

KaylaCookson.TV: An Online Resource Providing Nutrition Education to Young Adults

By
Kayla Rockwell

A Senior Project Submitted
In partial fulfillment of the requirement for the degree
of Bachelor of Science in Food Science

Food Science and Nutrition Department
California Polytechnic State University
San Luis Obispo, CA

December, 2010

Chapter I

There are nearly 14.4 million college students in the United States (Gow and Trace, 2009), these students typically move to college within the age range of 18-29 years old and are classified as young adults. Consequently little information and resources have been allocated towards the study of eating habits and nutrition education knowledge of college students. One study found weight gain during the first semester of college is estimated to range from 3.5 to 7.8 lbs (Lloyd-Richardson and others, 2006). There are many factors which influence diet and eating habits in college students these may include: living arrangements, gender, year in school, major, and other cultural and family practices.

Nutrition knowledge is the primary factor influencing and ultimately, dictating healthy eating habits in this demographic. There are numerous methods which nutrition education may be effectively presented. An example of a website, www.Kaylacookson.tv (“Kayla Cooks On Tv”) seeks to address the lack of nutrition information directed at college students and young adults. “Kayla Cooks on Tv” is an original website which brings together the necessary tools and resources for young adults to approach in a convenient and straightforward manner so that they may make the most healthful choices possible and decrease potential weight gain throughout their years in college as well as into their adult lives. The various tools found on the website include: cooking videos, recipes, blog posts, tips, links, photos, and nutrition information. In an age where a vast number of college students have access to and utilize the the world wide web, the use of internet interventions have not been utilized to

the full potential and may be particularly effective with young adults whose generation have been particularly distinguished with high participation rates concerning internet usage.

The purpose of the website “Kayla Cooks on TV” is to target the lack of nutrition education resources available to college students with internet as the chosen medium to address a population which seems to otherwise, be overlooked. The habits that are formed as students become independent will shape the decisions they make for the rest of their lives. This furthermore highlights the importance of equipping young adults with the right tools and more importantly addressing them through effective communication channels which are captivating and useful to its users. The feasibility of this route is highly successful as the cost and other related input factors required for an internet intervention are relatively low as compared to other education outlets (newspaper, college course, etc). Individuals with high body mass index (BMI) and who fall into the obese range are linked to experience numerous negative health and psychosocial outcomes as a result (Gow, and others, 2009). With the use of effective internet interventions the prevalence of unhealthy eating habits and unnecessary weight gain in college students can be significantly decreased. Therefore, the purpose of this literature review is to assess the effectiveness of a comprehensive nutrition education website for college students in preventing weight gain and creating healthy eating habits for a lifetime.

Chapter II

Eating habits are a key factor associated with personal health since dietary factors are associated with 5 out of 10 causes of death in the United States (U.S. Department of Health and Human Services, 2000). For college students unhealthy dietary behavior is one of the six top health risk behaviors identified for their demographic. Eating habits are of particular importance in the transition to college from high school. This is a big step for students because it generally requires students to move out of their childhood home, sometimes just a few of miles away to the next city or across the nation, either way this may be the first time a student has truly lived on their own, fully independent of their parents. Societal changes in recent years has changed the family dynamic dramatically resulting in unique situations such as both parents working or single parents or other various living arrangements. These new family situations may allow for less home cooked meals and more convenience type items or takeout especially when there are numerous family members and time is a limiting factor. When children and teens are not exposed to cooking at home they are less likely to develop the skills needed to cook on their own. As a result many students arrive at college less equipped to make healthy meals for themselves than say, twenty years ago when young adults may have been taught by a mother, grandmother, or other relative at least the very basic skills of cooking and food preparation.

Living arrangements are arguably one of the most crucial pieces of the transition to college and can often dictate the development of various habits that college students form during this time including but not limited to such choices as nutrient content of food

choices, alcohol consumption, smoking and dieting (Brunt, 2008). This change may be seen most drastically in the first few months of living away at college as evidence in the tendency to gain weight for most new students. For the purpose of this review we will explore the eating habits of students who occupy: on-campus dorm or apartment style living, when referring to on-campus living situations we will include sorority and fraternity houses in on campus living arrangements as well, this is because typically meals and beverages are prepared for Greek life houses in a manner similar to that of an on-campus meal plan, finally we will investigate off-campus living situations.

On-campus housing at many universities and colleges requires students to live in a dorm arrangement consisting of large buildings with many rooms sharing communal bathroom and living spaces. These living situations generally do not offer students access to kitchen facilities and thus colleges often require students to participate in a pre-paid campus run dining plan. A meal plan consists of three or so meals a day in either an all you can eat or Ala carte fashion. Research shows that students who participate in a campus meal plan consumed a larger number of servings from fruit, vegetable, and meat groups than students who did not participate in a campus dining plan (Brown and others, 2005). Typically the diet of young adults tends to be identified by large consumptions of fast food, sugar, fat, sodium, as well as lacking in food choice variety.

Students most commonly living on-campus are freshmen and sophomore students but may also include transfer or graduate students as well. The lack of kitchen availability may contribute to a higher number of snacks or other convenient

type foods found in dorm rooms which can be eaten with little or no preparation on the part of the student. One study by Nelson and Story found that students on average had forty seven different food and beverage items in their dorm rooms. The following is a breakdown by item type found in a freshmen on-campus dorm by the following categories based on prevalence, salty snacks and other savory items (88%); cereal or granola bars (78%) main dishes (78%) desserts or candy (75%) and sugar-sweetened beverages (71%). This resulted in an average of nearly 22,888 calories per dorm room. Students living on campus have limited access to outside food sources and grocery stores, which most likely means many of these food products are purchased by parents or other relatives rather than the students themselves (Nelson, 2009). The staggering amount of excessive calories found in these living situations highlights the potential ease of excess weight gain and unhealthy dietary behavior common among many first year students.

When students choose to live off-campus it is assumed that they must acquire or prepare their own meals and do not participate in a campus dining plan. According to research conducted by Brunt and Rhee, "Students who lived off-campus had increased health risks; having a BMI at the overweight and obese levels; smoking, drinking alcohol; and maintaining a diet with less variety of fruits and vegetables and dairy products than their on-campus peers" (Brunt and others, 2007). Many of the aforementioned practices are illegal in on-campus residence halls and as a result students may choose to live off-campus to legally engage in these practices.

The discrepancy between the dietary variety consumed by students of different

living situations may be accounted for by food cost, availability, preparation, as well as numerous social factors. College students are typically on tight schedules and campus meal plans offer ready-made, quick, and convenient healthful choices for students on the go. Consequently, young adults who don't have these options may reach for food items which are cheap, fast, and unhealthy to satisfy their need for nourishment with little concern to the implications these choices may have on their diet and overall health (Brown, 2005).

When choosing to feed themselves students have many different choices and although there may be numerous healthful options they may be ignored for a variety of reasons. Many factors may be dictating food choices which do not come readily to the mind and may include rejection of food based on distaste, danger, or disgust (Mooney, 2001). Furthermore this highlights the importance of health behaviors of college students and may be closely related to the perceived attractiveness benefits associated with choosing to participate in a healthy eating regimen. This may be based on a fear of becoming fat or ill and may limit or dictate food choices heavily. In a society where outward appearance has become increasingly important in the minds of many young people this may be a contributing factor affecting food choice especially when students are faced with stresses and pressures of fitting in on campus.

Family and cultural practices throughout childhood and adolescence have been found to be related to healthy habit formation which plays an important role in the decisions regarding eating habits of students as they move into adulthood and establish eating habits for the rest of their lives. In a study by Galloway and others looking at the

retrospective reports of child feeding practices on current eating behaviors and BMI in college students it was noted that a vivid memory of parental restriction and monitoring on childhood eating habits was positively correlated to higher BMI numbers and emotional eating than students who did not feel pressured or monitored by their parents growing up (Galloway and others, 2010). The term emotional eating is defined by eating in such a way to suppress or soothe negative emotions such as: fear, stress, anger, sadness, loneliness, or boredom (Mayo clinic, 2010). Eating this way can lead to unwanted and unnecessary weight gain.

The rejection of particular foods is most clearly seen through the female-male gender divide. For male students vegetables were the most commonly avoided foods in a study (Mooney and Walbourn, 2000). Though the avoidance for college females was markedly different with nearly 50% of women participants avoiding meat in a study on food choices and avoidances (Mooney, 2001). For females their avoidance to meat was associated with ethical concerns relating to animal product consumption, though the underlying reason concluded by researchers was the avoidance of meat based on weight concerns. For men the avoidance of vegetables was not based on these type of ethical or health concerns but rather on taste preferences alone.

A common misconception by many students is that it is more expensive and time consuming to make their own meals at home. The various routes which will be explored in terms of off-campus meal choices by students will be: take out or fast food, Ready To Eat (RTE) foods, home cooking from scratch, and semi-home made cooking. Fast food or take out is defined by various corporate types of food outlets also known as Quick

Service Restaurants (QSR) some familiar brands include: Subway®, McDonald's®, Chipotle®, Dominos®, and Jamba Juice® among numerous others. Food served at these locations include such items as hamburgers, chicken, milkshakes, sandwiches, various fried food items and other food stuffs which can be prepared in a rapid manner with little or no preparation at the retail location. These food items tend to be low in nutrition content, high in fat and sugar, and incredibly inexpensive, making them all too familiar items to college students.

Ready to eat foods consist of food products which are prepared ahead of time and can be eaten as purchased, or minimal further preparation is required for consumer consumption. Examples of products include: bagged salads, cereal, energy bars, snack foods, and other highly processed food products. Typically large companies such as Kraft®, Campbell's®, Proctor and Gamble® and other corporations own vast shares of this market. For the purpose of this literature review we will not address Ready to Eat Meals (RTEM) which have different requirements than ready to eat foods and are often seen in the military sector of society and not typically in the general public.

Home cooking may bring about various memories to each of us based on our childhood experiences but this concept can generally be defined as meals prepared in a private home setting involving numerous ingredients and often requiring extensive cooking methods or techniques to produce one or more dishes. Semi-homemade cooking made popular in the last hundred years in large part by the many technological advances in food processing which created products which provide minimal effort required on the part of the consumer for consumption and enjoyment some of these

technologies are freeze drying and canning. A large range of food products occupy this category but some more familiar items are: macaroni dinners, canned meat products, frozen entrees, pie crusts or other types of convenience items which play a specific role in the development of a complete meal.

Evidence shows that college student's knowledge of dietary guidelines translates into better eating habits. In a study of food choices by college students it was found that self-reported consumption of meals, was analyzed based on knowledge of dietary guidelines as pertaining to the major food categories developed by the US department of Agriculture Diet and Health Knowledge survey and the dietary guidelines for Americans 2005. Significant differences were seen between depth of knowledge and intake levels of fruits, dairy, and protein (Kolodinsky and others 2007). The survey questions were focused on energy, total fat, saturated fat, trans fat, added sugars, fiber, importance of maintaining a healthful weight, and of eating a variety of fruit and vegetables.

Students who consumed greater than the recommended amount of fruit had a more extensive nutrition knowledge than those who reported eating less than the recommended amount. For the protein category the results were strikingly different, students who had the highest knowledge reported eating less than the recommended servings for protein. The findings for the dairy category were similar in results to the fruit consumption category. This information is particularly telling in that it shows the significant impact of extensive food specific category advertisement campaigns such as, the \$2 million dairy campaign launched in 2003, the familiar "got milk" ads featuring

celebrities and athletes seemingly blanketed the media strongly promoting milk. Furthermore the findings show that this may skew consumer knowledge and does not increase overall dietary knowledge (Kolodinsky and others, 2007).

Informed young adults when presented with a food decision will use their knowledge to make a more healthful choice. This is consistent with the findings of the Keystone Forum on Away-from-home-foods sponsored by the US Food and Drug Administration (USDA) recommending that nutrition education be a part of an extensive plan to improve the dietary choices of college students who eat meals away from home or campus. Though it is important to highlight the fact that increased knowledge of dietary guidelines does not positively correlate to more healthful eating patterns among college students but rather better eaters have higher nutrition knowledge than their peers (Kolondinsky and others, 2007).

In today's society there are many different ways in which important messages can be delivered to a target audience. An effectively received message has a number of parts but first and foremost is the form which it is delivered. If an audience is not computer savvy then trying to deliver a message via that route would be extremely ineffective. College students are an ever changing group of society and are exposed to a variety of different media outlets some of which include: campus newspapers, internet, social networking sites, and television. In a study conducted by Strauss and Howe a survey of college students found that 97% of students own a computer and approximately 94% owned a cellphone (Strauss & Howe, 1992). The full potential of these resources has yet to be seen in an effective and persuasive manner as a means

to deliver meaningful information on nutrition education to college students (Gow and others, 2009).

The internet and social networking sites and the success of sites like, Facebook®, Twitter®, and Myspace® indicate some of the most influential outlets for the current population of young adults. A study by Gow and Mazzeo presented that students who received nutrition educational material through an online website gained significantly less weight than the control group, who did not receive any information, with the number nearing almost 3.1kg respectively (Gow and others, 2009). Although this study used only a one dimensional educational approach on the online website used and did not provide numerous resources on to students, but rather a more general spread of educational material on eating habits, tips on exercising, and preventing weight gain. It is then deduced that an online intervention would be most effective in preventing weight gain during the transition to college if it included multiple components and had a highly structured content. When young adults go online for health advice without a plan they are left to rely on their own judgement and search engines to find the information they need. In a study by Sutherland and others it was found that the effectiveness of nutrition websites as seen by consumers were judged most heavily on website design and aesthetic appeal as well as the type of information as an indication of credibility rather than of the actual content provided by the website (Sutherland and others, 2005).

Today's college students fall into Generation Y also known as the millennial generation which is marked by birth dates beginning in the 1970s and ending with the

early 2000's. This generation is typically associated with familiarity in communication, media, and technology. Generation Y is the first to grow up with increased technology and ease of access to such technologies as the personal home computer not previously available to generations which have proceeded this demographic. The explosion of technology use especially in the last ten years as lead to a mobile technology market which has been seen most prominently at the forefront of this growth. Smart phones and iPhone's® have allowed for the development of applications and other mobile device features which have, as a result, created a new market and another possible channel for reaching college students. An application for use by smart phones users can be created for "Kayla Cooks on Tv" so that students can have access to videos, recipes, and other content on the go even if they don't have access to a computer.

"Kayla Cooks on TV" is an original website which aims to address the gap left in effective online nutrition education resources for college students. Online video websites such as youtube.com® have skyrocketed in popularity over the last ten years and the prevalence of video use on the internet has been particularly popular with college students. "Kayla Cooks on TV" will host short, simple, and informative videos on cooking and nutrition topics alike. The cooking videos use recipes which are cost effective, non intimidating, and most importantly easy to cook. The segments are designed to provide inspiration for students to cook their own meals at home which would then decrease the amount of time, money, and calories wasted on unhealthy food from outside the home. Along with cooking videos there will be a variety of clips on food safety, label reading, portion control, and other vital information to help students make

the most healthful choices possible.

The videos are a crucial part of the website but other resources are also needed to maximize the effectiveness of the online intervention. Other tools available on the website will include weekly blog posts, these posts will be not only from “Kayla Cooks on TV” staff but also from guest authors who may choose to write a more structured or specific article on a current nutrition related topic. This will provide a variety of writing styles and information pertinent to the lifestyles of college students. Blog posts may also be in response to breaking news such as food borne illness outbreaks or other food worthy related news. In addition to the blog posts there will be recipes which are not included in the videos. These recipes are meant to give students options of cost effective and nutritionally dense meals. The recipes will be categorized by meal type (breakfast, lunch, dinner, etc) as well as tagged concerning specific points of narrowed interest, for example potential tags may include: gluten free, vegetarian, low fat, or high fiber. Students will find this particularly helpful for those who are looking to meet or explore specific dietary requests. This will help to organize the recipes in a searchable manner with suggestions of other dishes students may like if they enjoy a particular meal. Furthermore there will be a section with links to other valuable and useful websites such as the USDA.

The success of this model is based on the notion that if the information and resources are presented to students in a manner they find useful and appealing then consequently they will attain valuable knowledge from these tools. Evidence shows students are more likely to take advantage of the educational material presented to

them in an online format. The website will be implemented and evaluated for effectiveness and success of material presented by a student panel which will review the website through a number of survey questions, the results of the survey will then be statistically analyzed to further understand the findings and ultimately understand the the narrowing or widening of the lack of nutrition knowledge available to young adults.

Chapter III

Materials and Methods

The purpose of this project was to develop, implement, and evaluate a nutrition education resource via an online website aimed at helping college students make healthy choices. The website offers numerous types of information in a variety of formats including but not limited to: videos, recipes, blogs, pictures, educational material, and links to other helpful websites. Published literature and research shows an alarming gap in nutrition education addressing the lifestyles of college students in a format they are likely to receive and benefit from. College students are a growing demographic nation wide and it is important to understand the independence created by college and the responsibilities which accompany this independence in particular food choices and the impacts these may have on the health of the students. Because college students are frequent users of the internet this tool should be user friendly and inviting. A student centered website, Kaylacookson.tv was created and reviewed by a panel of college students living off-campus on the effectiveness of the educational tools and resources offered on the website.

“Kayla Cooks on TV”

Needs Assessment

The bases for the development of this website was to create a website with nutrition education information for college students. The need for this resource was highlighted in numerous studies performed on populations of college students throughout the country. Personally I noticed many of my peers were very impressed with my cooking skills after we moved out of the dorms and off-campus. These skills seemed basic to me and I was puzzled how so many students lacked proper cooking skills and knowledge. Their lack of skills forced them to choose fast food options, take-out, or other convenience foods. These students missed home-cooked meals but lacked the resources to make it happen. Out of this disconnect the idea for “Kayla Cooks on TV” was born. Although there are websites such as Food Network which offer recipes and videos, though they fail to address some of the other elements affecting college students such as budget friendly items, easy to prepare meals, and time efficient recipes.

The Website

“Kayla Cooks on TV” will host short, simple, and informative videos on cooking and nutrition topics alike. The cooking videos use recipes which are cost effective, non intimidating, and most importantly easy to cook. The segments are designed to provide inspiration for students to cook their own meals at home which would then decrease the amount of time, money, and calories wasted on unhealthy food from outside the home. Along with the cooking videos there will be a variety of clips on food safety, label

reading, portion control, and other vital information to help students make the most healthful choices possible.

Other resources available on the website will include weekly blog posts, these posts will be not only from “Kayla Cooks on TV” staff but also from guest authors as well who may choose to write a more structured or specific article on a pressing nutrition related topic. This will provide a variety of writing styles and information pertinent to the lifestyles of college students. Blog posts may also be in response to breaking news such as food borne illness outbreaks or other food worthy related news. In addition to the blog posts there will be recipes which are not included in the videos. These recipes are meant to give students options of cost effective and nutritionally dense meals. The recipes will be categorized by meal type as well as tagged concerning specific points of narrowed interest, for example potential tags may include: gluten free, vegetarian, low fat, or high fiber. Students will find this particularly helpful who are looking to meet or explore specific dietary requests. This will help to organize the recipes in a searchable manner with suggestions of other dishes students may like if they enjoy a particular meal. Furthermore there will be a section with links to other valuable and useful websites such as the USDA.

Subjects

The subjects for the panel will be between the ages of 18-23 and consist of both men and women who attend a four year university in California. These students typically come from upper middle class families although the survey is not limited to this demographic. Unfortunately the university where the survey was conducted does not

support a highly diverse population and as a result most of the students will identify with the race white/non-hispanic/Caucasian. The subjects were chosen for participation based on their attendance at a university and by their age range these were the only limiting factors for participation. These are the most important requirements for the panel as the website is aimed at young adults and more specifically college students so in order to understand the potential viability of the website college students must be surveyed.

Questionnaire and Data Collection

The questionnaire included a number of questions to evaluate students' opinions on the usefulness of the educational resources presented on the website. The questionnaire was posted to an online survey hosting site, [surveymonkey.com](https://www.surveymonkey.com). This method was chosen because that way students could easily switch back and forth between the website and the survey as they are answering the questions, rather than taking the survey on paper and thus having to recall the details of the website. A draft of the survey appears in the appendix, the following is a brief sample of some questions found in the survey including: Is the website: easy to navigate? Visually appealing and aesthetically pleasing? Professional and organized? Other questions will address the content: Was the information useful and easy to understand? Would you refer to this website for cooking or nutrition tips? Do you think your peers and other students could benefit from the information? Do you use other websites for nutrition education types of resources similar to "Kayla Cooks on TV"? What types of content and resources would you like to see on the website? Finally the overall effectiveness of the website was

evaluated.

Data Analysis

The statistical analyses performed on the data is yet to be determined pending results.

Appendix

Draft of Questionnaire for Student Panel

To be conducted and analyzed in FSN 462

This survey is meant to be taken while concurrently reviewing the kaylacookson.tv website.

Gender?

Female

Male

Age?

18

19

20

21

22

23

Is your major a science or health related major?

Yes

No

Do your cooking skills and knowledge allow you to create healthy meals for yourself or others?

Yes

No

If yes, did you learn these skills before you enrolled in college?

Yes

No

How often do you eat out?

1-2 times a week

3-4 times a week

5-6 times a week

everyday

never

How often do you use the internet?

Everyday

5-6 times a week

3-4 times a week

1-2 times a week

rarely

Do you think cooking at home costs more than eating out?

Yes

No

Is the website easy to navigate?

Yes

No

Do you click on the facebook badge?

Yes

no

Is the information useful and easy to understand?

Yes

No

Would you refer to this website for cooking or nutrition tips?

Yes

No

Do you use other websites for nutritional education and resources similar to Kaylacookson.tv if so what?

Yes, _____

No

What types of resources or content would you like to see on the website?

Do you think students could benefit from the information presented on Kaylacookson.tv?

Yes

No

How would you rate the overall effectiveness of the website?

Very effective, I would return to the website at a later date.

Somewhat effective, if the website added specific content or other information I would return

Neutral

Somewhat effective, I might return if I have a specific inquiry

Not effective, I would not return to the website or would use another resource instead.