DEVELOPMENT OF A PEER HEALTH EDUCATION PROGRAM (PHEP) ON THE CAL STATE LA CAMPUS: A PROGRAM FOR STUDENTS BY STUDENTS

A Project Report

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By

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ABSTRACT

Development of a Peer Health Education Program (PHEP) on the

Cal State LA Campus

By

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Research has shown that college students are notoriously under researched, underserved and are at an increased risk of developing health issues related to newfound independence upon leaving home and entering into the higher education system. Eating habits are one of the strongest contributing factors to health problems in college students, and one that should be given specific attention during this period. Socioeconomic and demographic data of the student population at Cal State LA suggest that a nutrition focused peer counseling program would be beneficial, seeing as other similar resources are not readily available at this time. This project spearheads the introduction of a Peer Health Education Program (PHEP) on the Cal State LA campus, with a focus on nutrition education. PHEP also seeks to provide experiential learning to nutrition upperclassmen interested in gaining valuable counseling skills. Peer education programs have been frequently utilized in the past due to their mutually beneficial nature for all parties, their cost effectiveness, and their adaptability.

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CHAPTER 1

Introduction

There are roughly 22.2 million undergraduate students in the United States as of the 2017-2018 academic year ("College enrollment in the United States", 2019). College students are at an increased risk for developing health issues because they are often living on their own for the first time. In addition, many students experience significant changes in their eating patterns and dietary options as well as increased social pressure and stress related to academic life. Due to these risk factors and others, eating disorders and weight gain are common among college students (Eisenberg et al., 2013 & Nelson et al., 2012). The "Freshman 15" is a term often used to describe the weight gain that occurs for many college students. This phenomenon has been attributed to behaviors such as eating late at night, eating unhealthy foods and snacks, drinking excessive amounts of alcohol, skipping meals, lack of exercise, poor nutrition skills and education, poor sleep habits and increased stress (Janeway & Mistry, n.d. & Vos et al., 2015). According to the American College Health Association, many college students report low intake of vegetables and fruits and high intake of dietary fat (2011). Despite the increased need for support and interventions, this population remains severely understudied and therefore, underserved.

According to the Center for Disease Control and Prevention, overweight and obesity is a major risk factor for hypertension, type 2 diabetes, coronary artery disease, stroke, cancer and high cholesterol among other health problems ("Adult obesity causes and consequences", 2017). The habits formed in college can extend many years beyond. There is a need for increased outreach on college campuses with regards to student health and wellbeing, and greater access to programs that educate students on how to have a

healthy lifestyle. One way to support students is by implementing peer-based advising programs that utilize upperclassmen majoring in health fields such as nutrition, kinesiology and public health. These students would be counseling other students in areas of health..

Peer-based education programs have been frequently deployed in the past with focuses ranging from substance abuse to breastfeeding (Srinivas et al., 2015 & Surratt et al., 2014). According to Habley (2004), 42% of colleges and universities utilize some kind of peer-advising service, and many more are considering implementing one. Peer education offers unique support to students by providing free access to information and basic counseling, while supplying a rewarding and hands-on teaching experience for the student educators.

According to the demographic data available for the undergraduate student population at California State University, Los Angeles, the campus ranks above average for racial diversity with more than 60% of students identifying as Hispanic/Latino and more than 14% identifying as Asian ("California State University", n.d. & "What California State University", n.d.). At CSULA, about 80% of incoming students obtain financial aid which include scholarships, grants and loans to subsidize their college education. Of freshman students whose incomes range from $0-$30,000 per year, about 42% receive financial aid, which indicates that a large percentage of undergraduate students qualify as low income. Low-income, minority populations with lower socioeconomic status are at an increased risk of being obese and living with chronic diseases related to modifiable lifestyle factors, such as metabolic syndrome, even when confounding factors are accounted for (Hostinar et al., 2017).

This project seeks to incorporate best practices from the scientific literature and apply it to the creation of a Peer-Health Education Program (PHEP) at CSULA. The Peer-Health Education Program is a nutrition counseling program that would be available to all enrolled students and rolled out in collaboration with the Xtreme Fitness Center located in the Student Union. Upperclassmen in the nutritional science program, preferably with an interest in sports nutrition, would be trained by peers and faculty using the educational modules provided to coach the students using general counseling techniques on evidence-based general nutrition and sports nutrition concepts to help educate students on how to incorporate nutrition into their fitness and lifestyle routines.

CHAPTER 2

Literature Review

This chapter will review and synthesize the current research on peer-advising programs for young adults with a primary outcome of a health-related behavior change. This chapter will also summarize the extent to which peer-advising programs focused on student health and nutrition are currently utilized on college campuses and identify best practices. This will inform the creation of the current project, which is the development of a peer-advising nutrition program on the Cal State LA campus.

Methods

The PubMed and Google Scholar databases were used to search for articles and the searched keywords and phrases were "peer advising," "peer counseling," "student advisor," "nutrition," "health," and "sports nutrition". Other studies were identified through a manual search of references from articles identified using these search terms. An article was included if it was published between the years 2008 and 2018, was published in English, and was a cohort study, observational study, randomized controlled trial, cross-sectional study or review article. Articles were excluded if they were published before 2008, were not in English, or if the topic was irrelevant.

Background

Peer advising models

There are three major models for peer-based interventions: dyads, groups, and a combination of the two. Dyads, where peers provide one-on-one advice and support, are the most popular model in peer interventions likely because of the flexibility attributed to them (Webel et al., 2010). Group interventions utilize peers as group leaders, and a

combination of the two utilize both methods. Ramchand et al. (2017) found that peer-based Randomized Controlled Trials (RCTs), that utilized the dyadic model, demonstrated a more positive effect on behavior change and physical health outcomes compared to group and combination interventions. Many college campuses have adopted peer-advising programs including Kansas State University, University of Massachusetts at Amherst, UC Berkeley, Georgetown and Howard among many others. These programs seem to serve multiple positive roles and are becoming more and more commonplace at college campuses and beyond.

Advantages of peer advising

According to the National Academic Advising Association (NACADA), peer advising offers many advantages, including being highly versatile in regards to how a program can be implemented based on students' needs as well as on the needs of the institution (NACADA, n.d.). Peer-advising programs can be scaled up or down depending on how the institution wants to implement them, and they can also be varied by delivery modes and styles. Peer advising also offers increased access to advising when it would otherwise be unavailable to students; existing advising may be limited in its ability to provide adequate assistance to all students due to lack of resources, personnel, funding, etc. Another benefit of peer advising is that it connects peers to each other and encourages community building, as well as offering an added layer of support that may be more effective in communicating important topics due to the notion that peers share more commonalities, allowing for a more natural, comfortable and relaxed environment. Additionally, peer advisors benefit just as much as the communities they serve. Peer advisors gain invaluable hands-on learning experience in their prospective field as well as

developing leadership skills that will assist them in their academic and professional endeavors.

History of peer advising

Peer leadership positions were first introduced to the higher education setting in the late 1950's, when peer educators served new students entering college through a formal orientation and helped them get settled into residence halls (Powell, 1959). In the 1980's and 1990's peer roles expanded due to the large influx of new students as well as the continued demand to meet student needs on an ever-shrinking budget (Ganser & Kennedy, 2012). What was once limited in scope to only include the orientation of new students, peer education has now expanded to encircle various disciplines and departments within the higher education system and beyond. The main roles that peer educators and counselors have come to embody are that of community builders and student advocates. Traditionally, upperclassmen were recruited to serve as peer advisors for their lower-classmen counterparts; however, peers may provide support and education to entire student bodies or populations depending on the role and demand presented. Peer leadership is now considered commonplace on college campuses due to its benefits to peer leaders and the students they are serving.

Research

General efficacy of health related peer-advising programs

There are 3 studies reviewed here that evaluate peer education interventions, which take place in settings other than on college campuses and in a variety of populations. The first is a systematic review focusing on the effects of peer-supported interventions on health and wellness while differentiating between peer roles, intervention types and outcomes

(Ramchand et al., 2017). Ramchand et al (2017) ended up with a total of 116 RCT's that met the eligibility criteria and addressed a wide variety of health and wellness areas including chronic disease, mental health, exercise and diet, among others. The researchers determined that there were three main types of peer interventions: group interventions, dyadic interventions and hybrid interventions that combined the two modalities. Of the 57 studies that used group peer interventions, most displayed no differences in outcomes between intervention groups and controls. However, researchers specifically noticed that a large percentage of the group-based studies had a positive effect on the knowledge, attitudes, beliefs and perceptions of the subjects. Of the 49 studies that focused on dyadic interventions, more studies showed improved outcomes for behavior change and physical health outcomes, specifically. Unfortunately, knowledge, attitudes, beliefs and perceptions were infrequently assessed and therefore, no conclusion could be drawn regarding the efficacy of dyadic interventions on this outcome. Of the 10 hybrid intervention studies, outcomes were positive when the interventions included peer education peer facilitation and peer support, when compared to other styles of peer interventions. Overall, dyadic peer support resulted most frequently in behavior change. This outcome is noteworthy because behavior change is a notoriously difficult outcome to achieve in the health and wellness field. Overall there was an added benefit to having a peer intervention compared to a control and therefore, the researchers concluded that it is an effective tool for achieving health related outcomes. However, more research is needed to improve the standards for such programs to increase the effectiveness and magnitude of such projects.

Another systematic review was done by Secomb (2008) and focused on peer teaching and learning in clinical education. Although this review focuses on peers stepping in for professors and taking on a teaching role, rather than an advising or educating role as seen throughout this review, it offers unique insight into the benefits for the peer leaders rather than focusing predominantly on the outcomes relative to the subjects. Twelve articles met the inclusion criteria for this paper, where undergraduate students in the same health sciences class were teaching each other in a clinical setting. This review reported that five out of the twelve studies revealed an increase in cognitive development relative to the peer teacher and learner, and four of the twelve studies reported the this method of peer teaching and learning had a positive outcome on the development of clinical skills (Secomb, 2008). Many of the study subjects, both teachers and learners, reported satisfaction with the experience and some of the reported benefits were "increased self-confidence, autonomy, clinical reasoning, self-evaluation and collaboration." There were only a few instances in which students reported negative feedback and these were related to incompatibility as well as feeling disconnected, from the professor due to lack of face-time. Most of the studies reviewed found that the peer teachers gained confidence in a clinical setting, improved their leadership skills and increased autonomy, among other positive learning aspects. Other than evaluating the benefits that peer teaching had on learning outcomes, Secomb (2008) also identified other important issues for education not clearly defined in the articles. The author remarks that peer teaching resulted in cost effectiveness and often resulted in beneficial collegial involvement, which includes increased participation and communication among students.

Secomb (2008) concluded that peer teaching and learning improves development in learning outcomes, although more research needs to be done to better support this claim.

A study by Walter et al. (2018) was of the implementation of a sports nutrition education intervention for adolescent athletes, performed by college nutrition students. The study focused on two main outcomes: changes in the nutrition practices of the adolescent athletes, and changes in general and academic self-efficacy among the nutrition students providing the intervention. The researchers decided to focus on academic self-efficacy, efficiency and self-worth due to their contributions to general success (Walter et al., 2018). The first sample size consisted of 49 adolescent athletes who trained at "Emek HaHula" High School Sports Association and met the criteria if they engaged in at least 4 hours of physical activity per week and had a signed consent form from a parent. About 88% of the athletes were participating in six hours of physical activity per week, and 33% of the athletes were involved in competitive sports. The second sample size consisted of 30 nutrition students who were in their final year of their undergraduate degree program in nutritional science. Research questionnaires were administered to the athletes at three points (start of program, end of program and 3 months post-intervention); research questionnaires were administered to the nutrition students at 4 points (before their training, start of program, end of program and 3 months after program completion).

Researchers found that athletes experienced statistically significant improvements in their nutritional practices at the end of the program when compared to the start of the program ($p<.05$), and from the start of the program to the 3 months follow-up ($p<.0001$). Although there was a slight decrease in knowledge at the 3-months follow-up when

compared to the end of the program, knowledge was still maintained at a significant level. For the nutrition students participating in the study, the researchers recorded outcomes for both general and academic self-efficacy at four points, which resulted in a total of six correlations for each outcome. T-tests for general self-efficacy at five out of six levels were statistically significant, with the exception being when researchers compared the 3 months follow-up to the end of the program. These findings indicate a gradual, positive trend over each stage of the program with a slight decrease in general self-efficacy at the 3 months follow-up. For academic self-efficacy, which was assessed using the students GPA's, statistically significant improvements were seen at four of the six levels, with negative correlations found when the 3 months follow-up was compared to the end of the program and when the end of the program was compared to the start of the program. It is important to note that there were statistically significant improvements at 3 months follow-up when compared to the start of the program as well as at the start of training, which indicates that the program had a significant and lasting impact on the students' academic self-efficacy. Researchers noted that the students who began the training with a lower degree of academic and general self-efficacy had a greater impact on the athletes' nutrition practices, perhaps due to more preparation and general openness to learn from their experience.

Efficacy of health related peer-advising programs on college campuses

An adequate amount of research has been conducted on college campuses implementing peer-advising programs and has generally shown positive outcomes. A quasi-experimental study using a non-equivalent control group design was utilized to examine the effects of a peer-led, non-diet nutrition and exercise pilot program (FitU) on a number

of health outcomes in college females (Keeler et al., 2013). The sample size consisted of 33 full-time female college students; there were 17 subjects in the intervention group (IG) who were self-selected by enrolling in the program and there were 16 subjects in the control group (CG) who were female students from the general student population. Both groups were recruited through convenience sampling. The intervention included four nutrition and three exercise adherence appointments over the course of a semester and focused on Health At Every Size (HAES) concepts like listening to internal cues of hunger and satiety, improving dietary quality, and improving body satisfaction, among others (Keeler et al., 2013). Upperclassmen undergraduate students in nutrition and kinesiology were self-selected and trained to provide peer mentorships using a HAES approach. It is important to note that over 50% of the intervention and control group reported the following barriers to healthy eating: "lack of time to prepare healthy food, emotional coping, knowledge of preparing healthy foods, lack of money for healthy foods and easy access to unhealthy foods" (Keeler et al., 2013). These barriers are likely common among the majority of college students due to limited resources, lack of nutrition education and time constraints. One of the results of the FitU program was that at the end of the program, the intervention group reported significantly fewer total barriers to healthy eating compared to the control group as well as improved dietary patterns/thoughts and exercise patterns/thoughts. The overall experience of the subjects working with their peers in mentorship roles was overwhelmingly positive and supports the implementation of such programs on college campuses. However, due to the self-selection of the intervention group and other limitations, the results seen here are not generalizable to all college students or all interventions of this type.

In another article, Brown & Tenison (2018) sought to create a curriculum for an athletic nutrition-advising program (ANAP) at a small, private DIII New England university. DIII refers to a division of the National Collegiate Athletic Association (NCAA) that offers competitive athletic programs at various universities nationwide. The purpose was to provide meaningful, sport specific nutrition information to collegiate athletes as well as providing experiential learning to dietetic students and interns. The researchers offered a 3-credit independent study course to undergraduate and graduate students in order to improve attrition rates of the peer leaders. Peer educators were required to have completed a handful of university nutrition courses in order to be eligible for the program and upon admission they were required to undergo training sessions based on the education provided by the customized evidence-based training manual provided by the researchers. Students were required to stay up to date with current sports nutrition related research as well as practice their presentation skills under the supervision of a Registered Dietitian (RD) before presenting the material independently. Sports nutrition presentations were kept to 30 minutes or less per the coach's request.

Based on the survey tool that researchers used to assess their target population, results showed that overall nutrition knowledge and practical skills were consistently lacking. Therefore, researchers prioritized hands-on learning, which included dining hall and grocery store tours as well as Fuel Pack demonstrations, where athletes were taught how to pack appropriate pre- and post-game snack combinations for trainings and games. During the fall, winter and spring seasons, about 30 performance nutrition seminars were delivered in addition to the hands-on learning components. Of the nutrition students and

interns that served as peer educators, 87.5% reported that their sports nutrition knowledge and skills improved and 100% reported that the program achieved its objectives; this data was assessed using a 5-point scale. Formal evaluation of the student athletes' feedback regarding the program is still underway, however, when utilizing the pilot-tested mobile fueling station towards the end of the program, it was observed that the majority of the athletes selected appropriate pre- and post-game snack combinations to meet their macronutrient needs (Brown & Tenison, 2018). While this study was a pilot program, it did set a high bar by using evidence-based research to inform the program, which should be the case for any educational program.

Another study involved a nutrition and physical activity peer-counseling program among nontraditional college students (Quintiliani & Whiteley, 2016). The nontraditional students included those who were older, part-time, or working. This population was chosen for the study because they were deemed particularly high-risk for health issues. Researchers utilized a randomized design and implemented an 8-week intervention at a large public university, which consisted of three phone appointments with a peer counselor as well a tailored report for the IG, where the CG received the report only. Forty participants were randomized into the IG and 20 were randomized to the CG. The researchers utilized the Social Contextual Model as their theoretical framework for counseling. In order to produce the tailored report for each participant, a baseline questionnaire was administered at the beginning of the study, which gathered data regarding demographics, fruit and vegetable intake, sugary drink intake, meals eaten, physical activity, psychosocial variables and goal-related variables.

Upon completion of the final survey, the intervention group demonstrated benefits to nutrition behaviors, including increased consumption of fruits and vegetables and decreased consumption of sugary beverages and fast food. However, none of the changes were statistically significant. Researchers also reported a non-statistically significant decrease in moderate-vigorous physical activity in the intervention group compared to the control; this result could possibly be explained by the "education" effect, where the group receiving the education learns what is meant by moderate-vigorous physical activity and improve the accuracy of their reporting. Feedback from the intervention participants indicated that the majority reported setting health related goals as well as actually meeting some or all goals upon completion of the study. While the results were not statistically significant, there were improvements among the intervention group and attrition rates were very low, indicating feasibility of the approach.

Discussion

Peer-advising programs have generally resulted in positive impacts for both peer groups. Peer-advising programs, especially those adopting a dyadic format, demonstrate versatility, flexible scaling, lowered costs for added and improved services, faculty support, as well as a community-building component. While much of the reviewed research indicates positive outcomes and support for peer advising, not all of the results were statistically significant and there were many flaws within the study designs, which contribute to a lowered level of confidence in the strength of the results and in regards to generalizability and reproducibility. Some of the limitations of the studies were small sample sizes, short intervention periods, limited long-term follow-up data, homogeneous

sampling, lack of qualitative results, and selection bias through convenience sampling and self-selection.

Although not all of the studies produced statistically significant improvements in health behaviors, the general impact was positive and both groups (advisors and advisees) benefited from their experiences in some way. Some of the positives revealed from the research were that common cultures, common language and understanding of the peer group's climate gave peers an advising advantage (Ramchand et al., 2017). Other benefits that peer advising provides for the student population is increased access to health care services, increased involvement in health related and self-care activities, and improved overall self-efficacy. Peer advising also resulted in advisors achieving increased academic and general self-efficacy, which would contribute to their success at school, in the workplace, and in all facets of life (Walter et al., 2018). The one negative remark seen in the research was that personalities and/or learning styles could be poorly matched and therefore lead to challenges within the dyad. However, this should be expected to a certain extent due to the interpersonal variability.

Conclusion

The research on peer advising has suggested both long and short-term benefits to the learning development of the advisors and to the health-related outcomes of the intervention groups. Future research on peer advising should seek to incorporate improved standards for reporting both quantitative and qualitative results, as well as increasing diversity among study populations, using larger sample sizes when possible, as well as focusing more on specific and measureable health outcomes. Recommendations for best practice include the use of the HAES framework to minimize harm related to

disordered eating and body image and requiring proper support and supervision of student advisors while training (Keeler, et al., 2013 & Brown & Tenison, 2018). In order for student advisors to be effective, they must first be well trained by faculty members as well as student mentors to ensure that necessary skills are developed before advising begins. Students may also practice with one another to strengthen counseling and presentation skills. At this time there is no standardized protocol for student mentoring in the various health professions. Therefore, each peer-advising program must create its own training protocol and curriculum. Future research should work towards creating a general standardized protocol for training peer educators in various health topics with room for specialization. Creating a standardized protocol for training, evaluation and best practices would encourage the implementation of new programs while improving the efficacy and efficiency of both new and established programs.

CHAPTER 3

Methods

A new program will be implemented for the Cal State LA campus called Peer Health Education Program (PHEP). The training of nutrition peer educators is expected to take place in the Fall of 2020 so they can begin to start seeing students, herein out referred to as "clients", as early as Spring 2020. Dr. Hillstrom is the lead faculty member for this project and has agreed to oversee the training and coordination of the program rollout and implementation. Graduate students in the nutritional science masters program will also be servings as trainers and coordinators for the program together with Dr. Hillstrom. For the first round of peer educator selections, announcements for the program will be made at Fall 2020 Student Dietetic Association (SDA) meetings as well as in NTRS 4180 (Community Nutrition) and NTRS 4300 (Sports Nutrition) classes. Students must meet some basic requirements to apply to become a peer educator for PHEP. Students must be a junior or senior in the nutritional science bachelors program, must show completion of all 2000 and 3000 level nutrition courses along with prerequisites, must have an undergraduate GPA of 2.5 or higher and have availability on Fridays for 2 consecutive semesters. It is recommended that students have completed NTRS 3150 (Counseling Skills), NTRS 4180 (Community Nutrition) and 41300 (Sports Nutrition) but these classes are not required for consideration. Students must submit their resume and complete a brief application with questions about their interest in the program and their availability. These will be submitted to Dr. Hillstrom as well as the graduate student advisors for review.

A group of five to ten upperclassmen candidates will be selected to become peer educators and will commence with training. A training schedule will be decided on among the graduate student advisors, Dr. Hillstrom and the peer educators and meetings will take place on campus, one day per week, for one and a half hours. Topics covered in the training sessions will be based off of the content supplied in the training modules. Each topic will be thoroughly reviewed, any questions will be answered, peer educators will "role play" presentations of the topic and FAQ's will be brainstormed for use in sessions. Peer educators will have access to all training modules as well as to the notes and information formulated during each training session. Once all topics are covered, additional topics and relevant research will be discussed as seen fit by program directors and trainers.

PHEP will be rolled out in Spring 2020 and will begin to be promoted on campus as early as Winter 2020. Promotions for PHEP will include posters in the Student Union, flyers and posters in Xtreme Fitness and mentioned in group exercise classes, posted signs around campus, information pamphlets in the student health center, as well as making information about the program available online via the CSULA Xtreme Fitness webpage. Appointments will take place on Fridays at Xtreme Fitness, in 30-minute time blocks and will be on a topic of the students choosing. A sign up sheet will be located at the front desk of Xtreme Fitness for students to sign up for their desired day, time slot and preferred topic. There will be a list of proposed topics attached to the sign up sheet for the student to choose from. Topics may include but are not limited to: nutrition 101, intro to macronutrients, fat loss, muscle gain, improving body image with intuitive eating, intro to tracking, etc. An email and/or phone confirmation will be sent the day before the

appointment to confirm attendance. If attendance is not met, a note will be associated with the students name for future reference and the time slot will be opened up to "walk-ins". Peer educators are welcome to do research or review materials relevant to their positions during the time slots, if not filled.

If a client wishes to continue seeing a particular peer educator, the peer educator can block off a recurring appointment time in the calendar and sessions can take place once a week, every other week, or once per month as seen fit or is desired by the client. Peer educators are expected to manage their own calendars and update the sign up sheet at the front desk with their availability etc. A comment "box" will be available at all times for clients to contribute to regarding their PHEP sessions. Feedback will be considered during program evaluations at the end of every month in order to improve services offered.

CHAPTER 4

Results

A three part module (see Appendix) was created using PowerPoint for training purposes. The three sections include “Nutrition 101”, “Special Topics in Sports Nutrition: Body Composition and Beyond” and “Counseling 101”. The Nutrition 101 section contains information on basic macronutrient information as well as information on fiber, alcohol, hydration, and intuitive eating/body image. These topics were chosen for the first section in order to provide a foundation for clients who require introductory nutrition education and basic intuitive eating concepts. Peer educators should go over this section briefly with all first time clients to assess their level of understanding of basic nutrition concepts using motivational interviewing techniques. Intuitive eating and body image topics were covered in order to help clients build a healthy foundation with food and eating while promoting awareness of the potential negative effects some of the information in the following section could have. Intuitive eating or mindful eating is recommended for all clients due to its contribution to overall health and body image, and in order to avoid development or worsening of disordered eating patterns that could be harmful to the mental and physical health of the client. If the peer educator suspects disordered eating or an eating disorder, there is information on when they should refer out to another healthcare professional and clearly communicate their scope of practice to the client. The Special Topics in Sports Nutrition section contains information on fat loss, muscle gain, meal timing, fad diets, popular ergogenic aids, as well as sleep and stress management. Because appointments are being offered in partnership with Xtreme Fitness, sports nutrition and body composition concepts are included as an offering to the

students wanting to achieve a certain aesthetic or level of performance in a healthy manner or in conjunction with their personal training/training routine. The topics presented in this section are directly related to achieving a desired body composition in a healthful manner along with improving athletic performance. Sleep and stress contribute uniquely to overall health, performance and body composition, and have a bidirectional relationship with eating habits. The Counseling 101 section contains some basic counseling techniques as well as sections on goal setting, and self-assessment. This section provides the necessary supportive tools for achieving successful behavior modification and long-term adherence to healthy habits. The information contained in these modules was obtained primarily from the Sports and Exercise Nutrition Textbook (2011), the Nutrition Therapy and Pathophysiology Textbook 2nd ed. (2011), the Motivational Interviewing in Nutrition and Fitness (2016) book and various peer reviewed research articles found using the PubMed database.

CHAPTER 5

Conclusion

The PHEP is an exiting new program that students and faculty feel will benefit the campus community. With help from the Nutritional Science department along with the staff at Xtreme Fitness, the implementation of PHEP has the potential to positively affect the health and wellbeing of CSULA students who take advantage of the program, as well as prepare nutritional science students for their future careers in dietetics. The project being introduced has the potential to expand in many ways. On campus, there is opportunity for students to attain academic credit in the newly developed Nutrition Practicum (NTRS 4960). Students are also encouraged to participate without credit in order to gain experience to add to their resume to make them a more competitive candidate for future internships or paid positions. Graduate students may also be offered academic credit for fulfilling fieldwork units if they decide to participate in the program in either a training and development role. Graduate students may also conduct research relating to the program and the effectiveness of various methods being implemented for the fulfillment of requirements related to the completion of a thesis or project.

The strength of the proposed program is that the framework is based on a dyadic peer model, which has been found to be valuable in research studies. CSULA has dietetics programs offered both at the undergraduate and graduate levels, which contributes to the availability of peer educators with advanced knowledge of nutrition concepts. While there are many synergistic aspects of this program, there are also some barriers that need to be addressed for this project to achieve success. The largest barrier to overcome is that there is currently no RD hired at CSULA to oversee the program

exclusively. In order to properly train peer educators and offer adequate support, the program must rely on faculty volunteering their time. Also, a private space for training is yet to be designated and currently, no funds are available for any supplies that may be required. Fortunately, CSULA staff and student are resourceful and there are many opportunities for raising necessary funds.

Once finalized, the program could be utilized as a model for replication on other campuses in the Cal State system with a Nutritional Science program. The basis on which this program was created is such that it offers generalizability to most college campuses offering a nutrition program, and can serve as an initial framework for a new program's creation.

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APPENDIX

Training Modules PP

Module #1: Nutrition 101

Erin McIntyre
California State University, Los Angeles

Why peer advising?

There are many reasons why your role as a peer advisor/educator is important and impactful.

You are offering valuable information and support to the student population who otherwise would not have access this kind of service.

You are also gaining valuable counseling experience through working 1 on 1 with clients in a professional setting.

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Module #1 learning outcomes

- Review basic nutrition concepts
- Understand your scope of practice as a peer educator
- Know when to refer your clients out to other professionals and where to refer them
- Review reading nutrition labels and MyPlate
- Get familiar with HAES concepts, intuitive eating principles and how to nurture a healthy body image

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Scope of practice

- You are in a role to focus on sharing knowledge and offering behavior change strategies
- If the client is talking a lot about their thoughts or feelings, refer out to the campus mental health professionals rather than try to counsel the client- it is possible to do harm
- If you suspect a client is a harm to him/herself or others refer to campus mental health professionals and alert the head staff member on duty
- DO NOT provide MNT or try to diagnose, treat or cure a disease, or offer meal planning to clients- simply provide information requested and help with setting goals and self assessment techniques
- You are here to listen, guide, support and provide reliable information

MACRONUTRIENTS

- Review:

Carbohydrate	Protein	Fat	
• 4 kcal/g • Main energy source • 45%-65% of intake	• 4 kcal/g • Needed for tissue growth and repair • 10%-35% of intake	• 9 kcal/g • Important for membranes, hormones and cell function • 20%-35% of intake	Fiber! Water! Alcohol!

Carbohydrates

Carbs are VERY IMPORTANT because they are your bodies main source of fuel! Not getting enough carbs will affect your mood, performance, recovery and energy levels! Carbs are NOT the bad guy!

Simple CHO's (glucose, fructose, sucrose)- High GI

~ Digested much more quickly which leads to a sharp increase in blood sugar (goal is to keep balanced blood glucose levels with minimal spikes)

~ Examples: sugar (brown or white), corn syrup and HFCS, fruit juice concentrate

* Best consumed post workout due to depleted glycogen stores in the liver and muscles

Recommendations: ~3-5 g/kg for moderately active individuals

Complex CHO's (starches) – Low GI

~ Composed of long chains of sugars which causes them to take longer to digest

~ Because is takes longer to digest, complex CHO's raise blood sugar slower without leading to a "spike" (contribute to more balanced blood glucose concentrations)

~ Examples: whole grains, quinoa, sweet potato, legumes, brown rice, whole wheat breads and pastas, etc.

*Choose these more often and at your main meals

Fiber

Recommendations:

- Men: 38 grams
- Women: 25 grams

* Add fiber into your diet slowly so that your digestive system has a chance to acclimate

What is fiber?

- Fiber is a carbohydrate derived from plants that does not break down or get absorbed by the small intestine
- Fiber helps to improve digestion by either improving absorption of nutrients (soluble fiber) or helping food pass through the digestive system (aka- going to the bathroom) by adding bulk to stool (insoluble fiber)
- Fiber helps to manage blood glucose levels, lower cholesterol and aids in maintaining a healthy weight due to its satiating effect

Examples
Whole grains
Fruits
Veggies
Legumes
Nuts and seeds

Protein- 2 types

There are 8 essential amino acids that our bodies do not make and we have to get from our diets!

Recommendations: 0.8 – 1.2 g/kg/day depending on activity level

Amino acids in protein are important for growth and repair of tissues, commonly referred to as the bodies building blocks, but too much protein can be inflammatory. Protein is the most tightly regulated macronutrient!

Heme Iron

- From animal sources (meat has both heme and non-heme)
- More readily absorbed and digested

Non-Heme Iron

- From non-animal sources
- Less readily absorbed- needs to be altered before it can be absorbed
- Examples: whole grains, legumes, nuts/seeds, tofu, lentils, diary and eggs

- Vitamin C helps to improve the absorption of iron

* Calcium can inhibit iron absorption

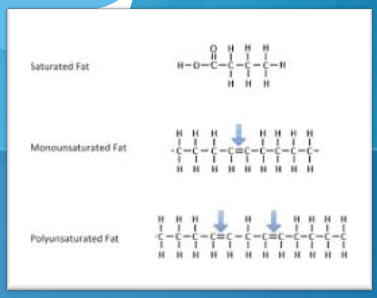
IMPORTANT: Vegetarians who eat diary and eggs will get adequate amounts of amino acids. However, vegans need to plan their diets more carefully to ensure adequate amounts. Food combining should take place over the course of the day and need not occur at the same meal.

Food Combinations for Vegans (AKA complete proteins):

- Grains + Legumes
- Grains + Nuts or Seeds
- Legumes + Nuts or Seeds

Fats-

AKA fatty acids- have important structural roles in membranes and in hormone production



2 essential FA's

Omega-3's

- EPA/DHA/ALA
- Have anti-inflammatory properties
- Sources: oily fish, walnut, flax seed, chia etc.

Omega-6's

- GLA/ARA/CLA
- Shown to have inflammatory properties but we need them (majority of people consume too much Omega-6)
- Sources: vegetable oils, poultry, eggs, nuts, cereals

Trans fats should be avoided!

GOAL: Ratio of 4:1 Omega 6 to Omega 3

The goal is to have these 2 essential FA's in balance from the diet. The typical American diet is high in Omega-6's and low in Omega-3's.

Alcohol

College students are at an increased risk of binge drinking/excessive drinking. Excessive alcohol consumption may lead to instances of assault, sexual assault, or even death by alcohol poisoning or drunk driving. Learn more by visiting

https://www.accreditedschoolsonline.org/resources/avoiding-substance-abuse/

- 7 kcal/g- needs to be accounted for with daily intake
- Effects: can cause liver damage, contribute to development of cancers and other diseases, impairs performance and post exercise recovery (limit alcohol before and after exercising), among other negative side effects. Alcohol should be consumed in MODERATION.
- Recommendations:
  - Women: 1 drink/day (2-3 drinks max)
  - Men: 2 drinks/day (3-4 drinks max)

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* Thirst if often confused for hunger, so before reaching for a snack try drinking a cup of water to see if your hunger subsides

Hydration- fluids and electrolytes

- Recommendations:
  - ~ 1 mL/kcal consumed
    OR
  - ~ 4 L/day for MEN
  - ~ 3 L/day for WOMEN

Basic electrolyte drink:
Add sea salt to coconut water!
OR
Water + pinch of sea salt + orange juice

The body's main electrolytes are Na (sodium) and K (potassium), and they are lost when we sweat. Water does not provide these electrolytes, therefore we must make sure to include electrolytes in our hydration protocol.

Extra H2O is required when:
- Exercising
- In a hot or humid environment
- If one has a fever or diarrhea
- Pregnant or breastfeeding

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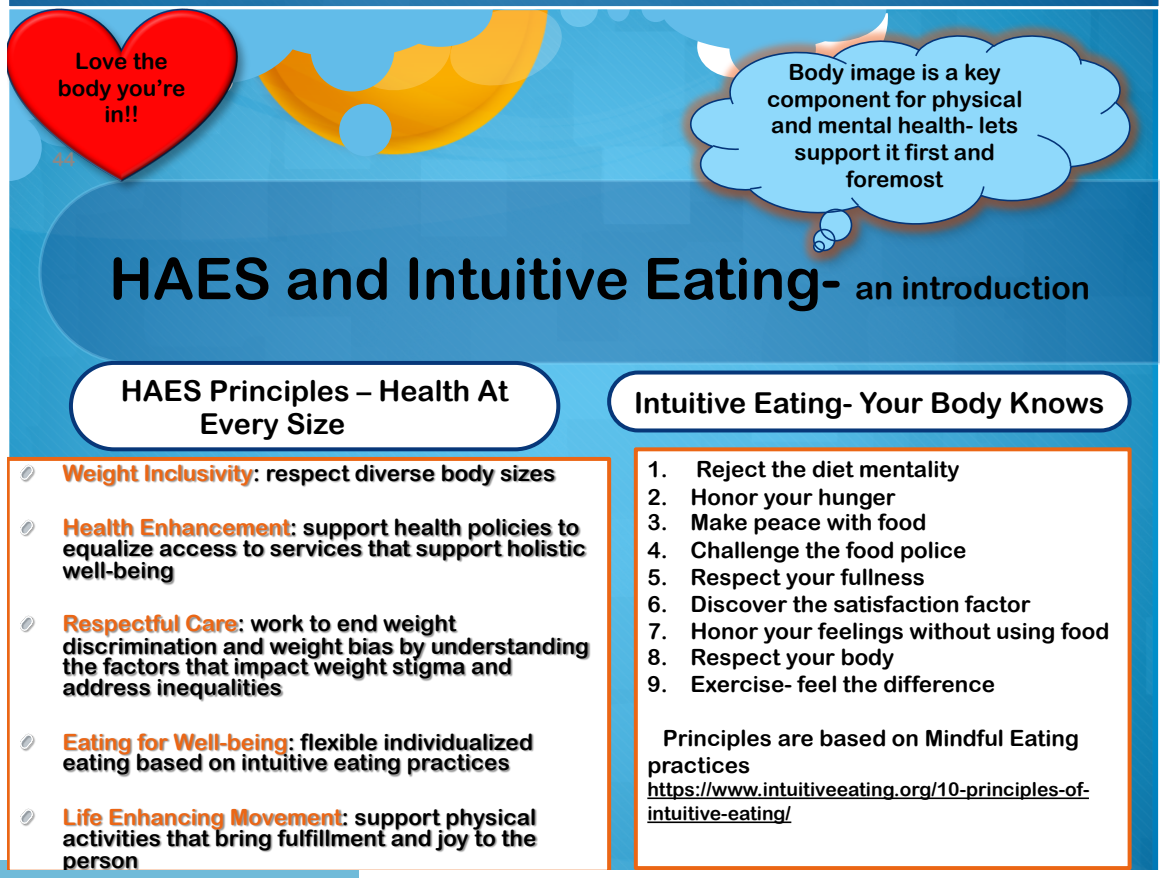
MyPlate recommendations

- General guidelines for adult meals
  - Recommended by the USDA

Understanding Nutrition Labels



HAES and Intuitive Eating- an introduction

HAES Principles – Health At Every Size

- **Weight Inclusivity**: respect diverse body sizes
- **Health Enhancement**: support health policies to equalize access to services that support holistic well-being
- **Respectful Care**: work to end weight discrimination and weight bias by understanding the factors that impact weight stigma and address inequalities
- **Eating for Well-being**: flexible individualized eating based on intuitive eating practices
- **Life Enhancing Movement**: support physical activities that bring fulfillment and joy to the person

Intuitive Eating- Your Body Knows

1. Reject the diet mentality
2. Honor your hunger
3. Make peace with food
4. Challenge the food police
5. Respect your fullness
6. Discover the satisfaction factor
7. Honor your feelings without using food
8. Respect your body
9. Exercise- feel the difference

Principles are based on Mindful Eating practices
https://www.intuitiveeating.org/10-principles-of-intuitive-eating/

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Body Image

If you suspect depression or mental health issues please refer out to the counseling department on campus

- Simple tips for improving body image:
  - Practice Mindful Eating
    - https://www.thecenterformindfuleating.org/
  - Practice Self-Compassion
    - https://self-compassion.org/

Additional Resources

- https://www.nationaleatingdisorders.org/learn/general-information/ten-steps

Special Topics in Sports Nutrition

Body Composition and Beyond

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Module #2 learning outcomes

- Safe weight/fat loss strategies
- Safe muscle gain strategies
- Understanding meal timing limitations and benefits
- Review fad diets
- Popular ergogenic aids
- Eating disorder warning signs
- Importance of sleep and stress management

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Fat Loss

If it was easy everyone would do it! Fat loss takes CONSISTENCY and ADHERENCE to a healthy and balanced lifestyle. These are guidelines- there is no quick fix to fat loss or weight loss

First let's talk about what NOT to do:

DO NOT under eat/restrict your intake!

~When we don't give our bodies proper nutrients, it goes into a state of starvation, which promotes the following:

- Decreased metabolism
- Increased fat storage hormones (holds onto fat stores)
- Increased hunger hormones/decreased satiety hormones (you feel hungry all the time and have intense food cravings)
- Impaired fertility and decreased bone density
- Lowered immunity
- Negative affect to mood and energy levels

NOTE: initial weight gain is common when eating proper amounts after restricting due to the body protecting itself for future restriction. Once the body feels "safe" it can start to regulate hormones that favor fat loss. This process takes patience and compassion for the body. Your body is not your enemy. SLOW AND STEADY WINS THIS RACE!

Sleep and stress can also greatly effect fat loss

- Regular exercise is an important part of any fat loss "program" and recommended as part of a healthy lifestyle
- https://health.gov/paguidelines/2008/

Talk to a fitness instructor about exercises to build lean muscle. Lean muscle mass contributes to fat loss due to its ability to burn calories even at rest

Strategies for Healthy Fat Loss

Strategy #1: Hit your protein and calorie goals

- Because protein is the most tightly regulated macronutrient, you will likely continue to eat (overeat) until you meet your daily requirements
- Consistency is key and by hitting your daily goals you ensure you are getting enough of the right things
- Always make sure to incorporate whole fruits and veggies! Don't stress too much about being perfect- life is meant to be enjoyed so don't cut out your favorite foods! Enjoy them in moderation!

Strategy #2: Get enough fiber/low GI foods

- Fiber enhances satiety and decreases hunger. By incorporating foods high in fiber you feel fuller longer and more satiated between meals which leads to less cravings and more energy throughout the day
- There are also a host of positive health benefits that go along with eating enough fiber
- Fiber can be found in whole fruits and vegetables- LOW GI FOODS are carbohydrates that don't spike your blood sugar, so instead of choosing fruit juice, candy or a pastry- you would reach for a piece of whole fruit, whole wheat bread or trail mix.
- https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/glycemic-index-diet/art-20048478

Post training meal: CHO, Protein and Fat. Aim to get a well balanced meal 1-3 hours after exercising

Strategies for Healthy Weight Gain or Hypertrophy (muscle gain)

Strategy #1: Get your protein

- Protein recommendations for the average sedentary individual is ~ .8 g/kg
  - For those who are resistance training and wanting to gain muscle ~1 – 1.2 g/kg is recommended

Acute Post Exercise Whey Consumption

- Acute post exercise whey consumption stimulates muscle protein synthesis due to its high leucine content
- Leucine is also found in high amounts in spirulina, peanuts, sesame seeds, chicken, hemp seeds, eggs and lentils

Symptoms of over training:
- Drop in performance
- Reduced mood state
- Sleep disturbances
- Very low energy and reduced recovery
- Illness or lowered immunity

Meal timing? How important is it?

- The research shows mixed results on the effectiveness and importance of specific meal timing strategies, but the International Society of Sports Nutrition (ISSN) supports the theory of nutrient timing and recommends various strategies depending on the type and duration of the exercise
- Generally, aim to get well spaced and well balanced meals containing carbohydrates, proteins and fats at every meal and needs will be met

Kerksick et al., 2017

General Guidelines for Meal Timing

AM: Carbs+ protein+ fat
Pre-training: Low GI carbs+ protein
During training: High GI carbs (only necessary for those engaging in prolonged exercise ~ 2 hours +)
Immediately Post-training: High GI carbs to replenish glycogen stores (again, only if training hard or for a prolonged period)
Post-exercise (1-3 hours post): Low GI carbs+ protein+ fat (a balanced meal)
PM: Protein+ fat (limit carbs or choose low GI carbs)

Yoyo dieting can be harmful to your body long term and make it harder and harder to lose weight. Focus on the sustainability of whichever "diet" you choose to follow. Will it work for your lifestyle?

FAD DIETS

KETO and very low carb

- While Keto may induce short term weight loss, results are not maintained long term, which leads to yoyo dieting
- The weight loss is typically from water loss, not fat loss, which is gained back quickly
- Generally, it is not advised to cut out entire food groups (grains, legumes, etc.) unless the individual has an allergy- this can lead to deficiencies

Juicing/Meal replacement

- Extremely low in calories- insufficient for providing adequate energy
- The fiber has been removed from juice so blood sugar spikes and feelings of hunger persist
- Lowered mood state and decreased energy levels
- Very short term in regards to sustainability and weight is regained quickly
- Can be dangerous if electrolytes are depleted due to lack of nutrients and should be under supervision of a healthcare professional

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FAD DIETS cont.

Intermittent Fasting

- Very individual to the person- works for some and not for others based on their schedules and lifestyle
- Research shows that IF is generally no more effective than simple calorie restriction
- This eating pattern could lead to bingeing and intense food cravings
- Not safe for everyone (T2DM, disordered eating, pregnant/breastfeeding)

• Trepanowski et al., 2017, Catenacci et al., 2017 & Moro et al., 2016

Vegan Diet

- While this diet can be practiced safely, many become vegan without having the proper information regarding possible risks
- Food choices and preparation are very important to gain the health benefits this diet has to offer
- B12 supplementation is required as B12 is only found in animal proteins

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"Diets" we can get behind

Mediterranean Diet

- This diet has been linked with a variety of positive health outcomes and is a great model to use
- Veggies, fresh fruit, whole grains, olive oil, nuts and seeds, fish (lean proteins), legumes and moderate red wine intake

• Hernandez-Galiot, A. & Goni, I., 2017 & Skarupski et al., 2013

DASH Diet

- DASH diet focuses on limiting sodium to 2,300 mg/day to prevent and lower high blood pressure
- Vegetables, fruits, low-fat diary foods, whole grains, fish, poultry, nuts

Supplements and aids are NOT regulated by the FDA and thus are

Ergogenic Aids and Supplements

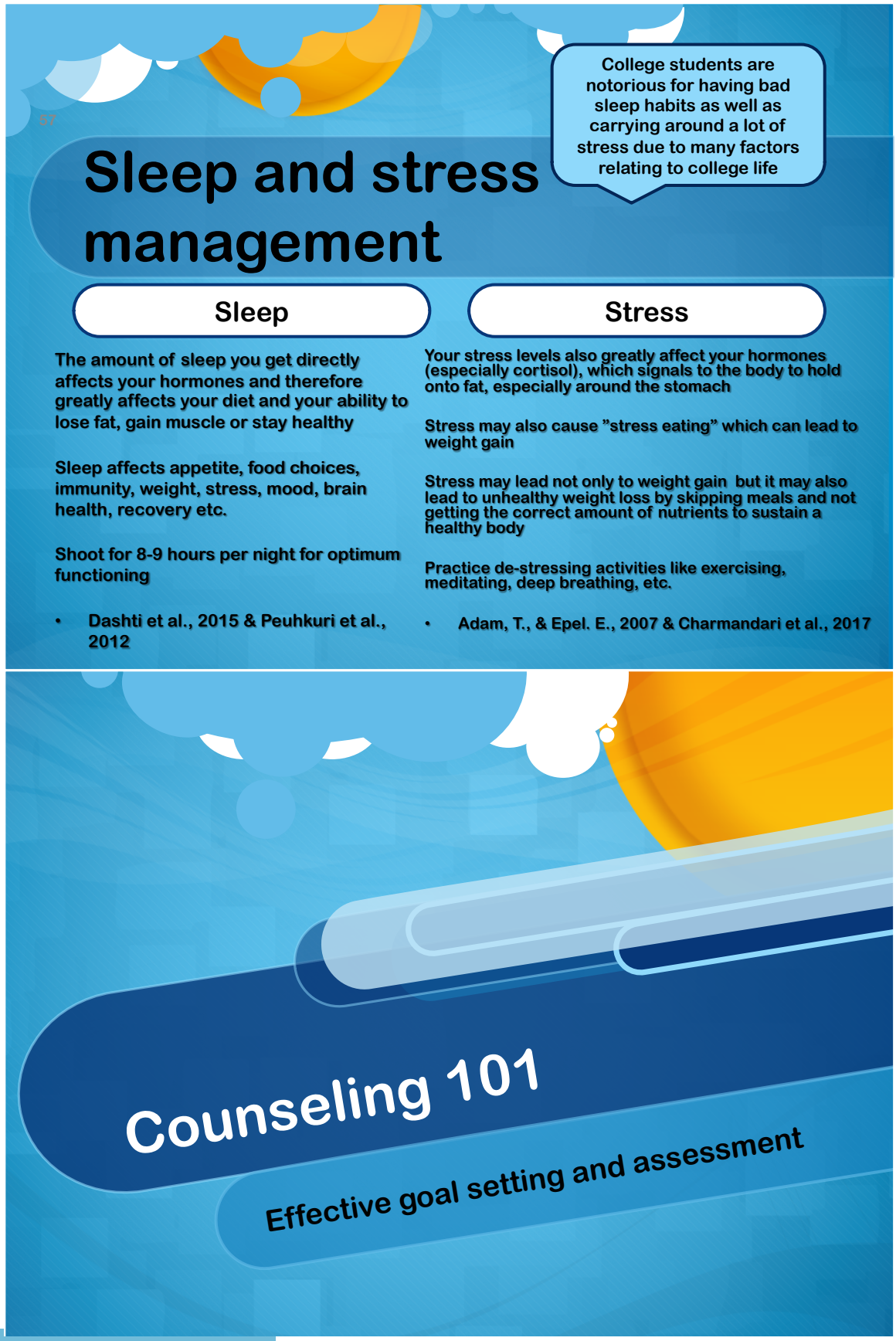
Name of aid	What does it do?	Is it effective?	Is it safe to use?
CHO & protein gels, drinks or bars	Provides energy, macronutrients and micronutrients	YES	YES
Caffeine	Improves endurance performance	YES	YES
Sodium Bicarbonate	Improvement in performance during a time range of 40s-10min by helping to resist fatigue	YES-with HIIT	YES-but some side effects may occur
Anabolic Steroids	Strength and muscle gains	YES	NO
BCAA's	Decreases fatigue	unclear	unclear
Creatine	Strength and muscle mass gains	YES (2-3g/day)	YES

* Supplementation does not replace a healthy diet and overuse of certain supplements can cause toxicity, resulting in health issues

Eating Disorder Warning Signs

- Dramatic weight loss/very low body weight
- Preoccupation with calories, food, weight and dieting
- Restriction of food groups without having allergies
- Lowered immunity
- Swelling around salivary glands
- Denies feeling hungry
- Muscle weakness
- Feeling cold all the time
- ETC.

- Notify an RD faculty member if an eating disorder is suspected or a client admits to having an ED- next steps for referral out to a healthcare professional will be discussed



Module #3 learning outcomes

- Understand what the primary outcome is for coaching- behavior modification
- Understand basic goal setting (SMART goals)
- Feel comfortable with basic self-monitoring and tracking
- Understand basic MI concepts

Behavior Modification- our goal

How do we achieve behavior change?

- Information (you are the expert)
- Goal setting
- Self monitoring
- Problem solving
- Mindful eating
- Stress management

For the purposes of this training program we will focus mainly on goal setting and self monitoring in this module

- Goal setting: must have something to strive for
- Self-monitoring: must track in order to become self-sufficient and gain enough data to decide next steps

Goal Setting

Small changes → Increased confidence → Increased motivation

- Set SMART goals:
- S: pecific…What will be done and how? Keep it simple.
- M: easurable….must be trackable so that changes are observable
- A: ttainable…small changes that are under the control of the client
- R: ewarding…client is able to visualize their success
- T: imely…must create an end point in order to maintain motivation

Examples of SMART goals

Not so SMART goals	SMART goals
I want to increase my vegetable intake	I will eat 2 servings of vegetables/day
I want to cut sugar out	I will replace soda with water 2x per week
I want to lose weight	I will exercise for 20 minutes 3 days this week
I want to get fit	

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Self-monitoring and tracking

- Provides feedback for the client so that they may better assess their goals
- Allows tracking for successes and failures- allows greater potential for learning what is working and what isn't
- Increases confidence and provides an accurate view of clients' behaviors
- Tracking/monitoring methods: Web based programs or Apps (MyFitnessPal, Coach.me, Strides, MyMacros, etc) or written logs (food diary/journal, tracking sheets, etc.)- go with whatever fits the clients lifestyle best

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Motivational Interviewing

- MI techniques: talking to clients about their habits, goals and fears
  - First of all, you are not telling your clients what to do, you are guiding them along their process of making healthier choices
  - It is the clients job to do the work, you cannot do it for them
  - Engage with the client by using open-ended questions (This also builds rapport between client and coach through nonjudgmental listening)
  - Try to help the client reflect on their behaviors, choices and desires to gain more understanding and clarity
  - Summarize what the client revealed during the session and recap next steps and forward movement towards a goal- this goal needs to be set by the client, not by the coach

* Use *Motivational Interviewing in Nutrition and Fitness* (2016) book for more information on MI