

DIETETICS STUDENTS' CULTURAL FOOD KNOWLEDGE AND EXPERIENCES WITH VARIOUS CULTURES

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ABSTRACT

Academic institutes are investigating benefits of integrating cultural diversity learning objectives into classroom learning outcomes and creating an environment supportive of students' interactions and experiences with diverse cultures. The purpose of this study was to investigate dietetics students' cultural awareness by measuring food knowledge, perceptions, and learning experiences with various cultures and differences in cultural awareness based on their gender, age, career choice, graduation date and amount of nutrition education. Results indicate that students' believe it is more beneficial to learn about other cultures through direct cultural experiences than through classroom interactions with other cultures or classroom instruction on other cultures

Keywords: culture, food customs, dietetics students

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INTRODUCTION

Institutions of higher learning have acknowledged the need to educate and prepare students to be future leaders in diverse workforces. To increase cultural competences in students, academic institutions are trying to find ways to bring diversity into the classroom. The incorporation of learning objectives and classroom environments that support student interactions and experiences with diverse cultures are being encouraged by academic institutions. Gurin, Hurtado, and Gurin (2002) reported increased intellectual interest and student engagement when a curriculum included incorporating outside classroom activities that increased interactions with students from diverse cultures. It was also noted that students perceived having a higher awareness and knowledge of multicultural issues when these types of activities were incorporated across their curriculum (Dickerson & Jepsen, 2007). Similar results were supported by Chang, Denson, Sàenz, and Misa (2006) who reported college students with higher levels of interaction with diverse groups had significantly greater increases in their knowledge, intellectual, and social self-confidence than students with lower levels of interaction. Additionally, Gottfredson et al., (2008) found a positive correlation between repeated student interactions with and exposure to multicultural students and favorable attitudes towards those groups.

Recently, McArthur, Greathouse, Smith, and Holbert (2011) assessed the cultural competence of dietetics majors at seven universities and reported knowledge scores were highest for food habit questions and lowest for questions concerning cultural health beliefs. They concluded that students would benefit from more interactive

intercultural learning opportunities. However, Knoblock-Hahn, Darcell, and Elliot (2010) reported fewer than 20% of the dietetics programs included in their survey (N = 153 program directors) incorporated a required course for cultural competency into the curriculum.

Within the area of dietetics and nutrition education, the focus on increasing dietetics students' understanding of and exposure to multicultural society has been intensified with the publication of the '2006 Environmental Scan of the Dietetics Profession' commissioned by the American Dietetic Association [(ADA) as of January 2012, referred to as the Academy of Nutrition and Dietetics] (Jarrat & Mahaffie, 2007). Because of the growing multicultural population in the U.S, it was reported that dietitians need greater cultural awareness, language skills, counseling sensitivity, and knowledge of the nutritional values of ethnic foods. Curry (2000, p1142) stated that "the strong influence of culture on an individual's food intake, attitudes, and behaviors is especially imperative." Recent commentaries by Stein (2009a, 2009b) presented a strong argument for the need to better prepare dietetics students to meet the challenges of working in a more culturally diverse work environment.

The issue of cultural awareness is addressed through the accreditation requirements of the Commission on Accreditation for Dietetics Education [(CADE) as of January 2012, referred to as the Accreditation Council for Education in Nutrition and Dietetics] who is responsible for establishing and enforcing eligibility requirements and accreditation standards that ensure quality and continued improvement in dietetics education. To be successfully accredited by CADE, dietetics programs must meet the Eligibility and Requirement Accreditation Standards (ERAS) which are updated accordingly as the dietetics profession evolves. In 2008, dietetics programs were required to implement the updated ERAS that included revised Foundation Knowledge Requirements (FKR) and learning outcomes. One of the updated FKR in 2008 is the learning outcome "Students are able to apply knowledge of the role of environment, food, and lifestyle choices to develop interventions to affect change and enhance wellness in diverse individuals and groups" (CADE, 2008, p15).

At present, the literature is limited in research investigating dietetics students' cultural awareness and the perceived importance and benefits of multicultural exposure in dietetics education. Therefore, the purpose of this study was to investigate dietetics students' cultural awareness by (1) identifying dietetics students' food knowledge, perceptions, and learning experiences with various cultures, and (2) identifying differences among dietetics students on cultural knowledge about food and perceptions across various cultures based on their gender, age, career choice, graduation date, and if they had taken a college nutrition course.

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METHODOLOGY

Instrument

This survey was designed for students matriculated in a university didactic program in Dietetics (DPDs) to determine their food knowledge, perceptions, and experiences with various cultures. Permission was granted to use the cross-cultural survey developed by Taylor and McArthur (2009) for measuring students' cultural knowledge, attitudes, and experiences. The original survey used 56 items in section one of the survey to address cultural social practices and food knowledge. The number of items addressing cultural social practices was reduced to more closely reflect the study's purpose of measuring cultural food knowledge and potentially increasing student participation by reducing survey length (Dillman, 2000). Thirty five items were included in this section. Content validity was established through subjective agreement among experts and professionals and through extensive literature review and pretest (Zikmund, 1997).

Prior to the study, the cross-cultural survey was pilot tested using a convenience sample of May 2010 graduating students enrolled in a DPD from one university. Students were asked to evaluate the survey instrument for clarity of instructions, and readability and content of items. Students' input resulted in some rewording of items. Students also completed the survey online to mimic the primary study and evaluated the ease of responding and the length of time to complete the survey.

The final survey included four sections. Section I, as described earlier, used 35 items measuring students' cultural food knowledge. Section II included 7 items assessing students' perceptions toward the importance of learning about other cultures and 2 items regarding their awareness about other cultures using a 5-point Likert-type scale with 1 being "strongly disagree" to 5 being "strongly agree." Two additional items identified students' exposure to another country and

Table 1: Demographic Profile

Variables	Frequency	Percentage (%)
Gender (N = 118)		
Female	111	94.1
Male	7	5.9
Age (N = 118)		
18	5	4.2
19	9	7.6
20	28	23.7
21	29	24.6
22	16	13.6
Older than 22	31	26.3
Pursuing Career (N = 18)		
Clinical/Healthcare	57	48.3
Community/ Nutrition	34	28.8
Other	20	16.9
Administrative/ foodservice	7	5.9
Expected Graduation (N = 116)		
2011	37	31.9
2012	49	42.2
2013	21	18.1
2014	9	7.8
Experience of Nutrition Course (N = 118)		
Yes	113	95.8
No	5	4.2
University (N = 118)		
A	33	28.0
B	47	39.8
C	38	32.2

likelihood of visiting another country. Section III consisted of 16 items ascertaining students' exposures and experiences with other cultures and how beneficial these experiences have been in increasing their understanding of the various cultures. A 4-point Likert-type scale was used with 1 being "not useful at all" to 4 being "an extremely useful experience." Section IV captured demographic data and provided an open ended question for students to write additional comments regarding their curriculum and cultural experiences.

Sample and Data Collection

Between October and November 2010 students (n = 294) in CADE accredited DPDs at three universities were recruited to participate in a survey using Survey Monkey on-line software program (SurveyMonkey, 2010). All students had the same opportunity to participate by receiving the survey link and instructions through their university email addresses. Dillman's Tailored Design Method (2000) was used for survey distribution. Faculty teaching courses with dietetics majors notified students that a survey was coming to their email address and encouraged students to participate. The study was approved by each university's institutional review board (IRB) prior to data collection. As an incentive, students were eligible for one of ten \$25.00 monetary rewards at each university.

Data Analysis

Data were analyzed using SPSS (version 16.0.1 SPSS, Inc, Chicago, IL, 2007). Descriptive statistics were employed identifying factors that statistically explained differences among variables. After encoding the data in SPSS, the data were screened for usage. Missing values, outliers, normality, and linearity were analyzed. An independent t-test: gender and dichotomous data (e.g., nutrition course taken) and Analysis of Variance (ANOVA): age, graduation date, and career choice were performed to investigate whether there were any significant differences among groups in cultural food knowledge, perceptions, and learning experiences. Statistical significance was determined using $p < .05$.

RESULTS AND DISCUSSION

A total of 118 (40%) useable surveys were completed, with 39.8% of the respondents being from one university, followed by 32.2% and 28.0%. The majority (94.1%) of students were female (n = 111) and 95.8% had taken a college-level nutrition course. Almost half (48.3%) of students identified clinical/healthcare nutrition as their career choice with 28.8% selecting community nutrition, 16.9% other career, and 5.9% administrative/foodservice. The demographic profile of participants is presented in Table 1.

There were no significant differences in cultural knowledge for food and custom among gender, graduation date, career choice, and completion of college-level nutrition course with the exception of age groups ($p = 0.02$). Students 23 years and older (M = 2.97) had more knowledge than younger students. The 19 year old group had the

Table 2: Difference Among Age Groups in Food and Cultural Knowledge

Age	n	M	SD
18	5	2.80	0.84
19	9	2.11*	1.05
20	28	2.54	0.69
21	29	2.54	0.87
22	16	2.13	0.81
>22	31	2.97**	0.95
Total	118	2.58 ⁺	0.89

$p < .02$

*Lowest and **Highest Score

+5 is the maximum score and 2.58 is approximately 52 out of 100 point scale

lowest score in the knowledge test ($M = 2.11$). However, there was no consistent relationship between knowledge and age. On average, students' answered 18 of 35 (52%) items correctly on cultural food knowledge, as measured in Section I.

For Section II, descriptive statistics were used to evaluate students' perceptions towards and awareness of other cultures. Students strongly agreed ($M = 4.14$) to the 7 items measuring importance of learning values, customs, and/or foods of other cultures. Students believed that incorporating information on other cultures into their curriculum is important in contributing to their future professional success. For Section III, factor extraction for the 16 items was conducted through Principle Component Analysis. Factor rotation was performed through the Varimax with Kaiser Normalization. The factor loading scores of the rotated solution were 0.51 and higher. In addition, the Cronbach's standardized alpha was used to test reliability. The reliability test was satisfied as reliabilities varied from 0.74 to 0.83. This resulted in three categories representing; interactions with other cultures (5 items), direct experiences with other cultures (4 items), and instruction and education on other cultures (7 items). As reflected in Table 3, students perceived a direct experience ($M = 3.48$) with other cultures in learning about other cultures a more useful experience than interactions with other cultures ($M = 3.22$) and instruction and education ($M = 3.15$) on other cultures. The open-ended question in Part IV "Please identify any factors that make it difficult for you to participate in activities where you could learn more about other cultures" generated responses regarding factors such as lack of financial support, time, and language as barriers for not participating in different cultural activities.

Discussion

The U. S. demographics are becoming more culturally and ethnically diverse. In preparing dietetics graduates, DPDs are expected to incorporate foundation knowledge into cultural competencies in their students. All three university's DPDs addressed cultural competencies in varying degrees across multiple courses during students' sophomore, junior, and senior years. However, no DPDs required an entire course designated to instruction on foods, values, and customs of different cultures. According to Knoblock-Hahn et al. (2010), the

vast majority of dietetics programs do not teach a course in cultural competence. These factors may have contributed to the low knowledge scores reflected in Section I. It may be interesting to survey dietetics programs on which courses in their curriculum include cultural learning objectives and how these objectives are met. It was clear that the majority of students (89.8%) strongly agreed or agreed to the importance of DPDs providing opportunities to learn about and have exposure to different cultures. The majority of students (92.4%) reported they had the opportunity to interact with individuals from other cultures with 91.5% reporting they enjoyed meeting and interacting with people from other cultures. These results are similar to the results of Taylor and McArthur (2009). While students reported varying degrees of exposure to individuals from other cultures, only 33% believed they were very aware of the values, customs, and foods of other cultures.

Students did perceive a direct experience, such as living abroad, as the most useful experience for learning about other cultures over local interactions with other cultures and instruction and education on other cultures. This is similar to what Taylor and McArthur (2009) found with students reporting that the most useful experience in learning about other cultures is direct experience by spending time in another country. This supports ADA's encouragement for dietetics education to offer more than just classroom instruction in meeting cultural competencies (Stein, 2009a, Stein 2009b). However, McArthur et al. (2011) reported that their sample of 238 junior and senior dietetics majors experienced least often intercultural activities such as study abroad and internship abroad programs. Now may be the time for Dietetics faculty to explore different avenues to facilitate international travel among their students. Efforts towards working more closely with study abroad and other exchange programs, in addition to what is available through the university, may be of real benefit in enhancing dietetics education. It is curious that "Interacting with individuals from other cultures on Facebook/Twitter" was perceived to be the least useful experience for increasing knowledge about other cultures (Table 3). A survey of a national representation of undergraduate college students found that while 90% of students use facebook, only 15% wished their professors would use this technology in the classroom (Educause: Center for Applied Research, 2011).

Table 3: Perceived Importance of Cultural Experiences

Direct Experience ($M=3.48, SD=0.43$)	M	SD
Traveling to another country as part of a study abroad program	3.83	0.38
Traveling to another country as a tourist	3.69	0.46
Working or participating in an internship in another country	3.69	0.50
Eating in a restaurant that featured the traditional foods of another culture	3.16	0.66
Interaction ($M=3.22, SD=0.47$)	M	SD
Working or volunteering with individuals from other cultures	3.43	0.66
Talking with classmates whose cultural background is different	3.43	0.63
Talking with friends who have spent time in another country	3.19	0.64
Talking with family members who have spent time in another country	3.18	0.69
Interacting with individuals from other cultures on Facebook/Twitter	2.76	0.86
Instruction and Education ($M=3.15, SD=0.41$)	M	SD
Watching television programs/movies/documentaries about another culture	3.33	0.56
Studying a language other than your own native language	3.29	0.79
Attending lectures or conferences that provide information about other cultures	3.18	0.55
Attending conferences about some aspect of another culture	3.11	0.69
Reading information about other cultures on the internet, YouTube, or other electronic reference sources	3.06	0.66
Reading newspaper/magazine articles about another culture	3.06	0.58
Reading literary works by authors from another culture	2.93	0.67

*Scale: 1 = Not useful at all, 2 = Not a very useful experience, 3 = A useful experience, 4 = An extremely useful experience, No experience = Not Applicable (No Value).

Qualitative responses from students identified that not knowing a second language was a barrier to learning more about another culture. It is interesting that the DPDs in this study did not require a language course, other than English, in their curriculum. Lack of financial support was also identified by students as a factor in preventing exposure to other cultures. Efforts could be made by DPDs to secure resources or provide guidance for students in finding resources that support participation in programs such as study abroad.

CONCLUSION AND MANAGERIAL IMPLICATION

In this study, students believed that knowing about different cultural values, customs, and foods, is important to their education and success in their future profession. While DPDs are including cultural diversity information in their courses, students believe that direct experience such as study abroad courses are more useful experiences in learning about other cultures. The benefit of incorporating cultural diversity competencies into secondary educational programs has been identified by Chang, Denson, Saenz, and Misa, (2006). However, no previous studies could be found on how best to impart cultural awareness in dietetics programs at the university level. In addressing cultural competencies in their programs, DPDs should explore ways to provide students direct exposure to and experiences with diverse populations. DPD programs could increase student exposure through their foods and foodservice courses. Having students investigate the different foods and social food norms and then prepare the various ethnic foods will assist in increasing their awareness. Field trips to ethnic grocery stores will also help increase exposure to new and exotic foods.

Limitations in this study may have affected the processes and results. The research did not address other potential variables that could increase or decrease students' cultural knowledge level on foods and customs, such as level of exposure to other cultures (e. g., hours per day or days per week, month, or year). Another limitation is that data were not gathered from individual DPD faculty on the extent or manner in which cultural competencies were being incorporated into the curriculum. Additionally, this study only included universities from one state in the U. S. with a limited number of students therefore limiting its application to other parts of the country. Finally, limitations may be associated with the limited objective of this study. Instead of comparing different groups and their knowledge level, it may suggest more implications by using regression analysis or structural equation modeling and knowing which activities are more helpful to better understand cultural knowledge of foods and customs.

This study provided an initial investigation of dietetics students' cultural knowledge on food and custom and learning experiences. The results suggest that future studies on "Best Practices" for imparting culture awareness into DPDs curricula would be of value. It is believed that the current study added to the literature on the assessment of cultural knowledge and awareness of college students in DPDs. It may

be suggested that future research should investigate how success is measured in achieving adequate cultural knowledge and understanding at the university level, and more specifically with dietetics students. It also may be of value to compare the associations between exposures and experiences of students and the importance they place on learning about other cultures.

REFERENCES

- CADE (January 2008). 2008 Eligibility requirements and accreditation standards for didactic programs in dietetics (DPD). P15 Available at <http://www.eatright.org/CADE/content.aspx?id=57>. Accessed February 10, 2010.
- Change, M. T., Denson, N., Saenz, V., & Misa, K. (2006). The educational benefits of sustaining cross-racial interaction among undergraduates. *The Journal of Higher Education, 77*, 430-455.
- Curry, K. R. (2000). Multicultural competence in dietetics and nutrition. *Journal of the American Dietetic Association, 100*, 1142-1143.
- Dahlstrom, E., de Boor, T., Grunwald, P., & Vockley, M. (October 2011). The ECAR national study of undergraduate students and information technology 2011 (Research Report). Boulder, CO: EDUCAUSE Center for Applied Research. Available from <http://www.educause.edu/ecar>.
- Dickerson, G. L. & Jepsen, D. A. (2007). Multicultural training experiences as predictors of multicultural competencies: Students' perspectives. *Counselor Education & Supervision, 47*, 76-95.
- Dillman, D. (2000). *Mail and internet surveys: The tailored design method* (2nd ed.). New York: John Wiley & Sons, Inc.
- Gottfredson, N. C., Panter, A. T. , Daye, C. E. , Wightman, L. F. , Allen, W. A., & Deo, M. E. (2008). Does diversity at undergraduate institutions influence student outcomes? *Journal of Diversity in Higher Education, 1*, 80-94. DOI: 10. 1037/1938-8926. 1. 2. 80.
- Gurin, P., Dey, E. L., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory and impact on educational outcomes. *Harvard Education Review, 72*, 330-366.
- Jarratt, J. & Mahaffie, J. B. (2007). The profession of dietetics at a critical juncture: A report on the 2006 environmental scan for the American Dietetic Association. *Journal of the American Dietetic Association, 107*, S39-S57.
- Knoblock-Hahn, A. L., Scharff, D. P., & Michael, E. (October/December 2010). Cultural competence in dietetics education: Where are we now and where do we need to go? *Topics in clinical nutrition, 25*, 323-334.
- McArthur, L. H., Greathouse, K. R., Smith, E. R., & Holbert, D. (2011). A quantitative assessment of the cultural knowledge, attitudes, and experience of junior and senior dietetics students. *Journal of Nutrition Education and Behavior, 43*, 464-472.
- Stein, K. (2009a). Cultural competency: Where it is and where it's headed. *Journal of the American Dietetic Association, 3*, 388-394.
- Stein, K. (2009b). Navigating cultural competency: In preparation for an expected standard in 2010. *Journal of the American Dietetic Association, 10*, 1676-1688.
- Taylor, M. & McArthur, L. (2009). Cross-cultural knowledge, attitudes and experiences of hospitality management students. *Journal of Hospitality & Tourism Education, 21*, 6-14.
- Zikmund, W. G. (1997). *Business research methods* (5th ed.). Orlando, FL: Dryden Press/Harcourt Press.