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# Food Pantry Evaluation and Assessment at the Dominican University of California

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**Introduction:**

Food security continues to be a relevant and prevalent problem in the US that affects millions of households per year (USDA). Food security is a goal that 12.3% of American households struggled to reach in 2016 (USDA). Although the percentage of food insecure households has experienced a decreasing pattern since its peak in 2011 of 14.9%, today's percentage is still higher than the pre-recession level of 11.1% in 2007 (USDA).

Food security is an important issue because there is a variety of negative physical, social, and mental health outcomes that stem from the lack of healthy nutritional meals and the stress of obtaining those meals (Knowles et al.). In addition, the direct link between financial insecurity and food insecurity results in poor dietary behaviors that can lead to further negative health outcomes (Bhattacharya et al.). The consequences of these poor dietary behaviors in children, and adults, who have a poor dietary intake (meet caloric need, but lack fruits and vegetables in diet, and/or have excess saturated or trans-fat consumption) are at increased risk for cardiovascular disease, type 2 diabetes, obesity, osteoporosis, and some types of cancer (FRAC). While children and pregnant women with inadequate dietary intake (little to no dietary requirements met which is a result of food insecurity) are at increased risk for anemia, birth defects, low birth weight, preterm birth, and developmental risk (FRAC). The link between financial insecurity and food insecurity suggests that households have to spend their money on bills and other necessary living expenses leaving little money to spend on healthy food options, so their diet consists of cheaper food that is usually lacking nutritional value (Knowles et al.). This financial compromise also adds unnecessary stress and frustration to the parents who are trying to protect their children from these hardships, but when these economic hardships are

prolonged they can lead to fear, anxiety, and depression in the parents and, potentially, their children (Knowles et al.). Furthermore, children are especially vulnerable because they are in their developmental stages. Research has shown that food insecurity is an indicator for negative health, academic, and social outcomes among elementary children leading to poor mathematical and reading performance, weight gain, and poor social development (Jyoti et al.).

Another group that is highly susceptible to food insecurity is college students (Hillmer et al., Holland et al., Maroto et al., Reynolds et al., & Patton-Lopez et al.). Multiple studies conducted at colleges and universities from different states with differing populations all report the same thing; food insecurity prevalence is far greater among the students of the college, or university than in the surrounding community regardless of the community's income level (Hillmer et al., Holland et al., Maroto et al., Reynolds et al., & Patton-Lopez et al.). One study conducted at the Winthrop University in South Carolina, USA concluded that 48.3% (n= 629) of their university's sample population classified as food insecure while only 14% of the general civilian population was classified as food insecure (Holland et al.). Another study conducted at a university in rural western Oregon concluded that 59% (n=354) of their university's sample population classified as food insecure which is almost the quadruple of the general population's 15% (Patton-Lopez et al.).

These high prevalence percentages are more common than expected on college and university campuses across the nation (Hillmer et al., Holland et al., Maroto et al., Reynolds et al., & Patton-Lopez et al.). Some theories as to why there are such high prevalence of food insecurity on college campuses are: rising tuition costs to attend college, inability of parents to provide financial support, and other necessary expenses like rent and textbooks (Maroto et al.).

There may be other underlying and hidden factors like the students' own eating habits and dietary behaviors that attribute to food insecurity which leaves room for speculation, but one thing is certain, food insecurity is a significant problem that can be detrimental to the student body, and academic institutions have the responsibility to intervene and provide aid to their students.

One way public health offices are trying to combat food insecurity in their communities is through the use of food banks and food pantry programs (Bazerghi et al.). Food banks and food pantries are different, but work together to help the communities in need get necessary food and groceries for free. The difference between a food bank and a food pantry is that food banks are the physical location, usually a warehouse, where food is solicited, received, inventoried, and then distributed to food pantry programs, not directly to the public (FCBNY). While food pantries are charity programs that receive food and other grocery products from the food banks to directly distribute to the local communities in need (FBCNY). Food banks and food pantries work in conjunction to help alleviate the prevalence and severity of food insecurity in their communities, and do it effectively as a short-term option (Bazerghi et al.). A systematic review of 37 studies conducted to examine the effectiveness of foodbanks and food pantries on their role in addressing food insecurity demonstrated that they are not a long-term option for three key reasons: there is an increasing number of food bank and food pantry clients, there is not enough donations being made to meet the demand, and the staff at food banks and food pantries are not trained well enough on nutrition to educate the clients or offer nutritional advice (Bazerghi et al.). According to the review, if these three limitations can be resolved, food banks and food pantries could potentially yield better long-term results.

However, this review only applies to food banks and food pantries addressing food insecurity in the general population, not in collegiate populations.

The Dominican University of California is one of the universities that has implemented a food pantry program named, “The Penguin Pantry,” which aims to reduce the severity and impact of food insecurity on the students. There are many studies done on public food pantries (Bazerghi et al.), but few studies available on the effectiveness of food banks and food pantries on college campuses, and that is why I want to conduct my study, especially at the Penguin Pantry because the program is in its inaugural year. The purpose of my study is to improve the Penguin Pantry by evaluating the program and highlighting the areas that need improvement. I will do this by surveying students on their perceptions of the pantry, and by conducting focus groups with the volunteers of the program in order to understand the areas of the program that need improvement through both perspectives (as a consumer and as a volunteer), and provide feedback to the university and the program’s coordinators.

### **Methods:**

This study received approval from the Institutional Review Board of the Dominican University of California. Additionally, the use of the Healthy Food Pantry Assessment Tool (HFPAT) was approved by the publisher, the Regional Nutrition Education and Obesity Prevention Center of Excellence-West, and by the Institutional Review Board. This study provided informed consent to both the survey participants, and the focus group participants prior to participation. The survey used in this study was modeled after the HFPAT and had

additional questions created by the researcher, which were approved by the Institutional Review Board. The questions used in the focus group were created by the researcher, and approved by the Institutional Review Board.

### Survey

Although the survey was modeled after the HFPAT, only questions that could be accurately answered by pantry users, and questions that were deemed relevant and important were used. Only 31 scored questions of the HFPAT's 49 scored questions were used, so the survey's score range was reduced to 0 – 60 in order to account for the omitted questions.

This study obtained survey participants from a convenience sample of students who are currently using the Penguin Pantry, or have used it in the past. The students were solicited in person at the Penguin Pantry, and via e-mail between January 2019 and March 2019. Students that were solicited via e-mail voluntarily provided their e-mail addresses. Students that participated in the survey at the Penguin Pantry were presented with an introduction of the study, and then used a laptop that was provided by the researcher to take the survey. While students that did not participate in the survey at the Penguin Pantry were e-mailed an introduction of the study along with the link to the survey.

A total of 98 of students participated in the survey and no responses were removed or excluded from the data analysis, but not all 98 participants responded to all 37 questions on the survey. Responses that were left blank were excluded in the data analysis. All survey response data was collected by SurveyMonkey.com, and then exported to Microsoft Excel to be cleaned and recoded, and finally exported to IBM's SPSS v.22 for data analysis.

The survey contained a total of 37 questions; the 31 from the HFPAT had scores, while the 5 questions created by the researcher are scoreless. The survey, and the analysis are split into three categories: location, food, and preferences. The five questions that were not scored asked the pantry users for their preferences on the pantry's operation time, day, and location, and about the users own diet preferences. Therefore, these questions were not analyzed for score, but for frequency in order to find the optimal operation time and location for the pantry. The rest of the 31 questions asked pantry users to rate their experiences with, and their knowledge of the pantry's location and food.

The answers to each question have a specific score that was modeled after the HFPAT's scoring system. The responses of every participant are then totaled to produce a score of the overall performance of the Penguin Pantry on a scale of 0 – 60. The HFPAT did not provide a ranking system for the scores, which provides the context for the pantry's performance. Therefore, to be able to interpret these scores without context I examined the survey scores like test scores. Examining the survey scores like test scores means putting the achieved score in the numerator and the highest attainable score in the denominator to calculate a percentage. For example, I divided the mean survey score ( $x$ ) by the highest attainable survey score (60) to calculate what percentile ( $x/60$ ) the pantry's performance scored in. This method was only used to interpret the scores, and was not only used for the categories, but for their individual variables too in order to quantify successful variables and variables that need improvement.

In addition, due to the design of the HFPAT's scoring system, a variable was created labeled, "Walkability," which grouped five questions that asked about the pantry's walkability



into one variable. This is why there are only 27 variables in the analysis even though there are 31 total questions.

### Focus Group

The study solicited participants for the focus group both in person at the Penguin Pantry and through the coordinator, Sr. Mary Soher, who provided the e-mail addresses of all the current and past volunteers. Volunteers were e-mailed an introduction to the study and a link to SignUpGenius.com to sign up to participate in a focus group, which is a free and confidential tool to organize and schedule groups. A total of nine participants signed up to participate in a focus group; the first focus group had six participants, and the second group had three participants. These participants were e-mailed prior to the date of the focus group with an explanation of the study's purpose, and a consent form informing them that participation was voluntary and not permanent, allowing them to stop participating at any time throughout the process. The focus groups were held in the Honors Center located within the Dominican University of California's Archbishop Alemany Library. Participants were informed prior to the commencement of the focus group that an audio recording would be taken of the focus group and that notes would be taken during the focus group. Participants were also reassured that their identity would remain confidential. In addition, participants were randomly assigned numbers to say before responding to a question in order to keep their identity confidential. Once the transcriptions were complete, the responses were thematically analyzed and grouped by theme: location, food, finance, and education.

**Results:**

**Survey**

The purpose of this research was to quantify the perceptions students have of the Penguin Pantry by using a survey with weighted answers to highlight the deficiencies and successes of the program. In addition, there were also questions that were not weighted because their purpose was to find out the students' preferences for the pantry's location, day, and time.

Table 1 shows the results for the section of the survey that pertains to the users' preferences. Pantry users voted Tuesdays (63.4%) at 1pm (91.6%) as they best operation time and the walkway behind Albertus Magnus (92.3%) as the best location, which is the current time and location, so this demonstrates that the pantry was already operating at the optimal time and location. Another question asked in the preferences category pertained to dietary restrictions which only 15 participants reported (e.g. vegetarian, vegan, allergies). However, all of the respondents mentioned that their diet never limited their options at the pantry.

Table 2 reports the average scores that the food and location categories received, as well as the average total score. On average, the location category received a score of 7.04 (SD=1.72) out of 14, the food category received a score of 26.59 (SD=3.64) out of 46, and the overall score the pantry received was 33.67 (SD=4.57) out of 60. Using the ranking system previously mentioned, these scores mean that the location of the pantry scores in the 50<sup>th</sup> percentile, the food of pantry scores in the 58<sup>th</sup> percentile, and overall, the pantry scores in the 56<sup>th</sup> percentile. These scores provide a macro view of the pantry's performance, so if we look at Table 3 and Table 4 which breakdown the location and food categories per variable,

respectively, we can specifically see the areas in which the location and food of the pantry are successful and which need improvement. In addition, Table 3 and Table 4 provide the score range for each individual variable, so when interpreting their score the denominator in the calculation is the highest attainable score for that specific variable.

Table 3 reports the average scores of each variable in the location category. The variables that scored low and fell in the 50<sup>th</sup> percentile, or lower include: bus line, parking, signage, and check-in line. The variables that scored well and fell in the 80<sup>th</sup> percentile, or higher include: pantry accessibility, first-time client procedure, and wait time.

Table 4 reports the average scores of each variable in the food category. The variables that scored low and fell in the 50<sup>th</sup> percentile, or lower include: greens advertisement, signs with nutritional benefits, fruit variety, vegetable variety, availability of low sodium canned goods, availability of low sugar canned products, protein variety, dairy variety, grain item variety, and wholegrain item variety. The variables that scored well and fell in the 80<sup>th</sup> percentile or higher include: food distribution method, greens placement, greens accessibility, fruit availability, vegetable availability, and egg-type availability.

### Focus Group

The purpose of the focus groups was to gain insight on the deficiencies and successes of the Penguin Pantry through the perspective of a volunteer. In addition, most, if not all, of the volunteers are students that also use the pantry, so they provided both perspectives: consumer and worker. As previously mentioned, the responses provided by the participants were thematically analyzed and grouped into four categories: location, food, finance, and education.

Although these are separate groups, many of the strengths and issues discussed at the focus group can fit into more than one group, so there is overlap.

Some of the topics discussed regarding the location of pantry dealt more with pantry users that lived off-campus. For students living on campus, the pantry is in a perfect location that is not a far walk from the dormitories, and in most cases is on the way to, or from class, so it is extremely convenient for on-campus students. However, that is not the case for students that live off campus and commute to campus for classes because of two main reasons: parking and food storage. Off-campus students struggle to find parking on campus, especially during the peak hours of class which coincide with the operation hours of the Penguin Pantry. Therefore, students that live off campus, and are not already on campus before the operation hours may feel discouraged to come to campus solely to go to the pantry. However, even those that are already on campus during the operation hours of the pantry face a different dilemma; where to store their food while they are in class. Most students that live off campus prefer to only drive to campus once a day, so they plan their schedules around one trip to campus meaning full class days with back-to-back classes that leave them with very little time to go to the pantry, and if they can go, that leaves them with one of two options: carry my food around all day, or put it in my car and risk certain food items spoiling.

Most participants did not have anything negative to say about the food provided at the pantry and that might stem from no one wanting to feel ungrateful for complaining about free food. However, some did mention that the variety and quality of the food available at the pantry has increased since the inception of the program, and suggested that might be because the amount of people using it has increased since the inception too. Another positive comment

brought up was on the fact that the pantry does to-go boxes for students that cannot attend the pantry during operation hours due to schedule conflicts and how the pantry does an exceptional job of making boxes for people with dietary restrictions.

For the topic of finances, participants mentioned the costs of grocery shopping, and the cost of tuition at Dominican. Half of the participants were surprised to see a program like the Penguin Pantry being implemented at Dominican, and the other half were not. Those that were surprised of the existence of this program were surprised because of the lack of support they had previously received from the university in light of the high cost to attend the university. These participants felt like they had not been receiving the same student privileges that other universities offer at a lower tuition price like 24/7 library, gym, and cafeteria hours. While the other half of the participants were not surprised of a program like the Penguin Pantry because a lot of the students that attend Dominican feel like most of their money goes towards living and school expenses leaving little money for proper nutrition.

These participants expected the University to implement a program like this because they believed it is the University's responsibility to aid their students in any way possible, especially for the price of tuition they are paying. Both groups of participants agreed that the Penguin Pantry has allowed them to eat healthier foods without spending more, and most say they plan grocery trips after they attend the Penguin Pantry so they only have to buy groceries that were not given at the pantry. However, a participant made a valid point in saying that although the pantry offers a variety of foods, sometimes they feel discouraged from taking certain foods because they are out of the realm of the student's cooking abilities. This means

that students may feel incapable of cooking with the foods provided at the pantry, which may deter them from taking all of the food even though it is free.

Most of the topics in regard to education at the food pantry apply to both the students and the workers. The pantry has a great variety of healthy food options, but as one participant said “If someone were to ask me what a healthy diet looked like, I wouldn’t know what to say.” Pantry volunteers simply do not know what is actually healthy, or how to cook healthy dishes, meaning if the volunteers do not know, then they cannot help students who have the same dilemma. It is not enough to hand out food to those in need, the next step is to educate students on what foods are healthy, and what healthy dishes they can make with the food they receive, but that starts with educating the volunteers which are the ones interacting with the pantry’s users.

Another important point brought up was that sometimes people will come to the pantry and not like what they are offered so they leave empty handed, and that discourages them from coming back in the future. This perspective limits students from using this free resource, so finding a way to change this mentality is crucial. Lastly, a participant stated, “If the pantry wants to serve as many people as possible, it has to be open when the majority of people are available.” To elaborate on their point, if students’ schedules change every semester, that means the hours of operation that work this semester might not work for every following semester.

**Table 1: Pantry Users' Preferences**

| Variable                       | N (%)                   |
|--------------------------------|-------------------------|
| Monday                         | 42 (45.2%)*             |
| Tuesday                        | 59 (63.4%)*             |
| Wednesday                      | 47 (50.5%)*             |
| Thursday                       | 39 (41.9%)*             |
| Friday                         | 36 (38.7%)*             |
| Saturday                       | 21 (22.6%)*             |
| Sunday                         | 17 (18.3%)*             |
| Current Operation Time is Best | 76 (91.6%)†             |
| Current Location is Best       | 48 (92.3%)*             |
| Have Dietary Restrictions      | 15 (17.2%) <sup>o</sup> |

\*=Calculated using 93 valid responses

†=Calculated using 83 valid responses

\*=Calculated using 52 valid responses

<sup>o</sup>=Calculated using 87 valid responses

**Table 2: Penguin Pantry's Average Score per Category**

| Variable (Score Range)        | Average Score (SD) |
|-------------------------------|--------------------|
| Location Variables (0 – 14)   | 7.04 (1.72)†       |
| Food Variables (0 – 46)       | 26.59 (3.64)*      |
| Pantry's Total Score (0 – 60) | 33.67 (4.57)*      |

†=Calculated using 92 valid responses

\*=Calculated using 87 valid responses

**Table 3: Penguin Pantry's Location Variables**

| <b>Variable<br/>(Score Range)</b>   | <b>Average Score (SD)</b> |
|-------------------------------------|---------------------------|
| Walkability<br>(5-30)               | 24.10 (5.01)              |
| Bus Line<br>(0-1)                   | 0.51 (0.50)*              |
| Pantry Access<br>(0-2)              | 1.75 (0.44)*              |
| Parking<br>(0-1)                    | 0.30 (0.46)*              |
| Signage<br>(0-1)                    | 0.20 (0.39)*              |
| First Time Procedure<br>(0-2)       | 1.89 (0.35)*              |
| Returning Client Procedure<br>(0-2) | 1.20 (0.39)*              |
| Check-in Line<br>(0-3)              | 0.23 (0.54)*              |
| Wait Time<br>(0-2)                  | 1.75 (0.44)*              |

\*=Calculated using 92 valid responses



**Table 4: Penguin Pantry's Food Variables**

| <b>Variable<br/>(Score Range)</b>         | <b>Average Score (SD)</b> |
|---|---------------------------|
| Food Distribution Method<br>(1-4)         | 3.33 (0.60) †             |
| Greens Placement<br>(0-2)                 | 1.88 (0.33) †             |
| Greens Accessibility<br>(0-2)             | 1.91 (0.33) †             |
| Greens Advertisement<br>(0-1)             | 0.47 (0.50) †             |
| Signs with Nutritional Benefits<br>(0-2)  | 0.30 (0.53) †             |
| Fruit Availability<br>(0-1)               | 0.99 (0.11) *             |
| Fruit Variety<br>(0-3)                    | 1.30 (0.51) *             |
| Fruit Quality<br>(0-3)                    | 2.02 (0.53) *             |
| Vegetable Availability<br>(0-1)           | 0.98 (0.21) *             |
| Vegetable Variety<br>(0-3)                | 1.43 (0.52) *             |
| Vegetable Quality<br>(0-3)                | 2.14 (0.53) *             |
| Sodium levels of canned<br>products (0-3) | 1.22 (0.54) *             |
| Sugar levels of canned<br>products (0-3)  | 1.07 (0.63) *             |
| Protein Variety<br>(0-3)                  | 1.52 (0.79) *             |
| Dairy Variety<br>(0-3)                    | 0.60 (0.67) *             |
| Egg-type Availability<br>(0-3)            | 2.66 (0.93) *             |
| Grain Item Variety<br>(0-3)               | 1.57 (0.64) *             |
| Whole Grain Item Variety<br>(0-3)         | 1.23 (0.48) *             |

†=Calculated using 89 valid responses

\*=Calculated using 87 valid responses

### **Discussion:**

The overall goal of this study was to evaluate the performance and other aspects of the Penguin Pantry to highlight the successes of the program and to bring awareness to the areas that need improvement. I have already mentioned the successes of the program and the areas that need improvement, so now I will offer possible improvements and solutions to the issues previously discussed.

### **Survey**

The majority of the variables that scored low in the survey can be placed into one of two themes: knowledge and food variety. The variables that are a part of the knowledge theme include: bus line, parking, and signage. These variables are grouped into this category because in some shape or form deal with knowledge, or the lack of it. These variables measured the users' knowledge of a bus line near the pantry, parking areas near the pantry, and signage associated to the pantry. The goal is not to improve the bus line or parking availability, rather, the goal is to raise awareness of these two resources that users can utilize when coming to the pantry.

A suggestion for improvement is to send out information on where to locate the bus line and parking on campus it would raise users' awareness of these resources and use them. The signage cannot be improved this way, but there are ways to increase this variables scores. The pantry has no physical signs or banners that is why it scored so low. An improvement could be having a banner or sign that can be seen from the street that highlights the pantry and its location. Furthermore, a social media account could be created to post updates about the pantry, and this could be a form of digital signage that helps keep users aware of the pantry's

location, and other program updates. The variables that fall into the food variety scored low not because the pantry does not have those food items, but because they have a low variety of these items. The only way to improve these scores is to provide more dairy, protein, grain, fruit, and vegetable variety. That means looking for food sources outside of the San Francisco and Marin Food bank, which is the primary supplier for the Penguin Pantry, like local farmers, grocers, and other food banks.

### Focus Groups

The focus groups offered insight on what the pantry is doing well and what needs improvement, and possible solutions and improvements. We have already discussed the opinions and perceptions of the pantry itself, but not the actual solutions that can help improve the pantry. Therefore this section will discuss the solutions to the issues pointed out in the focus groups. The solution presented for the issue regarding off-campus students and their dilemma with food storage is to bring awareness to locations on campus that offer public food storage like the fridge in the Guzman lecture hall's first floor lounge. Although this is a great short term solution, this raises the concern of security and if people can trust to leave their food there all day without it being stolen. Moving to the topic of education, a solution that was presented to combat the students' lack of cooking knowledge was for the pantry to offer recipes to students in person on how to cook, or utilize some foods in dishes. In addition, the pantry could also create an online resource like a google doc, which would have the recipes available online 24/7, so students can always reference them, and never lose them. Furthermore, one focus group participant suggested the pantry should provide samples of some of their most intimidating foods using their own recipes, so students realize how easy it is

to cook them, and how delicious they really are. Another solution presented regarding education is to create a social media page for the Penguin Pantry that posts about the foods available at the pantry that day, so students are informed about the food they can possibly receive at the pantry. Although there are limitations to this idea seeing as the coordinator of the pantry, Sr. Mary Soher, finds out what food they are receiving the day before the operation day. Regardless, this seems like a viable solution to encourage people to come to the pantry, especially those off campus students that are discouraged to make the trip because they are skeptical of if they will even like the food that is being offered. This way people can make an informed decision on whether or not to make the trip to the pantry. The last suggestions are concerned with educating the users of the pantry, but there are ways the pantry and the volunteers can educate themselves to improve the pantry. For instance, pantry volunteers should be taught basic nutrition and other helpful information on how to eat healthy and what foods contribute to a healthy diet. This is an ambitious solution because it would take a big organized effort to educate every single volunteer, and most volunteers have no obligation to volunteer besides because they want to, so this training could go to waste or possibly deter volunteers that do not want to receive the training. Another way the pantry could educate itself to improve would be to send out a survey to its users right before the beginning of the school year that asks them which day of the week and time is best for them to come to the pantry. This would help the pantry reach as many people as possible because every semester the schedules of the users change, so that means although the current time and day are the optimal options for the users, it might not be next semester. In order to reach the maximum amount of people, the pantry should operate when the majority of people are available.

During a focus group I mentioned how some of the solutions that were suggested, although very well thought out, were still ambitious for the current program. A participant rebuttal my claim with, “Why don’t we start offering internships for public health majors, or service-learning credits for students?” This was the best suggestion made during the focus groups because it gives the coordinator a stable workforce, it allows the coordinator to delegate job roles (social media, cook samples, educate students on healthy dishes, etc.), and gives students the opportunity to gain internship hours, and/or service learning credits on their own campus. Having a consistent workforce will also warrant training, and that training could include nutrition education. Another ambitious solution was to find a permanent indoor location. The reason being that Marin County receives a lot of rain fall in the spring semester and although we have found a short-term solution by hosting the pantry on the Bertrand Building’s covered patio, we need a long-term solution where students are sheltered from the weather. In addition, having a permanent indoor location could provide the space needed for refrigerators that can store perishable dairy and protein items. This could improve our variety of such items because currently we are incapable of refrigerating any amount of items. Furthermore, this indoor location could be used as a storage location for off-campus students that need a place to store their food while they are in class. Although, these two suggestion are ambitious, I believe they have the capacity to improve the pantry the most by helping build the program’s stability and by providing necessary assets for the program’s growth.

### Strengths

This study utilized a valid and reliable tool of measurement, the HFPAT. In addition, the survey had a good sample size which further validated the responses received. This was a mixed

methods study, so although the focus group could have had more participants, it still strengthened the results from the survey and provided two perspectives: the pantry user, and the pantry volunteer. This study also received help from the pantry coordinator and other faculty members in terms of advertising the survey and helping solicit participants for both the survey and focus groups. In addition, I had a personal connection to the topic of food insecurity and food pantries because I have personally struggled with food security and have used food pantries in the past, so this study has personal significance.

### Limitations

This study utilized a survey to measure the knowledge and opinions of pantry users, so there is the possibility of recall bias because the survey was sent to anyone who has ever used the pantry not just recent patrons. Therefore, pantry users that have only used the pantry once in the past may not have an accurate perception of the pantry's current operation leaving room for recall bias. Another confounder that might have influenced the participants is the fact that most of the survey participants were solicited during the rainy season. The weather is a confounder because the pantry operates outdoors which means that the pantry users are exposed to natural elements like rain while waiting in the check-in line. The survey could also improve by asking demographic information to be able to examine the relationship between demographic factors and survey scores. The results of the survey also have limitations because the HFPAT does not have a ranking system for the scores it produces, there is no context from which to conclude if a score is good or bad. In addition, the HFPAT was recently published so there is no literature published of other food pantry evaluations that used the HFPAT, so I have nothing to compare my results with. I also believe that both the survey and the focus groups,

although they yielded great content, could have had more participants to further validate the results.

### *Future Implications*

This study is the first of its kind at the Dominican University of California because this is the inaugural year of the Penguin Pantry, so moving forward I believe that doing a food pantry evaluation periodically would be beneficial for the continual improvement and growth of the program. This study is also one of the first pantry evaluations to use the HFPAT meaning that it can provide context for future pantry evaluations to compare their scores with this study. The biggest implication, and goal, of this study is to improve the pantry for future users by providing useful feedback and suggestions. Therefore, I believe this study has the potential to positively impact the health and food security of Dominican University students.

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