

Curriculum Development for Simulation of Nutrition Counseling Sessions

Management Project
RUSH Way Process Improvement
3/20/2015

Student:
Candace Richards

Advisors:
Dr. Kathy Keim
Dr. Sharon Foley

READY

The Problem

There is no standardized approach to observing the Clinical Nutrition dietetic intern students perform nutrition counseling within the supervised practice portion of the Clinical Nutrition Combined Internship/Master's program. Both the didactic and rotational portions of the of the program have imbedded curriculum for training on nutrition counseling; however, preceptor and faculty seldom have the opportunity to provide feedback to students as they progress in their nutrition counseling skills.

The Goal

Ultimately, the goal is to provide a nutrition counseling simulation experience during the Nutrition 531 class entitled *Application of Behavioral Change and Education Theories in Nutrition Counseling and Education*. The class time would involve a hired actor to perform as a "standardized patient." The standardized patient would be given enough background information to be an interactive, education tool to students learning particular nutrition counseling techniques. This would provide a hands-on, engaging experience for students to develop nutrition counseling skills. It should be noted that this experience would not replace supervised practice hours. Rather, the didactic simulation would mimic reality, and allow faculty to give accurate feedback on proficiency through a process called debriefing (6). In turn, this would increase student confidence and arm them with the skills necessary to move forward in their clinical rotations.

This ultimate goal of a simulation experience imbedded in the curriculum can only be achieved if preliminary research and first steps are taken towards curriculum development. Thus, the goals for the current project were as follows:

- Perform a literature review on nutrition counseling curriculum and simulation development
- Create two needs assessment surveys to determine current nutrition counseling practices within internship, including techniques that are the most challenging for interns, and estimated level of observation
 - One given to the Intern Class of 2015
 - One to the preceptors
- Tour the simulation lab to determine current resources
- Develop one script to be used by a standardized patient (hired actor)

A timeline of events and goals achieved can be seen in **Appendix C**.

The Scope

Nutrition counseling is an integral part of successfully motivating and educating patients on diet and nutrition. It not only facilitates in dietitians to adequately complete their job duties,

but it aids in promoted patient-centered approach to healthcare. Simulations provide a repeatable, organized experience that can increase the confidence of a novice counselor. This increased confidence may translate into better patient care, even among the newest of student. Additionally, it allows for prompt debriefing and data collection. Perhaps most importantly, simulations can reduce the risk to patients (2, 6, 11). This risk reduction may be particular interest to other healthcare fields that deal with risky procedures on a daily basis, such as the field of nursing. In fact, much of the recent dietetic simulation research is base on suppositions and frameworks developed through nursing research, as seen in **Appendix A**

According to Thompson et al. extensive nursing simulation research has revealed certain imperative steps that must be taken to develop and implement successful simulations. The first step emphasizes the importance of instructor knowledge. It is imperative that instructors understand the methodology behind both simulation curriculum development as well as the target skills the simulations will be based upon. Next, it is important to develop realistic scenarios and scripts that directly focus on the desired skills. Specific objectives and debriefing points are key. It is also important avoid writing a word-for-word script, but rather provide adequate background information to allow the actor to perform fluidly. Finally, the scenarios should be evaluated for validity and reliability (2, 6, 11).

The Team

- Graduate student: Candace Richards
- Advisors/Faculty Members: Dr. Foley, Dr. Keim
- The simulation lab managers: Nate Walsh and Beverly Robin
- Faculty with simulation development experience: Laura Vazquez, Amy Gelfand

The Metrics

The needs assessment surveys for both the intern needs assessment and the preceptor needs assessment. In general, both assessments aimed to 1) understand the skills needing improvement amongst the intern class of 2015, 2) ascertain level of observation (both inpatient and outpatient) and 3) briefly ascertain the level of difficulty for Subjective Global Assessment components. It should be noted that SGA will not be discussed further, as the main purpose of this summary is in the development of nutrition counseling curriculum. Please refer to **Appendix B** for a summary of the variables that were assessed, as well as the results of the surveys themselves.

Understand

Baseline Performance -- Nutrition Counseling

The hypothesis of my project is that there is minimal feedback on nutrition counseling. The current process for teaching and monitoring nutrition counseling among dietetic interns is was examined for the intern class of 2015. Two main avenues were used to teach students nutritional counseling. The students were exposed to motivational interviewing during the Medicine I supervised practice rotation. A total of 20 rotation hours were devoted to learning the basic theories behind motivation interviewing, role-playing with peers/preceptors, and shadowing preceptors that were proficient in motivational interviewing. Two preceptors were in

charge of this rotation. Secondly, the students took a 4-credit hour class that explored various theoretical constructs, and provided role-playing practice for these constructs.

Throughout these experiences, emphasis was placed on the “motivational interviewing” construct. This construct is a common nutrition counseling technique/philosophy, and it is well documented in the literature that its use provides positive dietary changes amongst patients with cancer, diabetes, and chronic heart failure (4, 8, 9).

Baseline Performance -- Rush University Simulation Laboratory

Touring the facility provided baseline understanding of the resources available through the Rush University Simulation Laboratory (RUSL). It was discovered that resources were quickly expanding, as the RUSL was in an exciting transition. The laboratory was moving from the Armour Academic Center where it had originally opened in 2003, to a more spacious location in the Kellogg Building. The final phases of development were recently completed this month (March 2015). The RUSL now houses a 15,000 square foot area for simulations. Simulations may be as simple as conversations between healthcare professions, to high fidelity clinical simulations (5,7,10).

Data Collection Execution

The first stage of informal data collection was the simulation lab tour. It provided important information with regard to cost, resources, space, and so forth. Notable findings were as follows:

- All clinical rooms contain cameras
- Debriefing rooms contain large televisions that can play recorded videos
- The Nurse Practitioner department currently has a grant for simulation using standardized patient actors
 - Standardized patients are paid \$25 per hour, for a minimum of 4 hours
 - Money taken out of call center
- The simulation lab plans to have a standard patient program (hired actors) in the next two years
- Nathaniel Walsh and Beverly Robin are the contact persons for setting up activities in the lab
- Life-like “manikins” can be used for “high fidelity,” clinical type of scenarios (surgery, birth, etc)

Next, two needs assessments were developed to ascertain opinions and performance of the intern class of 2015 with regards to nutrition counseling and SGA. One survey was administered to the interns and another survey was administered to dietitian preceptors for both the inpatient and outpatient clinics. The surveys were given through Survey Monkey, and 20 days were allowed for a response time. The summary of results can be reviewed in **Appendix B**.

Key drivers of the Problem

- Difficult to assess motivational interviewing and other nutrition counseling technique proficiency during rotations due to a plethora of other necessary teaching points (proper use of informatics, proper use of the Nutrition Care Process, etc)
- Rotations are often fast-paced, and patient care is the main focus → may be enough time room for in-depth discussion of nutrition counseling
- Patients are complex and dynamic, and thus it is difficult to learn motivational interviewing and other nutrition counseling techniques in a systematic, organized approach
- Opportunities for nutrition counseling may be scarce in certain rotations/specialties or during specific outpatient clinics (i.e. neurosciences unit, NICU outpatient clinic, ICU/critical care rotation, etc)
 - At least one intern reported not having an opportunity for nutrition counseling in outpatient clinics
- Preceptor-to-intern feedback on nutritional counseling competency is not assessed in a consistent manner throughout rotations
 - All students (n=11) reported receiving at least verbal feedback on nutrition counseling skills during inpatient rotations
 - Only 50% of students reported receiving any type of feedback on nutrition counseling during outpatient rotations
- There is no standardized rubric used to assess intern competency at nutrition counseling, even though 85% of preceptors are interested in the development of an inpatient vs. outpatient rubric
- Interns struggle most with “evoking” and “planning,” which are two concepts within Motivational Interviewing (3)

Solve

Develop Solutions

Using the knowledge gained during the review of literature, simulation lab tour, collaboration among local experts, and results from the needs assessments, templates and documents were created to provide a basis for curriculum development in the future. A template for scenario development was created that included pertinent components. These components were based loosely off elements found in the review of literature, as well collaboration with employees familiar in simulation curriculum development. It was found that the necessary documents for one scenario includes a script for the standardized patient (background information, diet history, temperament, expected actions, etc), a brief background information sheet for the student, objectives and de-briefing points for the student, and other ancillary documents that are technique-specific

A curriculum developed is complete for one scenario (one session with a standardized patient). The following are the main components of the curriculum:

- Heart Failure Scenario with patient in contemplation stage of change with low conviction (needs evocation)
- Scenario script, student information sheet, other ancillary documents created for that specific scenario

- Emphasis placed on proper use of evocation techniques

Test Solution/Benefit Analysis

The scenario has yet to be implemented, as the simulation lab has only recently completed its final phases of development (5, 7, 10). Additionally, the class of 2016 interns just begun their clinical rotations, and have yet to take the Nutr. 531 class. The plan is to build simulation into the curriculum of the summer Nutr 531 class. To build the simulation into the curriculum, the following steps will need to be taken in the coming months:

- Meet with the lab managers to secure a time slot in the simulation lab
- Hire a standardized patient for at least one session with the class
- Finalize the Heart Failure Scenario (perform final tweaks)
- Complete the scenario in the simulation with the intern class and a hired actor/standardized patient
 - Emphasis placed on debriefing and achieving objectives (6)

The recommended route to assess validity of the simulation experience is to assess student satisfaction and perception of the experience. According to Thomsons et al, although merely assessing student perception has its limitations, it is what the current validated simulation researched has largely focused on. A potential template to base this perception survey may be adapted from the two surveys developed by Hicks et al., nurse simulation researchers here at Rush University. The researchers measured the perceived simulation experience (first survey) and student learning (second survey) for 37 nursing students based on 4-point Likert scale post-simulation experiences. Unfortunately, the surveys are not validated for construct validity. However, they are validated for face validity, and can be easily adapted for dietetics. Additionally, the leads on the project are within Rush University, and can be collaboration partners in the future.

Continue to Improve & Implement

- Continue to write new simulation scripts (outpatient) based on different constructs, disease-states, and techniques
 - Dr. Keim to promote script writing through group project assignment in Nutr. 531
 - Objectives and de-briefing are the most important parts of the scripts (6)
 - Expand upon the scripts to make them more inpatient friendly
 - MNT focused
 - Shorter in nature
 - Faculty may need to partner with dietitians
- Continue to scan the most recent literature for simulation research, especially much-needed dietetics-specific simulation
- Develop rubrics to be used in the inpatient vs. outpatient settings
- Have scripts ready to provide simulation practice this summer

Hold

Maintenance Plan

Once simulation scenario scripts are developed and possibly validated, they will be re-used each year in the simulation lab for each new intern class. New scripts can be developed based on the needs or desires of that particular intern class. Furthermore, simulation can be extended in the future to preceptor or faculty use. In this way, students and faculty alike can plan to use the simulation lab every year during the months of the nutrition counseling class. Eventually, when Rush has its own standardized patient program, perhaps nutrition counseling simulations can be run more frequently throughout the year.

It is recommended that annual needs assessments surveys are administered towards the end of the supervised practice for each intern class (January-February).

- Intern Class of 2016 to determine what their strengths/weaknesses are and what further curriculum is needed in the program
 - Preceptors determine any strengths/weakness of intern class of 2016

Appendix A. Proposed Schematic for Simulation Development

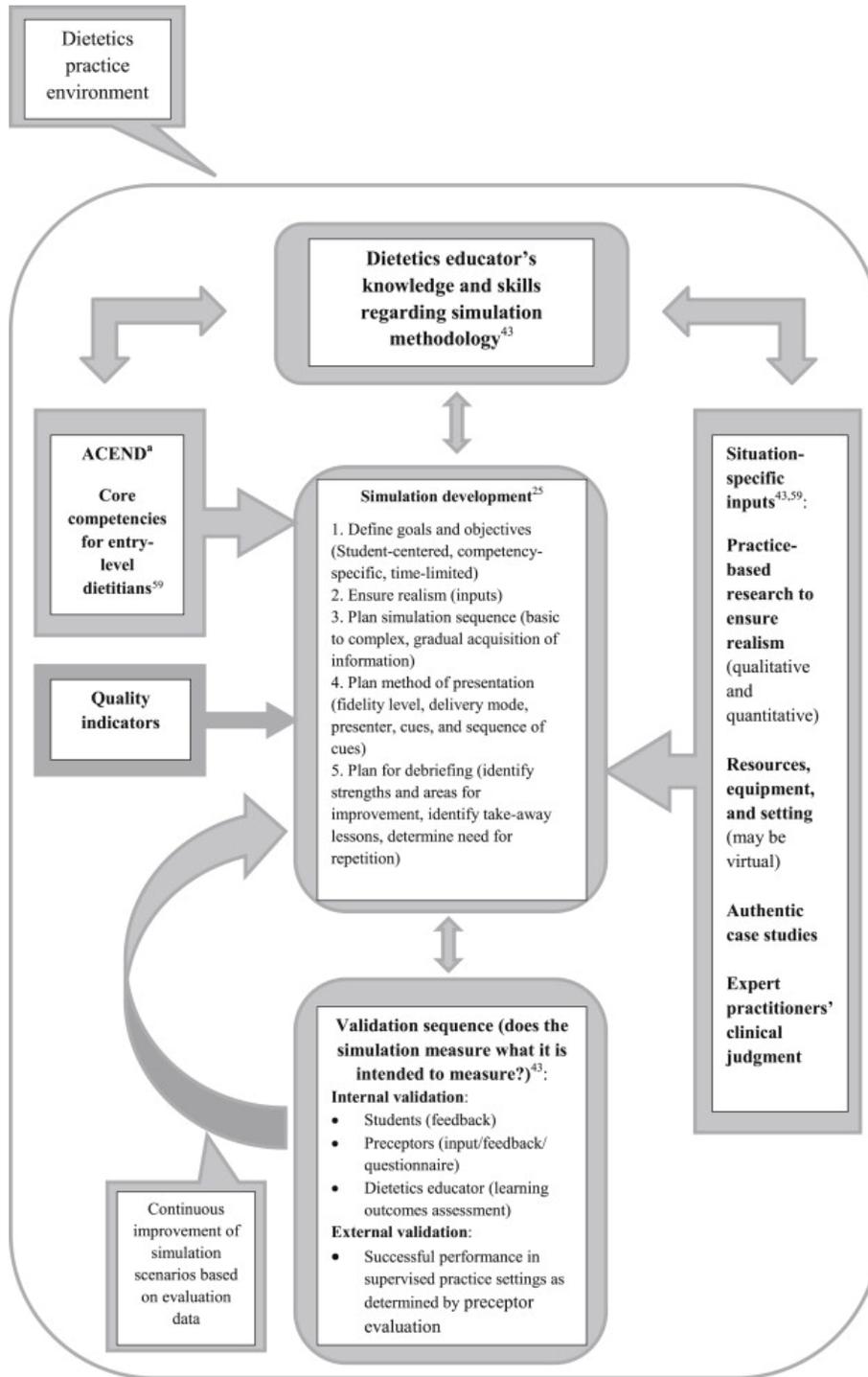


Figure 1: Proposed framework for the development and validation of effective simulation scenarios for dietetics education. Framework developed by Thompson et al, and includes well-researched elements from nursing simulation research as well as the use of dietetic-specific quality indicators and validation steps.

Appendix B: Summary Tables of Needs Assessment Surveys

Table 1: Summary of Responses to Simulation Needs Assessment Study – Nutrition Counseling Portion

Item	Intern Responses (n=11)	Intern Comments	RD Responses (n=8)	RD Comments
Most difficult counseling technique for the interns (inpatient)¹	<p>Most challenging technique:</p> <ul style="list-style-type: none"> • Evoking -- wt avg 3.27 • Planning – wt avg 2.55 	<ul style="list-style-type: none"> • Preceptor to specifically listen for change talk • Receiving specific examples immediately following evaluation • Preceptor to give more criticism (x2)⁴ 	<p>Technique interns struggled with most:</p> <ul style="list-style-type: none"> • Evoking (identifying when patient/client ready for change and when the patient is averse to change and responding appropriately) – wt avg 2.63 • Planning (guiding the patient in making SMART goal) – wt avg 2.63 	----
Feeling more comfortable/confident with nutrition counseling	<ul style="list-style-type: none"> • Additional shadowing of preceptors that are well-versed at MI (80%) • Additional oral eval from preceptors (55%) • Additional peer evals (45%) 	----	----	----
Most difficult counseling technique for the interns (outpatient)	----	----	<ul style="list-style-type: none"> • Evoking (Identifying when patient/client ready for change and when the patient is averse to change and responding appropriately) 	----
MI Scenario for more practice	<ul style="list-style-type: none"> • Pre-contemplation • Contemplation 	----	----	----
Inpatient feedback/Rubrics	<p>Percentage of interns that receive feedback during rotations:</p> <ul style="list-style-type: none"> • Verbal (100%) • Written (91%) • Peer (73%) 	----	<p>Helpfulness of Rubric:</p> <ul style="list-style-type: none"> • Rubric is helpful (77%) 	----
Outpatient feedback/rubrics	<p>Type of feedback received:³</p> <ul style="list-style-type: none"> • No Feedback (5, or 50%) • 4 verbal • 1 written • 1 self-evaluation • 1 had no opportunities for full MI sessions 	----	<p>Helpfulness of developing inpatient vs outpatient rubrics:</p> <ul style="list-style-type: none"> • Yes, helpful (85%) 	<p>“Yes” comments:</p> <ul style="list-style-type: none"> • Survival skills inpatient (commented twice) • Possibly different rubrics for different populations (peds vs adults, etc) • More time outpatient <p>“No” comments:</p> <ul style="list-style-type: none"> • Same basic principles exist in both settings • Eval forms should be as few and simple as possible

¹The weighted average was calculated by averaging the assigned weight (1-4) of the answers chosen on the rating scale. For the intern survey, 1=not challenging 2=slightly challenging,

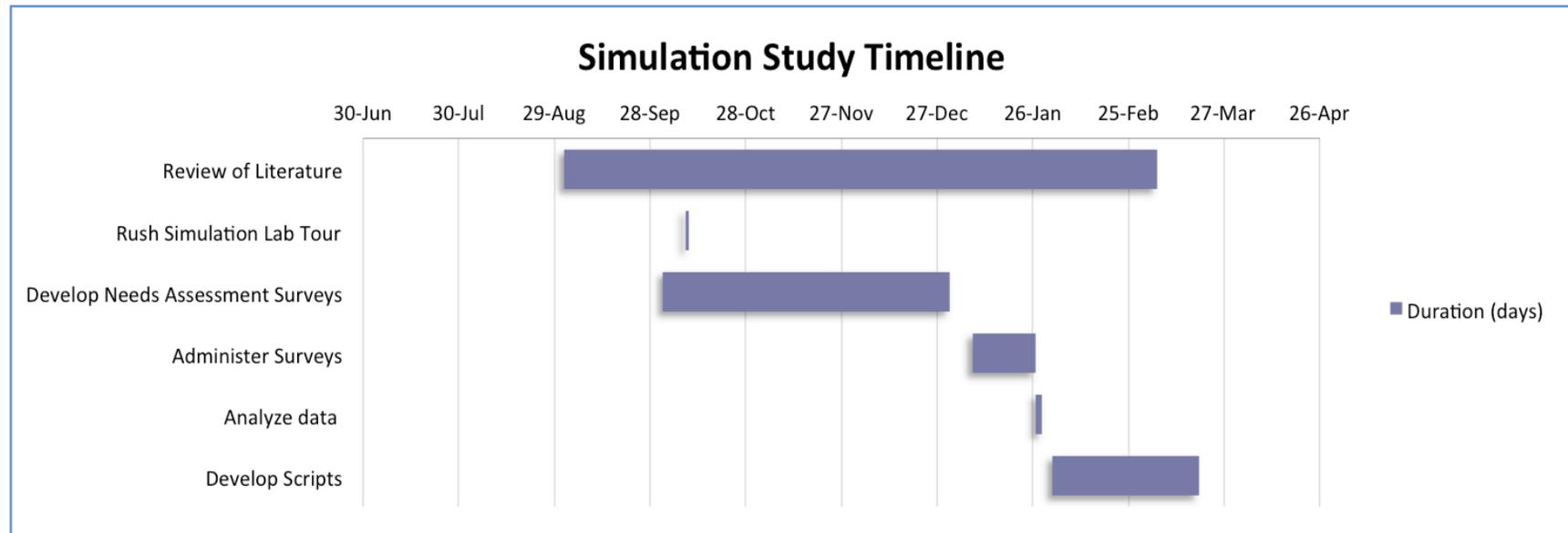
Table 2: Summary of Responses to Simulation Needs Assessment Study – Subjective Global Assessment (SGA) Portion

Item	Intern Responses (n=11)	Intern Comments	RD Responses (n=8)	RD Comments
SGA – most difficult item for interns to assess	Fat wasting, muscle wasting, and fluid status	----	Fluid status, fat wasting, and muscle wasting	<ul style="list-style-type: none"> • Specific details/guidelines (x2)¹ • Consistent expectations throughout internship
Additional SGA feedback needed?	None needed	----	----	----

¹Where “x2” means two different participants made the same general comment.

Appendix C: Timeline of Events

The main events that occurred during the management project are outlined in this figure and table. Of note, the length of time devoted to the review of literature was necessary to (1) appreciate a deep an understanding of simulation and nutrition counseling prior to creating scenario(s) and (2) novel research was being published on the subject of counseling/simulation as the months progressed. Meetings were not included in the timeline, but were important times for collaboration. Finally, it should be noted that although the Ntr. 532 class was not an official event in the project, it was an important experience with regard to learning the counseling constructs.



Start Date	End Date	Description	Duration (days)
6/24/14	8/19/14	NUTR 531	63
9/1/14	2/5/15	Review of Literature	186
10/9/14	10/9/14	Rush Simulation Lab Tour	1
10/2/14	12/31/14	Develop Needs Assessment Surveys	90
1/7/15	1/27/15	Administer Surveys	20
1/27/15	1/29/15	Analyze data	2
2/1/15	3/16/15	Develop Scripts	46

Nutr. 531 class was not an official event of the study, but was an event with regard to learning nutrition counseling constructs

References

1. Hicks, R. D., Coke, L., Li, Suling. (2009). Report of Findings from the Effect of High-Fidelity Simulation on Nursing Students' Knowledge and Performance: A Pilot Study (Vol. 40). National Council of State Boards of Nursing. Retrieved from <https://www.ncsbn.org/4130.htm>
2. Jeffries PR. A framework for designing, implementing, and evaluating simulations used as teaching strategies in nursing. *Nurs Educ Perspect* 2005;26:96-103.
3. Kellogg M. Toolbox for Nutrition Counseling Education. 2009. <http://www.mollykellogg.com/nutritiontoolbox.html>. Accessed August 2, 2010.
4. Martins RK, McNeil DW. Review of Motivational Interviewing in promoting health behaviors. *Clin Psychol Rev* 2009;29:283-93.
5. New simulation center will set Rush apart. (2015). Retrieved from <https://www.rush.edu/giving-rush/philanthropy-news-events/new-simulation-center-rush-university-medical-center>
6. Rudolph JW, Simon R, Dufresne RL, Raemer DB. There's no such thing as "nonjudgmental" debriefing: a theory and method for debriefing with good judgment. *Simul Healthc* 2006;1:49-55.
7. Rush University Medical Center Complete Simulation Lab. (March 2015). Retrieved from <http://www.schoolconstructionnews.com/articles/2015/03/3/rush-university-medical-center-completes-simulation-lab>
8. Smart H, Clifford D, Morris MN. Nutrition students gain skills from motivational interviewing curriculum. *J Acad Nutr Diet* 2014;114:1712-7.
9. Soderlund LL, Madson MB, Rubak S, Nilsen P. A systematic review of motivational interviewing training for general health care practitioners. *Patient Educ Couns* 2011;84:16-26.
10. Support for new simulation center will set Rush apart. (2014). Retrieved from <http://rush.convio.net/site/News2?page=NewsArticle&id=5310>
11. Thompson KL, Gutschall MD. The Time Is Now: A Blueprint for Simulation in Dietetics Education. *J Acad Nutr Diet* 2015;115:183-94.