A STUDY OF STUDENTS' RECOGNITION ON KOREAN FOODS AND HEALTH USING BORICH PRIORITY AND LOCUS FOR FOCUS MODEL

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ABSTRACT

A needs assessment is simply a tool for making better decisions. The purpose of this study was to analyze the priorities of food nutrition and health education for university students using Borich priority formula and The Locus for Focus Model. The data collected were analyzed by determination of the mean of the responses from the respondents and one-way of Variance (ANOVA). In the case of the mean of the Present Competency Level (PCL), the mean of U-7 (I understand that leaving food is a waste of resources) showed the highest score of 31.224, but S-3 (It is also necessary to volunteer for other people or countries in a difficult situation) showed the lowest score of 23.586. The lowest needed training was on the statement "It is also necessary to volunteer for other people or countries in a difficult situation" with the averages mean 19.581 because this statement, not important statement. All categories, 'Service', 'Understanding', 'Practice', and 'Food security' were statistically significant difference between March and June for categories present in Korean Foods and Health. These results could provide an understanding of needs assessment methodologies of food nutrition and health education for university students.

Keywords: Borich priority formula, food nutrition and health education, Locus for Focus Model, needs assessment.

INTRODUCTION

When one visits Korea, one can observe a great deal of fast food restaurants that are from United States: McDonalds, Burger King, KFC, Pizza Hut, and so on. Having Westernized food has become so common in Korea that most of the young people enjoy eating such food than traditional Korean food. Koreans are using American spices such as ketchup, butter, hot sauce, and honey muster to cook their regular meals instead of using Korean traditional spices. The consumption of pork and beef increased in this time of the period, too. Though the field of medicine and health hygiene continues to advance and branch out in many ways, nutritionists and health experts continue to praise the benefits of certain foods. If we get too much food, or food that gives our bodies the wrong instructions, we can become overweight, undernourished, and at risk for the development of diseases and conditions. Proper eating has been shown to reduce the risk of obesity, cardiovascular illnesses, and even certain types of cancer. Good nutrition is fundamental for good health and the prevention, treatment and management of disease (Day and Jackson, 2017). Access to a sustainable and healthy diet is a key requirement across the life course and across the globe. Young people prefer overeating or greasy foods because of their weak control over food. Korean college students are no exception. They often enter the classroom with coffee, bread and snacks. When you are young, excessive consumption of food leads to obesity, dieting is never easy, and you grow old and suffer from

various lifestyle diseases. Sweet foods also cause dental tooth cavities. In order to make greater advances, and more quickly, we will require transformative thinking and action.

New requirements are causing major changes in school education as well as in professional training (Ferrira & Abbad, 2013). A "needs assessment" is a systematic set of procedures that are used to determine needs, examine their nature and causes, and set priorities for future action. Also, a needs assessment is a systematic approach to studying the state of knowledge, ability, interest, or attitude of a defined student or group involving subjects (McCawley, 2009). It can be an effective tool to clarify problems and identify appropriate interventions or solutions (Fulgham et al., 2008). The need can be a desire to improve current performance or to correct a deficiency. Cooperative extension system professionals use needs assessments to learn about important issues and problems faced by our public in order to design effective educational programs (McCawley, 2009). A needs assessment also provides a method to learn what has already been done and what gaps in learning remain.

"Health needs assessment is a systematic method for reviewing the health issues facing a population, leading to agreed priorities and resource allocation that will improve health and reduce inequalities" (NICE, 2005). Kilduff et al (1998) highlight the need for primary health care teams to understand their stage of development and how this will directly affect any health needs assessment.

Questionnaires are specialized and structured tools of human interaction. They are meant to make communication more effective and predictable. Training Needs Assessment refers to the organizational process of collecting and analyzing data that supports decision making about when training is the best option (or not) to improve individuals' performances, define who should be trained, and exactly what content should be taught (Clarke, 2003).
Needs assessments and subsequent decisions generally benefit from data and information regarding performance discrepancies. The purpose of qualitative studies is to describe a phenomenon from the participants' points of view through interview and observations if there is an impact in students' recognition changes during at "Korean Foods and Health" lecture class.

METHODOLOGY

Subjects

Needs are simply the differences between your current achievements and your desired accomplishments. Thus, needs most commonly represent discrepancies between students' ambitions and the results of their current performance. This study conducted in the Dong-eui University, South Korea. The subject of the analysis is a student who takes the liberal arts course "Korean Foods and Health" in the first semester of 2019. The questionnaire was developed by the author M. K. Huh and applied for the first time. The question of the cognitive moral character consists of 24 questions. Twenty-four questionnaires were divided into four groups (Service, Understanding, Practice, and **Food security**) according to their characteristics. After reading each topic, respondents were asked to rate: (a) how important they perceive this topic to be, (b) what their current knowledge of this topic is, and, (c) what would be their opportunity to use information related to this topic in their present job? Questionnaire response rates are shaped by the research topic, the nature of the sample, and the quality and appropriateness of questionnaire design as much as by the mode of distribution. Table 2 provided examples of three types of rating scales: agreement, satisfaction, and frequency (Watkins et al., 2012).

Borich (1989) priority determination formula (BPD) was calculated using the following formula:
RCL: required competency level, each individual's importance score
PCL: present competency level, each individual's performance score
Avg.: average of importance by each competency.
N: total number.
Locus for Focus Model were used for the determination of the priority of needs (Mink et al., 1991).

The second quadrant: LH	The first quadrant: HH
The third quadrant: LL	The fourth quadrant: HL

Table 1. Twenty-four questionnaires for character education at "Korean Foods and Health" lecture class

Category	Questionnaire
Service	S-1. Do you think it is natural to provide food to the poor?
	S-2. Do you agree to increase your taxes for the sake of the sick or vulnerable?
	S-3. It is also necessary to volunteer for other people or countries in a difficult situation.
	S-4. Are you satisfied with the food in the school cafeteria?
	S-5. Are you satisfied with the service in our restaurant?
	S-6. I can pay more for fair trade including food materials in less developed countries.
Understanding	U-1. It is bad to serve low quality for people.
	U-2. I try to understand the suffering of those who are alienated from food.
	U-3. I feel sick when I think of children from other countries who are starving to death because they have nothing to eat.
	U-4. I try to understand openly food cultures of other countries.
	U-5. I reduced my salt intake that excessive intake of salt is bad for my health.
	U-6. I realized that balancing the intake and consumption of calorie is important to my health.
	U-7. I understand that leaving food is a waste of resources.
Practice	P-1. It was good for my health to give up fast food.
	P-2. The nutrient function was helpful in improving my diet.
	P-3. Korean fermented food such as Kimchi, Doenjang, and Gochujang helped me improve my diet.
	P-4. How often do you eat fast food?
	P-5. How often do you eat Korean food?
	P-6. Do you prefer rougher food that is less airtight than processed food?
Food security	L-1. Do you think the Food Sanitation Act should be strengthened?
	L-2. I agree to limit the salinity of food to the health of the people.
	L-3. Do you think we should reduce pesticide application for environmentally friendly ingredients?
	L-4. Do you think it is safe in the process of making and distributing food?
	L-5. Do you think the safety management of our government or local government is going well?

Table 2. Examples of different rating scales in this study

Agreement: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree		
Current performance	Survey question	Desired or optimal performance
① ② ③ ④ ⑤	Do you think it is natural to provide food to the poor?	① ② ③ ④ ⑤
Satisfaction: 1 = Very Dissatisfied; 2 = Dissatisfied; 3 = Neutral; 4 = Satisfied; 5 = Very Satisfied		
① ② ③ ④ ⑤	Are you satisfied with the food in the school cafeteria?	① ② ③ ④ ⑤
Frequency: 1 = Daily; 2 = Weekly (3–6 times per week); 3 = Occasionally (3–6 times per month); 4 = Sometimes (less than 3 times per month); 5 = Rarely (once a month to never)		
① ② ③ ④ ⑤	How often do you eat fast food?	① ② ③ ④ ⑤

Research limitations

Students who did not complete the questionnaire or who did not submit a report, either a single item or no answer, were excluded from the analysis.

Statistical analyses

Analyzing questionnaires used in mixed-method research that blends qualitative and quantitative data requires an approach that distinguishes between closed questions in which responses are provided in an easily quantified format and open questions that seek qualitative responses. Statistical analysis of data is a key step in every scientific research. Data were analyzed using the SPSS version 21 (SPSS Inc, Chicago, IL) statistical software package (IBM Corp, 2012). The results were submitted to an one-way of Variance (ANOVA) with an F test, and when relevant, the Greenhouse-Geisser (1959) was used to assess the change in a continuous outcome with two observations across time or within-subjects**.** Means and standard deviations should be reported for each observation of the outcome with Greenhouse-Geisser corrections.

RESULTS

In this study, we investigated how students' recognition of twenty-four questionnaires for Korean Foods and Health changed with the passage of time. Table 3 shows the analysis results of the mean and standard deviation of the educational needs and priorities by competency-unit according to the 24 competency-units. In the case of the mean of the Present Competency Level (PCL), the mean of U-7 (I understand that leaving food is a waste of resources) showed the highest score of 31.224, but S-3 (It is also necessary to volunteer for other people or countries in a difficult situation) showed the lowest score of 23.586. The highest value among the 24 items in the June survey was U-7 with 27.551 (Borich's needs). The second highest item was L-2 (I agree to limit the salinity of food to the health of the people). The lowest value among the 24 items was S-3.

The lowest needed training was on the statement "It is also necessary to volunteer for other people or countries in a difficult situation" with the averages mean 19.581 because this statement, not important statement. Many students did not have some information and knowledge.

Table 3. Educational needs and priorities by competency-unit in "Korean Foods and Health" class

Category	March		June	
	Borich's needs	Priority	Borich's needs	Priority
S-1	28.699	12	16.837	22
S-2	26.485	20	19.036	16
S-3	23.586	24	15.575	24
S-4	25.762	22	20.272	11
S-5	29.184	10	18.333	19
S-6	30.227	5	16.519	23
U-1	30.001	6	18.929	17
U-2	26.939	19	20.816	9
U-3	28.526	13	21.202	8
U-4	29.478	8	18.424	18
U-5	29.334	9	19.194	20
U-6	27.157	18	20.672	10
U-7	31.224	1	27.551	1
P-1	31.205	2	19.155	15
P-2	29.617	7	19.378	14
P-3	28.866	11	21.270	7
P-4	27.370	17	17.710	21
P-5	27.973	16	22.457	4
P-6	31.020	4	22.619	3
L-1	31.148	3	22.449	5
L-2	28.163	15	24.252	2
L-3	28.348	14	19.416	13
L-4	26.250	21	20.002	12
L-5	24.898	23	22.404	6

In the March survey, the average of 'Service' domains for personality was 27.324 that of June was 17.762 (Table 4). The gap between March and June was 9.562. According to the locus for focus type model, 'Service' appeared as LH belonging to the first quarter (Fig. 1). This is the factors that are required for improvement and are relatively high compared to other character education. In the March survey, the average of 'Understanding' domains for personality was 28.951 that of June was 20.827. According to the locus for focus type model, 'Understanding' appeared as HL belonging to the fourth quarter. This is the area where the need for improvement is most perceived. In the March survey, the average of 'Practice' domains for personality was 29.342 that of June was 20.432. The gap between March and June was 5.22. According to the locus for focus type model, 'Practice' appeared as HH belonging to the second

quarter. This is the priority to be considered. In the March survey, the average of 'Food security' domains for personality was 27.779 that of June was 21.704. The gap between March and June was 6.075. According to the locus for focus type model, 'Food security' appeared as HL belonging to the fourth quarter.

After one semester class, students' perception changes were examined. The main effects of the model were assessed with repeated-measures ANOVA (p<0.05). Post hoc testing was followed by paired t tests (Bonferonni corrections were applied for multiple comparisons). All categories, 'Service', 'Understanding', 'Practice', and 'Food security' were statistically significant difference between March and June for categories present in Korean Foods and Health (Table 5).

Table 4. Change of importance recognition in needs assessment in Korean Foods and Health class

Category	March		June		Difference	Locus for locus
	Mean	SD	Mean	SD		
Service	27.324	2.486	17.762	1.757	9.562	LH
Understanding	28.951	1.535	20.827	3.206	8.124	HL
Practice	29.342	1.572	20.432	1.987	8.910	HH
Food security	27.779	2.342	21.704	1.979	6.075	HL
Total	28.349	1.984	20.181	2.232	8.168	-

Table 5. Correlations between frequency counts for categories present in Korean Foods and Health according to time (March and June)

Test	Category			
	Service	Understanding	Practice	Food security
t-test	7.592**	7.198**	9.929***	2.234*

*: Significant, p <0.05, **: Significant, p <0.01, ***: Significant, p <0.001.

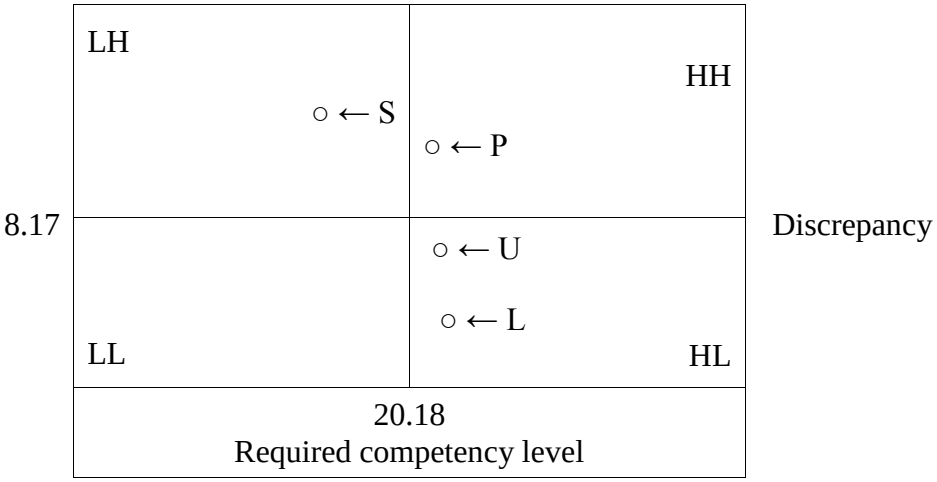

Figure 1. Analysis of the locus for focus model of the need's assessment in "Korean Foods and Health".

DISCUSSION

Health education is important as liberal arts for young college students. The percentage of college students who report experiencing psychological distress, depression, and anxiety has greatly increased over the past decade (Burris et al., 2009; Eisenberg et al., 2013; Baldwin et al., 2017). Many college students regularly engage in unhealthy behaviors, placing them at risk for developing serious health problems later in life (Heller & Sarmiento, 2016; Hopper & Moninger, 2017; Tran et al., 2017).

Since the 1960s, need assessments have become a common business practice (Brethower et al., 1998). Consequently, the term needs assessment has taken on several definitions and has led to a few related process models or approaches. Although such reports can provide valuable contexts for understanding the topic, there are a few foundational constructs and relationships that can help you better use needs assessments to achieve desired results. In this section, we offer an introduction to needs assessments as we present many of the most frequently asked questions that we get from colleagues, students, clients, and others. Education of healthy nutrition is a complex subject.

Nutritional requirements (both maximum and minimum) may vary according to factors including age, sex, body weight, genotype, level of activity, physiological status (e.g. growth, pregnancy and lactation) and the presence or absence of disease (Day and Jackson, 2017). The changing burden of disease across the world has led to the emergence and increase in prevalence of chronic non-communicable diseases (NCDs), for example heart disease, obesity, cancer and diabetes, in developing countries. Nutrition, and its influence at all life stages, is likely to play a pivotal role in understanding NCDs and their prevention and treatment. Food consumption and lifestyle directly impact nutritional health and well-being in everyday life of today's consumers. Bad food can be eradicated to some extent if it is not favored by individual perceptions. Therefore, education on food is important. The challenges with respect to food and nutrition, health and behavior, require innovations both in scientific knowledge as such, as well as its translation into societal practice (Wageningen, 2011). Knowledge and technology gaps between food technology, nutritional, clinical and behavioral research, inspire the development of innovative concepts; viable market concepts are identified by cooperation with partners from food industries, life science companies, medical universities, multinational food companies, etc.

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