

Improving Snack Program In SandPiper Childcare Centre In Vancouver

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FNH 370 Case Study

Improving Snack Program In SandPiper Childcare Centre In Vancouver

Group 15: Real Life Nutrition Assessment

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Executive Summary

The aim of this case study is to improve the current snack program in Sandpiper Child Care Services Centre in order to provide nutritionally adequate snacks to the children. The study follows the five-step nutrition care process (NCP), and dietary and ecological assessment are chosen as our areas of focus. Snack calendars provided by the childcare center are analyzed for the nutrition and energy content of each snack item, and surveys are conducted with the staff about their nutritional education background. From the assessment, we discovered the limited incorporation of all four food groups in snack preparation as well as a lack of awareness of healthy snack preparation amongst the child care staffs.

From the assessment and the analysis of the results, a PES statement is developed: Imbalanced macronutrient intake related to childcare staffs' lack of nutritional knowledge evidenced by low awareness of balanced diet in staff reported in surveying and lack of variety in food group selections in snack preparation. In order to improve the current situation, short-term and long-term intervention plans are proposed. Regarding short-term, alternative recipes with nutrient dense snacks are provided. On the other hand, for long-term, nutrition workshops for the staff every 6 months are suggested to refresh their nutritional knowledge. The goal of the interventions would be to improve staff's nutrition knowledge and promote healthy eating habits in the children at the childcare. The same questionnaire used in assessment will be redistributed to staffs after interventions for monitoring purposes. Even though there are limitations in the case study, such as the limited representation of children's dietary habits due to restricted observation opportunities, this study hopes to increase the awareness of providing nutritious food in childcare centres of the general public especially the childcare centres' stakeholders, which are the parents and child care staffs.

Introduction

It is a popular belief that populations in developed countries are, in general, healthier than those in developing countries due to ample food supplies. However, recent research has recognized the problem of “hidden hunger” in developed countries, especially in children (Cole, 2012). “Hidden hunger” is characterized by micronutrient deficiencies due to a lack of diversity in diet or an unbalanced diet (Cole, 2012). This phenomenon can be correlated to the overwhelming amount of fast foods in developed countries e.g. United States, which are usually carbohydrate and fat dominated (Freeman, 2007). Research also claims that hidden hunger can lead to long-term health problems such as neurological deficiencies (Cole, 2012). Therefore, in order to reduce the impact of “hidden hunger” in children, the first step is to encourage them to consume a balanced diet. Indeed, in order to cultivate a healthy eating behaviour that can sustain for a long time, it is important to start early in the childhood (Kaphingst & Story, 2009). Therefore, the role of parents and childcare providers are crucially important in terms of developing healthy eating habits in children. However, many childcare centres have reported issues in their meal or snack programs, including uneven portion sizes, excess fats or carbohydrates in snacks and meals as well as a lack of variety in their menus (Nicklas et al., 2001). This strikes our group’s interest and lead to the development of our case study.

This case study aims to design interventions to improve the current snack program in childcare centers in Vancouver in order to provide nutrition-adequate snacks to the children, by performing a complete Nutrition Care Process (NCP). Our initial target population was healthy children in developed countries. In this case study, we narrowed it down and focused on one childcare center in Vancouver, Sandpiper Child Care Services Centre, which is part of the UBC childcare. Parents have suggested that SandPiper Child Care does not prepare sufficient nutritious snacks to their children, therefore the supervisor of the center hopes to improve their current snack programs. Our target population would be children in the centre that are in the range of 18 months to 5 years old. The structure of this paper would mainly follow the NCP, starting from the assessment of the current situation in the childcare centre, followed by the diagnosis of the problem and interventions designed for the targeted population. Monitoring measures will then be proposed, followed by a brief conclusion of the case study.

Nutrition Assessment

Considering the easiness of practice and the context of our project, we chose to use dietary and ecological assessment among all the other assessment methods. Dietary assessment can provide us with information about the type of food offered in the snack program, which are analyzed for information about the nutritional contents of the snacks. Ecological assessment method, on the other hand, is related to the external environment (Hammond, 2016), such as social and economic status, culture and education level, which are important considerations for the practicality of our recommendations for the snack program.

The purpose of our project is to identify the potential problems existing in the snack program of the assigned childcare center, and make recommendations accordingly in order to provide children with more nutritious snack choices. Hence, for dietary assessment, snack recipes are collected, which reflect a detailed content of snacks provided in the childcare center. By analyzing the snack recipes, it is recognized that the childcare center does a great job in organizing and preparing snacks for each children at each weekdays. For example, cracker and cheese and fruits are provided on Monday while scrambled egg with cheese on cracker and fruits on Tuesday, etc. In addition, more specific snack recipes are prepared for children with food allergies, and those detailed allergy-friendly recipes have been written down on the snack menu board for notification. We found that the snacks that are given to each child usually contain a combination of carbohydrates, proteins, fats and some fruits, which are the three major macronutrients and micronutrients that everyone needs to maintain normal body function. However, the snacks may not be prepared with all 4 food groups. For example, only mac and cheese are offered on some days, which includes the grains and dairy groups but neglects the vegetables and fruits.

For ecological method of assessment, a questionnaire regarding the nutrition-related education background of the staff, the budget on food expenses, food sources and staff awareness in prepare nutritious snacks was articulated. The results showed that the staff responsible for the snack program is qualified with nutrition-related certification. Even though the staffs agree that it is important to make nutritious snack for children, very few of them would consider if the snack is healthy enough during the preparation process. For example, whole grains are only sometimes incorporated to the menu and less than 33% of the snack ingredients are organic. They also do not try to avoid snacks that are high in sugar and fat when planning the menu. The food budget for breakfast and snack is around \$300 to \$450, which is a moderate amount to purchase a variety of food. Snack foods are usually purchased from local groceries and wholesales. Even though a variety of snack options were provided by the childcare center, the staff reported that they often just prepared cheese and crackers to the children due to lack of time. For the preparation of snacks, workload is distributed amongst the staffs and the process often takes 30 minutes. Other than surveying via questionnaire, one of our group member also visited the kitchen in the childcare centre. Overall, the kitchen is fully equipped with different facilities: 4 stoves, an oven, a microwave and a refrigerator. Different sanitizers can be found, and the kitchen is clean and tidy.

Nutrition Diagnosis

PES Statement: Imbalanced macronutrient intakes related to child-care staffs' lack of nutritional knowledge evidenced by low awareness of balanced diet in staff reported in surveying and lack of variety in food group selections in snack preparation.

Interventions

Based on the assessment results, we discovered an imbalanced food group selection in the snacks prepared in the snack program mainly due to the low awareness of providing healthy food among the staffs. According to Canada's Food Guide, young children should include all four food groups in their diet by providing them a variety of foods (Health Canada, 2011). Therefore, it is essential to increase the number of food group used in snack preparation. From the survey, we realized the staff members are qualified with nutrition-related certification. Thus, the feasibility of providing more nutritious snacks to the children should be high. The interventions we designed mainly focus on increasing the awareness of the child-care staff on healthy snack preparation. The two main intervention we propose are offering healthy snack recipes that are easy to prepare to the staffs as well as holding nutrition-related workshops periodically to refresh staff nutritional knowledge.

For short-term improvement, offering healthy snack recipes to the staff would be the most efficient and straightforward. Taken the food budget and time for snack preparation into consideration, we would suggest snack recipes that are easy to prepare, have a good balance of nutrients that benefits growth and development of the children, and require ingredients that are easily found in the neighborhood markets. By providing recipes for them, we can tailor-make snack recipes that include all four or most food groups as well as accommodate the nutrition needs of the children at the daycare. A collection of suggested healthy snacks recipes are provided in appendix one.

For the long term consistency of providing nutrition-balanced snacks to the children, we recommend holding workshops for the staffs regularly; for example, having one workshop every 6 months. These workshops aim to improve staffs' experiences and knowledge in preparing healthy snacks. Ideally, we will invite professionals like experienced Registered Dietitians (RD) and Nutritionist to conduct the workshops. They could address the importance of eating healthy, especially during the childhood, which is the crucial period of cultivating a healthy diet as mentioned in the introduction. This helps the staff understand the crucial role they play in the children's dietary habits and become more motivated to prepare healthy snacks to the children. The workshops can also cover topics such as how to calculate the caloric and nutrient contents of snacks, healthy snack alternatives, proper serving sizes and food groups in snacks, and specific nutrient requirements for the age group of 18 months to 5-year-old. If they can incorporate the knowledge with their preparation regularly, it may become their habits and they can perform it and improve the problem in the long run.

Monitoring & Evaluation

Six months after our intervention, we will send the questionnaires again to measure any changes in staff's nutritional-related knowledge. The types of snacks provided after intervention will be assessed to see if the nutritional content of the snacks have indeed improved. Staff opinions and suggestion for our intervention will be collected to determine the effectiveness of our intervention, and revisions will be made if necessary.

Impact of Outcomes

In providing regular healthy snacks to children from a young age, we hope to capture their interest in healthful foods and motivate them to develop healthy eating habits that will be sustained for the rest of their lives. Also, through developing more nutrition awareness within the staffs, it would allow them to provide better care to the children.

Limitations

Several limitations exist in our case study. Firstly, we find that the snacks' portion sizes are not provided, which increases the inaccuracy of the result. Snack sources are also unclear as we do not know whether those snacks are homemade or store-bought. Secondly, limited information is provided regarding the total amount of food the children consume at lunch and dinner. Moreover, the scope of the questionnaire may not be comprehensive enough since there may be other contributing factors that we did not take into account. Lastly, the observation was done for a short period of time, which might not be representative of the childcare center's usual practice in terms of snacks provided.

Summary

The case study at Sandpiper Daycare Center revealed inadequate nutrition in their snack program, which could have potential impacts on the overall health and wellbeing of the children. This is by no means an isolated finding, as studies conducted at other childcare centers around UBC also found similar results, though the cause and extent of the problem may differ from one site to the next. The overconsumption of macronutrients and limited consumption of fresh fruits, vegetables, and other nutrient dense snacks in children is a common theme found all across North America (Nicklas et al., 2001). For day care centers, which children spends an average of 25 - 33 hours per week at (U.S Census Bureau, 2008), there is great potential for improvement to ensure the development of healthy eating habits will sustain throughout the children's lives. Although the scope of our study is small, involving only one of the many day care centers around UBC, we hope the findings from our study will raise awareness in the issue of nutrient deficiency in children in other day care centers around the city and across the country.

Critical Questions

1. Should the children be involved in the nutrition assessment process?

Yes, we can then receive more comprehensive results in the assessment and create interventions that better suits the needs of the children. However, practical and ethical issues may need to be considered e.g. consent form from parents, child pickiness, etc.

2. Should we include anthropometric assessment as one way to understand the children's

body compositions?

Yes, we can assess their BMI and body compositions which may give us further insight on their overall health, but once again, there are other considerations that need to be taken into account, such as the accuracy of BMI measurements in children undergoing rapid growth.

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Appendix 1

Snack Recipes

Winter

Nutella Porridge (1 serving= 150g)

Ingredients:

1/4 cups of oats
 1/4 cup hazelnut milk
 1/2cup water
 1/8 tbsp cacao powder
 1/2 tbsp date molasses
 Pinch of salt
 1 Toppings
 Cacao nibs
 Goji berries
 Bee pollen

Method:

1. Add your oats and hazelnut milk to the saucepan
2. Add a pinch of salt
3. Bring to the boil, once boil reduce the temperature and leave to simmer
4. Remove from heat when texture is nice and creamy
5. Add liquid sweetener & nut butter
6. Pimp with raw cocoa nibs, goji berries, bee pollen

Calories	200	Sodium	0 mg
Total Fat	6 g	Potassium	0 mg
Saturated	2 g	Total Carbs	30g
Polyunsaturated	0 g	Dietary Fiber	0 g
Monounsaturated	0 g	Sugars	0 g
Trans	0 g	Protein	12g
Cholesterol	0 mg		
Vitamin A	0%	Calcium	0%
Vitamin C	0%	Iron	0%

Zucchini Oat Muffins

Ingredients:

1 and 1/2 cups white whole wheat flour
 1 teaspoon baking powder
 1 teaspoon baking soda
 1 teaspoon ground cinnamon
 1/2 teaspoon salt
 1 egg
 1/2 cup maple syrup or honey
 1/3 cup milk (nut or dairy)
 1/3 cup melted coconut oil
 1 teaspoon vanilla extract
 1 and 1/2 cups grated fresh zucchini
 1/2 cups old-fashioned oats (uncooked), plus extra for sprinkling

Method

1. Preheat the oven to 350 degrees and grease a 12-cup muffin tin well.
2. In a large bowl add the flour, baking powder and soda, cinnamon, and salt. Use a whisk to combine well.
3. Make a well in the center of the dry mixture and add the egg, syrup or honey, milk, coconut oil, and vanilla. Stir until the mixture just comes together (don't over mix). Add the zucchini and oats and stir to combine.
4. Divide the mixture evenly between the 12 muffin cups. Sprinkle a few additional oats on each muffin if desired. Bake for 16-20 minutes until a toothpick inserted into the center comes out clean. Remove from the oven and let the muffins cool on a wire rack for 5 minutes. Remove from the muffin pan and serve warm, at room temperature.

Summer***Minty Shake*****Ingredients:**

2 cups peas, fresh or frozen

 sprig of mint

Methods:

1. Place the peas in a bowl covered with boiling or very hot water for 15 minutes.
2. Transfer the peas and mint to a food processor and puree until smooth. Add the soaking liquid 1 tablespoon at a time until desired consistency is reached.

Balanced Smoothies**Ingredients**

cow's, almond, rice, soy or other milk
vegetables:
 kale

broccoli spinach fruits: fresh or frozen berries banana mango pineapple passion fruit acai avocado apples proteins: whole nuts nut butter yogurt protein powder extras: hemp seeds bee pollen goji berries maca coconut oil
Method: 1. Choose at least 1 item from each category. 2. Place all the ingredients in a blender with milk and blend until smooth.

Yeal-Round Recipes

Asparagus pâté

Ingredients: 3 bunches of asparagus 2 tablespoons clotted cream
Methods: 1. Snap the woody ends off the asparagus. 2. Blanch the asparagus spears in boiling salted water until tender, then drain. 3. Blend the asparagus and clotted cream together and mix thoroughly. 4. Season with sea salt and black pepper, to taste, and whiz one last time.

Nutrition Facts

Serving Size 1/2 Pot (57 g)

Per Serving % Daily Value*

Calories 87

Calories from Fat 67

Total Fat 7.4g **11%**

Carbohydrates 2.9g **1%**

Dietary Fiber 0.6g **2%**

Protein 1.7g

No-Bake Carrot Cake Bites

Ingredient:

3 medium – carrot
 6 medium – dates, Medjool
 1/2 cup – pecans, chopped
 1 tablespoon – almond butter
 1 cup – oats, dry
 1 teaspoon – cinnamon
 1/2 teaspoon – nutmeg
 1/2 teaspoon – ginger, ground
 1/8 teaspoon – sea salt

1. Add the carrots to the bowl of a food processor and process until finely ground. Transfer to a plate or bowl and return the bowl to the food processor base.
2. Add in dates and pecans and process until combined. Return the carrots to the food processor and add in the remaining ingredients.
3. Process until a dough forms and you can roll them easily into balls. If the mixture is too wet, add in a tablespoon or two of flaxseed meal (or more oats). Roll the mixture into balls and store in an airtight container in the fridge for up to one week.(about 12-18 bites)

➤ 1 bite

Calories	78	Sodium	0 mg
Total Fat	3 g	Potassium	0 mg
Saturated	0 g	Total Carbs	11 g
Polyunsaturated	0 g	Dietary Fiber	1 g
Monounsaturated	0 g	Sugars	4 g
Trans	0 g	Protein	2 g
Cholesterol	0 mg		
Vitamin A	18%	Calcium	1%

Vitamin C	1%	Iron	3%
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No-bake mixed berry bites

Ingredients:

1 and 1/2 cups oat flour (use gluten free if necessary)
 1/2 cup coconut flour, sifted
 1/2 cup smooth peanut butter (can sub for any drippy nut butter or soy nut/sunflower seed butter)
 1/2 cup honey (can sub for agave, pure maple syrup or brown rice syrup)
 1/4 cup freeze dried unsweetened berries
 1/4 cup + milk of choice*

Method

1. In a small blender or food processor, add your freeze dried berries and blend until a flour-like consistency. set aside. Line a large plate with parchment paper and set aside.
2. In a large mixing bowl, add your oat flour and coconut flour and mix well. Stir through your smooth nut butter and honey and mix until a crumbly texture remains.
3. Using a tablespoon, add milk of choice until a thick batter is formed. Stir through your dried berries and using your hands, form into bite-sized balls and place on the lined plate. Refrigerate for at least 30 minutes to firm up. About 30 bites

> 100g

Calories	460	Sodium	270 mg
Total Fat	14 g	Potassium	250 mg
Saturated	1 g	Total Carbs	74 g
Polyunsaturated	3 g	Dietary Fiber	8 g
Monounsaturated	9 g	Sugars	24 g
Trans	0 g	Protein	6 g
Cholesterol	0 mg		

Vitamin A	0%	Calcium	0%
Vitamin C	0%	Iron	20%

Baked Avocado (1 serving)

Ingredients:

1/2 medium – avocado
 1/4 medium – lemon
 1/4 medium – lime
 1/4 cup – panko (Japanese bread crumbs)
 1/8 teaspoon – salt
 1/16 teaspoon – lemon pepper
 a little cooking spray

Methods:

1. Preheat oven to 425°F.
- 2.. Peel and slice avocado into 1/2-inch thick slices.
3. Juice lemon and lime.
4. Combine lemon & lime juice in small bowl. Mix bread crumbs, ¼ tsp. salt and ¼ tsp. lemon pepper in separate bowl.
5. Dip avocados into juice, season with ¼ tsp. salt and ¼ tsp. lemon pepper, and press into bread crumbs.
6. Spray baking sheet with cooking spray, lay avocados single layer and bake 12-15 minutes, or until golden brown

➤ 100g

calories	219	Sodium	152 mg
Total Fat	5 g	Potassium	351 mg
Saturated	3 g	Total Carbs	34 g
Polyunsaturated	0 g	Dietary Fiber	0 g
Monounsaturated	1 g	Sugars	28 g
Trans	0 g	Protein	8 g
Cholesterol	16 mg		
Vitamin A	79%	Calcium	55%
Vitamin C	983%	Iron	44%

Halloween Specials

Halloween Pumpkin Milk Shake

Ingredients:

1/2 cup pumpkin (i used canned)
 1 cup rice, almond or cow's milk (i used vanilla rice milk)
 pinch cinnamon
 pinch nutmeg
 1 tablespoon honey or agave nectar

Method

1. Place all the ingredients in a blender.
2. Puree until smooth.
3. Serve.

> 1 shake

Calories	162	Sodium	0 mg
Total Fat	0 g	Potassium	0 mg
Saturated	0 g	Total Carbs	0 g
Polyunsaturated	0 g	Dietary Fiber	0 g
Monounsaturated	0 g	Sugars	0 g
Trans	0 g	Protein	0 g
Cholesterol	0 mg		
Vitamin A	0%	Calcium	0%
Vitamin C	0%	Iron	0%

Pumpkin Dip

Ingredients:

3/4 cup (6 ounces) 1/3-less-fat cream cheese, softened
 1/6 cup packed brown sugar
 1/2 cup Steamed pumpkin
 1/2 tablespoon maple syrup

Methods:

1. combine first 3 ingredients in a medium bowl; beat with a mixer at medium speed until well combined.
2. Add syrup and cinnamon, and beat until smooth.
3. Cover and chill 30 minutes before serving.

4. Serve the dip with peeled apple slices, banana slices, or cinnamon pita chips.

> 1 tsp

Calories	54	Sodium	0 mg
Total Fat	1 g	Potassium	0 mg
Saturated	1 g	Total Carbs	9 g
Polyunsaturated	0 g	Dietary Fiber	1 g
Monounsaturated	0 g	Sugars	0 g
Trans	0 g	Protein	1 g
Cholesterol	0 mg		
Vitamin A	0%	Calcium	0%
Vitamin C	0%	Iron	0%