UBC Social Ecological Economic Development Studies (SEEDS) Student Report

UBC SHHS: Innovation of Menu Labelling at Open Kitchen Cin Yong, Emerlin Law, Emily Huang, Gail Hammond, Poonam Dattani, Sumire Sasayama University of British Columbia FNH 473 July 21, 2017

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UBC SHHS: Innovation of Menu Labelling at Open Kitchen

FNH 473

Professor: Dr. Gail Hammond

TA: Roselynn Verwood

Group 2: Poonam Dattani

Emily Huang

Emerlin Law

Sumire Sasayama

Tien Cin Yong

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Executive summary

The health and wellbeing of UBC first year students is a primary concern for UBC's Manager of Nutrition and Wellbeing: Melissa Baker, thus she desires to help students make informed food choices. Our project sets to gain insight for future direction in menu labelling approaches offered to residence dining at UBC. Our project integrates research that discusses menu labeling options available globally, and to discover elements of menu labeling that are perceived effectively by the consumers to make healthy food choices. Additionally, phone interviews were conducted with 5 universities across Canada to explore alternative labelling options used in institutions that have a similar background with UBC. A survey was conducted specifically on UBC first year students to test their perception of3 different labels informed by the literature search.

Data analysis has allowed us to determine which nutrients are of greatest concern for the students, what aspects should be emphasized and incorporated in future labeling initiative. In addition, the idea of being able to search for the menus and nutrition information online were also received favourably by our target population. Our first objective is to increase our group's awareness of types of menu labelling layouts offered in the food industry and to gain knowledge of menu labelling approaches used in Canadian university dining halls. Our second objective is to develop at least 2 recommendations for UBC SHHS, of alternative menu labelling layouts that can be offered at Open Kitchen; in which will be evaluated through UBC SHHS comments regarding whether we have made appropriate recommendations. Overall, our findings and recommendations will be useful for our community partner as a starting point in innovating new labels for Open Kitchen.

Introduction

This is a community project working on menu label innovation for Open Kitchen, a dining hall in Orchard Commons at the University of British Columbia (UBC). The project is under the SEEDS Sustainability Program at UBC, working with UBC's Manager of Nutrition and Wellbeing, Melissa Baker to test the likability of various menu labelling approaches that have shown effectiveness in literature. Our project is driven by a common desire - to support UBC students in making informed and healthy food choices, and to improve their health and wellbeing. Since Orchard Commons is a firstyear student residence, our target population is first year students. The 1047 students living in Orchard Commons would frequent and depend on Open Kitchen to nourish their daily meals. As Open Kitchen also provides food for students from other residences and campus staff, the effects will be significant as it may extend beyond the first-year students living in Orchard Commons. Likewise, this project was initiated by Melissa Baker's impression that the translation of nutrition information is ineffective in informing the customers of their food choices. The project is dedicated to find innovative layouts of menu labelling to improve the current nutrition information labelling approach of the menu items. Currently, the label is a Nutrition Facts panel-style of 9 calories and nutrient content in their perspective grams and milligrams amount. The limitations of this project mainly rest on the limited time allotted. We have little information on the current use of the labels since the other FNH 473 group's project is occurring simultaneously. Ideally, the other project's data on the efficacy of the current labels would inform our project of our target population. This project's survey combined with the other team's data would offer the community partner a better picture of the target audience at Open

Kitchen. Additionally, with the restricted time, our project is unable to see new labels being implemented. Therefore, our outcomes are adjusted and were mostly hypothetical for the future.

Situational Analysis and Planning Framework

<u>Problem</u>

Entering university is a momentous milestone in the life of a young adult and may be the first time they make lifestyle decisions on their own. They are in the process of implementing lifelong eating patterns when they have to make choices about whether to eat or not and what to eat. For our targeted population- which is UBC first year students, they are obliged to purchase a meal plan and consume their meals in the dining halls. They are exposed to a wider variety of food items than what they experienced at home, and the ready availability of this food may lead to overconsumption. Studies have shown that the "freshman 15" is a reality and is associated with the abundance of menu and snack items available on campus (Christoph et.al., 2016). Food consumption patterns of university students in general too are of concern because students tend to skip meals, eat diets excessively high in fat and low in energy, and avoid certain types of nutritious foods. Students also often consume intakes of calcium, iron, and vitamin A below the Recommended Dietary Allowance (Christoph et.al., 2016). Hence, UBC has emphasized on the placement of nutrition information on point of selection in the dining halls on campus to help the students make an immediate connection between food choices, calories, and nutrients consumed.

According to Marietta and colleagues however, approximately 44% of university students reported using nutrition labels often or always when making a first-time purchase. Conversely, Krukowski and colleagues found that approximately more than half of a university student sample reported that they did not look at food labels. Although these studies were not directly correlated with UBC students, we could still hypothesize that it could be the case with UBC students too; and that UBC students are either not utilizing nutritional labels effectively or not at all. Some reasons that being that they likely do not have time to read or understand the nutrition labeling that is posted in front of the food items. This agrees with another finding that time pressure may influence the nutrition information searches of consumers (Cooke & Papadaki, 2014). They may also be talking to their friends rather than taking the time to read the nutrition labels. Moreover, students also believe that the information will not change food choices, as their knowledge regarding the relationship between label-reading and health is limited and would rather consume foods that they believe are 'tasty' regardless of the nutrition label. Essentially, students do not understand how to interpret or apply nutritional information provided (Christoph et.al., 2015). Therefore it is important to study how the presentation of nutrition information influences label awareness and how the students interpret and use the type of information that is presented; supplement with the consideration to increase nutritional knowledge to improve the dietary quality of UBC students.

Behaviours

There are multiple behaviours that contribute to nutrition label awareness mentioned above. Findings from a study done among college students concluded that

the most frequent nutrition label readers usually engaged in higher rates of healthy dietary behaviours including higher consumption of fruits and vegetables, limiting fast food and added sugar, and high consumption of fibre. Frequent nutrition labels users not only exhibited more healthy dietary behaviours, they also they also had great nutrition knowledge in comparison to infrequent nutrition label readers (Graham & Laska, 2012). Time constraints and a "don't care" attitude are both behaviours contributing to infrequent nutrition label use (Rasberry, C. N., Chaney, B. H., Housman, J. M., Misra, R., & Miller, P. J., 2007). Moreover, a "don't care" attitude is often associated with negative health behaviours such as smoking, drinking, and poor eating habits. One's poor health behaviours overall reflect the awareness they have for nutrition labels. Ultimately, nutrition labels can be used as a preventative tool for college students through encouraging the formation of healthy habits that will impact their health behaviours and diet quality later on in life (Christoph & Ellison, 2015).

Mediating factors

As it is explained in Health behaviour theories, there are multiple levels of factors that contribute to people's health behaviour, including the individual, interpersonal and environmental factors. This is also applicable to the issue of nutrition labelling not being utilized by UBC 1st year students.

The individual factors that contribute to the nutrition label utilization are their beliefs, knowledge, presence of personal health goal, and time constraints. A study conducted by Driskell et al. (2008) at the University of Nebraska states that the predominant reason for not using the nutrition labels was a belief that the information will not change food choices. It also states that the knowledge of some individuals

regarding the relationship between label-reading and health is limited. This may lead to the student's' attitude of "not caring" about the information on nutrition labelling, which is suggested by Christoph et al. (2015) as a dominant reason behind the limited label use. The Health Belief Model also supports these findings by stating that if an individual does not perceive the severity of not utilizing the labels and/or the benefits of an action, they are not likely to execute that (National Cancer Institute, 2005). Moreover, students do not have sufficient time to spend on reading the labels while they are in the line, and therefore they do not pay attention to them (Christoph et al., 2015). On the other hand, consumers do use nutrition labels when they have a concern about their overall health (Driskell et al., 2008), as well as when they have specific dietary needs and/or are looking for certain nutrients (Rawson et al., 2008). These are also supported by the study by Herpen & Trip (2011) stating that health goals of individuals increase attention to and use of nutrition labels. Therefore, the newly developed label should be attention capturing, understandable in a short time, and include the information that the students are looking for so it can increase the awareness towards healthy eating.

The interpersonal factors that contribute to the label use are the influence from family members and friends, as well as what impression the behaviour of using the label gives to the others. Story et al. (2002) state that parental influence is critical in forming adolescents' food attitudes, preferences and values. Also, friends influence is significant in adolescents' behaviour, particularly if the behaviour is acceptable to their peer group. This is explained by the study conducted by Driskell et al. (2008) which has shown that few male students have indicated that they care about what the others think when they use nutrition labels.

The environmental factors are the accessibility of the menu labels and their quality of presentation. According to Christoph et al., there are nearly 20% of students who did not notice the labels. It is inconclusive if this is also the case at Open kitchen since the design and location of presentation are different from their study, however, making sure to locate the nutrition information at where students can readily read would help them better understand the importance of food choices (Driskel et al.,

2008). Differences in font sizes, colour coding, and use of symbols are one of the determinants of consumer attention to nutrition labels as well (Bialkova & Trijp, 2010). Moreover, more of the students may use nutrition labels if these labels were available online because individuals, particularly at the age of university 1st year students, are accustomed to getting much of their information online (Driskel et al., 2008). Therefore, developing a menu label which conveys nutritional information in an eye-catching and easily understandable way would be necessary for the students to make healthy food choices. To enable this, an institutional and public policy level intervention, which would be the involvement of Open Kitchen managers/staffs and UBC's policy development around the implementation should be considered.

Health Behaviour Theories

We used the Diffusions of Innovations theory to inform our project planning since there was already a health program intervention in place at Open Kitchen – the newly implemented menu labelling approach. Using the Diffusions of Innovations theory as a lens to analyze the situation, we realized that the menu information provided can reach its full potential, in encouraging first year students to make informed choices, if it was broadly spread among first year students. This led us into looking for alternative menu

labelling layouts that would be more easily accessed and comprehended by first year students so as to facilitate making informed dining choices at Open Kitchen. Incorporating an alternate layout meant introducing an innovative component to the menu labelling approach. Thus, through the Diffusions of Innovations theory we got insight into the characteristics of an alternative layout that would be most effective in increasing accessibility and comprehension, of first year students, of information provided in the menu labels.

Although the Diffusion of Innovations theory highlights room for improvement in the menu labelling approach, offered at Open Kitchen, what still remains to be understood is the possibility of other factors that may play a role in inducing, first year students, to use the menu labels as a source of information to make food choices. For example, based on the two key concepts of the ecological perspective – multiple levels of influence and reciprocal causation – other factors such as students' food nutrition knowledge, type of meal plan, social circle, etc., may also influence whether and how students use menu information provided (National Cancer Institute [NCI], n.d.). Program outputs targeted to understanding students' level of nutrition knowledge, meal plan affordability, and social environment on campus may give us insight to a more comprehensive approach in encouraging students to make informed choices at Open Kitchen.

Project Goals and Objectives

Project Goals

Our program is part of a larger project that is based on the overarching goal, set by UBC, of improving health and wellbeing on campus (Baker, 2017). The project goals include:

- 1) To gain an understanding of the usefulness and comprehension of the information provided on menu labels offered at Open Kitchen
- To gain insight for future direction in menu labelling approaches offered in residence dining at UBC

As the second group working on the project, our program focuses on achieving the second goal.

Program Objectives

Our program objectives are divided into three and include:

- 1) Short-term
 - a. To increase our group's awareness of types of menu labelling layouts offered in the food industry
 - To gain knowledge of menu labelling approaches used in university dining halls across Canada
 - c. To develop at least 2 recommendations, for UBC SHHS, of alternative menu labelling layouts that can be offered at Open Kitchen
- 2) Medium-term

- a. To upgrade menu labelling approaches offered at Open Kitchen
- b. To introduce menu labelling approaches in additional residence dining halls at UBC
- 3) Long-term
 - To increase the number of students who use menu labels, at UBC dining halls, to make informed and healthy choices

It is important to consider that since our program reports were due at the end of term (two months since the start of the program), our medium-, and long-term goals are hypothetical.

Description of Project Outputs

Our project consisted of four outputs that were informed by the Diffusions of Innovations theory. The theory suggests that relative advantage - characteristic of being better that what it is replacing - is one of the factors that positively influence the adoption and dispersion of an innovation (NCI, n.d.). Therefore, to develop a menu label layout that would be more efficient than the current, we, first, conducted an online literature review on different menu labelling layouts implemented, globally, in food retailers and university dining halls. The review focused on understanding the type of content provided and design elements that encouraged food retail customers and university students to make informed food choices. In addition, we looked into retail customers and university students' perceptions on the information provided and layout of menu labels; that is, if the menu labels were perceived as easy to understand and use.

We chose to broaden our research audience and include food retail customers, in addition to university students, for two main reasons: 1) menu labels, for food items sold in retail stores, may be influenced by food labelling policies and would likely be composed of components the benefit the customers; and 2) university students would likely be shopping for food items outside of the dining hall eventually, and adopting an efficient design from the retail environment may help decrease the confusion, in comprehension and use of menu labels, created by multiple layouts (Campos, Doxey, & Hammond, 2011).

Furthermore, the theory suggests that a strong compatibility of the innovation with the target audience will increase the chances of the intended behaviour being adopted. Thus we conducted a paper survey on first year UBC students to get their perceptions on the usefulness of three alternate menu label layouts (see Appendix C). Through the survey, our aim was to gauge which of the three menu labelling layouts (or components of the layouts) were compatible with first year students at UBC. In addition, the survey included questions, surrounding students' potential use of the labels, that were based on the trialability attribute of the Diffusion of Innovations theory that suggests that testing an innovation before implementation would positively influence its spread (NCI, n.d.).

Menu labels used for the survey were selected based on the results, from our literature review, that suggested that the chosen three labels were perceived to be the easiest to comprehend and use among the research studies reviewed. In order to control for consistency in information presented between the three labels, we edited the labels, using programs such as Preview and Paint, so that each label provided

nutritional information for the same food item - Kraft Mac and Cheese. In addition, the survey questions and format were based on similar surveys that were conducted in other menu labelling studies as well as on feedback from our community partner. The survey was conducted on March 16th, during lunch hours, on randomly selected first year students dining at Totem Park Dining Hall and Open Kitchen.

At the same time, we conducted 20 minute phone interviews with food services staff - including Dietitians, and Food Services Managers and Directors - employed by Canadian universities or food service companies operating at the universities. The universities were chosen based on whether they offered a menu labelling approach at their respective dining halls and were contacted either over the phone or via an email inviting them to participate in a class related research project. In addition, in the email, we provided all universities with a document with a brief outline of our program goals and objectives (see Appendix D) and only those that agreed to participate were further contacted for interview scheduling. The interview aimed to gain insight into menu labelling approaches that were compatible with university students; that is, what type of information and design layouts were easily understood and frequently used by students. The content and format of the questionnaire (see Appendix D) were based on information available on the Canadian Food Inspection Agency website, a similar styled research conducted by one of our group members (unpublished), and feedback from our community partner.

The university phone interview questionnaire was also designed based on the complexity and observability attributes, of the Diffusion of Innovations theory, that suggest that an innovation can be easily spread and adopted, within a population, if it

can be readily used and tested for results, respectively. Thus, part of the interview was composed of questions surrounding the ease and benefits, perceived by food services staff members, of implementing their respective menu labelling approaches.

Evaluation Plan

Our evaluation plan consists of qualitative and quantitative indicators based on the short, medium and long term objectives of our project. In terms of short term indicators, the first are the number of new menu labeling layouts discovered, for example the traffic light or Nuval layout primarily done through our literature review. Another short term indicator are comments of the Canadian university dining halls regarding menu labelling approaches used in their respective dining halls. Lastly, comments from UBC SHHS and our community partner, Melissa Baker, regarding the implementation of menu labeling recommendations.

Medium and long term indicators are hypothetical, as they are used to evaluate if and after implementation of our recommendations. The first being the number of recommendations integrated in the updated menu labelling layouts offered at open kitchen and the number of dining halls on campus that offer menu labelling (ex. Additional dining halls such as Vanier and Totem. Our long term objective, is to increase the number of first year students at UBC dining halls, who use menu labels to make informed and health choices. Our indicator on if we have reached this objective are the number of students who use menu labels to make informed and healthy food choices. In addition to this, the comments from these students on what information on the labels they use or don not use. Lastly, students' comments on the barriers faced in the process

of making informed decisions. The last two indicators are qualitative and can be done in the form of a survey or questionnaire.

Conclusion

This project was a wonderful opportunity to understand the usefulness and comprehension of various types of nutrition labels offered in the food industry. It allowed us to put forth evidence-based suggestions to design different layouts and presentation of nutrition information, and analyze UBC student's interpretation of these alternate labels through surveys. We have also approached other Canadian Universities for further information about their menu and labelling system. These therefore, resulted in us moving towards our overall goal of helping our community partner to gain insight for future direction in menu labelling approaches offered residence dining at UBC. Some of our recommendations for future menu labelling designs include: taking into consideration the importance of visual appeal (graphics, color, big and bold letters, clear, quick and easy to read), prioritizing information of certain nutrients (fiber, calories, protein and sodium) and incorporating a format that allows students to compare between two items (e.g. ratings for healthiness, 'high' & 'low'). In addition, it will also be helpful to provide menus and nutrition information online for students to refer to if they need additional references.

One of the lessons we learned was that in-person communication with our stakeholders is crucial to bridge expectations and ensure questions can be clarified at the start to ensure the smooth progress of the project. Moreover, we learned that it is important not make assumptions and should always rely on research and apply health

models/ theories to assess, plan, implement and evaluate a health intervention program in a university setting.

The next step for our project is for our recommendations to be accepted and implemented by UBC Food Services in all UBC dining halls. If implemented, the objective would be to observe through either focus groups or follow-up surveys to see if our intervention is useful in increasing the number of first year students who use menu labels to make informed and healthy food choices.

Authors' Contributions

Emily acted as the primary liaison between our team and our community partner, UBC SHHS, representative -Melissa Baker, contributed to developing survey questions, edited menu labels for the survey, conducted the survey, compiled all data for the appendices, drafted the introduction section of the report and sections of the program goals and objectives, designed the newsletter, and developed time lines for our project. Tien conducted the literature review, contributed to developing survey questions, edited menu labels for the survey, conducted the survey, drafted the executive summary, conclusion, and sections of the situational analysis and planning framework component of the report, and took lead on the completion and submission of the group evaluation forms. Sumire conducted the literature review, contributed to developing survey questions, edited menu labels for the survey, conducted the survey, drafted portions of the situational analysis and planning framework, the description of project outputs, and evaluation component of the report, and took the initiative to take meeting minutes. Emerlin conducted the literature review, ; contributed to developing survey

questions, edited menu labels for the survey, conducted the survey, drafted, portions of the situational analysis and planning framework, and evaluation components of the report. Poonam conducted research for developing the questionnaire, designed the questionnaire, developed a document with the project overview to be sent out to contacted Canadian universities, contacted universities for their participation, conducted phone interviews, collected, analyzed and graphed data from the phone interviews, drafted portions of the, project goals and objectives, situational analysis and planning framework, and description of project outputs components of the report. All members contributed to the developing the project goals, objectives, outputs and the logic model, analyzed data collected through student surveys, critically reviewed the student survey and phone interview questionnaire, and read and approved the final report.

References

- Baker, M. (2017). UBC SHHS: Nutrition and ingredient labelling comprehension and use in Open Kitchen.
- Campos, S., Doxey, J., & Hammond, D. (2011). Nutrition labels on prepackaged foods:
 a systematic review. *Public Health Nutrition, 14*(8), 1496-1506.
 doi:10.1017/S1368980010003290
- Christoph, M. J., An, R., & Ellison, B. (2015). Correlates of nutrition label use among college students and young adults: a review. *Public Health Nutrition*, *19*(12), 2135-2148. doi:10.1017/s1368980015003183
- Christoph, M. J., Ellison, B. D., & Meador, E. N. (2016). The Influence of Nutrition Label
 Placement on Awareness and Use among College Students in a Dining Hall
 Setting. *Journal of the Academy of Nutrition and Dietetics*, *116*(9), 1395-1405.
- Cooke, R., & Papadaki, A. (2014). Nutrition label use mediates the positive relationship between nutrition knowledge and attitudes towards healthy eating with dietary quality among university students in the UK. *Appetite*, *83*, 297-303.
- Driskell, J. A., Marian, S.C., & Hillary, D. A. (2008). Using nutrition labeling as a potential tool for changing eating habits of university dining hall patrons. *Journal of the American Dietetic Association, 108*, 2071-2076.
- Graham, D. J., & Laska, M. N. (2012). Nutrition label use partially mediates the relationship between attitude toward healthy eating and overall dietary quality

among college students. *Journal of the American Dietetic Association, 112*(3), 414-418. doi:10.1016/j.jada.2011.08.047

- Krukowski, R. A., Harvey-Berino, J., Kolodinsky, J., Narsana, R. T., & DeSisto, T. P. (2006). Consumers may not use or understand calorie labeling in restaurants. *Journal of the American Dietetic Association*, *106*(6), 917-920.
- Marietta, A. B., Welshimer, K. J., & Anderson, S. L. (1999). Knowledge, attitudes, and behaviors of college students regarding the 1990 Nutrition Labeling Education Act food labels. *Journal of the American Dietetic Association*, *99*(4), 445-449.

National Cancer Institute. *Theory at a Glance*. Available from http://www.sbccimplementationkits.org/demandrmnch/wpcontent/uploads/2014/02/Theory-at-a-Glance-A-Guide-For-Health-Promotion-Practice.pdf

- Rasberry, C. N., Chaney, B. H., Housman, J. M., Misra, R., & Miller, P. J. (2007).
 Determinants of nutrition label use among college students. *American Journal of Health Education*, 38(2), 76-82. doi:10.1080/19325037.2007.10598947
- Story, M., Neumark-Sztainer, D., & French, S. (2003). Individual and environmental influences on adolescent eating behaviors. *Journal of American Dietetic Association, 102 (3)*, S40-S51.

Wim Verbeke, H. C., & Van Camp, J. (2011). *Nutrition labelling intervention in university canteens; effects on meal choice and nutrient intake* [pdf document]. Retrieved from

http://mgmt.au.dk/fileadmin/www.asb.dk/forskning/forskningscentreoggrupper/fors kningscentre/mapp/billeder_mapp_typo3/christine_Hoefkens.pdf

Appendices

Appendix A: Logic Model for the project

SITUATION INPUTS OUTPUTS OUTCOMES The community Phone interviews • Time SHORT-TERM partner feels with 5 Canadian Project team • To develop at least 2 recommendations that UBC stuuniversity dining (5members), comon alternative menu labelling layouts dents are not hall staff that can be offered at Open Kitchen munity partner, effectively inteaching team, Connections with To gain knowledge of menu labelling formed of their approaches used in Canadian university SEEDS project coorthe interviewed food choices dining halls dinator staff members of MEDIUM-TERM • The community other universities Knowledge—FNH partner desires • To upgrade menu labelling approaches 473 course materi-• Survey with 100+ to help UBC stuoffered at Open Kitchen UBC students on 3 al, research, dents make in-• To upscale the upgraded menu labelling knowledge from proposed menu formed food approach in all dining halls at UBC experiences and labels (community partner's desired outcome) choices other courses Recommendation LONG-TERM Skills on improving the · To increase the number of first year stucurrent Open dents making informed and healthy food Kitchen labels choices at UBC dining halls (community laptops, printer, partner's desired outcome) phone • Number of new menu labelling layouts discovered • Comments of interviewees regarding menu labelling approaches used in their respective dining halls • Comments of UBC SHHS regarding the implementation of menu **EVALUATION** labelling recommendations

UBC OPEN KITCHEN MENU LABEL PROJECT LOGIC MODEL

A UBC SEEDS SUSTAINABILITY PROJECT

Highlights

- A literature search, survey and phone interviews of Canadian universities were conducted.
- Lessons were learned about ourselves, our target community, and about "doing" public health

t ourrget A group of nutrition students from the University pubof British Columbia was involved with a project with Melissa Baker, UBC's Nutrition and Wellbeing Manager, to improve the layout of nutrition infor-

> mation on menu labels at Open Kitchen. This project is part of a greater project to help UBC students make more informed food choices when visiting residence dining halls.

A literature search was conducted to surface menu labels that demonstrated effectiveness and

Lessons Learned

Communication is key

With all public health projects, relationships involved. Whether it is with the community partner, stakeholders, or teammates, clear and sensitive communication is critical in coming to common ground on the project plans. three labels were surveyed amongst first year UBC students. These students prefer labels with colourful graphics that do not contain an overwhelming amount of information. In addition, five

Menu Label Innovation

@ Open Kitchen

What was done?



41% of respondents felt the Traffic Light design was the most helpful in making an informed food choice.

UBC students are open

Our team was surprised to find the survey process easy to complete. The first year students we asked were mostly receptive to taking their time and contributing their opinion to help improve the dining menu labels.



Canadian universities student dining halls of the community partner's interest were interviewed to gain insight on their experiences with menu labeling.

Throughout the project, we greatly appreciated Melissa's support and easiness to work with, especially her willingness to communicate and provide feedback and resources, which allowed this project to run smoothly.

OPEN Kitchen

"Doing" public health for the first time

While our work was small, it was an amazing experience knowing that we are contributing to a larger public health nutrition project aimed towards impacting students' eating behaviour. Appendix C: Survey and Edited Menu Labels

Survey (on Nutrition	Labelling in	Resident Dining Hall

		This is a	project u	nder the S	SEEDS Su	stainabi	lity Program at U	BC.
Year	of Study				Ν	/lajor		
1.	What inf below)	ormation/e	elements	stand or	ut the mos	st for yo	ou in: (Please ree	cord your answer
	Label A	?						
	Label B?	?						
	Label C?	?						
2.	Rank the	ese nutritio 1= Best a	on labels nd 3= Wo	in an oro orst)	der that yo	ou feel v	vould help you i	make an informed
	Α()	В()	C ()		
	Why did	you rank t	this way	? Please	record yo	ur answ	ver below.	

- 3. What do you look for when you want to make a healthy food choice? (e.g. high fibre, low sodium, etc.). Please record your answer below.
- 4. If nutrition information is provided on the menu labels in the dining hall, how often would you use this information to make your food choice? (Circle one)

Always	Often	Sometimes	Rarely	Never
5	4	3	2	1

- 5. Label D is the current label at another dining hall on campus. What would you change and what would you keep? (Please record your answer below)
- Would you use menus and nutrition information online (eg. mobile friendly website) if that was available? (Circle one) Yes No

LABEL A



This nutrition information does not represent the food offered in UBC dining halls.



LABEL B

This nutrition information does not represent the food offered in UBC dining halls.

LABEL C



This nutrition information does not represent the food offered in UBC dining halls.

LABEL D

CLASSIC BEEF BURGER	Nutritic	on Facts Per burger
\$6.30 / \$5.20 for residents	Calories	491
	Total Fat	31.5g
ALLERGENS:	Total Fat31.5gSodium1091mgCarb30.8g	
EGGS, GLUTEN, MILK, MUSTARD, WHEAT	Carb	30.8g
	Fibre	1.8g
Ingredients:	Sugars	6.2g
brioche bun, beef patty, pickle, lettuce,	Protein	18.7g
mustard, relish, shallots, salt, pepper)	Iron	1.4mg

Appendix D: Phone Interview Questionnaire and Project Overview Document

- 1) Are you affiliated with a third party to provide food services at dining halls on campus? If ves, are you comfortable providing us with the name? □Yes □No Name: 2) Do you provide meal plans for your students? If yes, how many students are on the meal plan? □Yes □No Number: 3) Do you provide menu labeling for foods prepared for sale in dining halls? a. Hot foods (soups, lunch of the day, rice, etc.) □No \Box N/A (e.g., do not sell hot foods) □Yes b. Cold foods (salads, pasta salad, potato salad, etc.) □No \Box N/A (e.g., do not sell cold foods) □Yes c. Pre-packaged meals (salads, sandwiches, wraps, Panini, sushi, etc.) \Box No \Box N/A (e.g., do not sell pre-packaged foods) □Yes (other categories of foods sold which we d. Other: may not have covered) □Yes □No 4) Do you provide an ingredient list for foods prepared for sale in dining halls? a. Hot foods (soups, lunch of the day, rice, etc.) □Yes □No \Box N/A (e.g., do not sell hot foods) b. Cold foods (salads, pasta salad, potato salad, etc.) \Box N/A (e.g., do not sell cold foods) □Yes □No c. Pre-packaged meals (salads, sandwiches, wraps, Panini, sushi, etc.) \square No \square N/A (e.g., do not sell pre-packaged foods) □Yes d. Other: ____ (other categories of foods sold which we may not have covered) □Yes □No 5) Do you provide a nutritional facts label for foods prepared for sale in dining halls? a. Hot foods (soups, lunch of the day, rice, etc.) \Box N/A (e.g., do not sell hot foods) □Yes □No b. Cold foods (salads, pasta salad, potato salad, etc.) □Yes □No \Box N/A (e.g., do not sell cold foods)
 - c. Pre-packaged meals (salads, sandwiches, wraps, Panini, sushi, etc.) □Yes □No □N/A (e.g., do not sell pre-packaged foods)
 - d. Other: ______(other categories of foods sold which we may not have covered)
 □Yes □No

- 6) If yes (to the above question), what nutrient categories are included in the nutritional facts label? (Check all that apply). If applicable, what units are used? a. Hot foods:

 \Box Metric (g/mg/etc.) \Box % D.V. □Image* (please specify): _____ □ Other: _____ \Box N/A (e.g. category not included in nutrition labels) □ Carbohydrates \Box Metric (g/mg/etc.) \Box % D.V. □ Metric (g/mg/etc.) □% D.V. □ Image* (please specify): _____ Other: □N/A (e.g. category not included in nutrition labels) □Sugars \Box Metric (g/mg/etc.) \Box % D.V. □ Metric (g/mg/etc.) □% D.V. □ Image* (please specify): _____ □Other: \Box N/A (e.g. category not included in nutrition labels) Fibre \Box Metric (g/mg/etc.) \Box % D.V. \Box Image* (please specify): _____ Other: _____ □N/A (e.g. category not included in nutrition labels)

□ Protein

 \Box Metric (g/mg/etc.) \Box % D.V.

□ Image* (please specify): _____

Other:

□N/A (e.g. category not included in nutrition labels)

Fats

 \Box Metric (g/mg/etc.) \Box % D.V. □Image* (please specify): _____ □Other: □N/A (e.g. category not included in nutrition labels)

□ Saturated fats

 \Box Metric (g/mg/etc.) \Box % D.V.

□Image* (please specify): _____

□Other:

 \Box N/A (e.g. category not included in nutrition labels)

 \Box Trans fat

 \Box Metric (g/mg/etc.) \Box % D.V.

Image* (please specify): _____

Other:

 \Box N/A (e.g. category not included in nutrition labels)

Cholesterol

□ Metric (g/mg/etc.) □% D.V. □ Image* (please specify): _____

Other:

 \Box N/A (e.g. category not included in nutrition labels)

 \Box Sodium

 \Box Metric (g/mg/etc.) \Box % D.V.

□Image* (please specify):

□Other:

 \Box N/A (e.g. category not included in nutrition labels)

□Vitamins

Please specify:

□ Metric (g/mg/etc.) □% D.V.

□ Image* (please specify): _____

Other:

 \Box N/A (e.g. category not included in nutrition labels)

 \Box Minerals

Please specify:

□ Metric (g/mg/etc.) □% D.V. □ Image* (please specify): _____ □ Other: _____

 \Box N/A (e.g. category not included in nutrition labels)

 \Box Other:

Metric (g/mg/etc.) □% D.V.
Image* (please specify): _____
Other: _____
N/A (e.g. category not included in nutrition labels)

b. Cold foods: Same as above

Calories

 \Box Metric (g/mg/etc.) \Box % D.V.

Image* (please specify): _____

Other:

□N/A (e.g. category not included in nutrition labels)

□ Carbohydrates

 \Box Metric (g/mg/etc.) \Box % D.V.

Image* (please specify): _____

Other:

□N/A (e.g. category not included in nutrition labels)

□ Sugars

 \Box Metric (g/mg/etc.) \Box % D.V. Image* (please specify): _____ Other: □N/A (e.g. category not included in nutrition labels)

Fibre

 \Box Metric (g/mg/etc.) \Box % D.V.

□Image* (please specify): _____

□Other:

□N/A (e.g. category not included in nutrition labels)

Protein

 \Box Metric (g/mg/etc.) \Box % D.V. □Image* (please specify): _____ □Other:

□N/A (e.g. category not included in nutrition labels)

□Fats

 \Box Metric (g/mg/etc.) \Box % D.V. □Image* (please specify): _____ □Other:

 \Box N/A (e.g. category not included in nutrition labels)

□ Saturated fats

 \Box Metric (g/mg/etc.) \Box % D.V.

□Image* (please specify): ____

□Other:

 \Box N/A (e.g. category not included in nutrition labels)

□ Trans fat

 \Box Metric (g/mg/etc.) \Box % D.V.

□ Ivietric (g/mg/etc.) □% D.V. □Image* (please specify): _____

Other:

□N/A (e.g. category not included in nutrition labels)

 \Box Metric (g/mg/etc.) \Box % D.V.

Image* (please specify):

Other: _____

 \Box N/A (e.g. category not included in nutrition labels)

Sodium

 \Box Metric (g/mg/etc.) \Box % D.V.

Image* (please specify): _____

Other:

□N/A (e.g. category not included in nutrition labels)

Vitamins

Please specify: _

 \Box Metric (g/mg/etc.) \Box % D.V. Image* (please specify): _____ □Other: \Box N/A (e.g. category not included in nutrition labels)

□ Minerals

Please specify:

□Metric (g/mg/etc.) □% D.V. □ Image* (please specify): _____ □Other: \Box N/A (e.g. category not included in nutrition labels)

Other:

 \Box Metric (g/mg/etc.) \Box % D.V. □ Image* (please specify): _____ Other: □N/A (e.g. category not included in nutrition labels)

c. Pre-packaged foods: Same as above

 \Box Metric (g/mg/etc.) \Box % D.V.

□ Image* (please specify): _____

□Other:

 \Box N/A (e.g. category not included in nutrition labels)

□ Carbohydrates

□ Metric (g/mg/etc.) □% D.V. □ Image* (please specify): _____ \Box Metric (g/mg/etc.) \Box % D.V.

Other:

 \Box N/A (e.g. category not included in nutrition labels)

□ Sugars

 \Box Metric (g/mg/etc.) \Box % D.V.

Image* (please specify): _____

Other: _____

 \Box N/A (e.g. category not included in nutrition labels)

□Fibre

 \Box Metric (g/mg/etc.) \Box % D.V.

□Image* (please specify): _____

Other:

 \Box N/A (e.g. category not included in nutrition labels)

□Protein

□ Metric (g/mg/etc.) □% D.V.
□ Image* (please specify): _____
□ Other: _____
□ N/A (e.g. category not included in nutrition labels)

□Fats

 \Box Metric (g/mg/etc.) \Box % D.V.

Image* (please specify): _____

Other:

 \Box N/A (e.g. category not included in nutrition labels)

 \Box Saturated fats

 \Box Metric (g/mg/etc.) \Box % D.V.

Image* (please specify): _____

Other:

 \Box N/A (e.g. category not included in nutrition labels)

 \Box Trans fat

 \Box Metric (g/mg/etc.) \Box % D.V.

□Image* (please specify): _____

Other:

 \Box N/A (e.g. category not included in nutrition labels)

 \Box Cholesterol

 \Box Metric (g/mg/etc.) \Box % D.V.

□Image* (please specify): _____

Other:

□N/A (e.g. category not included in nutrition labels)

Sodium

 \Box Metric (g/mg/etc.) \Box % D.V.

□ Image* (please specify): _____

Other:

 \Box N/A (e.g. category not included in nutrition labels)

 \Box Vitamins

Please specify: _____

 \Box Metric (g/mg/etc.) \Box % D.V.

□ Image* (please specify): _____

□ Other: _____

 \Box N/A (e.g. category not included in nutrition labels)

□Minerals

Please specify:

Metric (g/mg/etc.) □% D.V.
Image* (please specify): _____
Other: _____
N/A (e.g. category not included in nutrition labels)

 \Box Other:

Metric (g/mg/etc.) □% D.V.
Image* (please specify): _____
Other: _____
N/A (e.g. category not included in nutrition labels)

□ Calories

 \Box Metric (g/mg/etc.) \Box % D.V.

Image* (please specify): _____

Other:

 \Box N/A (e.g. category not included in nutrition labels)

□Carbohydrates

 \Box Metric (g/mg/etc.) \Box % D.V.

□ Image* (please specify): _____

□ Other: _____

 \Box N/A (e.g. category not included in nutrition labels)

□Sugars

 \Box Metric (g/mg/etc.) \Box % D.V.

□ Image* (please specify): _____

Other:

 \Box N/A (e.g. category not included in nutrition labels)

□Fibre

 \Box Metric (g/mg/etc.) \Box % D.V.

□Image* (please specify):

Other:

 \Box N/A (e.g. category not included in nutrition labels)

□Protein

 \Box Metric (g/mg/etc.) \Box % D.V.

 ☐ Image* (please specify): ☐ Other: ☐ N/A (e.g. category not included in nutrition labels)
□ Fats □ Metric (g/mg/etc.) □% D.V. □ Image* (please specify): □ Other: □ N/A (e.g. category not included in nutrition labels)
□ Saturated fats □ Metric (g/mg/etc.) □% D.V. □ Image* (please specify): □ Other: □ N/A (e.g. category not included in nutrition labels)
□Trans fat □Metric (g/mg/etc.) □% D.V. □Image* (please specify): □Other: □N/A (e.g. category not included in nutrition labels)
□Cholesterol □Metric (g/mg/etc.) □% D.V. □Image* (please specify): □Other: □N/A (e.g. category not included in nutrition labels)
□ Sodium □ Metric (g/mg/etc.) □% D.V. □ Image* (please specify): □ Other: □ N/A (e.g. category not included in nutrition labels)
 □ Vitamins Please specify: □ Metric (g/mg/etc.) □% D.V. □ Image* (please specify): □ Other: □ N/A (e.g. category not included in nutrition labels)
□ Minerals Please specify: □ Metric (g/mg/etc.) □% D.V. □ Image* (please specify): □ Other:

 \Box N/A (e.g. category not included in nutrition labels)

 \Box Other:

 ☐ Metric (g/mg/etc.) □ % D.V. ☐ Image* (please specify): ☐ Other: ☐ N/A (e.g. category not included in nut 	trition labels)
 7) Do you serve foods prepared for particular dietary resall that apply). If offered, do you post a claim and/state (Yes/No). If yes, what is the format of the claim? (State a. Hot foods (soups, lunch of the day, rice, etc.) □ Gluten Free □ Yes □ No □ N/A □ Statement □ Image □ Other: 	strictions/preferences? (Tick tement on the food? tement/image)
□Low/Reduced Gluten □Yes □No □Yes □No □N/A □Statement □Image □Other:	□N/A
□Wheat Free □Yes □No □N/A □Statement □Image □Other:	
□Vegan □Yes □No □N/A □Statement □Image □Other:	
□Vegetarian □Yes □No □N/A □Statement □Image □Other:	
□Nut Free □Yes □No □N/A □Statement □Image □Other:	
□Organic □Yes □No □N/A □Statement □Image	

	□Other:	
□Local □Yes	s □No □N/A □Statement □Image □Other:	
□Kosher □Yes	S □No □N/A □Statement □Image □Other:	
□Halal □Yes	S □No □N/A □Statement □Image □Other:	
□Other (high e □Yes	nergy, low fat, etc.)	
b. Cold foods (s □Gluten Free □Yes	salads, pasta salad, potato salad, S □No □N/A □Statement □Image □Other:	etc.) □Same as above
□Low/Reduced □Yes	d Gluten □Yes □No	□N/A
□Wheat Free □Yes	s □No □N/A □Statement □Image □Other:	
⊡Vegan ⊡Yes	s □No □N/A □Statement □Image □Other:	
□Vegetarian □Yes	s □No □N/A □Statement □Image	

□Other:
□Nut Free □Yes □No □N/A □Statement □Image □Other:
□Organic □Yes □No □N/A □Statement □Image □Other:
□Local □Yes □No □N/A □Statement □Image □Other:
□Kosher □Yes □No □N/A □Statement □Image □Other:
□Halal □Yes □No □N/A □Statement □Image □Other:
□Other (high energy, low fat, etc.) □Yes □No □N/A □Statement □Image □Other:
 c. Pre-packaged meals (salads, sandwiches, wraps, Panini, sushi, etc.) Same as above Gluten Free Yes No N/A Statement Image Other:
□Low/Reduced Gluten □Yes □No □N/A □Yes □No □N/A □Statement □Image □Other:
□Wheat Free □Yes □No □N/A

□Statement □Image □Other:
□Vegan □Yes □No □N/A □Statement □Image □Other:
□Vegetarian □Yes □No □N/A □Statement □Image □Other:
□Nut Free □Yes □No □N/A □Statement □Image □Other:
□Organic □Yes □No □N/A □Statement □Image □Other:
□Local □Yes □No □N/A □Statement □Image □Other:
□Kosher □Yes □No □N/A □Statement □Image □Other:
□ Halal □ Yes □ No □ N/A □ Statement □ Image □ Other:
□Other (high energy, low fat, etc.) □Yes □No □N/A □Statement □Image □Other:
 d. Other:(other categories of foods sold which we may not have covered) □ Same as above

-	
Gluten	Free

□Yes	□No □Statement □I □Other:	□N/A mage		
□Low/Reduced □Yes	Gluten No Statement II Other:	Yes □N/A mage	□No	□ N/A
□Wheat Free □Yes	□No □Statement □I □Other:	□N/A mage		
⊡Vegan ⊡Yes	□No □Statement □I □Other:	□N/A mage		
□Vegetarian □Yes	□No □Statement □I □Other:	□N/A mage		
□Nut Free □Yes	□No □Statement □I □Other:	□N/A mage		
□Organic □Yes	□No □Statement □I □Other:	□N/A mage		
□Local □Yes	□No □Statement □I	□N/A mage		
⊡Kosher □Yes	□No □Statement □I □Other:	□N/A mage		
□Halal □Yes	□No □Statement □I	□N/A mage		

□Other:	
□Other (high energy, low □Yes □ □Statem □Other:	r fat, etc.) No □N/A nent □Image
8) Do you have any protocols and procedures in place to ensure that the items are actually what they are claimed to be? (E.g., do you have protocols (QC) in place to ensure items are actually gluten free, halal, vegetarian, etc.)	
 9) Do you include Canada's Foo prepared for sale at dining ha convey that information? a. Hot foods (soups, lunc □Yes □No □Number □Other: 	d Guide food group servings on labels for foods Ils? (Yes/No). If yes, what format do you use to h of the day, rice, etc.) □Image
b. Cold foods (salads, pa □Yes □No □Number □Other:	sta salad, potato salad, etc.) □Image
c. Pre-packaged meals (s □Yes □No □Number □Other:	salads, sandwiches, wraps, Panini, sushi, etc.)
d. Other: may not have covered) □Yes □No □Number □Other:	(other categories of foods sold which we) □Image

- 10) Do you provide nutrition information for foods prepared for sale at dining halls in any other manner not already discussed? (May also include general promotions to making healthy choices or nutrition educational tools e.g. a poster showing different amounts sugar, Canada's Food guide poster, frequent offerings of a meal that is nutrient dense, nutrition programs etc.)
- 11) Can you please touch upon what resources, software and personnel have supported you in implementing the current menu labeling approaches?
- 12) If answered no to all of or either of questions 1/2/3/5/6, please touch upon why and/or any resources that would support providing that information.

- 13) Have there been any recent changes in menu labels offered for foods prepared for sale at dining halls?
 - a. If yes:
 - i. What was the reason for the change?
 - ii. Based on your experience, do you think that the current menu labeling approach provided at the dining hall affects eating choices of students? (How has this been measured? - Prompt with, in what way does it affect choices? Do students choose foods that are labeled more often vs. those not labeled? Any student feedback or comments?)
 - iii. Have you observed any difference in food choices after the implementation of the new labeling approach?
 - iv. Has there any research been done on how students use/comprehend/perceive nutrition labels? If yes, – can we access that?)
 - b. If no:
 - i. How long has this system been used?
 - ii. Based on your experience, what do you believe are the advantages and disadvantages of offering nutrition and ingredient information on menu labels
 - iii. Based on your experience, do you think that the current system through which nutrition information is provided at the dining hall affects eating choices of students? (How has this been measured?
 Prompt with, in what way does it affect choices? Do students choose foods that are labeled more often vs. those not labeled? Any student feedback or comments?)
 - iv. Has there any research been done on how students use/comprehend/perceive nutrition labels? If yes, – can we access that?)
- 14) Are there any future considerations for menu labeling you are hoping to implement?
- 15) Would you be comfortable sharing pictures of some of your nutrition labels? We would only be using these to give UBC Food Services an example of an alternative menu label option
 - □Yes □No
- 16) Is there anything else you would like to add today?(Comments/observations/something you do that you feel may add to understanding what helps students make healthier choices)

Project Overview Document

To whom this may concern,

This project is part of our coursework for a course offered at the University of British Columbia – FNH 473: Applied Public Health Nutrition (course description can be accessed at http://www.calendar.ubc.ca/vancouver/courses.cfm?code=FNH). Through this course, students are given the opportunity to collaborate with a community partner to work on projects aiming to make positive contributions to the community. This term, our group is collaborating with the University of British Columbia's Student Housing and Hospitality Services (SHHS) through the SEEDS Sustainability Program to improve menu labelling options offered at UBC student dining halls.

Project Background:

A new menu labelling (nutrition facts panel, ingredients list, and allergen claims) design has recently been implemented in one of UBC's dining hall and is currently being surveyed among UBC students for their perceptions on it. Before implementing the design in other dining halls and potentially food service locations at UBC, we would like to gain insight into alternative menu labelling approaches and improve the current menu label offered at UBC for easier comprehension among students and thereby positively influencing their food choices.

Project Goals:

- To gain understanding of how menu labels are used by UBC students (particularly first year students). That is, what do students look for in menu labels to make their decisions? What components of a food label helps students make food choices? When and for what foods do students read nutritional labels?
- To gain understanding of how nutrition labels are perceived by UBC students. That is, do students find nutrition labels helpful or confusing?
- To gain understanding of UBC students' comprehension of nutrition labels. For example, does 600 calories mean anything to the average student?
- To gain knowledge of different nutrition labelling systems implemented by other universities across Canada and how they are used/comprehended/perceived by students at the respective universities.

Our last goal highlights your role in our project through which we will gain insight for future direction in residence dining at UBC. Through the knowledge obtained, from your participation, on the menu labelling approach being used and its comprehension and usefulness in residence dining, the UBC Food Services can ensure that the best approach possible is being implemented, at the university, to help students make informed choices. This aim is aligned with UBC's goal of improving health and wellbeing on campus.

Your time and support through your participation in our project is greatly appreciated. All data collected will remain anonymous and will primarily be used for our group presentation to the UBC SHHS who may further use it to improve menu labelling in dining halls at UBC. We will be delighted to share our final report with you if you are interested kindly let us know your preference via email or phone. Please feel free to get in touch with us (contact below) if you have any further questions, concerns, comments, or suggestions regarding our project.

Thank you for your consideration.

Sincerely,

Poonam Dattani

Poonam Dattani

FNH 473 - Group 2 Food, Nutrition and Health University of British Columbia **Email:** pari.dattani@gmail.com **Phone:** 1(778)788-6731

Dr. Gail Hammond

FNH 473 - Instructor University of British Columbia Email: gail.hammond@ubc.ca Phone: +1(604)822-3934

Roselynn Verwoord

FNH 473 - Group 2 Teaching Assistant University of British Columbia Faculty of Land and Food Systems Email: roselynn.verwoord@ubc.ca

Melissa Baker, MHSc, RD (Community Partner)

Manager Nutrition and Wellbeing UBC Student Housing and Hospitality Services **Email:** melissa.baker@ubc.ca