
Chloride, Plasma	101	[101-111 MEQ/L]
Glucose	110	[70-115 MEQ/L]
BUN, Plasma	10	[8-26 MG/DL]
Creatinine, Plasma	0.7	[0.5-1.3 MG/DL]
C Reactive Protein, Plasma	0.7	[0-0.7 MG/DL]
Prealbumin	18	[18-45 MG/DL]
Protein, Total Plasma	6.2	[6.1-8.2 G/DL]
Albumin, Plasma	3.1	L [3.2-5.5 G/DL]
AST, Plasma	16	[8-40 IU/L]
ALT, Plasma	15	[0-60 IU/L]
Total Vitamin D	45	[30-150 NG/ML]
White blood cell count	9.0	[4.0-10.5 THOUS/MCL]
RBC	4.29	[3.70-5.00 MILL/MCL]
Hemoglobin	12.8	[11.5-15.0 G/DL]
Hematocrit	40.7	[34.0-44.0 %]

SELF-REFLECTION FOR STUDENTS

Because reflective thinking doesn't come naturally for most of us, we need some educational opportunities to help us develop our ability to reflect. The process of reflection involves four components: Description, Analysis, Discovery, and Action.

Use the following questions to write your weekly self-reflection paper. Answer at least two questions from each of the following categories.

DESCRIPTION:

1. At what moment did I feel most engaged with what was happening?
2. What action that anyone took did I find most helpful/affirming, or, puzzling/confusing?
3. Did anything surprise me—my own reactions or something that someone did?
4. Did I have the information or skills needed to deal with this situation?



CRITICAL ANALYSIS

1. What can I learn from this experience?
2. Was I tolerant of divergent views?
3. Was I sensitive to the possibility that I might have biases?
4. Can I handle ambiguity?
5. Am I making it a habit to seek to learn new things?

6. How would I solve this problem?
7. What can I do to change my performance next time?

DISCOVERY

1. What are things I want to improve?
2. Have I discovered something I want to learn more about?
3. What are my goals to improve my performance in the future?

GENERAL QUESTIONS: (answer all the following questions)

1. Did the patient appear receptive to suggestions for modifications in diet?
2. Did the patient understand the explanation provided for the recommendation?
3. Did I have a clear understanding of the medical terminology, labs, studies, and medications?
4. If I could repeat this case, would I do anything differently?

Source: Enhancing Medical Students Education – Student Series, Issue 2. Loma Linda University School of Medicine.

SECTION 2:

Information for the Standardized Patient

Notes: The section will be used by the simulation center to train the Standardized Patient

Dumping Syndrome

Michael Cooper

Presenting Complaint – Nausea, vomiting, and abdominal pain after eating

Patient Name – Michael Cooper

Patient Demographics

Age: Adult

Sex: Male

Race: Any

Height: --

Weight: --

BMI: Overweight

Descriptive Materials

1) Patient's Personal Presentation and Emotional Tone.

- a. Physical appearances:** Casually dressed, looks neat.
- b. Personal presentation Emotional tone:** Patient was worried that he had a complication from the surgery but is relieved that the doctor told him the dietitian can help ease the symptoms. Patient is talkative and likes to joke around, he is interested in listening to what the dietitian has to say, he's blunt and would say whatever is on his mind.
- c. Chief complaint at the time of the visit:** Nausea, vomiting, and abdominal pain after eating.

- d. **The symptoms in detail:** Patient had Roux-En-Y Gastric Bypass Surgery on 03/10/2014 (7 weeks ago). Patient has lost 40 lbs since the surgery and continues to lose weight. Since the surgery and especially last week, since he started adding solid foods to his diet, patient feels very full right after he eats, but he also complains of nausea, vomiting, cramping, abdominal pain, sweating, flushing and rapid heart beat about 30 minutes after eating. However, after about 2 hours, he starts getting anxious, a little confused and hungry. At first he thought that was normal due to surgery and weakness because he doesn't eat much. Patient notices that when he lies down after a meal, he feels like his symptoms get a little better. Since his surgery, patient is determined to lose weight and live a healthy lifestyle. He is convinced that he needs to change his lifestyle. He follows the diet the dietitian prescribed him when he got discharged from the hospital, and he walks everyday for at least 30 minutes (which he never did before). He plans on going to the gym and lifting weights to build muscles as soon as his surgeon allows him to do so. Patient is very happy that his blood sugar is normal now (which was one of his main concerns).
- e. **Date of birth:** 08/22/1979
- f. **Anthropometrics:**
Weight: 94.45 kg today
Height: 5'9"

g. History of the present illness: Patient has been overweight for as far as he can remember (since childhood) and started becoming pre-diabetic one year ago. He presents with history of prediabetes and obstructive sleep apnea.

Diet restriction: Vegetarian diet, no caffeine due to religious beliefs (Seventh-day Adventist).

Diet history: Patient didn't go to nutrition classes before his surgery. He only saw the dietitian at the hospital right after the surgery and she gave him a handout on post-gastric bypass diet.

Patient has been following the required diet:

-First day after surgery, he was on clear liquids with no added sugars (broth, sugar-free popsicles, decaffeinated coffee, sugar free Jell-O).

-When he went home, he started on full liquid diet (skim milk, protein shakes, protein powder, and creamed soups).

- At his 2-week post-op appointment, the physician instructed him to follow a pureed diet for 2 weeks (yogurt, mashed potato, cottage cheese, scrambled eggs).

- For one month, patient was following a soft high protein diet (hard boiled eggs, cheese, yogurt, refried beans, baked potato, tofu, mashed potato, cream of wheat, applesauce, fresh fruit without skin).

- Last week, he followed his surgeon's instructions and started adding solid foods to his diet and his symptoms became worse.

h. Medications:

- Tylenol tablets (crushed) of 1000mg every six hours as needed
 - Multivitamin, chewable twice a day two servings/day or 1 serving specially formulated bariatric supplement
 - Vitamin B12 sublingual B12 lozenges 500 mcg daily
 - Calcium citrate 1500 mg/day, divided doses (~500mg/dose), separate from iron by 2-3 hours - chewable
 - Iron, 30 mg, if not in MVM – chewable
 - Pepcid 10mg chewable tablets twice a day – for heartburn.
 - Actigall 300mg tablet twice a day for six months– to prevent gallstone.
 - Colace – for constipation
- **Typical diet before surgery:** He was eating a lot of junk food. He lives by himself and never cooks; he usually passes by Pizza Hut on his way home from work and brings a vegetarian or cheese pizza home. He generally likes fried foods, juices, and drinks a lot of soda (at least 4 cans a day). He also ate ice cream daily.
 - Now: Patient will report that it takes him about 40 minutes to eat a meal, he gets abdominal discomfort when he eats fast, he also feels exhausted after a meal. Patient will also report that he cannot tolerate rice and pasta too well, he gets discomfort and feeling of fullness right away.
 - His surgeon has instructed him to avoid gum or straws to prevent gas in his stomach. (Patient doesn't know that he needs to avoid carbonated beverages.

24-diet recall:

Meal	Time	Item	Comments will only be answered if the student asked for more details. Patient will not give out the information if not asked
Breakfast	7 am	1 hard-boiled egg	
		1 cup iced tea	Sweetened iced tea
		1 small Strawberry yogurt	Not light yogurt, not Greek yogurt
Snack	9:30 am	1/2 cup grapes	
		1/2 bagel with jam	White bagel
Lunch	11:30 am	1/2 cup Mac and cheese	From box (not home made)- he doesn't know what it's made of, or what it contains
		3/4 cup iced tea	Sweetened iced tea
Snack	2:30 pm	1 small Yogurt	Not light yogurt, not Greek yogurt
		1/4 cup granola	
		1 TBSP honey	
	4:30 pm	1/2 can Sprite	
Dinner	5:00 pm	Veggie burger	Made of soy
		1/2 Burger bun	
		Ketchup	
		3/4 can Sprite	Regular Sprite
Snack	6:30 pm	1 Popsicle	Regular (Not sugar free)
Snack	8:00 pm	1 cup Home-made shake	Frozen strawberries, bananas, grapes, strawberry yogurt and 1 scoop of protein powder from Trader Joes
Snack	10 pm	1/2 White bagel	
		Honey-walnut cream cheese from Panera bread	Not low fat
		1 cup Iced tea	

- **Patient Risk Factors**

- i. **Life style risks:**

Alcohol Use: No

Drug Use: No

Smoker: No

ALLERGIES: none

j. Physical activity: very sedentary; at work, he sits on his desk all day and at home he usually watches TV.

- **Past Medical History**

k. Relevant past medical history: Obesity, pre-diabetes, obstructive sleep apnea.

l. Relevant family medical history:

Mother: Obesity, diabetes, hypertension, hyperlipidemia.

Father: Obesity.

Brother: Obesity and diabetes.

m. Information needed to answer "all" medical questions likely to be asked by the interviewers:

- **Do you have any allergies?** “Not that I know of”
- **Are there any foods you avoid?** Patient jokes saying I follow the “SEE food diet”, I eat everything I see that’s vegetarian.
- **Did you follow any specific diet to lose weight?** “I tried different types of diets throughout the years; I’d lose some but always gain it back”. If student asked what the diets were: Weight Watchers, Atkins diet, cabbage soup diet and, occasionally, just some diet he found online, he would do it for a few days and then stop.

If student asked for details about amount of weight loss, or how long he followed each diet, or what type of foods he ate: he will say he forgot, it was a long time ago.

- **Do you drink any nutrition supplements?** “They told me at the hospital to drink Premier Protein but I didn’t drink it”. “I did not like the taste.” Did you try any other meal replacement shake? “No, I haven’t”
- **Do you take any vitamins?** Multivitamin, Vitamin B12, and Calcium.
- **Do you or anyone else do the food shopping/cooking?** How do you feel about cooking? I don’t mind cooking, but I don’t enjoy cooking for myself only.

- **Psychosocial/Personal History**

- n. **Personal family history:**

Patient lives alone. He is single, never married, doesn’t have a girlfriend at this time. He is hoping once he loses weight, he can start dating again.

Growing up with his family, there was a lot of fatty, fried foods, a lot of junk and sweets. Both his parents and brother are obese and his mother has diabetes. Michael was pre-diabetic prior to the surgery which was one of the main reasons he decided he needed to lose weight and change his lifestyle.

- o. **Educational background and occupational history:**

He studied civil engineering at California State University-Fullerton (CSUF), and then he got a job with his current company as a project manager for a construction company that mainly builds retail centers such

as malls and movie theaters. The nature of his job is very stressful and sedentary. He works from his computer and phone all day long, even when he is home.

- **Expected Sequence of Events:**

1. Student should introduce him/herself, if they don't, the patient will ask who they are.
2. Student is expected to ask about Patient's name and date of birth.
3. If the student asks more than one question at a time, the patient will only answer last question.
4. Patient is Seventh-day Adventist and follows a vegetarian diet.
5. Patient will say he eats small frequent meals as his surgeon encouraged him.
6. Patient will mention that he doesn't drink water at all (he just doesn't like the taste of water), instead, he drinks a lot of juices, ice tea, and soda.
7. Patient will say he started eating a lot of yogurt because of the protein, he never ate yogurt before. (Student is expected to encourage him to avoid the flavored yogurt and read label to make sure low sugar). Patient will ask which brand of yogurt to buy and what to look for when reading labels.
8. If asked about bowel movements: he had regular bowel movements before the surgery, slightly decreased after surgery but still regular.
9. If patient is asked about amount of weight loss, he was about 250 lbs

before surgery, and today he is 210 lbs (40 lbs in 7 weeks). He is very encouraged and happy about the weight loss and his improved blood glucose levels.

10. At the end of the interview, the patient will say he will try to follow the student's recommendation and will be thankful (if the student provided any recommendations).

- **Information the Patient Volunteers:**

1. He will say that when he lies down his symptoms get better, he will ask if it's better to lie down after a meal or not?
2. Can you explain exactly what dumping syndrome is; I don't think I really understand why this is happening, is it because something went wrong with the surgery?
3. He will ask if the student saw his new laboratory results. And will ask how his glucose and protein levels are? Patient will be very happy to hear that his glucose levels are within normal levels, he will say even his sleep apnea improved.
4. The patient will say he has been hearing everyone talking about gluten-free diet lately, that its healthier and helps losing weight. He will ask whether following gluten-free diet is healthier and better for him.
5. At the end, patient will say how he is very determined and excited to change his lifestyle, he will explain how he started walking everyday and he is trying to cook at home to improve his eating habits.

Standardized Patient Assessment Form

Michael Cooper- Dumping Syndrome

Directions – Respond to the following items related to the student’s performance. Check off the category that most closely reflects your feelings.

		Not done (Unacceptable)	Partially done (Acceptable)	Well done	Outstanding
During our interaction, the student:					
1	Introduced self in a professional manner				
2	Made me feel at ease by taking personal interest in me (personal warmth, genuine attitude, went beyond medical issues at hand, conversed about personal background, interest, job, etc.)				
3	Used language that was clearly understandable to me and adapted to my level of understanding (avoid medical terminology, avoid child-like slang)				
4	Made me feel that I could discuss sensitive topics				
5	Gave me opportunity/time to talk (e.g. didn’t interrupt)				
6	Listened/gave me undivided attention (eye contact, non-verbal feedback, verbal acknowledgment)				
7	Made me feel confident that I now have the knowledge I need to make appropriate dietary choices				
8	Provided rationale for the modifications in diet (low-fat and DM specific)				
9	Expressed Empathy (e.g. demonstrated care and concern for me, acknowledged my feelings, expressed understanding of my feelings/ respect for my situation/ willingness to support me)				
10	Closed the interview with: Asking me if I had any further questions or anything he/she can do to help. And referred me to social worker				

Would you recommend this Dietitian to a friend or family member for his/her....

		Not recommend	Recommend with reservation	Recommend	Highly recommend
11	Communication skills				
12	Medical/clinical competence				

Overall, how would you rate this student dietitian's professionalism?

		Not at all professional	Somewhat professional	Professional	Very Professional
13	Professionalism	Most of the following: -Disrespectful -Not compassionate -Not accountable -Not sensitive/ responsive to my needs	A few of the following: -Disrespectful -Not compassionate -Not accountable - Not sensitive/ responsive to my needs	3 of the following: -Respectful -Compassionate -Accountable -Sensitive/ responsive to my needs	All of the following: -Respectful -Compassionate -Accountable -Sensitive/ responsive to my needs

Please provide feedback on your experience with the student. Recommendations to improve the student's clinical and communication skills are appreciated.

Thank you!

SECTION 3:
Information for the Registered Nurse

Patient Name: Michael Cooper or Michelle Cooper (depending on gender of the patient)

Brief information about the patient: the patient had Roux-en-Y gastric bypass surgery 7 weeks ago. He/she has history of obesity, sleep apnea and prediabetes. Since the surgery the patient lost about 40 lbs and his/her blood sugar is normal now. Yesterday when he/she visited the doctor's office and saw you there too, he/she was complaining of nausea, vomiting, and abdominal pain right after eating, and after about 2 hours, he/she starts getting anxious, a little confused and hungry. The doctor diagnosed him/her with dumping syndrome and referred the patient to a dietitian to educate him/her on the appropriate diet to help relieve the symptoms.

Example Scenario:

Student: Hi, my name is I'm the student dietitian. I'm calling regarding the patient (Michael Cooper or Michelle Cooper)

RN: hello, I was expecting your call. I saw the patient yesterday when he/she came to the doctor's office; he/she was really concerned about the symptoms. It seems that he/she is not very familiar with the diet he/she needs to follow. Did you get a chance to discuss the diet?

Student: Yes, it seemed that he/she was very concerned and thought it was a type of complication with the surgery. He/she is definitely not following the appropriate diet, and is not eating the right foods. He/she is eating and drinking a lot of simple sugars like juices and high sugar popsicles and soda which exacerbate the symptoms, I also noticed he/she barely eats any vegetables and drinks a lot of fluids with the meals.

I educated the patient on the appropriate diet, recommended to avoid the simple sugars

and made suggestions for better alternatives.

(Diet for dumping syndrome includes: High protein, moderate fat, small frequent meals, eat complex carbohydrate instead of simple/concentrated sugar, consume adequate amount of water throughout the day and not with meals)

RN: that's great to hear. Do you think he/she was receptive to the information? Or do you think we need to refer him/her to one of our classes and schedule a meeting with you again?

Student: Yes, the patient seemed receptive and excited and ready to make lifestyle changes. I think he will be fine at this point.

RN: I also wanted to mention that the patient asked me yesterday if he/she should follow a gluten-free diet and I wasn't sure what to tell him/her. I told him/her to ask you about it.

Student: Yes, he/she asked me about it today. I discouraged him/her to follow it at this time and recommended to focus on eating a healthy balanced meal *(there is no scientific evidence at this point that proves that gluten free diet is healthier for patient not suffering from gluten sensitivity)*.

RN: I'm glad you got to educate him/her; I will let the doctor know about our conversation.

**Health Care Professional Assessment Form
Registered Nurse (RN)**

Direction: Respond to the following items related to the student's performance. Check off the category that most closely reflects your feelings.

		Not done (Unacceptabl	Partially done (Acceptable)	Well done	Outstanding
During our interaction, the student dietitian:					
1	Introduced self in a professional manner				
2	Identified patient of concern (patient's name)				
3	Appeared knowledgeable about my role as a Registered Nurse.				
4	Appeared confident				
5	Behaved professionally and respectfully				
6	Explained the case and issues in an organized manner				
7	Appeared to understand the patient's case and discussed the case accurately				
8	Actively participated as a team member				
9	Made appropriate recommendations				

		Not recommend	Recommend with reservation	Recommend	Highly recommend
10	Would you recommend this student dietitian to work as part of a multidisciplinary team?				

Please provide feedback on your experience with the student. Recommendations to improve the student's clinical and communication skills are appreciated.

SECTION 4:
Information for the Faculty and Research

Researcher's Assessment Form

Direction: Respond to the following items related to the student's performance. Check off the category that most closely reflects their performance.

		Not done	Partially done	Well done	Outstanding
Patient interaction					
1	Introduced self by name and title (RD)				
2	Asked about patient's name and date of birth				
3	Asked questions to see what the patient understood				
4	Asked one question at a time and no leading questions				
5	Explained dumping syndrome and rationale for dietary recommendations (food dumps too quickly into the small intestine)				
6	Provided clear explanations/information on nutrition management of dumping syndrome (eat small frequent meals, no sugar, high protein (protein w/each meal or snack), avoid juices and soda and sweetened tea, no fluids with meals, avoid refined grains and avoid all starch at this time (and increase water) Increase intake of fruits and vegetables.				
7	Asked about usual intake/or 24-hour dietary recall				
8	Asked about dietary restrictions, food allergies				
9	Asked about weight history				
10	Accepting and non judging and asked questions regarding patient's beliefs if he/she didn't understand a specific area				
11	Explained to the patient what to look at when reading food labels (high fiber, low sugar and protein)				
12	Developed and recommended customized plan based on the patient's lifestyle and needs (Vegetarian diet)				
13	Answered all the patient's questions - What type of yogurt is better - If lying down after a meal is better				
14	Answered patient's question on gluten-free diet and discouraged him from doing so, due to low fiber content, and no scientific evidence suggesting gluten-free diet for weight loss				
15	Overall professional manner				

Please write any comments on your interaction with this student, and list any recommendations you may have to improve the student's clinical and communication skills

Grading Criteria

Grading criteria is entered to the system with the checklist. **The score of this evaluation can range from 0 to 114 points.**

1. Interaction skills evaluated by SP (36 points):

This will be found under Standardized patient form (to be filled out by the “patient”): this part consists of 11 questions. From question 1 to 10: Outstanding performance will count for 3 points, well-done will count for 2 points, partially done (acceptable) will count for 1 point, and not done (unacceptable) will count for 0 points.

Question 11, which tests the overall professional skills will count as the following: Very professional: 6 points, Professional, 4 points, somewhat professional 2 points, and not professional 0.

The highest score that can be achieved on this section is 36. Students scoring less than 12 will be required to remediate.

2. Interaction skills evaluated by researcher (45 points):

This will be found under researcher’s assessment form Patient Interaction: this part consists of 15 questions. From question 1 to 15: Outstanding performance will count for 3 points, well-done will count for 2 points, partially done (acceptable) will count for 1 point, and not done (unacceptable) will count for 0 points.

The highest score that can be achieved on this section is 45. Students scoring less than 15 will be required to remediate.

3. Communication with healthcare professional (33 points):

This can be found under healthcare professional assessment forms: this part consists of 10 questions. From questions 1 to 9: Outstanding performance will count for 3 points, well-done will count for 2 points, Partially done (acceptable) will count for 1 point, and not done (unacceptable) will count for 0 points.

As for question 10: highly recommend will count for 6 points, recommend for 4 points, recommend with reservation 2 points, and not recommend 0 points.

Highest score that can be achieved on this section is 33. Students scoring lower than 10 will need to remediate to improve their interprofessional skills.

Debriefing Questions

1. Why did the patient present to the hospital? What was she complaining of? What is the pertinent PMH/PSH? What work-up was done (labs, studies), what medications is she on at home?
2. Labs: which labs did you notice changed, why did it change? What are the causes of low albumin and prealbumin, and which one would you prefer?
3. Why was the patient referred to you?
4. What was the patient's weight and height? What would you use to calculate estimated needs? How much weight did he lose?
5. How was the patient's appetite? Does he avoid any specific food for religious reasons or personal dislike? How long does it take him to eat? Does any kind of food cause him discomfort?
6. What were the types of foods the patient mentioned in the 24-hour diet recall? Are these contributing to her current medical issues? What was the diet he followed since the surgery?

Page 12: started with clear liquid at hospital

After discharge, for 1 week: full liquid diet

1 week post-op for 1 month: soft high protein diet

1 month post-op: start adding solid foods (once stapled areas healed)

7. By looking at the diet, what type of dietary changes did you recommend to improve his symptoms?
8. What diet information did you provide? Did the patient appear receptive to

suggestions for modifications in diet?

9. Can someone explain the correlation between Dumping syndrome and a low concentrated sweets and carbohydrates? (Include in your answer what types of foods should be avoided).
10. How did you explain what dumping syndrome was? (Avoid medical jargon)
11. Did the patient have any questions?
 - Which kind of yogurt to buy, choose high protein, low sugar
 - Whether lying down after a meal helps improve symptoms and
 - Gluten-free diet:
12. What's the most appropriate nutrition diagnosis?
13. How did your interaction go with the RN? Did he/she ask anything? How did the interaction make you feel?
14. What part of this case was challenging?
15. What did you learn from this case?
16. What would you do differently if you had to do it over again?
17. Discuss important findings from the journal articles you have read.

CASE TWO

Patient Name – Josephine Smith
Cancer and Anemia

Clinical Consultant – Dottie Gibson, RD, CNSD,

Pam Short, RD, CNSC.

Speech and Language Pathology Consultant - Christina Bratlund, Ph.D., CCC-SLP

Case Author - Elaf Farahat, Ph.D.(c), MS, RD

Patient Interaction Setting – Outpatient clinic setting, 20 minutes history taking and education.

Case Primary Objectives:

- 3) Assess nutritional needs for patient with cancer
- 4) Identify patient's history, paying close attention to factors related to oral intake and anemia, and ongoing swallowing disorders.
- 5) Address poor appetite and use motivational interviewing to optimize oral intake
- 6) Deliver science-based answers to patient's questions regarding diet and nutrition trends (i.e gluten-free diet)

Case Secondary Objectives:

- 4) Identify patient's religious and cultural food practices
- 5) Refer patient to Speech and Language Pathologist

SECTION 1:
Information for the Nutrition Students

Instructions to the Student:

Setting: Walk-In Clinic

Reason for Consult: Mrs. Smith was discharged from the hospital a few days ago with stage III lung cancer, currently undergoing chemotherapy. Recent lab work significant for a low hemoglobin level, diagnosed with iron-deficiency anemia. She would like diet education regarding iron rich foods. Please assess patient and educate her on an appropriate diet.

You have 20 minutes to obtain patient's history and make appropriate dietary recommendations. View attached chart for additional information.

SMITH, JOSEPHINE	Gender: female	Admit Date: 04/28/2014 18:00
MR# 00290480003	DOB: / /	Discharge Date: 05/01/2014 16:40
DR: Richards, William	Age: YO	Service: OP- Oncology

HISTORY AND PHYSICAL

Josephine Smith, a 63-year-old female, has been admitted with diagnosis of anemia.

Source/Reliability: Patient average and chart review average.

Chief Complaint: Fatigue, SOB on exertion, and lower extremity edema

History of Present Illness:

63-year old female with lung cancer on GemCarbo, has just started cycle #3 of chemotherapy early this week. Her first chemotherapy cycle started early March. She has had history of bilateral DVT and pulmonary embolism; Coumadin was discontinued two weeks ago. No bleeding. She has been anemic likely due to cancer since diagnosis and refuses blood transfusion due to religious beliefs. She was also on Lasix but discontinued 2 weeks ago. Patient presented to clinic today with dyspnea on exertion, fatigue, weakness, and mild lower extremity edema. Patient afebrile, positive for chills, cough, chest pain, lightheadedness. Found to have hemoglobin of 5.9.

Allergies:

Lipitor (Atorvastatin) - Comment: Myalgia

Simvastatin - Comment: Myalgia

Medications (prior to admission):

Outpatient prescriptions marked as taking for the 10/11/13 encounter (Hospital Encounter):

Ferrous Sulfate 325 mg	Take 1 tablet by mouth three times daily
Atenolol (TENORMIN) 25 mg Oral Tab	Take 1 tablet by mouth twice per day for high blood pressure
Ritalin (Methylphenidate Hcl) 5 mg Oral Tab	Take 1 tablet by mouth daily
Concerta 54 mg Oral TR24 SR TAB	Take 1 tablet by mouth daily
Ondansetron (ZOFTRAN) 8 mg Oral Tab	Take 1 tablet by mouth every 8 hours as needed for nausea/vomiting
Lysine (L-LYSINE) 500 mg Oral Tab	None Entered
Omeprazole (PRILOSEC) 20 mg Oral CPDR SR Cap	Take 1 capsule by mouth daily 30 minutes before breakfast
Docosate Sodium (COLACE) 100 mg Oral Cap	1 cap PO BID as needed for constipation
Albuterol (PROAIR HFA) 90 mcg/actuation Inhl HFAA	Shake well and inhale 2 puffs orally every 6 hours as needed for shortness of breath

Cholecalciferol, Vitamin D3, (VITAMIN D3) 2,000 unit Oral Tab 1 tab orally daily

Past Medical History

Diagnosis	Date
• SCREENING COLONOSCOPY.	1/16/2009
• ADHD, INATTENTIVE	3/25/2006
• ASTHMA, MILD INTERMITTENT.	6/27/2013
<i>PFT 6/14/13 with mild airflow obstruction, improvement after bronchodilator administration.</i>	
• LUNG MASS	7/17/2013
• PULMONARY EMBOLISM	7/17/2013
• DEEP VEIN THROMBOSIS	7/17/2013
• IRON DEFICIENCY ANEMIA	7/12/2013
• CHRONIC KIDNEY DISEASE, STAGE 3, MOD DECREASED GFR	7/12/2011

Procedure	Date
• Lumpectomy of breast	2004
• Removal of ovarian cyst	2006

Social History

- Marital Status: Married
- Spouse Name: No social history on file
- Number of Children: No social history on file
- Years of Education: No social history on file

Problem	Relation
• Colon Cancer	Brother
• Lung Cancer	Father
• Hypertension	Mother
• Hyperlipidemia	Mother
• Alzheimer's Disease	Mother
• Prostate Cancer	Father

Social History:

- Smoking status: Never Smoked
- Smokeless tobacco: Never Used

- Alcohol Use: No
- Drug Use: No
- Sexually Active: No social history on file

Review of Systems:

Fatigue, SOB on exertion, coughing, weakness and leg swelling.

Physical Exam:

HEENT: NC/at, anicteric sclerae, pale conjunctivae.

Neck: No jvd, no lymphadenopathy.

Lungs: Clear to auscultation bilaterally, no crackles/rales.

CVS: S1S2 heard.

Abd: Soft, non-tender, + bowel sounds, no organomegaly.

Ext: Bilateral lower leg edema

Patient Vitals for the past 24 hrs:

Height: 165.1 cm (05/11/2014)

Date	Weight
05/11/14	145.0 lbs
05/10/14	150.1 lbs
02/20/14	148.5 lbs
12/04/2013	151.1 lbs
12/02/2013	150.7 lbs
08/7/2013	160.2 lbs
07/30/2013	155.9 lbs
01/08/2013	160.0 lbs

Recent Labs

	05/10/14
	1956
Na	135
K	3.4
Cl	105
CO2	27
BUN	22*

Cr	1.4*
GFR	43
PO4	2.5
ALT	45
AST	43
TBili	0.7
WBC	11.4*
Hgb	5.9*
Hct	17.8*
Plt	796*
Albumin	1.8*
Prealbumin	9.3*

* Indicates abnormal range

Principal Problem:

ANEMIA DUE TO ANTINEOPLASTIC DRUG

Recommendation/Plan:

- Consult dietitian to assess patient and educate on appropriate diet

Discharge tomorrow if labs improved to WNL.

Electronically signed by:

WILLIAM RICHARDS MD

05/10/2014

10:45 PM

SELF-REFLECTION FOR STUDENTS

Because reflective thinking doesn't come naturally for most of us, we need some educational opportunities to help us develop our ability to reflect. The process of reflection involves four components: Description, Analysis, Discovery, and Action.

Use the following questions to write your weekly self-reflection paper. Answer at least two questions from the first three categories.

DESCRIPTION:

5. At what moment did I feel most engaged with what was happening?
6. What action that anyone took did I find most helpful/affirming, or, puzzling/confusing?
7. Did anything surprise me—my own reactions or something that someone did?
8. Did I have the information or skills needed to deal with this situation?



CRITICAL ANALYSIS

8. What can I learn from this experience?
9. Was I tolerant of divergent views?
10. Was I sensitive to the possibility that I might have biases?
11. Can I handle ambiguity?
12. Am I making it a habit to seek learning new things?
13. How would I solve this problem?

14. What can I do to change my performance next time?

DISCOVERY

4. What are things I want to improve?
5. Have I discovered something I want to learn more about?
6. What are my goals to improve my performance in the future?

GENERAL QUESTIONS: (answer all the following questions)

5. Did the patient appear receptive to suggestions for modifications in diet?
6. Did the patient understand the explanation provided for the recommendation?
7. Did I have a clear understanding of the medical terminology, labs, studies, and medications?
8. If I could repeat this case, would I do anything differently?

Source: Enhancing Medical Students Education – Student Series, Issue 2. Loma Linda University School of Medicine

SECTION 2:

Information for the Standardized Patient

Notes: The section will be used by the simulation center to train the Standardized Patient

Cancer and Anemia

Josephine Smith

Presenting Complaint – Fatigue, shortness of breath on exertion, and lower extremity edema.

Patient Name – Josephine Smith

Patient Demographics

Age: Older adult

Sex: Female

Race: Any

Height: --

Weight: --

BMI: Normal-overweight

Descriptive Materials

1) Patient's Personal Presentation and Emotional Tone.

- a. **Physical appearances:** Neatly dressed, wearing scarf because of hair loss from chemotherapy, she appears tired and exhausted.
- b. **Personal presentation:** Weak and tired, talks slowly.
- c. **Interaction style:** She talks slowly due to physical weakness and fatigue, coughs every now and then.
- d. **Emotional tone:** a little down and upset that she isn't getting better and feels like she keeps developing new medical problems.
- e. **Chief complaint at the time of the visit:** Fatigue, weakness, poor

appetite and difficulty swallowing and nausea.

f. **The symptoms in detail:** Mrs. Smith complains of poor appetite since 7/2013 when she was diagnosed with lung cancer and started chemotherapy. She complains of poor appetite, minimal oral intake. Her clothes feel loose fitting, edema is mainly in lower extremities. Her weight before she was diagnosed with cancer was 160 lbs. She was also diagnosed with anemia last July. Pt was noncompliant with Fe supplements due to constipation.

g. **History of the present illness:** 63-year-old female with lung cancer on GemCarbo. Patient just started cycle #3 of chemotherapy last week. History of bilateral lower extremity DVT and pulmonary embolism on Coumadin. No bleeding. She has been anemic likely due to cancer therapy since diagnosis and refused blood transfusion due to her religious beliefs (Jehovah's Witnesses). Patient was also on Lasix but discontinued 2 weeks ago. She came into clinic with dyspnea on exertion, cough, fatigue, and weakness. Bilateral legs swollen. No fever, chills, chest pain, lightheadedness; her labs were drawn and found to have a hemoglobin of 5.9.

Medications:

Ferrous Sulfate 325 mg	Take 1 tables by mouth three times daily
Atenolol (TENORMIN) 25 mg Oral Tab	Take 1 tablet by mouth twice per day for high blood pressure
Ritalin 5 mg Oral Tab	Take 1 tablet by mouth daily

Concerta 54 mg Oral TR24 SR TAB	Take 1 tablet by mouth daily
Ondansetron (ZOFTRAN) 8 mg Oral Tab	Take 1 tablet by mouth every 8 hours as needed for nausea/vomiting
Lysine (L-LYSINE) 500 mg Oral Tab	None Entered
Omeprazole (PRILOSEC) 20 mg Oral CPDR SR Cap	Take 1 capsule by mouth daily 30 minutes before breakfast
Docusate Sodium (COLACE) 100 mg Oral Cap	1 CAP PO BID AS NEEDED
Albuterol (PROAIR HFA) 90 mcg/actuation Inhl HFAA	Shake well and inhale 2 puffs orally every 6 hours as needed for shortness of breath
Cholecalciferol, Vitamin D3, (VITAMIN D3) 2,000 unit Oral Tab	1 tab PO daily

Diet history:

Usual diet prior to hospital admission: Avoids green leafy vegetables due to history of taking Coumadin, poor appetite, drinks a lot of milk and tea (which reduce iron absorption).

- Patient avoids eating fruits, like apples, and salad because she has a hard time swallowing, she eats very well cooked vegetables, like broccoli and baby carrots, and vegetable soup because it goes down easier and faster.

Patient notes that it's taking her longer to eat, even though her new dentures fit well.

24-hour dietary recall:

Breakfast: ½ of a 2-egg-omelet with cheese, spinach and mushrooms

1-cup milk with

1- cup coffee

Lunch: Salad with Ranch dressing

1/2 Chicken breast

½ Potato

2 cups black tea

Dinner: 1/2 cup cream of broccoli soup

5 wheat crackers

2) Patient Risk Factors

a. Life style risks

- Smoking status: Never Smoked
- Smokeless tobacco: Never Used
- Alcohol Use: No
- Drug Use: No

b. **Physical activity:** limited physical activity since diagnosis with cancer.

3) Past Medical History

a. Relevant past medical history:

SCREENING COLONOSCOPY. 1/16/2009

ADHD, INATTENTIVE	
ASTHMA, MILD INTERMITTENT.	6/27/2013
LUNG MASS	7/17/2013
PULMONARY EMBOLISM	7/17/2013
IRON DEFICIENCY ANEMIA	7/12/2013
CHRONIC KIDNEY DISEASE,	7/12/2011
STAGE 3, MOD DECREASED GFR	

Surgical History:

Lumpectomy of breast	2004
----------------------	------

right-benign

Removal of ovarian cyst

b. Relevant family medical history.

Problem	Relation
Colon Cancer	Brother
Hypertension	Mother
Hyperlipidemia	Mother
Alzheimer's Disease	Mother
Prostate Cancer	Father

Information needed to answer "all" medical questions likely to be asked by the interviewers.

1. **Do you have any allergies?** “ No, I’m not allergic to any kind of food”
2. **Are there any foods you avoid?** “I used to avoid green leafy vegetables when I was taking Coumadin, but I got used to not eating any, even now that I’m off Coumadin”.
3. **Do you drink any nutrition supplements?** “No, I couldn’t decide which one is best for me. Can you recommend one for me?”
4. **Do you take any vitamins or supplements?** I take vitamin D, and Lysine (if asked why she is taking Lysine, patient will answer because I was told that it can treat cancer). I am supposed to take iron, but I don’t like to because it causes constipation.

4) Psychosocial/Personal History

a. Personal family history:

Patient is married, lives with her husband. They have one daughter who is married and lives close by.

b. Educational background and occupational history:

After graduating high school, she enrolled in cosmetology school. She was working as a hair stylist in a salon, but she stopped 10 years ago. She enjoys community events and meeting up with her friends, taking care of her granddaughter.

5) Expected Sequence of Events:

1. Student should introduce him/herself, if they don't, the patient will ask who they are.
2. Student is expected to ask about patient's name and date of birth.
3. Patient will say that she doesn't eat green leafy vegetables because she wasn't allowed when she was on Coumadin, and although she stopped taking it about a year ago, she already got used to the dietary restrictions.
4. Patient is Jehovah's Witness and refuses blood transfusion. Patient will get really offended if the student tries to discuss it with her.¹
5. If patient was asked why she doesn't take iron supplementation regularly, she will say because it causes constipation. Student is expected to educate her on ways to prevent constipation (mention high fiber foods, discuss ways to incorporate it to her diet, encourage to increase fluid intake).
6. Patient will ask about dietary sources of iron.
7. Patient will say she doesn't want to lose any weight anymore "What can I do to keep my weight on?"
8. If patient was educated on iron foods, she will ask if there is a difference between animal and plant iron sources.
9. Student is expected to educate patient on nutrition supplementation and encourage her to drink any supplementation that she likes.²
10. If student asks about appetite stimulants, she will say she never tried but is willing to try, student may say she will discuss it with the patient's MD.³
11. Patient will ask about natural treatments for nausea and constipation.

- 12.** Patient will say, “I have been constantly hearing that Juicing fruits and vegetables is healthier, is that true? Would I get more vitamins and fiber?”
Student should discourage patient from juicing all the fruits and vegetables and should also encourage her to follow up with her MD and consider if needs to be on Neutropenic diet (most fresh fruits and vegetables may not be allowed)
- 13.** If the student asks more than one question at a time, the patient will only answer last question.
- 14.** At the conclusion of the interview, the patient will thank the student for their time and recommendations.

Standardized Patient Assessment Form

Josephine Smith- Cancer & Anemia

Directions – Respond to the following items related to the student’s performance. Check off the category that most closely reflects your feelings.

		Not done (Unacceptable)	Partially done (Acceptable)	Well done	Outstanding
During our interaction, the student:					
1	Introduced self in a professional manner				
2	Made me feel at ease by taking personal interest in me (personal warmth, genuine attitude, went beyond medical issues at hand, conversed about personal background, interest, job, etc.)				
3	Used language that was clearly understandable to me and adapted to my level of understanding (avoid medical terminology, avoid child-like slang)				
4	Made me feel that I could discuss sensitive topics				
5	Gave me opportunity/time to talk (e.g. didn’t interrupt)				
6	Listened/gave me undivided attention (eye contact, non-verbal feedback, verbal acknowledgment)				
7	Made me feel confident that I now have the knowledge I need to make appropriate dietary choices				
8	Explained rationale for my specific diet needs (Iron helps carry oxygen throughout the body, low iron causes fatigue, high iron foods and supplements can help. Iron supplements commonly cause constipation, therefore, high fiber foods, water, increasing physical activity can help)				
9	Expressed Empathy (e.g. demonstrated care and concern for me, acknowledged me feelings, expressed understanding of my feelings/ respect for my situation/ willingness to support me)				
8	Closed the interview with: Asking me if I had any further questions or anything he/she can do to help. And referred me to Speech Therapist				

Would you recommend this Dietitian to a friend or family member for his/her....

		Not recommend	Recommend with reservation	Recommend	Highly recommend
9	Communication skills				
10	Medical/clinical competence				

Overall, how would you rate this student dietitian's professionalism?

		Not at all professional	Somewhat professional	Professional	Very Professional
11	Professionalism	Most of the following: -Disrespectful -Not compassionate -Not accountable -Not sensitive/responsive to my needs	A few of the following: -Disrespectful -Not compassionate -Not accountable - Not sensitive/responsive to my needs	3 of the following: -Respectful -Compassionate -Accountable -Sensitive/responsive to my needs	All of the following: -Respectful -Compassionate -Accountable -Sensitive/responsive to my needs

Please provide feedback on your experience with the student. Recommendations to improve the student's clinical and communication skills are appreciated.

Thank you!

SECTION 3:
Information for the Speech and Language Pathologist

Information for the volunteer Speech and Language Pathologist (SLP):

1. The student is expected to introduce him/herself in a professional manner.
2. The student is expected to give a brief description on the patient's case and why she needs to be referred to a SLP. The student should explain that patient has been having difficulty swallowing for the past few months, which has been affecting her fiber intake and quality of food.
3. The SLP will explain to the nutrition student the process of deconditioning and how it affects chewing and swallowing and will make recommendations.
4. At the end of the conversation, the SLP will thank the nutrition student for referring the patient to him/her.

**Health Care Professional's Assessment Form
Speech and Language Pathologist**

Direction: Respond to the following items related to the student's performance. Check off the category that most closely reflects your feelings.

		Not done (Unacceptabl	Partially done (Acceptable)	Well done	Outstanding
During our interaction, the student dietitian:					
1	Introduced self in a professional manner				
2	Identified patient of concern (patient's name)				
3	Appeared knowledgeable about my role as a Speech and Language Pathologist				
4	Appeared confident				
5	Behaved professionally and respectfully				
6	Explained the case and issues in an organized manner				
7	Appeared to understand the patient's case and discussed the case accurately				
8	Actively participated as a team member				
9	Made appropriate recommendations				

		Not recommend	Recommend with reservation	Recommend	Highly recommend
10	Would you recommend this student dietitian to work as part of a multidisciplinary team?				

Please provide feedback on your experience with the student. Recommendations to improve the student's clinical and communication skills are appreciated.

SECTION 4:
Information for the Faculty and Researcher

Researcher's Assessment Form

Direction: Respond to the following items related to the student's performance. Check off the category that most closely reflects their performance.

		Not done	Partially done	Well done	Outstanding
Patient interaction					
14	Introduced self by name and title (RD)				
15	Asked about patient's name and date of birth				
16	Asked questions to see what the patient understood				
17	Asked one question at a time and no leading questions				
18	Provided clear explanations/information on nutrition management of cancer (small frequent meals, variety of foods, low fat foods, whole grains, overall healthy diet)				
19	Provided clear explanations/information on nutrition management of anemia (discussed heme vs. non heme iron, discussed dietary iron sources, encouraged to take iron supplements regularly, limit caffeine with meals, use citrus/lemon/vitamin C to improve absorption, consume green leafy vegetables)				
20	Provided clear explanations/information on nutrition management of constipation				
21	Asked about usual intake/or 24-hour dietary recall				
22	Asked about dietary restrictions, food allergies				
23	Asked about weight history				
24	Made suggestions for nutrition supplementation such as Ensure or Boost and encouraged patient to drinks it to meet estimated needs				
25	Asked questions in a non-judgmental tone regarding patient's cultural and dietary beliefs				
26	Answered patient's question on juicing in a professional manner, discouraged her from juicing all her fruits & vegetables because of the loss of fiber & vitamins.				
27	Answered all the patient's questions 1. Iron from plan vs. animal sources 2. Discussed natural sources of iron 3. Made suggestions for constipation management				

	4. Made recommendation to prevent weight loss 5. Made suggestions for nausea management				
28	Overall professional manner				

Please write any comments on your interaction with this student, and list any recommendations you may have to improve the student's clinical and communication skills

Grading Criteria

The score of this evaluation can range from 0 to 117 points.

1. Interaction skills evaluated by SP (36 points):

This will be found under Standardized patient form (to be filled out by the “patient”): this part consists of 11 questions. From question 1 to 10: Outstanding performance will count for 3 points, well-done will count for 2 points, partially done (acceptable) will count for 1 point, and not done (unacceptable) will count for 0 points.

Question 11, which tests the overall professional skills will count as the following: Very professional: 6 points, Professional, 4 points, somewhat professional 2 points, and not professional 0.

The highest score that can be achieved on this section is 36. Students scoring less than 12 will be required to remediate.

2. Interaction skills evaluated by researcher (48 points):

This will be found under researcher’s assessment form Patient Interaction: this part consists of 16 questions. From question 1 to 16: Outstanding performance will count for 3 points, well-done will count for 2 points, partially done (acceptable) will count for 1 point, and not done (unacceptable) will count for 0 points.

The highest score that can be achieved on this section is 48. Students scoring less than 16 will be required to remediate.

3. Communication with healthcare professional (33 points):

This can be found under healthcare professional assessment forms: this part consists of 10 questions. From questions 1 to 9: Outstanding performance will count for 3 points, well-done will count for 2 points, partially done (acceptable) will count for 1 point, and not done (unacceptable) will count for 0 points.

As for question 9: highly recommend will count for 6 points, recommend for 4 points, recommend with reservation 2 points, and not recommend 0 points.

Highest score that can be achieved on this section is 33. Students scoring lower than 10 will need to remediate to improve their interprofessional skills.

Debriefing Questions

Lets start by discussion the patient's chart.

1. What's the patient's medical history?
2. What was her chief complaint (based on the chart)?
3. What nutrition related medication is she taking at home?
4. What were the most important labs you noticed?
 - a. Patient's weight and height? Weight changes? What weight would you use to calculate estimated needs (actual weight, IBW, adjusted weight)?
5. How was the patient's appetite?
6. Did she/he have any difficulties chewing or swallowing? Has she seen SLP before?
7. What were the types of foods the patient mentioned in the 24-hour diet recall? Are these contributing to her current medical issues? How does patient's diet affect her iron absorption? (Tea and calcium reduce iron absorption).
8. When did the patient take her iron supplements? With her milk
9. Did the patient have any dietary restrictions? Did anyone ask patient about his food beliefs/religious values affecting his diet?
10. What diet information did you provide? Did the patient appear receptive to suggestions for modifications in diet? (Anemia education, constipation, nausea management- include types of foods)
11. Did the patient have any questions about her diet? (Juicing, nutrition supplementation) what did you recommend? (Consider Neutropenic diet)
12. What's the most appropriate nutrition diagnosis?

13. How much calories and protein would you recommend?
14. How did your conversation go with the speech therapist, how did you feel about it?
What did you tell the SLP?
15. What areas did you find most challenging?
16. What did you learn from this case?
17. What will you do differently next time?
18. Discuss findings from the journal article you have read. What's your opinion on juicing?

CASE THREE

Patient Name – Sarah Baker

Cholelithiasis and pre-DM

Social Work Consultant - G. Victoria Jackson, EdD, EdS, MSW, LCSW

Nutrition Consultants- Pam Short, RD, CNSC,

Dottie Gibson, RD, CNSD

Case Author – Elaf Farahat, PhD(c), MS, RD

Patient Interaction Setting– (5/15/2014) 6th week of DTCS 343 course. Outpatient clinic setting, 20 minutes history taking and education.

Case Primary Objectives:

- 1) Assess nutritional status and needs for obese patient.
- 2) Review patient's medical history, focusing on modifications in diet related to cholelithiasis, risk of developing DM, and financial hardship.
- 3) Identify religious and cultural food practices.
- 4) Educate patient on diet related to symptomatic cholelithiasis and uncontrolled blood sugars.

Case Secondary Objectives:

- 1) Refer clients and patients to other professionals (social worker) when needs are beyond individual scope of practice.

SECTION 1:
Information for the Nutrition Student

Instructions to the student:

Setting: Walk-In Clinic

You have received a consult from a patient's physician for a diet education.

Patient with recently diagnosed cholelithiasis and concern for pre-diabetes.

Review the patient's information, interview the patient, and assess the patient's nutrition goals/requirements.

Provide the patient with education regarding the appropriate diet (including rationale for diet).

You have 20 minutes to obtain patient's history and make appropriate dietary recommendations. View attached chart for additional information.

Baker, Sarah	Gender: Female	Admit Date: 05/11/2014 2:00
MR# 00290480003	DOB:	Discharge Date: 05/11/2014
Dr: Michael Thomson (M.D.)	01/05/1948	16:40
	Age: 66 y/o	Service: OP, GI

INTERNAL MEDICINE HISTORY AND PHYSICAL

Date of Admission: 05/11/2014

Admitted from: Emergency Department

CHIEF COMPLAINT: Abdominal pain, nausea and vomiting.

HPI: Sarah Baker is a 66-year-old female with hypertension, asthma/COPD on home oxygen at night, history of chronic back pain due to severe degenerative changes. Her son brought her to the Emergency Room (ER) because of nausea, vomiting 4 x last night and abdominal pain. No appetite for the past several days. Emesis 4x last night that was black but possibly dark green. Last bowel movement this morning: loose and light brown. Patient states she has severe abdominal pain for 2-3 months. She denies chest pain; c/o intermittent SOB due to asthma/COPD. At home she is on oxygen as needed. She has severe lower back pain. Complains of insomnia and states that the medication does not help. She denies dysuria or change in the volume of her urine.

She lives alone. She was working a full time job as a teacher, however recently unemployed. She has a son that lives across the town.

ROS: 10 point system review is negative, except for POSITIVES marked below with (+):
 Fever, weight loss, vision changes, hearing changes, chest pain, shortness of breath, cough, +abdominal pain, +nausea, +vomiting, diarrhea, BRBPR, melena, dysuria, hematuria, joint pain, muscle pain, skin rash, or neurologic complaint.

PMH:

Diagnosis	Date
ASTHMA w/COPD –	6/8/2004
Breast cancer-	8/12/2003
HTN –	9/18/2013

PSH:

Colonoscopy with biopsy	7/31/2012
Colonoscopy with removal of lesion	7/31/2012
Breast lumpectomy, bilateral	10/2/2003
Open ventral hernia repair	7/31/2012
Breast implant, bilateral	2/11/2008

Family History

Problem	Relation
----------------	-----------------

- Uterine Cancer
- Breast Cancer
- Lung Cancer
- DM

Mother
Sister
Father
Mother and Father

History:

Former smoker
Quit date: 01/01/1992
Alcohol Use: No
Drug Use: No

Most Recent Immunizations

<u>Administered Date(s)</u>	<u>Administered</u>
INFs (Influenza split virus).	10/19/2012
PNUcn (Pneumococcal conjugate, pneumonia)	01/12/2010
PNUps (Pneumococcal polysaccharide, pneumonia)	01/09/2012
Td 7yrs-adult (Tetanus, diphtheria)	08/04/2006
Tdap (ADACEL) (Tetanus, diphtheria, acellular pertussis)	06/17/2011
INFs 4yrs and over (FLUVIRIN) (Influenza)	09/10/2013

Medications:

Metronidazole (FLAGYL) 500 mg Oral Tab	1 tab PO three times per day for 14 days
Tiotropium (SPIRIVA) 18 mcg Inhl Cap w/device	Inhale contents of 1 cap PO daily. Take 2 inhalations from the same capsule to get full dose.
Metoprolol Tartrate (LOPRESSOR) 25 mg Oral Tab	Take one-half tablet orally twice a day hold it if your pulse is less than 60
Beclomethasone Dipropionate (QVAR) 80 mcg/actuation Inhl Aero	Inhale 2 puffs orally 2 times daily- rinse mouth after using.
Lisinopril (PRINIVIL/ZESTRIL) 10 mg Oral Tab	Take 1 tablet by mouth daily
Hydrocodone-Acetaminophen (NORCO) 10-325 mg Oral Tab	1 tablet every 6 hours as needed
Rosuvastatin (CRESTOR) 40 mg Oral Tab	1/2 tablet daily

Venlafaxine (EFFEXOR) 37.5 mg Oral Tab Take 1 tablet by mouth 2 times a day

Albuterol (PROAIR HFA) 90 mcg/actuation Inhl HFAA Shake well and inhale 2 puffs orally every 6 hours as needed for shortness of breath

LORazepam (ATIVAN) 0.5 mg Oral Tab 1 tab PO at bedtime for insomnia

Prednisone (DELTASONE) 40 mg orally Take 1 tablet every 12 hours for every 12 hours

Physical Examination

O: BP 109/48 | Pulse 81 | Temp (Src) 98.6 °F (37 °C) | Resp 15 | Wt 79.2 kg (174 lb 9.7 oz).

| Ht 1.626 m (5' 4") | SpO2 96%

General: No apparent distress.

Eyes: Pupils equal, round, reactive to light, conjunctivae anicteric, normal lids.

Ear, Nose, Mouth, & Throat: Inspection of nasal mucosa, septum and turbinate without drainage or mucus, oral mucosa is wet, tonsil without exudate.

Neck: Trachea midline, supple, no thyromegaly.

Respiratory: Inspiratory wheezing. Normal respiratory effort.

Cardiovascular: Regular rate and rhythm. No murmurs, rubs, or gallops. No pedal edema.

Abd: Soft, very tender

GU: Not indicated

Rectal: Guaiac test negative per ER physician

Skin: Warm, dry, no rashes.

Musculoskeletal: No clubbing or cyanosis. Tenderness on lower back

Psychiatric: Normal affect and mood. Oriented 3 x.

CT abdomen on 04/26/2014 found Cholelithiasis.

Blood collected 05/11/14

Sodium	137		[135-145 mEq/dL]
Potassium	3.9		[3.3-4.8 mEq/dL]
Chloride	101		[101-111 mEq/dL]
CO2	31		[25-34 mEq/dL]
Glucose	125		[70-115 mEq/dL]
BUN	25		[8-26 mg/dL]
Creatinine	1.2		[0.5-1.3 mg/dL]
Calcium	8.4		[8.4-10.2 mg/dL]
Phosphorus	4.5		[2.5-4.6 mg/dL]
C Reactive Protein	13.6	H	[0-0.7 mg/dL]
Prealbumin	9.8	L	[18-45 mg/dL]
Albumin	2.4	L	[3.2-5.5 G/DL]
Protein	5.7	L	[6.1-8.2 G/DL]
Cholesterol	235	H	[<200 mg/dL]
Triglyceride	194		[<150 mg/dL] Borderline high: 150-199 mg/dL High 200-499 mg/dL
HDL	45		[>35 mg/dL]
LDL	75		[65-180 mg/dL]
CHOL/HDL	5.2		[1-6]
HGBA1C	6.4	H	<5.4 - Normal, 5.5- 6.4 – High risk
Total Vitamin D	23	L	[30-150 ng/mL]
WBC	14.7	H	[4.0-10.5 THOUS/MCL]
RBC	2.59	L	[3.70-5.00 MILL/MCL]

Hemoglobin	15.0		[11.5-15.0 g/dL]
Hematocrit	44		[34.0-44.0 %]
Bilirubin, Total Plasma	0.6		[0.0-1.4 mg/dL]
Bilirubin, Direct Plasma	0.2		[0.0-0.2 mg/dL]
Alkaline Phosphatase, plasma	120	H	[26-110 IU/L]
AST, Plasma	46	H	[8-40 IU/L]
ALT, Plasma	65	H	[0-60 IU/L]

CT ABDOMEN AND PELVIS NO CONTRAST, ordered by Michael Thomson (M.D.)
at 05/11/2014 4:55 PM

CLINICAL HISTORY: Reason: With oral contrast, no IV contrast patient with history of abdominal hernia now has tenderness and pain. Please evaluate for strangulation or any other abnormalities if after hours.

TECHNIQUE: Study performed per protocol.

CT Dose: As required by California law, the CTDIvol and DLP radiation doses associated with this CT study are listed below. This represents the estimated dose to a standard lucite phantom resulting from the technique used for this study, but is not the dose to this specific patient.

Type / CTDIvol / DLP / Phantom

Helical / 22.01 / 1090.83 / B

Total Exam DLP: 1090.83

CTDIvol = mGy DLP = mGy-cm

Phantom: B=Body32, H=Head16

FINDINGS:

ABDOMEN:

- Lung bases are unremarkable.
- Liver is normal.
- 2.4-cm gallstone.
- Spleen is normal in size.
- Pancreas is without focal lesions.
- Kidneys are normal in size. No renal mass is identified. There is no hydronephrosis. Adrenal glands are unremarkable.
- Vasculature is unremarkable. Atherosclerotic vascular calcification of aorta is present.
- No ascites or fluid collections. No evidence of pneumoperitoneum.
- No abdominal adenopathy.
- Appendix is unremarkable.

PELVIS:

- Urinary bladder is unremarkable.
- No pelvic adenopathy.
- Multi-level degenerative changes are present in dorsal spine.
- Multiple remote compression fractures throughout dorsal spine.

IMPRESSION:

- Cholelithiasis.

Report given to Dr. Ali Roberts at 9:47 a.m. on May 11, 2014.

SELF-REFLECTION

Because reflective thinking doesn't come naturally for most of us, we need some educational opportunities to help us develop our ability to reflect. The process of reflection involves four components: Description, Analysis, Discovery, and Action.

Use the following questions to write your weekly self-reflection paper. Answer at least two questions from the first three categories.

DESCRIPTION:

1. At what moment did I feel most engaged with what was happening?
2. What action that anyone took did I find most helpful/affirming, or, puzzling/confusing?
3. Did anything surprise me—my own reactions or something that someone did?
4. Did I have the information or skills needed to deal with this situation?



CRITICAL ANALYSIS

1. What can I learn from this experience?
2. Was I tolerant of divergent views?
3. Was I sensitive to the possibility that I might have biases?
4. Can I handle ambiguity?
5. Am I making it a habit to seek learning new things?

6. How would I solve this problem?
7. What can I do to change my performance next time?

DISCOVERY

1. What are things I want to improve?
2. Have I discovered something I want to learn more about?
3. What are my goals to improve my performance in the future?

GENERAL QUESTIONS: (answer all the following questions)

1. Did the patient appear receptive to suggestions for modifications in diet?
2. Did the patient understand the explanation provided for the recommendation?
3. Did I have a clear understanding of the medical terminology, labs, studies, and medications?
4. If I could repeat this case, would I do anything differently?

Source: Enhancing Medical Students Education – Student Series, Issue 2. Loma Linda University School of Medicine

SECTION 2:

Information for the Standardized Patient

Notes: The section will be used by the simulation center to train the Standardized Patient

Cholelithiasis and Hyperglycemia

Sarah Baker

Presenting Complaint – Your son brought you to the Emergency room yesterday because of nausea, vomiting and abdominal pain. The pain was sudden and intense (9 out of 10) for the past 2-3 months, especially after a meal. Nausea and vomiting x4 (black but possibly dark green) last night. Poor appetite for the past several days due to the pain.

Patient Name – Sarah Baker

Patient Demographics

Age: Older adult

Sex: Female

Race: Any

Height: --

Weight: --

BMI: Overweight

Descriptive Materials

1) Patient's Personal Presentation and Emotional Tone.

- a. Physical appearance:** Neatly dressed, casual, some jewelry and little make-up. She isn't feeling too well, still has some abdominal pain, holds upper part of her stomach due to sudden intense pain every once in a while.
- b. Personal presentation:** Neat, not overly stylish.

- c. **Interaction styles:** Talks slowly due to breathing difficulties, responds slowly, tries to answer all questions, patient is concerned about her financial difficulties and that she has to pay for this visit.
- d. **Emotional tone:** Patient is still in a little pain and discomfort, but improved. She is concerned about her current health and going to ER yesterday, she is interested in hearing what the dietitian has to say because of severe long-term discomfort.
- e. **Chief complaint at the time of the visit.**
“My stomach has been hurting me for the past 2 to 3 months, I haven’t seen the doctor before because I don’t have insurance, and the pain usually goes away after 30 minutes to an hour. The doctor told me if I follow the diet, the pain would decrease. So here I am... what do you have to tell me”.
Patient reports decreased appetite but once asked about diet recall, it will be clear that she is eating a lot of food. She denies weight loss at this time, “Although I haven’t been eating, I haven’t lost any weight”.
- f. **The symptoms in detail:** Patient presents with a past medical history of hypertension, asthma/COPD on home oxygen at night, history of chronic back pain due to severe degenerative changes. She was seen in ER yesterday due to nausea, emesis 4 x last night and intermittent upper abdominal pain. She denies chest pain; she has shortness of breath on and off because she has asthma/COPD. At home she is on oxygen as needed. Her appetite was not good for the past 2 days. She denies dysuria or

change in the volume of her urine.

Outpatient Medications:

Metronidazole (FLAGYL) 500 mg Oral Tab	1 tab PO three times per day for 14 days (For bacterial infections)
Tiotropium (SPIRIVA) 18 mcg Inhl Cap w/device	Inhale contents of 1 cap PO daily. Take 2 inhalations from the same capsule to get full dose. (Used to prevent bronchospasm)
Metoprolol Tartrate (LOPRESSOR) 25 mg Oral Tab	Take one-half tablet orally twice a day hold it if your pulse is less than 60 (Treats high blood pressure and angina)
Beclomethasone Dipropionate (QVAR) 80 mcg/actuation Inhl Aero	Inhale 2 puffs orally 2 times daily- rinse mouth after using (Asthma inhaler)
Lisinopril (PRINIVIL/ZESTRIL) 10 mg Oral Tab	Take 1 tablet by mouth daily (for hypertension)
Hydrocodone-Acetaminophen (NORCO) 10- 325 mg Oral Tab	1 tablet every 6 hours as needed (for pain)
Rosuvastatin (CRESTOR) 40 mg Oral Tab	1/2 tablet daily (Lowers high levels of cholesterol and triglycerides)
Venlafaxine (EFFEXOR) 37.5 mg Oral Tab	Take 1 tablet by mouth 2 times a day (for depression)
Albuterol (PROAIR HFA) 90 mcg/actuation Inhl HFAA	Shake well and inhale 2 puffs orally every 6 hours as needed for shortness of breath (for Asthma)
Lorazepam (ATIVAN) 0.5 mg Oral Tab	1 tab PO at bedtime for insomnia
Prednisone (DELTASONE) 40 mg orally every 12 hours	Take 1 tablet every 12 hours for (for asthma)

g. History of the present illness

Diet history:

Restrictions: Patient is Muslim and only eats halal foods (no pork, alcohol,

Halal meat comes from animal that have been slaughtered in a specific way by a Muslim person)

Patient reports that her sister buys groceries for her because she doesn't have money. She eats whatever her sister buys. (Her sister won't mind if the patient asks for specific low fat foods.)

24-hour food recall:

Time	Quantity	Details of food and drink
8 AM	1 cup	Tea
	1 cup	Whole milk, patient will only say "Milk". If the student asked more specifically, she will say its whole.
	2-3 teaspoon	White sugar
	1	Banana
	1	Yogurt
	¼ cup	Granola
	3	Waffles
	4 tablespoons	Syrup
11 AM	2 pieces	Home made date cake
	2 tablespoon	Instant powdered coffee
	2-3 tablespoon	White sugar
	1 cup	Whole milk, patient will only say "Milk". If the student asked more specifically, she will say its whole.
2 PM	1	Baked potato
	3 tablespoon	Sour cream
	2 tablespoon	Corn
	2 tablespoon	Olives
	3 slice	Cheese
	1/2	Avocado
	4 pieces	Fried chicken wings
	1 cup	Homemade Coleslaw salad (Mayonnaise, 1 bag of coleslaw mix, sugar, wine vinegar)
5 PM	3 squares	Dark chocolate

	1 cup	Tea
	1 cup	Whole milk, patient will only say “Milk”. If the student asked more specifically, she will say its whole.
	2-3 teaspoon	White sugar
7 PM	2 slices	White toast
	2 slices	Cheese
	1 slice	Tomato
	10 pieces	Grapes

2) Patient Risk Factors

a. Life style risks:

Alcohol Use: No

Drug Use: No

Smoker: No- former smoker, stopped 15 years ago

Allergies: None

b. Physical activity: Limited physical activity, lives in one story home, has a dog “Charlie”. She walks him sometimes, other times she just stands with him outside by the front door.

3) Past Medical History

a. Relevant past medical history

Asthma, COPD – 6/8/2004

Breast cancer- 8/12/2003

HTN – 9/18/2013

Surgical History:

Colonoscopy with biopsy 7/31/2012

Colonoscopy with removal of lesion 7/31/2012

Breast lumpectomy, bilateral 10/2/2003

Open ventral hernia repair 7/31/2012

Breast implant, bilateral 2/11/2008

b. Anthropometrics: Wt 79.2 kg (174 lb), Ht 1.626 m (5' 4")

c. Relevant family medical history.

- Father: Diabetes, lung cancer – deceased.
- Mother: Diabetes, hyperlipidemia, and hypertension, uterine cancer – deceased.
- Sister: Breast cancer.

d. Information needed to answer "all" medical questions likely to be asked by the interviewers.

1. **Do you have any food allergies?** No
2. **Do you follow any specific diet, or avoid any specific foods?** Patient is Muslim, avoids pork, alcohol and meat that isn't halal.
3. **How is your appetite?** It's not too good, I'm not a big eater but I don't know why I don't lose weight.
4. **Please clarify, aside from your recent episodes of N/V, how is your appetite usually?** "I usually have a good appetite and I can eat everything"
5. **Do you take any vitamins or supplements?** "No, do I need to take any?" This

would be a good time for the student to discuss low Vitamin D levels.

6. **Do you have any questions?** If these haven't been addressed throughout the interview. The patient will ask

- a. Is organic food healthier? Should I buy organic food?
- b. Are there any resources where I can get food or discount?
- c. Is it possible that my medication increase my blood sugar?

Answer: Yes, steroids raise blood glucose

- d. Does cinnamon improve blood glucose?
- e. Are there any ways to prevent diabetes?
- f. If students discusses need for low fat diet, the patient will ask how or why low fat will help (because gallbladder digests that fat, and with the presence of gallstone the gallbladder cannot work properly)

4) **Psychosocial/Personal History**

a. **Personal family, educational background and occupational history:**

She lives alone. She was working a full time job as a math teacher for high school, but recently became unemployed and is receiving unemployment. She has a son that lives across the town, she sees him often. She got divorced 15 years ago. She also has a sister who lives two blocks away. Her sister usually buys her groceries to help her out.

5) **Expected Sequence of Events:**

1. Student should introduce him/herself, if they don't, the patient will ask who they

are.

2. If asked about diet, the patient will say she eats a healthy diet, 3 small meals, and snacks in between, her parents were both diabetic and this is how they ate. She is concerned about developing diabetes herself. She will ask how she can prevent becoming diabetic?
3. Student is supposed to educate patient on a low fat diet, discussion of elevated triglycerides and cholesterol and rationale for low fat diet given diagnosis of cholelithiasis.
4. Student is expected to educate patient regarding a diabetes specific diet, re-iterating that patient has not been diagnosed with diabetes. However due to occasionally elevated blood sugar, elevated HgbA1C, steroid use, and family history of DM patient is at risk of diabetes.
5. If asked, the patient will say she doesn't drink skimmed milk "Honestly, I think they just rip us off with skim milk, you pay the same price for diluted milk". Student will re-focus the discussion from the patient's belief's regarding "rip us off with skin milk" to the importance of avoiding fat (and thus decreasing abdominal pain).
6. If the student doesn't educate the patient on the diabetic diet or hyperglycemia wasn't addressed, the patient will mention "I also noticed that my blood sugar has been high the last few times I have been to the Dr., I'm not sure if it's one of the medications or if it's because my parents were diabetic. The student is expected to explain that steroid use can increase blood glucose and should discuss ways to control blood glucose.

7. If a diabetic diet was discussed, the patient will ask whether **cinnamon helps controlling blood sugar** or not, and if she should take pills or natural cinnamon.
8. The patient will also ask **whether organic food is healthier choice**
9. Student is expected to refer patient to a social worker and explain that a social worker can help her with her financial issues.

Student may also discuss with patient's primary physician concern regarding elevated blood sugars and elevate HgbA1C. Patient may benefit from a referral to a DM educator for a glucometer and education regarding daily blood sugar monitoring.

Standardized Patient Assessment Form

Sarah Baker - Cholelithiasis

Directions – Respond to the following items related to the students’ performance. Check off the category that most closely reflects your feelings.

		Not done (Unacceptable)	Partially done (Acceptable)	Well done	Outstanding
During our interaction, the student:					
1	Introduced self in a professional manner				
2	Made me feel at ease by taking personal interest in me (personal warmth, genuine attitude, went beyond medical issues at hand, conversed about personal background, interest, job, etc.)				
3	Used language that was clearly understandable to me and adapted to my level of understanding (avoid medical terminology, avoid child-like slang)				
4	Made me feel that I could discuss sensitive topics				
5	Gave me opportunity/time to talk (e.g. didn’t interrupt)				
6	Listened/gave me undivided attention (eye contact, non-verbal feedback, verbal acknowledgment)				
7	Made me feel confident that I now have the knowledge I need to make appropriate dietary choices				
8	Provided rationale for the modifications in diet (low-fat and diabetes specific)				
9	Expressed Empathy (e.g. demonstrated care and concern for me, acknowledged me feelings, expressed understanding of my feelings/ respect for my situation/ willingness to support me)				
10	Closed the interview with: Asking me if I had any further questions or anything he/she can do to help. And referred me to social worker				

Would you recommend this Dietitian to a friend or family member for his/her....

		Not recommend	Recommend with reservation	Recommend	Highly recommend
11	Communication skills				
12	Medical/clinical competence				

Overall, how would you rate this Dietitian's professionalism?

		Not at all professional	Somewhat professional	Professional	Very Professional
13	Professionalism	Most of the following: -Disrespectful -Not compassionate -Not accountable -Not sensitive/ responsive to my needs	A few of the following: -Disrespectful -Not compassionate -Not accountable - Not sensitive/ responsive to my needs	3 of the following: -Respectful -Compassionate -Accountable -Sensitive/ responsive to my needs	All of the following: -Respectful -Compassionate -Accountable -Sensitive/ responsive to my needs

Please provide feedback on your experience with the student. Recommendations to improve the student's clinical and communication skills are appreciated.

Thank you!

SECTION 3:
Information for the Social Worker

Information for the volunteer Social Worker:

1. The student and the social worker should both introduce themselves by name and title/role (RD/SW).
2. The nutrition student is expected to explain that the patient suffers from financial difficulties, which are affecting her dietary choices.
3. If the student doesn't start by discussing the interaction with the patient, the social worker (SW) will ask if there is anything the SW can help with.
4. The SW will inquire about religious beliefs and if the patient is a member of a church.
5. The SW will suggest referring the patient to the Supplemental Nutrition Assistance Program (SNAP). The program issues monthly electronic benefits that can be used to buy most foods at many food stores.
6. The patient may also be eligible CalFresh (formerly known as Food Stamps). This is an entitlement program that provides monthly benefits to low-income households for purchasing food needed to maintain adequate nutritional levels.
7. The patient may be eligible for Medicare as she is > 65 years of age.
8. At the end, the SW will thank the student for referring the patient and that he/she will go talk to the patient now.

Health Care Professional's Assessment Form

Social Worker

Direction: Respond to the following items related to the student's performance. Check off the category that most closely reflects your feelings.

		Not done (Unacceptabl	Partially done (Acceptable)	Well done	Outstanding
During our interaction, the student dietitian:					
1	Introduced self in a professional manner				
2	Identified patient of concern (patient's name)				
3	Appeared knowledgeable about my role as a Social Worker				
4	Appeared confident				
5	Behaved professionally and respectfully				
6	Explained the case and issues in an organized manner				
7	Appeared to understand the patient's case and discussed the case accurately				
8	Actively participated as a team member				
9	Made appropriate recommendations				

		Not recommend	Recommend with reservation	Recommend	Highly recommend
10	Would you recommend this student dietitian to work as part of a multidisciplinary team?				

Please provide feedback on your experience with the student. Recommendations to improve the student's clinical and communication skills are appreciated.

SECTION 4:
Information for the Faculty and for Researcher

Researcher's Assessment Form

Directions: Respond to the following items related to the student's performance. Check off the category that best reflects their performance.

		Not done	Partially done	Well done	Outstanding
Patient interaction					
14	Introduced self by name and title (RD)				
15	Asked about patient's name				
16	Asked questions to see what the patient understood				
17	Asked one question at a time and no leading questions				
18	Addressed significant labs such as Glucose				
19	Asked about usual intake/or 24-hour dietary recall				
20	Asked questions in a non-judgmental tone regarding patient's cultural and dietary beliefs				
21	Asked about dietary preferences and food allergies				
22	Asked about weight history				
23	Explained rationale for low fat diet				
24	Made suggestions for low fat foods				
25	Addressed high blood glucose and answered patient's question on ways to prevent diabetes - Increase physical activity - Avoid concentrated sweets - Increase fiber intake - Weight reduction				
26	Developed and recommended customized plan based on the patient's lifestyle and needs				
27	Answered all the patient's questions 1. (Including effect of cinnamon on blood glucose) 2. Organic food				
28	Explained to the patient that a social worker may help her with her financial difficulties				
29	Overall professionalism				

**Please provide feedback on your experience with the student.
Recommendations to improve the student's clinical and communication skills are**

appreciated.

Grading Criteria

Grading criteria is entered to the system with the checklist.

The score of this evaluation can range from 0 to 117 points.

1. Interaction skills evaluated by SP (36 points):

This will be found under Standardized patient form: this part consists of 11 questions. From question 1 to 10: Outstanding performance will count for 3 points, well-done will count for 2 points, Partially done (acceptable) will count for 1 point, and not done (unacceptable) will count for 0 points.

Question 11, which tests the overall professional skills will count as the following: very professional: 6 points, professional, 4 points, somewhat professional 2 points, and not professional 0.

Highest score that can be achieved on this section is 36. Students scoring less than 12 will be required to remediate.

2. Interaction skills evaluated by researcher (48 points):

This will be found under researcher's assessment form- Patient Interaction: this part consists of 16 questions. From question 1 to 16: Outstanding performance will count for 3 points, well-done will count for 2 points, partially done (acceptable) will count for 1 point, and not done (unacceptable) will count for 0 points.

Highest score that can be achieved on this section is 48. Students scoring less than 17 will be required to remediate.

3. Communication with healthcare professional (33 points):

This can be found under healthcare professional assessment forms: this part consists of 10 questions. From questions 1 to 9: Outstanding performance will count for 3 points, well-done will count for 2 points, Partially done (acceptable) will count for 1 point, and not done (unacceptable) will count for 0 points.

As for question 10: highly recommend will count for 6 points, recommend for 4 points, recommend with reservation 2 points, and not recommend 0 points.

Highest score that can be achieved on this section is 33. Students scoring lower than 10 will need to remediate to improve their professional skills.

Debriefing Questions

- 1- Why did the patient present to the ER? What was she complaining of? What is the pertinent PMH/PSH? What work-up was done (labs, studies), what medications is she on at home?
- 2- What was the patient's weight and height? What weight would you use to calculate estimated needs (actual weight, IBW, adjusted weight)?
- 3- How was the patient's appetite? Did she lose any weight?
- 4- Did the patient follow any specific diet? Any food restrictions? Did you ask her?
- 5- What were the types of foods the patient mentioned in the 24-hour diet recall? Are these contributing to her current medical issues?
- 6- Did anyone ask the patient about her bowel movements? Please be specific re: consistency (loose, soft, hard) and frequency
- 7- What was the discussion regarding a DM specific diet ?
- 8- What diet information did you provide? Did the patient appear receptive to suggestions for modifications in diet?
- 9- Can someone explain the correlation between cholelithiasis and a low-fat diet?
(Include in your answer what types of foods should be avoided).
- 10- Did the patient have any questions about her diet?
- 11- What's the most appropriate nutrition diagnosis?
- 12- Why did you refer the patient to a social worker? Please discuss your conversation with the social worker.
- 13- What areas did you find most challenging?

14- What did you learn from this case?

15- What will you do differently next time?

16- Discuss findings from the journal article you have read.

a. -Kosher diet

b. Halal diet

c. Mormons

d. SDA