2020

AP CollegeBoard

AP® Research Academic Paper

Sample Student Responses and Scoring Commentary

Inside:

Sample A

- ☑ **Scoring Guideline**
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The Response…				
Score of 1 **Report on Existing Knowledge**	**Score of 2** **Report on Existing Knowledge with Simplistic Use of a Research Method**	**Score of 3** **Ineffectual Argument for a New Understanding**	**Score of 4** **Well-Supported, Articulate Argument Conveying a New Understanding**	**Score of 5** **Rich Analysis of a New Understanding Addressing a Gap in the Research Base**
Presents an overly broad topic of inquiry.	Presents a topic of inquiry with narrowing scope or focus, that is NOT carried through either in the method or in the overall line of reasoning.	Carries the focus or scope of a topic of inquiry through the method **AND** overall line of reasoning, even though the focus or scope might still be narrowing.	Focuses a topic of inquiry with clear and narrow parameters, which are addressed through the method and the conclusion.	Focuses a topic of inquiry with clear and narrow parameters, which are addressed through the method and the conclusion.
Situates a topic of inquiry within a single perspective derived from scholarly works **OR** through a variety of perspectives derived from mostly non-scholarly works.	Situates a topic of inquiry within a single perspective derived from scholarly works **OR** through a variety of perspectives derived from mostly non-scholarly works.	Situates a topic of inquiry within relevant scholarly works of varying perspectives, although connections to some works may be unclear.	Explicitly connects a topic of inquiry to relevant scholarly works of varying perspectives **AND** logically explains how the topic of inquiry addresses a gap.	Explicitly connects a topic of inquiry to relevant scholarly works of varying perspectives **AND** logically explains how the topic of inquiry addresses a gap.
Describes a search and report process.	Describes a nonreplicable research method **OR** provides an oversimplified description of a method, with questionable alignment to the purpose of the inquiry.	Describes a reasonably replicable research method, with questionable alignment to the purpose of the inquiry.	Logically defends the alignment of a detailed, replicable research method to the purpose of the inquiry.	Logically defends the alignment of a detailed, replicable research method to the purpose of the inquiry.
Summarizes or reports existing knowledge in the field of understanding pertaining to the topic of inquiry.	Summarizes or reports existing knowledge in the field of understanding pertaining to the topic of inquiry.	Conveys a new understanding or conclusion, with an underdeveloped line of reasoning **OR** insufficient evidence.	Supports a new understanding or conclusion through a logically organized line of reasoning **AND** sufficient evidence. The limitations and/or implications, if present, of the new understanding or conclusion are oversimplified.	Justifies a new understanding or conclusion through a logical progression of inquiry choices, sufficient evidence, explanation of the limitations of the conclusion, and an explanation of the implications to the community of practice.
Generally communicates the student's ideas, although errors in grammar, discipline-specific style, and organization distract or confuse the reader.	Generally communicates the student's ideas, although errors in grammar, discipline-specific style, and organization distract or confuse the reader.	Competently communicates the student's ideas, although there may be some errors in grammar, discipline-specific style, and organization.	Competently communicates the student's ideas, although there may be some errors in grammar, discipline-specific style, and organization.	Enhances the communication of the student's ideas through organization, use of design elements, conventions of grammar, style, mechanics, and word precision, with few to no errors.
Cites **AND/OR** attributes sources (in bibliography/ works cited and/or in-text), with multiple errors and/or an inconsistent use of a discipline-specific style.	Cites **AND/OR** attributes sources (in bibliography/ works cited and/or in-text), with multiple errors and/or an inconsistent use of a discipline-specific style.	Cites **AND** attributes sources, using a discipline-specific style (in both bibliography/works cited **AND** in-text), with few errors or inconsistencies.	Cites **AND** attributes sources, with a consistent use of an appropriate discipline-specific style (in both bibliography/works cited **AND** in-text), with few to no errors.	Cites **AND** attributes sources, with a consistent use of an appropriate discipline-specific style (in both bibliography/works cited **AND** in-text), with few to no errors.

Academic Paper

Overview

This performance task was intended to assess students' ability to conduct scholarly and responsible research and articulate an evidence-based argument that clearly communicates the conclusion, solution, or answer to their stated research question. More specifically, this performance task was intended to assess students' ability to:

- Generate a focused research question that is situated within or connected to a larger scholarly context or community;
- Explore relationships between and among multiple works representing multiple perspectives within the scholarly literature related to the topic of inquiry;
- Articulate what approach, method, or process they have chosen to use to address their research question, why they have chosen that approach to answering their question, and how they employed it;
- Develop and present their own argument, conclusion, or new understanding while acknowledging its limitations and discussing implications;
- Support their conclusion through the compilation, use, and synthesis of relevant and significant evidence generated by their research;
- Use organizational and design elements to effectively convey the paper's message;
- Consistently and accurately cite, attribute, and integrate the knowledge and work of others, while distinguishing between their voice and that of others; and
- Generate a paper in which word choice and syntax enhance communication by adhering to established conventions of grammar, usage, and mechanics.

Analyzing the Prevalence of the Mediterranean Diet Within Connecticut Facilities that Care for Residents with Alzheimer's Disease

May 26, 2020

Word Count: 5406

ABSTRACT

The neurodegenerative Alzheimer's Disease is the most common form of dementia. Previous researchers have found a link between the Mediterranean Diet and curbed symptoms and effects of Alzheimer's Disease. This finding from the pre-existing research sparked the goal of this research study: to examine the extent to which Connecticut facilities that care for residents with Alzheimer's Disease are incorporating aspects of the Mediterranean Diet into meal plans.

To assess the prevalence of the Mediterranean Diet amongst 12 Connecticut facilities, 3 methodology tools were used: a pre-validated quantitative questionnaire, qualitative interviews, and both qualitative and quantitative content analyses were conducted on dining menus.

It was concluded that 100% of the participating facilities incorporate aspects of the MedDi into their meal plans. It was additionally concluded that the incorporation of the Mediterranean Diet is both intentional and unintentional and to varying extents.

INTRODUCTION

The rate of Alzheimer's Disease (AD) is increasing annually and claims the unfortunate title of the most common form of dementia (Omar, 2019). In fact, AD accounts for 50%-80% of all dementia cases which affects 40-50 million people currently (Gupta, Lee, Choi, Lee, Kim, Kwon, 2019). "Alzheimer's disease is an irreversible, progressive brain disorder that slowly deteriorates memory, thinking skills and eventually the ability to carry out life's simplest tasks" (National Institute on Aging, 2017, p.1). AD does not lack research and attention; researchers and professionals strive each day to uncover ways to circumvent the neurodegenerative condition—an illness that involves deterioration in parts of the brain.

The pre-existing research regarding AD indicates that dietary choices can lessen symptoms or deter the risk of contracting the cognitive disease (Yusufov, Weyandt, Piryatinsky, 2017). The numerous diets and dietary patterns that researchers have examined include the Ketogenic Diet, Mediterranean Diet, MIND Diet, high iron-related patterns, and high oil related patterns (Rusek, Pluta, Ułamek-Kozioł, & Czuczwar, 2019; Omar, 2019; Shi, El-Obeid, Li, Xu, & Liu, 2019; Woodside, Gallagher, Neville & McKinley, 2014). After reviewing numerous studies pertaining to dietary choices that curb effects and symptoms of AD, it is clear that the Mediterranean Diet (MedDi) garners the most attention in this field and prevails overall in curbing further cognitive decline. The MedDi replicates the eating patterns of individuals from Greece and Italy in the early 1960s (Woodside, Gallagher, Neville, McKinley, 2014). The "building block" for the MedDi is olives, which can be in oil form. The olives provide prominent biophenols, a chemical that can help fight chronic illnesses, including AD (Omar, 2019). The

general guidelines of the MedDi (Figure 1) include high intake of foods rich in fiber, protein, and docosahexaenoic acid (DHA). Foods rich in DHA help prevent or improve several chronic conditions, including AD. Some examples of foods consumed while abiding to the diet include fish, nuts, legumes, and eggs (Shi, El-Obeid, Li, Xu, Liu, 2019). According to the pre-existing research, the richness in natural foods plays a role in increasing cognitive function—"any mental process that involves symbolic operations...perception, memory, creation of imagery or thinking" (Segen's Medical Dictionary, 2011, p.1).

Figure 1: *Mediterranean Diet Guidelines/Food Pyramid* (Dodge, 2017)

Gap in the Research

The pre-existing research links the MedDi to positive outcomes concerning cognitive function (e.g., Hernandez-Galiot & Goni, 2017; Scarmeas, Stern, Tang, Mayeux, & Luchsinger, 2006). However, the pre-existing research does not indicate if facilities that care for residents with AD incorporate the MedDi into meal plans. The purpose of this study is to address this gap. This is salient to determine because the prevalence of AD is increasing and it is vital that AD facilities are cognizant of the MedDi due to the link between diet and cognitive function (Nicolson & Ngwenya, 2001). Therefore, this study can assist with facilities choosing to

implement aspects of the MedDi to curb and deter AD symptoms (Omar, 2019). To analyze the prevalence of the MedDi at AD facilities, the guiding research question is: To what extent are aspects of the Mediterranean Diet being incorporated into the meal plans in Connecticut facilities that care for residents with Alzheimer's Disease?

LITERATURE REVIEW

Search Strategies

Sources were located via scrutinizing various databases with the limiter of peer-reviewed to ensure credibility. Keywords used while researching were: diet, Mediterranean Diet, cognitive function and Alzheimer's Disease.

Increased Cognitive Function Via the Mediterranean Diet

Researchers, using diverse methods, similarly conclude: there is a correlation between the MedDi and the prevention of or the curbing of AD symptoms. This is attributed to the proportions of foods comprising the diet. For example, when following typical adherence to the diet, red meat is consumed only on a monthly basis and fruits and vegetables are heavily incorporated into the diet on a daily basis (Yusufov, Weyandt, Piryatinsky, 2017).

In a study conducted by researchers in Madrid, 79 subjects ≥ 75 years old were fed the MedDi and later assessed on their cognitive status and potential symptoms of depression. The subjects were surveyed and interviewed daily to test their adherence to the diet, their cognitive function, and potential signs of depression. The study concluded that adherence to the MedDi positively correlates to increased cognitive function, but the correlation to depression symptoms remains unclear. The researchers found that many elders lack essential nutrients such as fish and

other fatty vitamins, which are abundant ingredients in the MedDi (Hernandez-Galiot & Goni, 2017).

Evidence of improved cognitive function regarding the MedDi was also assessed by means of surveying. In alignment with Hernandez-Galiot & Goni's (2017) method of utilizing surveys, researchers from Spain assessed the linkage of adherence to the MedDi to chronic mental illness. This cohort study had 11,015 subjects who each filled out a 136-item food frequency questionnaire, that established the participants' general adherence to the MedDi. After data collection for four years, the study "revealed a significant direct association between adherence to Mediterranean diet and all the physical and most mental health domains ...." (Henriquez Sanchez, Ruano, de Irala, Ruiz-Canela, Martinez-Gonzalez, Sanchez-Villegas, 2012, p.360).

Additionally, researchers from the Taub Institute in New York inspected the link between the MedDi and risks of AD. A total of 2,258 subjects were examined over 1.5 years. All subjects participated in an interview which assessed cognitive function. The cognitive assessments included "tests of memory (short- and long-term verbal and nonverbal), orientation, abstract reasoning (verbal and non-verbal); language (naming, verbal fluency, comprehension, and repetition), and construction (copying and matching)." The subject's food intake was recorded daily and assessed for MedDi adherence by interpreting their results on a zero to nine scale (higher score meaning higher adherence). The result of the study determined: "Higher adherence to the MeDi was associated with lower risk for AD" (Scarmeas, Stern, Tang, Mayeux, & Luchsinger, 2006, p.1). The pre-existing research highlights the alignment between AD and the

MedDi; it is of importance to conduct research on this finding to determine if facilities caring for residents with AD are utilizing this diet.

Foods in the Mediterranean Diet Contributing to Increased Cognitive Function

Researchers have discovered foods, nutrients, and vitamins that increase cognitive function, however, the minimum consumption of the diet to achieve curbed symptoms of AD remains unknown (Omar, 2019). According to Omar, olives and olive oil are considered the foundation of the MedDi. The olive, in any form, is a main source of monounsaturated fat. The general format of the diet is as follows: "high consumption of fruit, vegetables, legumes, and complex carbohydrates, with a moderate consumption of fish...and a low-to-moderate amount of red wine during meals" (Sofi et al., 2010, p.798). According to Sofi et al., when an individual has neurological damage, there is an increase in reactive oxygen species. This leads to an imbalance in the brain known as oxidative stress. This stress can diminish the brain's way of repairing damage. As the amount of reactive oxygen species increases, the amount of oxidative stress in the brain also increases. The oxidative stress that is produced can be affected by dietary choices. There are foods rich in antioxidants that can decrease oxidative stress; for example, vitamin C and vitamin E are rich in antioxidants. As expected, the MedDi is rich in foods with antioxidants, explaining why this diet is attributed to curtailing symptoms of AD. Additionally, nuts, seeds, and grains outlined in the diet pertain to foods categorized as rich in vitamin E. (Sofi et al., 2010). The MedDi is copious in natural foods that have not only been linked to increased cognitive function, but also increased quality of life. The wholesomeness of the foods prescribed in the diet make AD patients feel better internally (Henriquez Sanchez et al., 2012). The

pre-existing research concludes that higher incorporation rates of specific foods contained in the MedDi are better for cognitive function, general health, and quality of life.

Measurement and Adherence Tactics for Diets

The pre-existing research discovered effective approaches to enable greater adherence to diets. Researchers from Spain created an instrument to quantitatively measure adherence to the MedDi called the *14-Item Mediterranean Diet Assessment Tool*. It is a questionnaire that generates a *Mediterranean Diet Score* that classifies subjects as having high/low adherence to the MedDi (Martinez-Gonzalez et al., 2012). This instrument served as the quantitative tool for this study, further explanation is in the *Research Instruments* section (p.11). Concerning adherence tactics, it is known that individuals with AD can have trouble chewing, swallowing, or staying on task when it is mealtime. (Riley & Volicer, 1990). As a result, it is vital that meals are fed efficiently to AD residents to ensure that all proper nutrients are consumed. For example, researchers Riley and Volicer (1990) analyzed a high-calorie pudding supplement called "Frosty Cal." They hypothesized that small quantities of high calorie supplements would be beneficial for those suffering from AD. It was concluded that the pudding supplement was beneficial because patients found Frosty Cal easier to consume than other supplements.

Summary

Copious studies concluded that higher consumption of the MedDi translates to curbed symptoms and effects of AD (e.g., Scarmeas, Stern, Tang, Mayeux, & Luchsinger, 2006). The evidence of improved cognitive function was found via neuropsychological tests. Individuals

were assessed; however, the studies did not address if the participants resided in specialized facilities or not.

To connect the prior research and to fill a gap, this study determined the extent to which Connecticut AD facilities are incorporating aspects of the MedDi into meal plans.

RESEARCH DESIGN AND METHODOLOGY

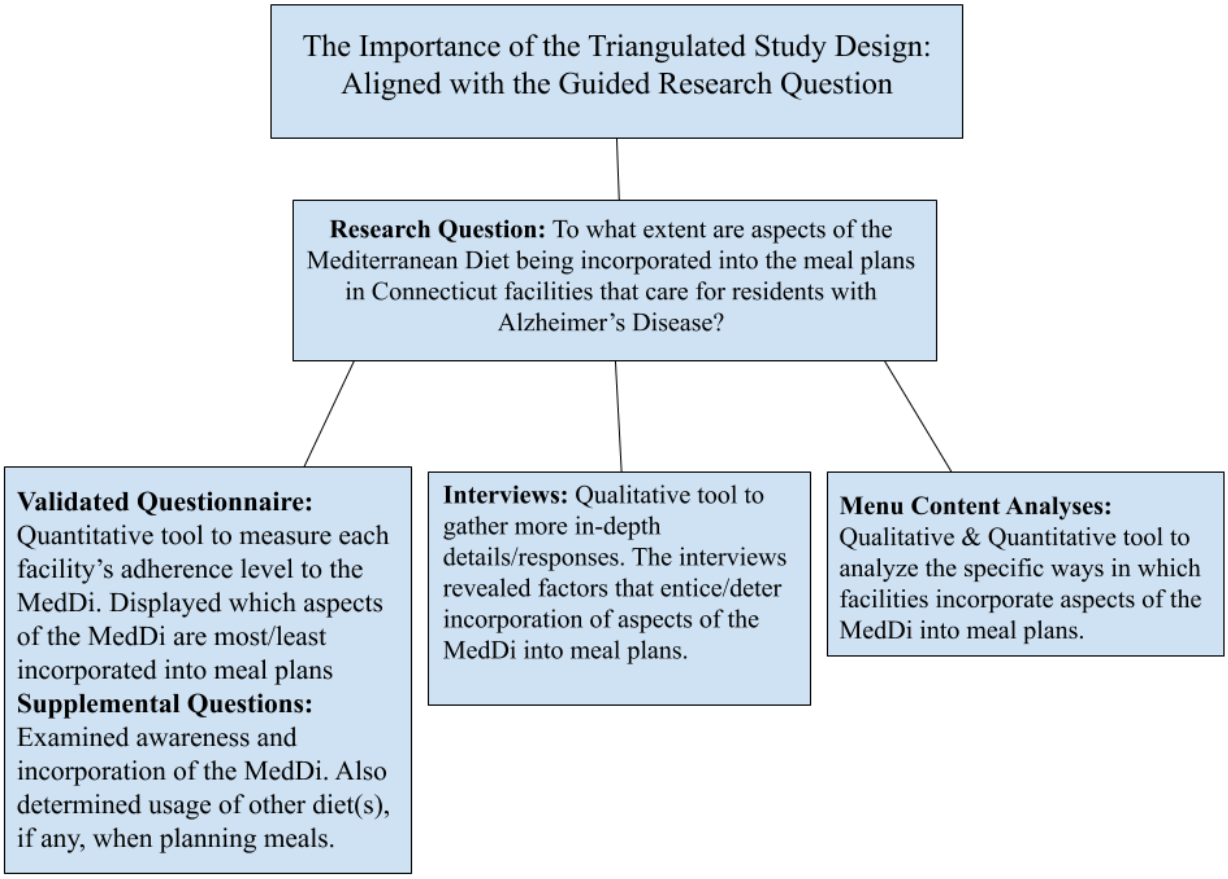
Study Design

This study explores the prevalence of components of the MedDi within facilities that care for residents with AD. The goal is to increase awareness of the MedDi and thus spur further implementation of it into the design of meal plans. This is important because the decline in cognitive health can be offset by increased consumption of foods contained in the MedDi.

A three-part, mixed-methods study was conducted. This approach allowed for both a quantitative and qualitative analysis of compliance to the MedDi. This is important because the mixed-methods captured details that would not have been revealed had only one component of the method (e.g. the questionnaire) been utilized to gather data and formulate results (Leedy & Ormrod, 2010). The study was also triangulated. The three methods utilized to gather data were: a pre-validated quantitative questionnaire, qualitative interviews, and content analyses of the dining menus (Figure 2). As seen in the literature review, some past researchers have conducted interviews and others have created questionnaires concerning the MedDi, but not in a mixed-method approach as utilized in this study. Additionally, the pre-existing research shows no evidence of researchers performing menu content analyses. The mixed-methods design in this

study is important as it combines methods from the literature review and adds a new qualitative measure.

Figure 2: *The 3-part Method Design in Alignment with the Research Question*



Subjects

The subjects were the individuals that are responsible for designing the meal plans in facilities that care for residents with AD. These individuals consisted of nutritionists, chefs, dining directors, and dieticians. This demographic of participants was chosen because they are

the decision-makers concerning the dining options and they are the most knowledgeable concerning the quantities of foods served. Also, they have the greatest insight pertaining to the reasons that entice/deter facilities from incorporating aspects of the MedDi into meal plans. Prospective subjects were gathered via compiling a list of all facilities in the state of Connecticut that have a residential memory care unit (n=54).

Research Instruments

The questionnaire in this study was based on the "Validated 14-item Questionnaire of Mediterranean diet adherence" (V14Q) from Martinez-Gonzalez et al. (2012).

Table 1: *Original Questionnaire with Criteria to Score one Point on the Mediterranean Diet Score (Martinez-Gonzalez et al., 2012)*

Questions	Criteria for 1 point
1. Do you use olive oil as main culinary fat?	Yes
2. How much olive oil do you consume in a given day (including oil used for frying, salads, out-of-house meals, etc.)?	≥4 tbsp
3. How many vegetable servings do you consume per day? (1 serving : 200 g [consider side dishes as half a serving])	≥2 (≥1 portion raw or as a salad)
4. How many fruit units (including natural fruit juices) do you consume per day?	≥3
5. How many servings of red meat, hamburger, or meat products (ham, sausage, etc.) do you consume per day? (1 serving: 100–150 g)	<1
6. How many servings of butter, margarine, or cream do you consume per day? (1 serving: 12 g)	<1
7. How many sweet or carbonated beverages do you drink per day?	<1
8. How much wine do you drink per week?	≥7 glasses
9. How many servings of legumes do you consume per week? (1 serving : 150 g)	≥3
10. How many servings of fish or shellfish do you consume per week? (1 serving 100–150 g of fish or 4–5 units or 200 g of shellfish)	≥3
11. How many times per week do you consume commercial sweets or pastries (not homemade), such as cakes, cookies, biscuits, or custard?	<3
12. How many servings of nuts (including peanuts) do you consume per week? (1 serving 30 g)	≥3
13. Do you preferentially consume chicken, turkey, or rabbit meat instead of veal, pork, hamburger, or sausage?	Yes
14. How many times per week do you consume vegetables, pasta, rice, or other dishes seasoned with sofrito (sauce made with tomato and onion, leek, or garlic and simmered with olive oil)?	≥2

Approval to use the instrument was granted by Martinez-Gonzalez et al. and Schroder et al. (Appendix A). The V14Q concerns an individual's diet and answers are assigned points. Table 1 depicts the V14Q questionnaire; on the left side are the questions and on the right is the criteria to score one point. The sum of the points determines the participant's Mediterranean Diet Score. The scoring framework from the V14Q was mirrored in this study. If the response aligned with the coded answer (generated by Martinez-Gonzalez et al., 2012), one point was awarded. According to the V14Q, an overall score ≤ 7 is considered "low adherence" to the MedDi and an overall score ≥ 8 is considered "high adherence" to the MedDi. The questionnaire served as the quantitative measure for assessing overall adherence at the various facilities. The original questionnaire was designed for and effective at examining individuals with obesity risks and had not been used in the context of AD facilities. The purpose of the V14Q instrument was to measure adherence to the MedDi, thus it was useful in this study to measure adherence levels of the MedDi within facilities. Minor modifications to the questionnaire wording were made to accommodate the new context of this study (e.g. words such as "consume" were changed to "provide").

In this study, supplemental questions were added to the questionnaire. They were reviewed and approved by the Institutional Review Board (IRB). Table 2 depicts the supplemental questions. The questionnaire used in the study is located in Appendix B.

Table 2: Supplemental Questions Added to the Validated Questionnaire

Q 1	Q 2	Q 3	Q 4
Prior to this questionnaire, were you aware of any link(s) between cognitive function and the Mediterranean Diet?	Do you intentionally provide/design meals that adhere to the Mediterranean Diet?	Do you provide/design meals that adhere to either the Ketogenic Diet or the MIND Diet?	Do the meals you provide/design adhere to any particular diet? If so, please specify which diet(s). If not, please respond with "N/A."

Note. There were two additional questions: one requesting interviews and the other requesting menus for content analyses (all questions were approved by the IRB).

Procedures

After the compilation of potential subjects, each facility received a recruitment phone call. Subjects that did not answer the phone were left voice messages and contacted a second time. Upon agreement to participate in the study, the subjects were emailed a link to the questionnaire.

Twelve facilities completed the questionnaire, eleven facilities completed the supplemental questions, six out of the twelve provided menus, and four subjects interviewed. The consent form (Appendix C) outlined that facilities can choose which component(s) of the method to complete. To ensure confidentiality, the consent form informed participants that neither names of people nor facilities would not be disclosed. To keep names classified, each subject/location received a study code number (ex. Facility A). Throughout this study, the words "subjects" and "facilities" are used interchangeably. The study design and procedures were approved by the IRB to eliminate ethical issues.

Delimitations

Delimitations were established ahead of time to narrow the subject pool. First, individuals that design meal plans for individuals with AD in residential homes were excluded; only AD facilities with residents were subjects for the study. Second, only facilities located in the state of Connecticut were contacted as participants.

RESULTS

Quantitative Results

The questionnaire (Appendix B) was completed by twelve facilities. Table 3 depicts the frequency and percentage of criteria met/not met in total for all participating facilities per question. Provided with each question is the criteria needed to score one Mediterranean Diet Score (MDS) point according to the V14Q. For example, to score a point for question 4, a response must have been that the facility provides ≥ 3 units of fruit per day.

As seen in Table 3, the total number of responses that met the criteria (90) was greater than the total number of responses that did not meet the criteria (73). Therefore, this table presents an overall finding that the majority of responses to each question met the criteria to earn one MDS point. The top 3 food categorizations that met the criteria were fruits (91.7%; Q4), vegetables (75%; Q3), and legumes (75%; Q9). The top 3 food categorizations that did not meet the criteria were red meat (83.3%; Q5), commercial sweets (75%; Q11) and sweet/carbonated beverages (66.7%; Q7). It is important to note that some facilities omitted responses to questions. In order to keep the scores aligned with the 14-point MDS, scores for these facilities were proportionally calculated (Appendix D).

Table 3: *Frequency and Percentage of Criteria Met/Not Met Per Question* (n=12)

Question with Predetermined Criteria to Score one Point on the Mediterranean Diet Score by Martinez-Gonzalez et al.	Met Criteria Frequency (%)	Did Not Meet Criteria Frequency (%)
1. Do you provide meals utilizing olive oil as main culinary fat? Criteria= Yes	8 (66.7)	4 (33.3)
2. How much olive oil do you provide in a given day (including oil used for frying, salad, out-of-house meals, etc.)? Criteria= ≥ 4 tablespoons	8 (66.7)	4 (33.3)
3. How many vegetable servings do you provide per day? (1 serving: 200 g [consider side dishes as half a serving]) Criteria= ≥ 2 (≥ 1 portion raw or as a salad)	9 (75)	3 (25)
4. How many fruit units (including natural fruit juices) do you provide per day? Criteria= ≥ 3	11(91.7)	1 (8.3)
5. How many servings of red meat, hamburgers, or meat products (ham, sausage, etc.) do you provide per day? (1 serving: 100-150 g) Criteria= < 1	2 (16.7)	10 (83.3)
6. How many servings of butter, margarine, or cream do you provide per day? Criteria= < 1	5 (41.7)	7 (58.3)
7. How many sweet or carbonated beverages do you provide per day? Criteria= < 1	4 (33.3)	8 (66.7)
8. How many glasses of wine do you provide per week?** Criteria= ≥ 7 glasses	6 (60)	4 (40)
9. How many servings of legumes do you provide per week? (1 serving: 150 g) Criteria= ≥ 3	9 (75)	3 (25)
10. How many servings of fish or shellfish do you provide per week? (Serving: 100-150 g of fish or 4-5 units or 200 g of shellfish) Criteria= ≥ 3	8 (66.7)	4 (33.3)
11. How many times per week do you provide commercial sweets or pastries (not homemade), such as cakes, cookies, biscuits, or custard? Criteria= < 3	3 (25)	9 (75)
12. How many servings of nuts (including peanuts) do you provide per week? (1 serving: 30 g)** Criteria= ≥ 3	4 (40)	6 (60)
13. Do you preferentially provide chicken, turkey, or rabbit meat instead of veal, pork, hamburger, or sausage? Criteria= Yes	6 (50)	6 (50)
14. How many times per week do you provide vegetables, pasta, rice, or other dishes seasoned with sofrito (sauce made with tomato and onion, leek, or garlic and simmered with olive oil)?* Criteria= ≥ 2	7 (63.3)	4 (36.7)

Note. Total Frequency of Responses that Met the Criteria= 90, Total Frequency of Responses that Did not Meet Criteria= 73
*One facility omitted a response to this question
** Two facilities omitted responses to this question
See Appendix D for Proportional Explanations for Omitted Questions

Table 4 illustrates the frequency and percentage of criteria met/not met in total, per facility. Facilities A, E, F, I, J, & M (50%) had a sum score ≥ 8 and, therefore, demonstrate "high adherence." In other words, these facilities are most aligned with the guidelines of the MedDi. Contrastingly, facilities B, C, D, G, H, & K (50%) had a sum score ≤ 7 and, therefore, demonstrate "low adherence." In other words, these facilities are least aligned with the guidelines of the MedDi. The highest MDS was 10 out of 14 (Facility A); the lowest MDS was 6 out of 14 (Facilities D & G). None of the facilities had a perfect MDS (14), but 100% incorporated MedDi food options as evidenced by each facility having a MDS ≥ 6.

Table 4: *Frequency and Percentage of Criteria Met/Not Met in Total, Grouped by Facility (n=12)*

Facility	Frequency Met of Total Criteria (%)	Frequency Not Met of Total Criteria (%)
A	10 (71.4)	4 (28.6)
B	7 (50)	7 (50)
C	7 (50)	7 (50)
D	6 (42.9)	8 (57.1)
E	8 (57.1)	6 (42.9)
F^^	9 (64.3)	5 (35.7)
G	6 (42.9)	8 (57.1)
H	7 (50)	7 (50)
I	8 (57.1)	6 (42.9)
J	9 (64.3)	5 (35.7)
K	7 (50)	7 (50)
M^^^	8 (57.1)	6 (42.9)

Note. ^^This facility omitted two questions
^^^This facility omitted three questions
See Appendix D for Proportional Explanations for Omitted Questions

Table 5 summarizes the results of Table 4. This table depicts the frequency and percentage of high and low adherence amongst all the facilities. According to the scoring framework, exactly half of the facilities demonstrated "high adherence" and exactly half of the facilities demonstrated "low adherence."

Table 5: *Frequency and Percentage of High and Low Adherence in Totality for All Facilities (n=12)*

Adherence Level	Frequency (%)
High Adherence	6 (50)
Low Adherence	6 (50)

Note. A frequency of total met criteria ≤ 7 yields "low adherence", a frequency of total met criteria ≥ 8 yields "high adherence."

The supplemental questions consisted of three multiple-choice questions and one open-ended question (see Appendix E for the justifications to the supplemental questions). The responses portray that seven out of the eleven facilities were "...aware of any link(s) between cognitive function and the Mediterranean Diet." In response to the second supplemental question, four facilities selected, "Yes, I intentionally provide/design meals that adhere to the Mediterranean Diet." When asked if they plan meals in accordance to the MIND or Ketogenic Diet, Facility A was the only facility to select "Yes…". Concerning the open-ended question, facilities were asked if they design meals in accordance to any diet in particular and if so, to

specify the diet. Only one, Facility F, stated that they use "specifically Mediterranean." Appendix F charts all responses to the supplemental questions.

Qualitative Results

Interviews

The interviews (see Appendix G for questions) were conducted both in person and over the phone. The interviews were transcribed (Appendix H) and then coded in an open-coding format for each emerging theme. Qualitative coding of interview transcripts was conducted using Miles and Huberman's (1994) iterative coding process. After two iterations of open-coding, 14 final themes emerged (Appendix I) with the following four most prevalent: 1) incorporated aspects of the MedDi; 2) willingness to incorporate aspects of the MedDi into meal plans and change menus; 3) reservations regarding incorporating the MedDi and 4) budget factors.

Incorporated Aspects of the Mediterranean Diet

When asked to list the main ingredients incorporated into meal plans, every facility highlighted foods outlined in the MedDi. Facility L stated, "I use olive oil even though it costs more money. We do fish, a lot of fish." Facility D said, "I'd say that 90% of our vegetables are fresh. Our potatoes are all fresh, nothing comes in a box." According to Facility K, "...for vegetables there's a wide variety, but we do a lot of broccoli and carrots...we have and we use olive oil, extra virgin olive oil to roast our vegetables." Facility B stated that they "...make a lot of chicken and a lot of fish...try to incorporate a lot of fresh fruits and vegetables."

Willingness to Incorporate Aspects of the Mediterranean Diet into Meal Plans and Change Menus

All four facilities expressed their willingness to incorporate aspects of the MedDi in their meal plans. According to Facility K, "...we both were aware that it [the MedDi] helps and that is why we are working to incorporate it into our menus." As Scarmeas, Stern, Tang, Mayeux, & Luchsinger (2006) concluded, subjects in this study also recognized that the MedDi is beneficial for individuals with AD. In their interview Facility K stated, "we're trying to promote if you eat this diet you will have fewer symptoms, your blood sugars will look better, there's less sodium so their blood pressure is going to look better, less pills...It's not just gonna extend your life, but you will feel better on a day to day." Additionally, when asked if their facility adheres to any particular diet, as noted prior, Facility F responded with "Specifically Mediterranean" (Appendix F). Half of the facilities (B and D) expressed that they use the MedDi. For example, Facility B stated, "To be honest, our menus do [incorporate the MedDi]." Facility D stated, "We do use that diet [the MedDi] in our building now."

Reservations Regarding Implementing Aspects of the Mediterranean Diet

An obstacle subjects face regarding the incorporation of certain aspects of the MedDi is the texture of the foods. As noted by Riley & Volicer (1990) and all four facilities interviewed in this study, individuals with AD have trouble chewing, swallowing, and consuming food. During interviews, Facilities K & L discussed adjusting meal plans to compensate for the food consumption limitations of the AD residents. For example, Facility L stated that they have beverage only diets because "these guys have teeth issues, that's why a lot of them end up with

soft diets and even puree. It's not usually the teeth it's the swallowing mechanisms that's more of the problem." Riley & Volicer also found that nutritional supplements can aid those with AD by ensuring all nutrients are consumed. Similarly, Facility K stated, "Some people cannot tolerate any food at all and I just have to give them like an Ensure or a Boost supplement that gets all their calories and proteins in."

An additional deterrent is food waste factors. Facility B stated, "We don't use things timely and as efficiently as we could...with fresh products there is always the waste factor." Another finding was that not all residents like Mediterranean food. Subjects attributed this to the way residents were raised and to the evolving sense of taste as one ages. For example, although sweets and baked goods are not highly recommended for the MedDi, Facility L mentioned, "...the sweet taste bud is the last to go. So, these guys that live here, if they could live off of sweets for the rest of their lives that's what they'd do… so we balance that." Facility B stated, "Some people...in their eighties or nineties are set in their ways of what they were raised on. I think they are not necessarily going to change, but then we also do have a small percentage that do want to learn while they're here." Also, Facility K noted that the MedDi cannot be sprung upon AD residents, "...we can't do a complete overhaul, we have to take baby steps into this. If we just did a whole Mediterranean Diet menu, the first thing that they would say is 'where is my meatloaf, where are my buttery mashed potatoes?' So we have to do trial and error." See Appendix J for additional quotes regarding each final theme.

Budget Factors

Another prominent theme that emerged was budget factors. While some facilities (K&L) budget for the cost to continuously purchase fresh foods such as ones in the MedDi, others expressed economic concerns. For example, Facility D stated, "We also have to write these menus in coordination with our budget...we write a budget for the year and we pertain to that budget monthly" (Appendices H & J). Additionally, Facility B stated, "cost of course is always a concern." Therefore, a limitation to the MedDi is the cost of ingredients. According to researchers in Washington, "The Mediterranean diet has come to be viewed, at times, as a high-cost option for the elite, especially when transplanted from its rustic roots to an urban North American setting" (Drewnowski & Eichelsdoerfer, 2010, p.1). Consequently, a potential barrier to incorporating the MedDi are financial circumstances.

Content Analyses

Content analyses were made upon the dining menus to discover how MedDi foods are incorporated into meals. This analysis was both a quantitative and qualitative measure and it triangulated the study. Two coding iterations were completed via Strauss' (2010) deductive coding process. Appendix K depicts Iteration One: deductive coding of the food categories on the V14Q, which are organized by those that align (Theme 1) with the MedDi and those that do not (Theme 2). For example, vegetables fall in Theme 1 and commercial sweets fall in Theme 2.

Iteration Two analyzed each facility's menu in accordance with the foods that fall into each theme from Iteration One. First, food categories were separated via Iteration One. Then, each food category was analyzed on facilities' menus. This iteration uncovered how the menu

offerings do and do not incorporate aspects of the MedDi (Appendix L). For example, Facility B incorporated vegetables into the menu by providing potato soup and Facility J incorporated fish into the menu by providing baked tilapia, tuna salad and tuna melts. Based on the specific foods found, the frequencies of each food category were tabulated (Table 6).

As seen in Table 6, each menu incorporated ≥ 1 unit of vegetables. This was the only food category incorporated by all facilities. Facility M did not incorporate fruit and all others did. Half of the facilities incorporated fish into the menu. Not one facility listed wine as an option on their menu. This is a limitation to the menus because according to the survey responses from the facilities that provided menus, four out of the six (66.7%) indicated that they provide ≥ 7 glasses of wine per day. A similar situation occurred with the nuts and peanut category. Two out of the six facilities (33%) met the criteria for this category on the questionnaire, but zero units of nuts or peanuts were found on any of the menus. Facility B offered the most aspects of the MedDi on their menu (12 items). Facility M offered the least aspects of the MedDi on their menu (4 items). Please note that signs of butter/margarine, sofrito, and olive oil were not present on any menu. This serves as a limitation because these foods are not typically listed on a menu, but they are on the V14Q. Appendix M displays the final coding framework for the themes (Iteration Two).

Table 6: *Frequency of Each Food Category on the Dining Menus, by Facility: Foods that Align with the Mediterranean Diet*

Food Category	Facility B	Facility C	Facility I	Facility J	Facility K	Facility M
Olive Oil	0	0	0	0	0	0
Vegetables	7	6	2	6	6	1

Fruits	3	1	2	1	1	0
Wine	0	0	0	0	0	0
Protein/Meat	0	1	0	0	1	0
Pasta	1	0	1	0	0	0
Rice	0	0	0	1	0	0
Nuts & Peanuts	0	0	0	0	0	0
Sofrito	0	0	0	0	0	0
Fish	1	0	0	3	0	1
Shellfish	0	0	0	0	0	1
Legumes	0	0	0	0	1	1

DISCUSSION

The study was designed to examine the extent to which Connecticut facilities attending to residents with Alzheimer's Disease are incorporating aspects of the MedDi into their meals.

Findings

After examining the results obtained by the three methods, it can be concluded that 100% of the participating facilities incorporate aspects of the MedDi into their meal plans. This is proven by all facilities having a MDS ≥ 6 (Table 4). The incorporation is both intentional and unintentional (Table 2, Q2; Appendix F) and to varying extents—as displayed by the MDS scores ranging from 6-10 (Table 4).

As depicted in Table 5, the percentage of facilities demonstrating high/low adherence was 50%/50%. Although, when triangulating the data, it became apparent that responses concerning the incorporation of MedDi foods fluctuated depending upon the tool used (questionnaire, supplemental questions, interviews and content analyses). This finding displays the importance of triangulation as evidenced by the following analysis: Facility D (along with Facility G) had the lowest MDS score of 6 (Table 4). On the questionnaire Facility D indicated, "No, I do not intentionally provide/design meals that adhere to the Mediterranean Diet." This response correlates to their comparatively low MDS. Contrastingly, the same subject stated in their interview, "we do use that diet [the MedDi] in our facility now...we do utilize this diet so there are no deterrents." These findings emphasize that had this study only scrutinized data via one method (e.g. the questionnaire), prevalence would have been under/over reported. This was also reinforced when the responses to the supplemental questions were compared to the questionnaire. For example, only three out of the eleven facilities (27.3%) selected, "Yes, I intentionally provide/design meals that adhere to the Mediterranean Diet" (Table 2, Q2; Appendix F). However, this number alone is misleading as the questionnaire found that six facilities (50%) scored ≥ 8 on the MDS and, therefore, demonstrate "high adherence." This indicates that facilities unwittingly incorporate more aspects of the MedDi than they think.

Analysis of the menus found that each facility incorporated menu items that align with the MedDi into their meal plans (Table 6). Although non-MedDi food options were available, residents could still choose foods that would allow them to adhere to the MedDi. See Appendix N for an annotated menu.

Another finding is that subjects are incorporating the diet, but are incognizant of the pre-existing research emphasizing the link between cognitive function and the MedDi. According to the supplemental question responses (Appendix F), 4 out of the 11 subjects were unaware of the aforementioned link, yet two demonstrated "high adherence" according to their MDS (Facilities A & J). It is important to mention that the other two facilities also incorporate aspects of the MedDi (MDS=6 & 7). It is beneficial that subjects are incorporating the MedDi into meal plans. However, it is paramount that subjects are also cognizant of this link because ongoing implementation can improve the quality of life of residents by halting and preventing cognitive decline.

Fulfillment of Gaps in the Research

This study addresses several gaps in the pre-existing research. First, the targeted subjects: nutritionists, chefs, dining directors, and dieticians were not the subjects in any of the aforementioned studies. In the pre-existing studies, the cognitive function of people was studied in accordance with dietary choices. The subjects were those actually consuming the diet, not those planning the diets. Second, the setting of this study: prior studies did not mention if the subjects were gathered from specialized facilities. In this study, subjects were only gathered from specialized AD facilities with a memory care unit. Contrastingly, the studies mentioned in the literature review do not specify if the subjects are from facilities or individuals living at home. Third, and the most prominent gap filled was the extent to which specialized AD facilities are incorporating the MedDi into their meal plans. The pre-existing literature reiterated the link

between the MedDi and curbed symptoms and effects of AD (Scarmeas, Stern, Tang, Mayeux, & Luchsinger, 2006), but not one study mentioned how prevalent the MedDi is within specialized AD facilities. This gap served as the foundation for this study.

Implications

The results of this study can spur facilities to intentionally incorporate as many aspects as possible of the MedDi into the meal plans for residents with AD. Those that were not previously aware of the correlation between the diet and cognitive function can now introduce the foods into dining plans with a meaningful purpose. As Facility L stated, "I think this topic is certainly something to be considered. I'll even pass it on up to my people and say we are due for a new menu, why don't we lean more in that direction. It can't hurt." In addition, the results of this study can inform the designers of meal plans—in and out of AD facilities—to allocate budgets to fund purchases of MedDi foods. The pre-existing research signifies that the prevalence of AD is increasing (Omar, 2019). Therefore, this study can inform the designers of meal plans at AD facilities—and on a broader scope all people taking care of an individual with AD—to be cognizant of the MedDi to help curb and deter AD symptoms (Hernandez-Galiot & Goni, 2017).

Limitations

As noted, some facilities omitted questions from the questionnaire (both V14Q and supplemental questions). While scores for these facilities were calculated proportionally, more data could have been analyzed had all subjects answered all questions. Another limitation to this study was the failure to acquire Facility L's questionnaire. Technical difficulties prevented Facility L from filling out the questionnaire. Two attempts via email were made to have them fill

it out, but no response was returned. Had Facility L responded to the questionnaire the 50%/50% tie between the facilities for high/low adherence to the MedDi would have been broken. Also, limitations with the menus emerged as some facilities only provided dinner menus and others provided menus for all three meals. For example, Facility B showed the most signs of the MedDi, but they are also one of the two facilities that provided menus for all three meals (the other was Facility K). Also, because the menus only account for one day they do not capture the fact that facilities may incorporate more or less aspects of the MedDi on other days.

Areas for Future Research

This study's delimitations are catalysts to new areas of research. The subject pool can be expanded to include those responsible for the meals of individuals with AD that reside at home. Future research can also expand beyond Connecticut to include other geographic regions in the United States and globally. Alternate diets that assist with cognitive functions can also be researched. As noted, the Ketogenic Diet and MIND Diet have also been attributed to increased cognitive function (Rusek, Pluta, Ułamek-Kozioł, & Czuczwar, 2019; Omar, 2019). One could look into the prevalence of the aforementioned diets amongst facilities in Connecticut and elsewhere.

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APPENDICES

Appendix A: *Permission for Questionnaire Instrument Utilization from Miguel Angel Martinez-Gonzalez*

Note. Crossed out is my name and my email. This was done to maintain anonymity. Also crossed out is Dr. Martinez-Gonzalez's email for his own privacy.

Utilization Request: "Validated 14-item Questionnaire of Mediterranean diet adherence"

Miguel Ángel Martínez González [redacted] Mon, Nov 25, 2019 at 1:58 AM
To: [redacted]

Dear [redacted]

You have our permission to use this tool. However, you need to send me (an email is enough) your commitment to quote always the following three sources:

-www.predimed.es
-Martínez-González et al. Cohort profile: design and methods of the PREDIMED study. Int J Epidemiol. 2012 Apr;41(2):377-85
-Schröder H, et al. A short screener is valid for assessing Mediterranean diet adherence among older Spanish men and women. J Nutr. 2011 Jun;141(6):1140-5.

Thank you for you interest in our work.
Sincerely,
miguel

Miguel A. Martinez-Gonzalez. MD, PhD, Univ. **Navarra** *(Prof. & Chair, Prev. Med. & Public Health)*
Harvard TH Chan School Public Health, Dpt. Nutrition *(Adjunct Prof.)*. ***CIBEROBN*** (Group Coordinator),

Appendix B: *Questionnaire Sent to Participating Facilities*

Questionnaire: Dietary Choices within Facilities that Care for Residents with Alzheimer's Disease

This questionnaire is based on a study conducted by Martinez-Gonzalez et. al (2012).
Note: These questions pertain to what is provided/available to an individual resident at your facility. Thank you for completing the questionnaire. Your participation is greatly appreciated!

You are being asked to participate in a research study that is focused on dietary options within facilities that care for patients with Alzheimer's Disease. Please note that you have the ability to opt out of any question(s) with no penalty. The compiled results will not contain information that enables participant recognition. If you have any questions about this study, feel free to contact:
Researcher: _____ Email:_____
Teacher:_____ Email:_____

By clicking "accept," I agree to participate in the study.

Accept

1. Do you provide meals utilizing olive oil as main culinary fat?

   Yes

   No

2. How much olive oil do you provide in a given day (including oil used for frying, salads, out-of-house meals, etc.)?

   > 4 Tablespoons

   < 4 Tablespoons

   4 Tablespoons

3. How many vegetable servings do you provide per day? (1 serving: 200 g [consider side dishes as half a serving])

   > 2 (>1 portion raw or as a salad)

   < 2 (< 1 portion raw or as a salad)

   2 (1 portion raw or as a salad)

4. How many fruit units (including natural fruit juices) do you provide per day?

   > 3

   < 3

   3

5. How many servings of red meat, hamburgers, or meat products (ham, sausage, etc.) do you provide per day? (1 serving: 100-150 g)

   > 1

   < 1

   1

6. How many servings of butter, margarine, or cream do you provide per day?

   > 1

< 1

1

7. How many sweet or carbonated beverages do you provide per day?

> 1

< 1

1

8. How many glasses of wine do you provide per week?

> 7

< 7

7

9. How many servings of legumes do you provide per week? (1 serving: 150 g)

> 3

< 3

3

10. How many servings of fish or shellfish do you provide per week? (serving: 100-150 g of fish or 4-5 units or 200 g of shellfish)

> 3

< 3

3

11. How many times per week do you provide commercial sweets or pastries (not homemade), such as cakes, cookies, biscuits, or custard?

> 3

< 3

3

12. How many servings of nuts (including peanuts) do you provide per week? (1 serving: 30 g)

> 3

< 3

3

13. Do you preferentially provide chicken, turkey, or rabbit meat instead of veal, pork, hamburger, or sausage?

Yes

No

14. How many times per week do you provide vegetables, pasta, rice, or other dishes seasoned with sofrito (sauce made with tomato and onion, leek, or garlic and simmered with olive oil)?

    > 2

    < 2

    2

15. Prior to this questionnaire, were you aware of any link(s) between cognitive function and the Mediterranean Diet?

    Yes, prior to this questionnaire I was aware of any link(s) between cognitive function and the Mediterranean Diet.

    No, prior to this questionnaire I was not aware of any link(s) between cognitive function and the Mediterranean Diet.

16. Do you intentionally provide/design meals that adhere to the Mediterranean Diet?

    Yes, I intentionally provide/design meals that adhere to the Mediterranean Diet.

    No, I do not intentionally provide/design meals that adhere to the Mediterranean Diet.

17. Do you provide/design meals that adhere to either the Ketogenic Diet or the MIND Diet?

    Yes, I do provide meals that adhere to either the Ketogenic Diet or the MIND Diet.

No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet.

18. Do the meals you provide/design adhere to any particular diet? If so, please specify which diet(s). If not, please respond with "N/A."

19. If you are willing, please provide me with dining menus that display the foods provided to residents with Alzheimer's Disease (which may be the same menu for the general population that you serve). Please Email the menus using the Email: _____

I will be providing menus.

20. Would you like to participate in a brief interview (10 minutes or less) over the phone? Please provide your name, phone number and/or Email to schedule a time.

Appendix C: *Consent Form*

Project Title: Analyzing the Prevalence of the Mediterranean Diet Within Connecticut Facilities that Care for Residents with Alzheimer's Disease

Introduction/Purpose:

You are being asked to participate in a research study that is focused on the extent to which the Mediterranean Diet is utilized in meals for those with Alzheimer's Disease. The purpose of the research is to determine if facilities are utilizing this diet and if so, to what extent.

Procedures:

As a participant of this study, you will be asked to fill out a questionnaire which assesses adherence to the Mediterranean Diet. At the end of the questionnaire I will ask if you would be willing to participate in an interview for a more in-depth conversation. Please note that interviews will be audio recorded. The audio recordings are for the sole purpose of transcribing the interviews. Your participation in the survey/questionnaire will require approximately 10 minutes. The interview portion will require an estimated 20 minutes. Additionally, I will request copies of your dining menus (if there is not a separate menu for Alzheimer's Disease residents that is still acceptable). Participation in the study is fully optional. If you feel uncomfortable answering any of the questions asked, you can opt out of any question(s). There will be no penalty for unanswered questions. Furthermore, if you wish to drop out of the study at any time you have the ability to do so. If you withdraw from the study after you have completed the questionnaire, I will remove you from the prospective interviewee pool (if you had indicated you would be willing to participate in an interview). When you indicate your withdrawal from the study, I will ask if the material already collected (the questionnaire data and menus) can still be used in my project.

Risks:

Your participation in this study involves no physical risks. As noted before, you have the ability to opt out of any particular question with no penalty. You are permitted to remain in the study if you leave question(s) unanswered. You also have the ability to withdraw from the study at any time.

Benefits:

A potential benefit to the study is increased awareness of the link between the Mediterranean Diet and cognitive function. This study may serve as a catalyst to curb further cognitive deterioration by increasing the incorporation of Mediterranean Diet foods into the meal plans for residents with Alzheimer's Disease. This study may not benefit you directly, but will

improve the general understanding concerning the rate and extent to which Alzheimer's Disease facilities are utilizing the Mediterranean Diet.

Alternatives:

You have the alternative to choose not to participate in this research study.

Confidentiality:

Participation in this study will not result in a loss of privacy. Unless required by law, only I and my expert advisor will have access to your information. This study is for my AP score in the class AP Research. Therefore, the final paper which explains my study will be submitted to the College Board to be graded. To protect your identity and the identity of the facility you are affiliated with, I will assign to your facility a study code number. This means your name and your facility's name will not be released.

Data Collection:

The data will be stored on my password-protected laptop. The stored results will not contain information that enables participant recognition.

Subject's Rights:

Participation in this study is voluntary, you have the ability to withdraw from the study at any time. You have the authority to leave any question(s) unanswered without penalty. If you leave question(s) unanswered, you may remain in the study if desired.

Consent:

I agree to participate in the research study outlined above.

Name (printed), signature, date signed, E-mail address

Name (printed) of person obtaining consent, date signed

If you have any questions, please contact me or my Research Advisor.
My email: _____
Research Advisor email: _____

Appendix D: *Supporting Work for Proportional Scoring*

Table A: *Percentage for Each Question*

Question:	1	2	3	4	5	6	7	8**	9	10	11	12**	13	14*
% Met Criteria $\frac{x}{12}$ *(100)*	66.6	66.6	75	91.6	16.6	41.6	33.3	60	75	66.6	25	40	50	63.6
% Did not Meet Criteria $\frac{x}{12}$ *(100)*	33.3	33.3	25	8.33	83.3	58.3	66.6	40	25	33.3	75	60	50	36.4

*This question was omitted once amongst all the facilities, percentage was proportionally calculated (ex. $\frac{7}{11} = \frac{x}{12} \rightarrow 11x=84 \rightarrow x= 7.6$, *formula*= $\frac{7.6}{12}$ *(100)*

** This question was omitted twice amongst all the facilities, percentage was proportionally calculated (ex. $\frac{6}{10} = \frac{x}{12} \rightarrow 10x=72 \rightarrow x= 7.2$, *formula*= $\frac{7.2}{12}$ *(100)*)

Table B: *Results from the Questionnaire, Grouped by Facility*

Facility	A	B	C	D	E	F^^	G	H	I	J	K	M^^^
% Met of Total Criteria $\frac{x}{14}$ *(100)*	71.4	50	50	42.8	57.1	66.4	42.8	50	57.1	64.2	50	54.2
% Not Met by Total Criteria $\frac{x}{14}$ *(100)*	28.5	50	50	57.1	42.8	33.5	57.1	50	42.8	35.7	50	45.7

^^This facility omitted two questions, percentage was proportionally calculated= $\frac{8}{12} = \frac{x}{14} \rightarrow 12x=112 \rightarrow x= 9.3$, *formula*= $\frac{9.3}{14}$ *(100)*

^^^This facility omitted three questions, percentage was proportionally calculated= $\frac{6}{11} = \frac{x}{14} \rightarrow 11x=84 \rightarrow x= 7.6$, *formula*= $\frac{7.6}{14}$ *(100)*

Note: Facility L did not submit the questionnaire

Appendix E: *Justification for Supplemental Questions*

Justification for Supplemental Questions

Question	Justification
15.	This question was important because if a subject stated that they were aware of any link(s) between cognitive function and the Mediterranean Diet it could potentially substantiate their "high adherence" result. It will also ascertain if a facility intentionally or unintentionally incorporates aspects of the MedDi.
16.	This question was needed because it is important to gather a baseline, independent of the questionnaire results if a facility believes they incorporate the Mediterranean Diet into their meal plans.
17.	This question is important because the Ketogenic Diet and the MIND Diet have been discussed in pre-existing studies regarding their link(s) to cognitive function. If a facility clicked "yes", it could explain a potential low score on the Mediterranean Diet Score.
18.	It was important to note what other diet(s), if any, that facilities adhere to. This can substantiate a potential low score on the Mediterranean Diet Score because some facilities may already use an alternate diet. Additionally, this question brings up a future area of research: the prevalence of other diets (not the Mediterranean Diet) amongst facilities that care for residents with Alzheimer's Disease).
19.	This question was salient because it helped recruit questionnaire participants to send dining menus for the content analyses section.
20.	This question was needed as it helped recruit questionnaire participants to engage in an interview.

Appendix F: *Each Facility's Supplemental Questionnaire Responses*

Supplemental Questionnaire Responses by Facility (n=11)

	Question			
Facility	Q 1	Q 2	Q3	Q4
	Prior to this questionnaire, were you aware of any link(s) between cognitive function and the Mediterranean Diet?	Do you intentionally provide/design meals that adhere to the Mediterranean Diet?	Do you provide/design meals that adhere to either the Ketogenic Diet or the MIND Diet?	Do the meals you provide/design adhere to any particular diet? If so, please specify which diet(s). If not, please respond with "N/A."
A	"No, prior to this questionnaire I was not aware of any link(s) between cognitive function and the Mediterranean Diet."	"Yes, I intentionally provide/design meals that adhere to the Mediterranean Diet."	"Yes, I do provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"N/A"
B	"Yes, prior to this questionnaire I was aware of any link(s) between cognitive function and the Mediterranean Diet."	"No, I do not intentionally provide/design meals that adhere to the Mediterranean Diet."	"No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"N/A"

C	"No, prior to this questionnaire I was not aware of any link(s) between cognitive function and the Mediterranean Diet."	"No, I do not intentionally provide/design meals that adhere to the Mediterranean Diet."	"No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"N/A"
D	"Yes, prior to this questionnaire I was aware of any link(s) between cognitive function and the Mediterranean Diet."	"No, I do not intentionally provide/design meals that adhere to the Mediterranean Diet."	"No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"Our diets are a mix of residents requests along with always available heart healthy choices."
E	"Yes, prior to this questionnaire I was aware of any link(s) between cognitive function and the Mediterranean Diet."	"Yes, I intentionally provide/design meals that adhere to the Mediterranean Diet."	"No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"Yes"
F	"Yes, prior to this questionnaire I was aware of any link(s) between cognitive function and the Mediterranean Diet."	"Yes, I intentionally provide/design meals that adhere to the Mediterranean Diet."	"No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"Specifically Mediterranean"

G	"No, prior to this questionnaire I was not aware of any link(s) between cognitive function and the Mediterranean Diet."	"No, I do not intentionally provide/design meals that adhere to the Mediterranean Diet."	"No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"N/A"
H	"Yes, prior to this questionnaire I was aware of any link(s) between cognitive function and the Mediterranean Diet."	"No, I do not intentionally provide/design meals that adhere to the Mediterranean Diet."	"No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"NCS*, NAS"**
I	"Yes, prior to this questionnaire I was aware of any link(s) between cognitive function and the Mediterranean Diet."	"No, I do not intentionally provide/design meals that adhere to the Mediterranean Diet."	"No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"We make sure the residents have choices to order what they want to meet their dietary and nutritional needs."
J	"No, prior to this questionnaire I was not aware of any link(s) between cognitive function and the Mediterranean Diet."	"No, I do not intentionally provide/design meals that adhere to the Mediterranean Diet."	"No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"NAS**, sugar free, gluten free"

K	"Yes, prior to this questionnaire I was aware of any link(s) between cognitive function and the Mediterranean Diet."	"Yes, I intentionally provide/design meals that adhere to the Mediterranean Diet."	"No, I do not provide meals that adhere to either the Ketogenic Diet or the MIND Diet."	"Blue Zone Diet"

Note. Facility L did not fill out the questionnaire and therefore these open-ended questions. Facility M omitted responses to all supplemental questions and is therefore not included in this table.

*Understood to mean "No Concentrated Sweets"

**Understood to mean "No Added Salt"

Facility E only responded to Q 4 with "yes" without providing additional detail

Appendix G: *Interview Questions with Justification*

1. Briefly describe the main ingredients you incorporate into meals for residents.
   Justification: Shi, El-Obeid, Li, Xu, Liu, (2019), Yusufov, Weyandt, Piryatinsky, (2017), Hernandez-Galiot & Goni, (2017)

2. Briefly describe the method in which you plan meals that are served to residents with Alzheimer's Disease.
   Justification: This question provides an opportunity for justification if a facility does not adhere to the Mediterranean Diet. I would like to understand the thought process of the meal designers when creating the meal options.

3. Briefly describe what considerations you take into account when you plan meals that are served to residents with Alzheimer's Disease.
   Justification: It is important to determine the meal plan designers thought process when planning meals. This also is an opportunity for them to express any barriers, if any, such as budget.

4. Without disclosing information that will infringe upon resident confidentiality, please describe any correlations you have found between the foods you have provided and cognitive function.
   Justification: Sanchez, Ruano, Irala, Ruiz-Canela, Martinez-Gonzalez, Sanchez-Villegas (2012)

5. Were you previously aware that the Mediterranean Diet is linked to cognitive function? If so, how did you hear about this diet? If not, does this new knowledge provoke you to look into utilizing this diet in meals going forward?
   Justification: Yusufov, Weyandt, Piryatinsky, (2017), Sanchez, Ruano, Irala, Ruiz-Canela,
   Martinez-Gonzalez, Sanchez-Villegas, (2012), Feart, Samurai, Rondeau, et al., (2009), Scarmeas, Stern, Tang, Mayeux, & Luchsinger, (2006)

6. What are some factors that may deter you from providing the foods associated with the Mediterranean Diet?
   Justification: It is important to know the reasons behind the potential hesitations among facilities.

7. Do you think there are factors that deter residents from consuming the Mediterranean Diet? If so, please specify some factors.
   Justification: It is important to know what hurdles residents may face that may cause low consumption of the foods contained in the Mediterranean Diet.

8. Do you have any other thoughts regarding this topic you would like to share?
   Justification: This question allowed for interviewees to share information they felt was necessary and that did not apply to the aforementioned questions.

Appendix H: *Interview Transcriptions*

Color Code	Theme
Red	Aspects of the Mediterranean Diet
Dark Blue	Timing & Occurrence
Dark Purple	Team Efforts
Pink	Willingness to Incorporate Aspects of the Mediterranean Diet into Meal Plans and Change Menus
Orange	Budget Factors
Neon Yellow	Types of Diets
Navy	Food Presentation
Green	Incorporated Aspects of the Mediterranean Diet
Light Red	Ethnic & Upbringing Factors
Dark Green	Food Consumption Limitations
Light Blue	Importance of Diet
Light Pink	Awareness of the Mediterranean Diet
Mustard Yellow	Reservations Regarding Implementing Aspects of the Mediterranean Diet
Light Purple	Abiding to Legal Guidelines

Facility D

Can you briefly describe the main ingredients you incorporate into meals for residents?

"I would say that 90% of our vegetables are fresh vegetables. 10% are probably frozen and that is just mainly due to certain times like peas, corn; corn you can't get in the winter time

so we buy frozen corn and frozen peas. Occasionally spinach we will buy frozen, but I'd say that 90% of our vegetables are fresh. Our potatoes are all fresh, nothing comes in a box. We incorporate fresh garlic on a daily basis. Turmeric, rosemary, tyme, basil--all fresh again, nothing is dried. In terms of protein we use munk fish or salmon, we would actually do flounder. Seasonally we do cod. We use fresh lemons, fresh oregano, I said garlic, white wine, and olive oil."

Briefly describe the method in which you plan meals that are served to residents with Alzheimer's Disease.

"So we as a team meet weekly. So it would be myself, my executive chef, my office manager, and my dietary supervisors. We try to meet at least weekly and go over the menus and what went well and what didn't go well. We also have to write these menus in coordination with our budget, our food budget costs and that comes from our financial office. I do that on a yearly basis--at the beginning of the year we write a budget for the year and we pertain to that budget monthly.

Briefly describe what considerations you take into account when you plan meals that are served to residents with Alzheimer's Disease.

"So diets would be number one, all the residents' therapeutic diets we have here in house. So we have purees, and your minced, chopped, multiple different diets. I would also say presentation and how the meals kind of present on the plate for all those different diets. So for instance it might look nice on a regular meal, a pasta, but on a puree pasta it might be more difficult making it look appealing. Colors also if there is fish like a white fish, we are not gonna put cauliflower on with that white fish, we might put a carrot or greenbean something like that to bring out the color on the plate and the garnishing and what not.

Without disclosing information that will infringe upon resident confidentiality, please describe any correlations you have found between the foods you have provided and cognitive function.

"Um to be honest I haven't--we probably do 700 meals a day here so it is kind of hard for me on my end. I talk to dieticians a little bit and we don't really get that information."

Were you previously aware that the Mediterranean Diet is linked to cognitive function? If so, how did you hear about this diet? If not, does this new knowledge provoke you to look into utilizing this diet in meals going forward?

"We do use that Diet in our building now. So I work for [Facility D], but I also work for [undisclosed company] and that's part of our programs, the Mediterranean Diet. So actually we

are incorporating it this month into our facilities because it is national nutrition month (March). So yeah, we do incorporate it, the olive oil, the high fats, the avocados, the fish.

What are some factors that may deter you from providing the foods associated with the Mediterranean Diet?

"As I mentioned before, we do utilize this diet so there are no deterrents."

Do you think there are factors that deter residents from consuming the Mediterranean Diet? If so, please specify some factors.

"I think definitely ethnicity. I think European ethnicity, they wanna have that diet, they are used to that diet, especially if they grew up on that side of the land. Or grew up with families that incoorperated that diet in their daily adult life. So I think ethnicity 100% percent and health too we're in an environment now, in a world now where health is more important than any other time and I think it's just keeping up with the trends and keeping these residents informed of these trends.

Do you have any other thoughts regarding this topic you would like to share?

"Um no I'm pretty sure you know all about it so not much."

Facility L

Can you briefly describe the main ingredients you incorporate into meals for residents?

"Proteins, statches, vegetables"

Briefly describe the method in which you plan meals that are served to residents with Alzheimer's Disease.

"We get all our menus from corporate. It is a 5 week cycle that has been approved by a dietician."

Briefly describe what considerations you take into account when you plan meals that are served to residents with Alzheimer's Disease.

"We have special diets that we have to consider. We have a couple allergies, nothing serious at this time though there have been--seafood is usually the one. We have different levels of diet so we have regular, we have soft, we have ground, we have chopped, we have puree. We also have different beverages. So some people as they lose the ability to swallow correctly--their body can't do it anymore there's nectar and honey and pudding thickness in drinks. So we have

speech pathologists that come and evaluate someone that we feel they changed their eating, a lot of time these guys will pocket stuff and we need to make sure that they're safe.

Without disclosing information that will infringe upon resident confidentiality, please describe any correlations you have found between the foods you have provided and cognitive function.

"I don't think that's something you see immediately. But it's certainly a factor if it continues on. One of the biggest issues with old people in this world and every other world that you go to, with old people is they didn't drink water. That's not something they did. They need to drink water. With each meal here they get juice and water and coffee. During the day they have snacks, they have water, they have this and that. But one of our biggest pushes is to get them to stay hydrated. And if they are not hydrated, their behaviors can be off the wall. Like you know you can end up in a hospital because of it. So we constantly, I constantly stress that they drink water. It's amazing how much it throws people off from just simply dehydration. So in that way, yes, if someone is not eating for awhile they're going to get weak and they will not be able to participate in activities and it becomes a negative spiral where the next thing you know, their evaluating them for their diet and they don't like the level or people don't like the purees. The thing about puree is no matter how nice you make it, it's still the texture. So yes absolutely, food does influence behavior, but not immediately that you see.

Were you previously aware that the Mediterranean Diet is linked to cognitive function? If so, how did you hear about this diet? If not, does this new knowledge provoke you to look into utilizing this diet in meals going forward?

"I am aware of it. Just because I am into food a lot. I think we do a lot of healthy things here on the menu and off the menu. There is one little complication and that's the sweet taste bud is the last to go. So, these guys that live here, if they could live off of sweets for the rest of their lives that's what they'd do. Men usually, the family says 'he never liked sweets but now that's all he wants, he wants ice cream and cookies' and I go well you came to the right place. So we balance that. But as far as the Mediterranean itself I think in a group setting it would be a lot more difficult than doing it at home. I'm sure, look at the little Italian guys that drink their red wine every day that followed the Mediterranean Diet all their lives. Yes they do live longer, yes they do get Alzheimers. So I think it certainly helps to have a healthy diet like that, but you still gotta get them to eat.

What are some factors that may deter you from providing the foods associated with the Mediterranean Diet?

"Pretty much everything I just said. I think our budget would cover it. I mean I use olive oil even though it costs more money. We do fish, a lot of fish. Cost would not be a factor, this company really wants the people to eat well and it's up to me to make it work. So obviously after twenty years I am doing something right."

Do you think there are factors that deter residents from consuming the Mediterranean Diet? If so, please specify some factors.

"I don't think so, again a lot of our residents are Italian and from Italy so it's normal to them. So I don't think that's a factor. A lot of this is--picture sushi, you eat with your eyes , then you eat with your mouth. If a plate presents well which I think is very important in this population, that everything looks beautiful that says 'eat me' versus a bunch of stuff on a plate which is something I strive with any new chefs that I bring in here. This crowd more than anyone else I think needs to look good because they have forgotten what the foods are called. So instead they go 'wow that looks really good' and they'll try it. So I think truthfully with any crowd, but especially these guys more so because a lot of times they know that they don't know in the beginning stages and it's very frustrating to them. So if they can look at a plate and go 'wow that looks good, I want to eat it' then we've accomplished what we want to accomplish."

Do you have any other thoughts regarding this topic you would like to share?

"I think this topic is certainly something to be considered. I'll even pass it on up to my people and say we are due for a new menu, why don't we lean more in that direction. It can't hurt. Again, these guys eat good here, we do good food here. Our food tastes good, looks good, but you can always do better. You never reach your goal and are like 'okay we are done now' so why not look in that direction and throw some more things in. We have to be careful of nuts and seeds and stuff like that, but most of the time I will do nuts here. We do have seven or eight soft diets that would not be able to have something like that, but we compensate with cooking a quarter with nuts and a quarter without so we do cover our bases with that. Another issue here and any place you deal with old people is teeth. These guys have teeth issues, that's why a lot of them end up with soft diets and even puree. It's not usually the teeth it's the swallowing mechanisms that's more of the problem. That's another consideration with this crowd. I think moving down the line it won't be such an issue because of implants and everything. Someone might have false teeth, but they don't fit properly because of the disease process so then they don't want them. Things are changing, the world of assisted living and dementia more and more people younger and younger are getting it. It's not uncommon for people in their sixties now to get it--seventies is very common and it did not used to be that way. It burns out younger for a lot of reasons and I think food is one of them. Food, stress, the whole schlemiel. So I think this whole world is evolving and there are also many many baby boomers that are going to traditional assisted living where it is still very independent. A lot of facilities you will see range from very

very independent living all the way down to the last stop. People can stay here until the last stop, but these are people who are paying a lot of money. The world of assisted living is changing."

Facility B

Can you briefly describe the main ingredients you incorporate into meals for residents?

"They make a lot of chicken and a lot of fish. They try to incorporate a lot of fresh fruits and vegetables."

Briefly describe the method in which you plan meals that are served to residents with Alzheimer's Disease.

"We do take a lot of feedback from people in the community. We have comment cards all over the different areas of the community. We do a lot of resident council meetings. We like to get their feedback on what they would like to be offered."

Briefly describe what considerations you take into account when you plan meals that are served to residents with Alzheimer's Disease.

"We take into account the population as a whole in terms of ethnicity. We also take into account the residents input as I mentioned in the last question. Everything also has to meet the nutritional standards in terms of providing adequate nutrients, calories, that kind of stuff so we definitely plan around that.

Without disclosing information that will infringe upon resident confidentiality, please describe any correlations you have found between the foods you have provided and cognitive function.

"The only thing I would say to that and it's not really from a nutrient standpoint, but more a food presentation standpoint would be we have the 'thrive program' where it's basically like a finger food program where the food is made in these specialized molds and wraps that the kitchen uses for our dementia patients. That plays a huge role and then being able to consume their meals without as much assistance as they might need as if it was something they were to eat with a fork and a knife. So that is improving their cognitive function at meal time to proceed themselves and pick up stuff with their hands. I guess it's not the nutrients of the food, but more the presentation of the food.

Were you previously aware that the Mediterranean Diet is linked to cognitive function? If so, how did you hear about this diet? If not, does this new knowledge provoke you to look into utilizing this diet in meals going forward?

"I probably have heard that back when I was in school. To be honest, our menus do--I mean their not perfect in terms of the Mediterranean Diet--but do offer compared to other facilities I have worked with. We do provide a lot more of like whole grains, fresh fruits and vegetables, meats."

What are some factors that may deter you from providing the foods associated with the Mediterranean Diet?

"Waste is a big thing to consider in a huge community like this. We don't use things timely and as efficiently as we could. You know utilize things across multiple recipes. With fresh products there is always the waste factor. Cost of course is always a concern. I don't deal too much to be honest with you regarding the food budget, but I know that's going to get mentioned anywhere."

Do you think there are factors that deter residents from consuming the Mediterranean Diet? If so, please specify some factors.

"In general we always have a percentage of people that are not concerned with what they eat and how they eat. They kind of want to stick with what they are used to and order hotdogs and cheeseburgers that kind of stuff off of our always available menu. Some people I think that are in their eighties or nineties are set in their ways of what they were raised on. I think they are not necessarily going to change, but then we also do have a small percentage that do want to learn while they're here.

Do you have any other thoughts regarding this topic you would like to share?

"I don't think so"

Facility K

Can you briefly describe the main ingredients you incorporate into meals for residents?

"We do 4 ounces of starch at lunch and supper. 4 ounces of vegetables at lunch and supper and then we 2 do starch portions at breakfast, it could be cereal, toast or a muffin. And the meat portions are 3 to 4 ounces depending on what the meal is. We do a lot of free starch, we do mashed potatoes, a lot of rice like rice pilaf or brown rice, risotto, different types of rice. We use grains. We do roasted potato, we do sweet potato, potato mashed. And for vegetables there's a wide variety, but we do a lot of broccoli and carrots. We have brutal sprouts we have turnips, green beans, asparagus. We are always using peppers and onions in our meals. So it is a vegetable, but they're in a lot of our meals. Mushrooms we have and we use olive oil, extra virgin olive oil to roast our vegetables or we add once the vegetables are cooked. We use a

canola oil/extra virgin olive oil blend to fry. Everybody gets offered a salad at lunch or supper also so there they can get their raw veggies.

Briefly describe the method in which you plan meals that are served to residents with Alzheimer's Disease.

"We have guidelines that tell us exactly how much milk we have to offer and meat equivalents and vegetables. Our food director **undisclosed name** has been trying to incorporate the Blue Zone Diet and the Mediterranean Diet into our menus. So he's been going through a lot of recipes. We meet quarterly to go over the menus, every three months. So we do a major menu overhaul twice a year where we re-do the whole menu. We meet every month to do a change here and a change there. For example, for the spring we are going to do a whole new menu. A 3-week cycle is going to be 63 meals we are going to have to come up with. And that will last for the spring and summer. We will meet a couple months in to see what's working and what's not to see what changes we need to make. And then in the fall and in the winter we do a lot more of comfort foods. Stuff you would eat more in the fall and winter versus the summer."

Briefly describe what considerations you take into account when you plan meals that are served to residents with Alzheimer's Disease.

"As far as the budget we take considerations in saving money, but also keeping our quality of food high. And the way we do that is by making more of our own food. For example, we used to buy pureed fruit and it would be let's say 90 dollars a case, but now we buy whole fruit canned at a third of the price and we puree our own. We found a lot of different methods where we could--say instead of buying stuffed roasted chicken breast for 100 dollars a case, we can buy raw chicken and make our own stuffing for a fraction of the price and we can make our own fresh, stuffed chicken. So we can have quality products at a lower cost. That's something we have been doing for the last couple of years, which has contributed to our success. We also meet with the families and the residents and staff to find out what's working and what's not working when we rate the menus. We once put sauerkraut on there and they all said that nobody liked it. The families said they didn't like it, they also had a hard time chewing. A lot of our residents also have very few teeth too, we have to take that into account also--but we find out what they like and what they don't like.

Without disclosing information that will infringe upon resident confidentiality, please describe any correlations you have found between the foods you have provided and cognitive function.

"As far as cognitive function, we are trying to incorporate the Blue Zone Diet into our menus because they have found that that helps cognitively with anyone that has Alzheimer's Disease. And they have a couple studies done on the Mediterranean Diet also that show that will

definitely help. So that is why we have kind of moved our menus over to those two diets. There are more beans and legumes on the menu, definitely more than we've ever had before. Like I said before we have an olive oil/canola oil blend so we are trying to improve the oils we use even if it is just for pan frying, we are using more extra-virgin olive oil. We are definitely trying to use more sweet potatoes for example and we have a lot more fish on the menu than we used to. We are doing minimal meat portions also. For example, we are not going to put a one pound T-bone steak on the plate, which would be phenomenal if we could, but we do the minimal four ounces you know just a few slices of meat and try to help that complement a healthy starch and healthy vegetables.

Were you previously aware that the Mediterranean Diet is linked to cognitive function? If so, how did you hear about this diet? If not, does this new knowledge provoke you to look into utilizing this diet in meals going forward?

"Yes, we both were aware that it helps and that is why we are working to incorporate it into our menus. Basically we read about it, that's how we know it is helpful. We go online and check resources and check menus and sort of look. We also learned that we can't do a complete overhaul, we have to take baby steps into this. If we just did a whole Mediterranean Diet menu, the first thing that they would say is 'where is my meatloaf, where are my buttery mashed potatoes?' So we have to do trial and error. We have to try it, put it out there and get some feedback and then go from there. A lot of the generations that are here are in their eighties and nineties, they're all meat and potatoes, that's all they ate their whole life. So we also have to make food that they recognize. We once put food in a pita pocket and I remember that none of them knew what it was so we also have to take that into consideration.

What are some factors that may deter you from providing the foods associated with the Mediterranean Diet?

"Yes, the families. I meet with the resident's families daily, pretty much every family. We have 120 residents here so we meet with the families for each (10:25)unit. So basically we have four units which 30 people live on. We are in contact with the families at all times meeting with them and if somebody says 'you know my mother will never follow that diet, that's not something she would follow and I don't want her on it' then I would have to make a separate menu for that person. This is so I can make sure that they're likes and needs are available. And the amount of meat, we have specific guidelines we have to follow as far as our DTA to our state regulations. So I can't just put like beans, spinach, and asparagus on a plate and serve it, I have to meet standards that are given to me and the guidelines we have to follow. So some of the menus that we are finding there are no meat in them and there's not significant protein sources. That would deter us also, meeting our guidelines.

Do you think there are factors that deter residents from consuming the Mediterranean Diet? If so, please specify some factors.

"There are definitely factors. With our population that lives here a lot of them with Alzheimer's Disease you're going to have chewing and swallowing disabilities. And I would say that probably 90% of the people here are left with a form of dysphagia where they cannot swallow. There are 59 steps to chewing and swallowing food that we do automatically and they lose that as they're going through the disease. We have to change our diets around that. We do a more modified diet where it is a lot of chopped up foods and we do a puree diet where everything is almost like a baby food consistency. We also do a liquid diet because some people can drink, but they can't eat so we actually make the meal into a soup. And I have numerous supplements. Some people cannot tolerate any food at all and I just have to give them like an Ensure or a Boost supplement that gets all their calories and proteins in. Where if you were in a regular resting home where everybody here has Alzheimer's Disease, where if they didn't have Alzheimer's Disease some people would put a tube feed in to provide their calories or their proteins. We can't do that here because everybody has Alzheimer's Disease and it puts the people at risk because they don't know what that is and most of them will just pull it out. We have had them in the past but either the resident themself would pull it out and their roommate doesn't know what it is and they'll pull it out. We can't risk by being in this population with the tube feeding so if they do need to have one, they will go somewhere else for that.

Do you have any other thoughts regarding this topic you would like to share?

"Yes, we would like to do more Blue Zone diet and more Mediterranean Diet definitely, but we are up against some challenges that we mentioned previously. The stage of people when they move from regular diet to modified diet and puree diet, their stages of palatability change. Their families wanting certain things, not wanting to try new things for their family members. For us what we're trying to do is give education before we roll out with more vegetable based meals and move away from a lot of meat-based and a lot of unhealthy starches. Try to educate the families, we are working with the families to teach them more about the diet and how it's gonna help their loved one that lives here. Only because a lot of them say 'you know this is it for them' which I understand too. They're only here for a year or two some of them so they just want to eat whatever they want. They're not going to learn about the healthy aspects of the Mediterranean Diet, they just want to have ice cream and cookies and whatever they want. So we have to go along, kind of see where the families are at--that is why everyone is so different here. We are trying to make it homelike also, we don't want it to be so strict. This is their home and they are here. If they were to go home and they're going to eat a whole bag of m&ms, then you know we try to limit how much they eat, but if the families are bringing them in extra stuff and they're eating it and then if they're alright with that then we let them have whatever they want.

Instead of promoting longer life with the Mediterranean Diet and the Blue Zone Diet, we are trying to promote quality of life because people are at the end stages of their lives and some families don't want to prolong that with a healthier diet that they think they might not enjoy as much. So I guess what we're trying to promote is if you eat this diet you will have fewer symptoms, your blood sugars will look better, there's less sodium so their blood pressure is going to look better, less pills. So we are trying to tell people if you eat this diet, then you'll need less pills and you'll feel better. It's not just gonna extend your life, but you will feel better on a day to day and that's the message we are trying to get across for our population. Again, if this was a restaurant or any other nursing home without dementia, residents might be a little easier. We can change the menu and they can try it, but yeah, we are doing our best.

Appendix I: *Interviews Second Iteration, Final Coding Framework*

A. Aspects of the Mediterranean Diet
- 1A1 — Foods found on the questionnaire/instrument by Martinez-Gonzalez et al.

B. Timing & Occurrence
- 1B1 — Reasons for purchasing certain foods (ex. weather)
- 1B2 — Frequency of meeting with associates
- 1B3 — Frequency of meeting with residents & families
- 1B4 — Occurrence of certain foods (ex. more vegetables available at dinner time)

C. Team Efforts
- 1C1 — Resident's input
- 1C2 — Families' input
- 1C3 — Expert's input (chefs, speech pathologists, dining directors, office managers)

D. Willingness to Incorporate Aspects of the Mediterranean Diet into Meal Plans and Change Menus
- 1D1 — Mention of future development
- 1D2 — Discussion of "foods that went well"
- 1D3 — Mention of improvements to the menus (ex. re-do)

E. Types of Diets
- 1E1 — Mention of dietary restrictions (ex. allergies)
- 1E2 — Mention of special/modified diets (puree, chopped, minced, soft)
- 1E3 — The Mediterranean Diet

G. Food Presentation
- 1G1 — Strategic color choices
- 1G2 — Garnishing
- 1G3 — Visual Appeal
- 1G4 — Specialized molds/wraps

H. Incorporated of Aspects of the Mediterranean Diet
- 1H1 — Mention if diet is in use
- 1H2 — Methods of incorporation

I. Ethnic & Upbringing Factors
- 1I1 — Mention of geographical regions
- 1I2 — Follow diet of their upbringing
- 1I3 — How residents were raised (ex. use foods that residents will recognize)
- 1I4 — Generational reasons

J. Food Consumption Limitations
- 1J1 — Limited swallowing ability
- 1J2 — Lack of teeth & Difficulty chewing
- 1J3 — Certain food textures
- 1J4 — Desire sweet foods
- 1J5 — Usage of dietary supplements

1E4 — The Blue Zone Diet

F. Budget Factors

1F1 — Mention of food cost or money
1F2 — Mention of food Budget
1F3 — Cost efficiency & saving money

K. Importance of Diet

1K1 — Drinking water
1K2 — Fewer symptoms
1K3 — Lower blood Sugars
1K4 — Less pills needed
1K5 — Improved quality of life

L. Awareness of the Mediterranean Diet

1L1 — Mentioned awareness
1L2 — Mentioned pre-existing research
1L3 — Reading about the Mediterranean Diet
1L4 — Online Resources

M. Reservations Regarding Implementing Aspects of the Mediterranean Diet

1M1 — Difficulties in a group setting
1M2 — Managing food waste (ex. fresh foods perish quickly)
1M3 — Resident's lack of concern regarding diet & unwillingness to try new foods
1M4 — Large change (ex. limiting meat availability can be problematic)
1M5 — Residents not able to recognize foods
1M6 — Stage of life

N. Abiding to Nutritional Guidelines

1N1 — Mention of required quantities

1N2 — Mention of nutritional standards
1N3 — State regulations & guidelines

Appendix J: *Interview Quotes Regarding each Theme, by Facility*

Interview Quotes Regarding each Theme, by Facility

Theme	Facility B	Facility D	Facility K	Facility L
Aspects of the Mediterranean Diet	"They make a lot of chicken and a lot of fish. They try to incorporate a lot of fresh fruits and vegetables." "We offer more compared to other facilities I have worked with. We do provide a lot more of like whole grains, fresh fruits and vegetables, meats."	"...our vegetables are fresh vegetables...like peas and corn" "Occasionally spinach we will buy frozen, but I'd say that 90% of our vegetables are fresh. Our potatoes are all fresh, nothing comes in a box." "So yeah, we do incorporate it, the olive oil, the high fats, the avocados, the fish."	"We do mashed potatoes, a lot of rice like rice pilaf or brown rice, risotto, different types of rice. We use grains. We do roasted potato, we do sweet potato, potato mashed. And for vegetables there's a wide variety, but we do a lot of broccoli and carrots. We have brutal sprouts we have turnips, green beans, asparagus. We are always using peppers and onions in our meals. So it is a vegetable, but they're in a lot of our meals. Mushrooms we have and we use olive oil, extra virgin olive oil to roast our vegetables or we add once the vegetables are cooked. We use a canola oil/extra virgin olive oil blend to fry."	"Proteins, starches, vegetables" "I use olive oil even though it costs more money. We do fish, a lot of fish."
Timing/Occurrence	N/A	10% [of our vegetables] are probably frozen and that is just mainly due to certain times like peas, corn; corn you can't get in the winter time so we buy frozen corn and frozen peas. "We incorporate fresh garlic on a daily basis… seasonally we do cod." "We as a team meet weekly… It is a 5 week cycle [the menus]."	"We do 4 ounces of starch at lunch and supper. 4 ounces of vegetables at lunch and supper and then we 2 do starch portions at breakfast…" "Everybody gets offered a salad at lunch or supper also so there they can get their raw veggies." "A 3-week cycle is going to be 63 meals we are going to have to come up with. And that will last	"It [the dining menus] is a 5 week cycle" "I don't think that's [influence on cognitive function] something you see immediately. But it's certainly a factor if it continues on." "So yes absolutely, food does influence behavior, but not immediately that you see."

			for the spring and summer."	
Team Efforts	"We do take a lot of feedback from people in the community. We have comment cards all over the different areas of the community. We do a lot of resident council meetings."	"So we as a team meet weekly. So it would be myself, my executive chef, my office manager, and my dietary supervisors."	"Our food director...has been trying to incorporate the Blue Zone Diet and the Mediterranean Diet into our menus. So he's been going through a lot of recipes. We meet quarterly to go over the menus, every three months." "We also meet with the families and the residents and staff to find out what's working and what's not working when we rate the menus. "I meet with the resident's families daily, pretty much every family. We have 120 residents here so we meet with the families for each unit." "We are in contact with the families at all times meeting with them and if somebody says 'you know my mother will never follow that diet, that's not something she would follow and I don't want her on it' then I would have to make a separate menu for that person."	"We get all our menus from corporate… that has been approved by a dietician." "So we have speech pathologists that come and evaluate someone that we feel they changed their eating…"
Willingness to Incorporate Aspects of the Mediterranean Diet into Meal Plans and Change Menus	"We like to get their [the community's] feedback on what they would like to be offered." "We also take into account the residents input"	"We try to meet at least weekly and go over the menus and what went well and what didn't go well."	"So we do a major menu overhaul twice a year where we re-do the whole menu. We meet every month to do a change here and a change there. For example, for the spring we are going to do a whole new menu." "We will meet a couple months in to see what's working and what's not to see what changes we need to make." "we are trying to improve the oils we use even if it is just for pan frying, we are using more	"I think this topic is certainly something to be considered. I'll even pass it on up to my people and say we are due for a new menu, why don't we lean more in that direction. It can't hurt." "Our food tastes good, looks good, but you can always do better. You never reach your goal and are like 'okay we are done now' so why not look in that direction and throw some more things in."

			extra-virgin olive oil. We are definitely trying to use more sweet potatoes for example and we have a lot more fish on the menu than we used to. We are doing minimal meat portions also."	
Types of Diets	N/A	"So diets would be number one, all the residents' therapeutic diets we have here in house. So we have purees, and your minced, chopped, multiple different diets."	"...we would like to do more Blue Zone diet and more Mediterranean Diet definitely" "As far as cognitive function, we are trying to incorporate the Blue Zone Diet into our menus because they have found that that helps cognitively with anyone that has Alzheimer's Disease. "We do a more modified diet where it is a lot of chopped up foods and we do a puree diet where everything is almost like a baby food consistency. We also do a liquid diet because some people can drink, but they can't eat so we actually make the meal into a soup."	"We have special diets that we have to consider. We have a couple allergies, nothing serious at this time though there have been--seafood is usually the one. We have different levels of diet so we have regular, we have soft, we have ground, we have chopped, we have puree… we do have seven or eight soft diets."
Budget Factors	"Cost of course is always a concern. I don't deal too much to be honest with you regarding the food budget, but I know that's going to get mentioned anywhere."	"We also have to write these menus in coordination with our budget, our food budget costs and that comes from our financial office. I do that on a yearly basis--at the beginning of the year we write a budget for the year and we pertain to that budget monthly."	"As far as the budget we take considerations in saving money, but also keeping our quality of food high. And the way we do that is by making more of our own food."	"I think our budget would cover it [the Mediterranean Diet]. I mean I use olive oil even though it costs more money…cost would not be a factor, this company really wants the people to eat well and it's up to me to make it work."
Food Presentation	"a food presentation standpoint would be we have the 'thrive program' where it's basically like a finger food program where the food is made in these specialized molds and wraps that the kitchen uses for our dementia patients."	"I would also say presentation and how the meals kind of present on the plate for all those different diets. So for instance it might look nice on a regular meal, a pasta, but on a puree pasta it might be more difficult making it look appealing. Colors also if there is fish	N/A	"...you eat with your eyes , then you eat with your mouth. If a plate presents well which I think is very important in this population, that everything looks beautiful that says 'eat me' versus a bunch of stuff on a plate which is something I strive with any new chefs that I bring in here. This

		like a white fish, we are not gonna put cauliflower on with that white fish, we might put a carrot or green bean something like that to bring out the color on the plate and the garnishing and what not."		crowd more than anyone else I think needs to look good because they have forgotten what the foods are called. So instead they go 'wow that looks really good' and they'll try it. So I think truthfully with any crowd, but especially these guys more so because a lot of times they know that they don't know in the beginning stages and it's very frustrating to them. So if they can look at a plate and go 'wow that looks good, I want to eat it' then we've accomplished what we want to accomplish."
Incorporated of Aspects of the Mediterranean Diet	"To be honest, our menus do--I mean they're not perfect in terms of the Mediterranean Diet--but do offer compared to other facilities I have worked with."	"We do use that diet [the Mediterranean Diet] in our building now." "So actually we are incorporating it this month into our facilities because it is national nutrition month" "...we do utilize this diet so there are no deterrents."	"Instead of promoting longer life with the Mediterranean Diet and the Blue Zone Diet, we are trying to promote quality of life because people are at the end stages of their lives and some families don't want to prolong that with a healthier diet that they think they might not enjoy as much."	N/A
Ethnic/Upbringing Limitations	"Some people I think that are in their eighties or nineties are set in their ways of what they were raised on. I think they are not necessarily going to change but then we also do have a small percentage that do want to learn while they're here." "We take into account the population as a whole in terms of ethnicity."	"I think definitely ethnicity. I think European ethnicity, they wanna have that diet, they are used to that diet, especially if they grew up on that side of the land. Or grew up with families that incorporated that diet in their daily adult life. So I think ethnicity 100% percent."	"A lot of the generations that are here are in their eighties and nineties, they're all meat and potatoes, that's all they ate their whole life. So we also have to make food that they recognize."	"I don't think so, again a lot of our residents are Italian and from Italy so it's normal to them. So I don't think that's a factor."
Food Consumption Limitations	" ...the food is made in these specialized molds and wraps that the kitchen uses for our dementia patients. that	N/A	"they also had a hard time chewing. A lot of our residents also have very few teeth too, we have to take that into account also--but we find	"We also have different beverages. So some people as they lose the ability to swallow correctly--their body can't do it anymore…"

	plays a huge role and then being able to consume their meals without as much assistance as they might need as if it was something they were to eat with a fork and a knife. So that is improving their cognitive function at meal time to proceed themselves and pick up stuff with their hands."		out what they like and what they don't like." "...a lot of them with Alzheimer's Disease you're going to have chewing and swallowing disabilities. And I would say that probably 90% of the people here are left with a form of dysphagia where they cannot swallow. There are 59 steps to chewing and swallowing food that we do automatically and they lose that as they're going through the disease." "And I have numerous supplements. Some people cannot tolerate any food at all and I just have to give them like an Ensure or a Boost supplement that gets all their calories and proteins in. Where if you were in a regular resting home where everybody here has Alzheimer's Disease, where if they didn't have Alzheimer's Disease some people would put a tube feed in to provide their calories or their proteins. We can't do that here because everybody has Alzheimer's Disease and it puts the people at risk because they don't know what that is and most of them will just pull it out."	"...a lot of time these guys will pocket stuff and we need to make sure that they're safe." "And if they are not hydrated, their behaviors can be off the wall." There is one little complication and that's the sweet taste bud is the last to go. So, these guys that live here, if they could live off of sweets for the rest of their lives that's what they'd do…so we balance that." Another issue here and any place you deal with old people is teeth. These guys have teeth issues, that's why a lot of them end up with soft diets and even puree. It's not usually the teeth it's the swallowing mechanisms that's more of the problem. That's another consideration with this crowd."
Awareness of the Mediterranean Diet	N/A	N/A	"And they have a couple studies done on the Mediterranean Diet also that show that will definitely help." "Yes, we both were aware that it helps and that is why we are working to incorporate it into our menus. Basically we read about it, that's how we know it is helpful. We go online and	"I am aware of it. Just because I am into food a lot."

			check resources and check menus and sort of look."	
Reservations Regarding Implementing Aspects of the Mediterranean Diet	"Waste is a big thing to consider in a huge community like this. We don't use things timely and as efficiently as we could. You know utilize things across multiple recipes. With fresh products there is always the waste factor." "In general we always have a percentage of people that are not concerned with what they eat and how they eat. They kind of want to stick with what they are used to and order hotdogs and cheeseburgers that kind of stuff off of our always available menu."	"As I mentioned before, we do utilize this diet so there are no deterrents."	"We also learned that we can't do a complete overhaul, we have to take baby steps into this. If we just did a whole Mediterranean Diet menu, the first thing that they would say is 'where is my meatloaf, where are my buttery mashed potatoes?' So we have to do trial and error." "We once put food in a pita pocket and I remember that none of them knew what it was so we also have to take that into consideration." "The stage of people when they move from regular diet to modified diet and puree diet, their stages of palatability change. Their families wanting certain things, not wanting to try new things for their family members." "They're only here for a year or two some of them so they just want to eat whatever they want. They're not going to learn about the healthy aspects of the Mediterranean Diet, they just want to have ice cream and cookies and whatever they want."	"But as far as the Mediterranean itself I think in a group setting it would be a lot more difficult than doing it at home." "We have to be careful of nuts and seeds and stuff like that, but most of the time I will do nuts here."
Abiding to Nutritional Guidelines	"Everything also has to meet the nutritional standards in terms of providing adequate nutrients, calories, that kind of stuff so we definitely plan around that."	N/A	"We have guidelines that tell us exactly how much milk we have to offer and meat equivalents and vegetables." And the amount of meat, we have specific guidelines we have to follow as far as our DTA to our state regulations. So I can't just put like beans, spinach, and	N/A

			asparagus on a plate and serve it, I have to meet standards that are given to me and the guidelines we have to follow…that would deter us also, meeting our guidelines."	
Importance of Diet	N/A	N/A	"we're trying to promote is if you eat this diet you will have fewer symptoms, your blood sugars will look better, there's less sodium so their blood pressure is going to look better, less pills. So we are trying to tell people if you eat this diet, then you'll need less pills and you'll feel better. It's not just gonna extend your life, but you will feel better on a day to day and that's the message we are trying to get across for our population."	"One of the biggest issues with old people in this world and every other world that you go to, with old people is they didn't drink water. That's not something they did. They need to drink water… one of our biggest pushes is to get them to stay hydrated" "So in that way, yes, if someone is not eating for a while they're going to get weak and they will not be able to participate in activities and it becomes a negative spiral…"

Appendix K: *Menu Analyses First Iteration*

Initial Themes for Menu Analysis

Theme 1 Foods that Align with the Mediterranean Diet Based on the V14Q	Theme 2 Foods that Do Not Align with the Mediterranean Diet Based on the V14Q
Olive Oil	Beef
Vegetables	Hamburger
Fruits	Ham
Wine	Sausage
Legumes	Butter
Nuts	Margarine
Peanuts	Cream
Chicken	Sweet/Carbonated Beverages
Turkey	Commercial Sweets (cookies, cakes, custard, pastries)
Rabbit Meat	Pork
Veal	All other foods on the menu not mentioned
Pasta	
Rice	
Sofrito	
Fish	
Shellfish	

Appendix L: *Second Iteration of Menu Analyses*

Foods that Align with the Mediterranean Diet on the Menus (Martinez-Gonzales et al.)

Food Category	Facility B	Facility C	Facility I	Facility J	Facility K	Facility M
Olive Oil						
Vegetables	Potato Leek Soup Mixed Vegetables Yellow Squash Roasted Potato Medley Vegetable Soup Honey Glazed Brussel Sprouts Tossed Green Salad	Minestrone Soup Tossed Salad Green Peas Butternut Squash O'Brien Potatoes Whipped or Baked Potato	Butternut Squash Garden House Salad	Mixed Green Salad Cucumber Tomato Mushrooms Steamed Broccoli Garden Vegetable Blend	Mashed Potatoes Steamed Cabbage Carrots Lettuce Tomato Pickle Chips	Caesar Salad
Fruits	Stewed Prunes Banana Diced Peaches	Fruit Cup	Apple Soup (chicken broth) Fresh Fruit	Fresh Fruit Cup	Fruit	
Wine						
Protein/Meat		Chicken Breast Bruschetta			Chicken Salad Sandwich	
Pasta	Baked Manicotti with Marinara Sauce		Spaghetti			
Rice				Rice Pilaf		
Nuts & Peanuts						
Sofrito						
Fish	Pan Seared Salmon			Baked		Grilled Salmon

				Tilapia Tuna Salad Tuna Melt		
Shellfish						Shrimp Cocktail
Legumes					Bean Salad Sandwich	Red Bean and Lentil Stew

Foods that Do Not Align with the Mediterranean Diet on the Menus (Martinez-Gonzales et al.)

Food Category	Facility B	Facility C	Facility I	Facility J	Facility K	Facility M
Protein/Meat		Roast Pork Tenderloin	Steak	Beef Tips Cheeseburger	Corned Beef Pot Roast Ham and Cheddar Sandwich	Rack of Lamb Classic Bacon, Lettuce,Tomato Sandwich Filet Mignon
Butter & Margarine	Butter Margarine					
Cream						
Sweet & Carbonated Beverages	Orange Juice Coffee, DeCaf Tea, DeCaf Arnold Palmer Iced Tea	Assorted Soda Juice Coffee Tea			Juice	
Commercial Sweets	Marble Cake with and without Frosting	Homemade Baked Treats	Assorted Desserts	Cheesecake Ice Cream	Carrot Cake	NY Cheesecake
Other Foods not Outlined in the V14Q	Assorted Cereal Scrambled Eggs French Toast Bacon White & Whole Wheat Toast Beverages Milk, Skim, Ice	Condiments Salad Dressing & Gravy Beverages Milk	Ham & Potato Casserole	Cottage Cheese	Hash Browns Cereal Milk Condiments Brown Sugar Potato Chips Vegetable Frittata with Onions, Peppers, and	

Water	Sauteed
Condiments	Mushrooms
Jelly,	
Salt,	
Pepper,	
Sugar,	
Sugar,	
Syrup	
Bacon, Lettuce,	
Tomato	
Sandwich	
Cream of Wheat	
Broccoli Quiche	

Appendix M: *Menu Final Coding Framework Separated by Foods that Would/Would Not Score a Point on the Mediterranean Diet Score*

Factor 1: Foods that would score one point for the Mediterranean Diet score (Martinez-Gonzalez et al.)

1A. Olive Oil

1B. Vegetables
- 1B1 — Mention of Salad & Vegetable Blends
- 1B2 — Lettuce (ex. romaine)
- 1B3 — Fresh Vegetables (ex. cucumber, tomato, broccoli, butternut squash)
- 1B4 — Vegetable Soup & Stew (ex. potato leek soup, minestrone soup, butternut squash soup)
- 1B5 — Pickle Chips
- 1B6 — Mashed, Steamed Vegetables

1C. Fruits
- 1C1 — Mention of fresh fruits
- 1C2 — Fruit compotes
- 1C3 — Stewed fruits & Diced Fruits
- 1C4 — Fruit Soups (ex. apple soup)

1D. Wine

1E. Protein/Meat
- 1E1 — Chicken Breast Bruschetta
- 1E2 — Chicken Salad Sandwich

1F. Pasta
- 1F1 — Spaghetti

1I. Sofrito

1J. Fish
- 1J1 — Tilapia
- 1J2 — Tuna & Tuna Melt
- 1J3 — Salmon

1K. Shellfish
- 1K1 — Shrimp

1L. Legumes
- 1L1 — Bean Salad
- 1L2 — Red Bean & Lentil Stew

1F2 — Baked Manicotti with Marinara Sauce

1G. Rice

1G1 — Rice Pilaf

1H. Nuts & Peanuts

Factor 2: Foods that would not score one point for the Mediterranean Diet score (Martinez-Gonzalez et al.)

2A. Protein/Meat

2A1 — Bacon
2A2 — Corned Beef
2A3 — Pot Roast
2A4 — Ham
2A5 — Lamb
2A6 — Steak (ex. filet mignon) & Beef Tips
2A7 — Cheeseburger
2A8 — Pork Tenderloin

2B. Butter & Margarine

2C. Cream

2D. Sweet & Carbonated Beverages

2C1 — Fruit Juices
2C2 — Coffee
2C3 — Tea
2D4 — Arnold Palmer Iced Tea
2D5 — Soda

2E. Commercial Sweets

2C1 — Assorted Desserts
2C2 — Cake & Cheesecake
2C3 — Ice Cream

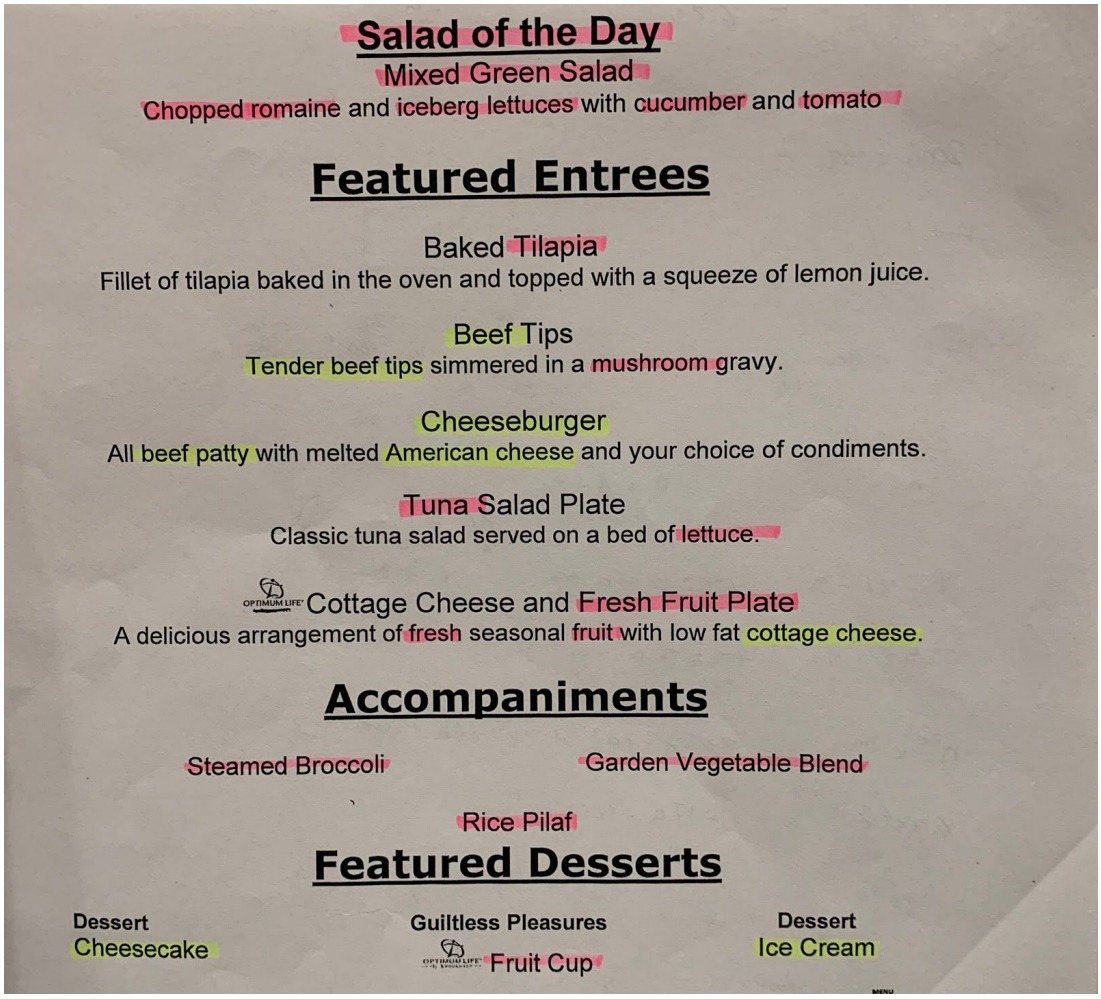
2F. Other Foods not Outlined in the Questionnaire

2D1 — Milk (ex. skim)
2D2 — Condiments (ex. salad dressing, gravy, brown sugar, jelly, salt, pepper, artificial sweetener, syrup)
2F3 — Cottage Cheese, Cheese
2F4 — Potato Chips & Hash Browns
2F5 — Cereal
2F6 — Bread (ex. white toast, whole wheat toast, French toast)
2F7 — Eggs (ex. scrambled, vegetable quiche, vegetable frittata)
2F8 — Cream of Wheat

Appendix N: *Annotated Menu (Facility J)*

Note. This is one example of a menu used in this study. To see all other menus, please contact the researcher.

Highlight Color	Categorization
Pink	Would Score 1 Point on MDS, Aligns with MedDi (Martinez-Gonzalez et al.)
Yellow	Would Not Score 1 Point on MDS, Does Not Align with MedDi (Martinez-Gonzalez et al.) or Foods Not Mentioned on the V14Q



Salad of the Day

Mixed Green Salad

Chopped romaine and iceberg lettuces with cucumber and tomato

Featured Entrees

Baked Tilapia

Fillet of tilapia baked in the oven and topped with a squeeze of lemon juice.

Beef Tips

Tender beef tips simmered in a mushroom gravy.

Cheeseburger

All beef patty with melted American cheese and your choice of condiments.

Tuna Salad Plate

Classic tuna salad served on a bed of lettuce.

OPTIMUM LIFE Cottage Cheese and Fresh Fruit Plate

A delicious arrangement of fresh seasonal fruit with low fat cottage cheese.

Accompaniments

Steamed Broccoli

Garden Vegetable Blend

Rice Pilaf

Featured Desserts

Dessert
Cheesecake

Guiltless Pleasures
OPTIMUM LIFE Fruit Cup

Dessert
Ice Cream

MENU

Academic Paper

Note: Student samples are quoted verbatim and may contain spelling and grammatical errors.

Sample: A
Score: 5

Analyzing the Prevalence of the Mediterranean Diet within Connecticut Facilities that Care for Residents with Alzheimer's Disease

The paper earned a score of 5 because it presents a clear and narrow topic found on page 5: "To what extent are aspects of the Mediterranean Diet being incorporated into the meal plans in Connecticut facilities that care for residents with Alzheimer's Disease?" Further, there is a logical explanation of the gap in the professional conversation found on page 4: "...the pre-existing research does not indicate if facilities that care for residents with AD incorporate the MedDi into meal plans." The methods detailed on pages 9-13 are ambitious: "a three-part, mixed-methods study... a pre-validated quantitative questionnaire, qualitative interviews, and content analyses of the dining menus (Figure 2)." Each component is defended, including the content analysis on page 21: "Two coding iterations were completed via Strauss' (2010) deductive coding process." An example of the justification of the new understanding is on page 24: " These findings emphasize that had this study only scrutinized data via one method (e.g. the questionnaire), prevalence would have been under/over reported."

This paper didn't earn a score of 4 because of its thorough explanation of limitations and implications found on page 25: "It is beneficial that the subjects are incorporating the MedDi into meal plans. However, it is paramount that subjects are also cognizant of this link because ongoing implementation can improve the quality of life of residents by halting and preventing cognitive decline." The paper also confidently communicates the student's ideas through its organization, design, and voice, hallmarks of a paper that exceeds the criteria for an essay earning the score of 4.