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## How Community Engagement and the Power Nine Impact Health

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## Introduction

The concept of health plays an important role in everyday life, whether it be physical, mental, or spiritual health. While in recent years the mortality levels and longevity have improved significantly, this conflicts with how unhealthy the lifestyle habits are of Americans. The leading causes of death in America are cigarette smoking and obesity, which can be attributed to poor diet and physical inactivity (Chamie, 2021). Americans have the highest obesity rate among all ages, the second highest prevalence rate for HIV and AIDS, and the death rate for ischemic heart disease is also the second highest compared to the rest of the world (*Ranking21*, 2021). While some Americans weight lift, run marathons, and explore other methods to help them achieve the idea of a “long and healthy life,” there are certain areas of the world that actually do achieve this goal and are specifically known for the methods they use to obtain this (Buettner, n.d.).

The Blue Zones are a “non-scientific term given to geographic regions that are home to some of the world’s oldest people” (Robertson, 2017). There are five of these regions: Loma Linda, California; Okinawa, Japan; Sardinia, Italy; Ikaria, Greece; and Nicoya, Costa Rica. These five areas each specifically have met the criteria to be considered as a Blue Zone based on behaviors and lifestyles of residents. For example, Ikaria is an island with the lowest rates of dementia and the lowest rates of middle age mortality. Okinawa met the criteria because females that are over the age of 70 are the longest-lived population in the world, and in Sardinia, they have the highest concentration of male centenarians in the world. Scientists who have spent time researching these places have found that they all share common factors that help them achieve their longevity and healthiness, known as the Power Nine (Buettner, 2008).

The Power Nine are nine different lifestyle habits that the residents of the Blue Zones encompass and live by. The nine characteristics are as follows: move naturally, have a purpose, down shift, 80% rule, plant slant, wine at 5, belong, loved ones first, and right tribe or more simply stated, nutrition, exercise, rest, and socialization (Buettner, n.d.). By living their lives with these principles in mind, the citizens of Blue Zones are able to achieve longer and happier lives. When looking at the Power Nine, a connection can be made to the dimensions of wellness that are important to one’s personal health. There are five

dimensions of health which include: physical, social, spiritual, social, and intellectual (*Dimensions of Wellness*, 2021). When comparing the benefits of engaging in community activities and how it can benefit one's health, one can look at the social aspect of the dimension of wellness and the connection aspects of the Power Nine and better understand the benefits.

Along with looking at community engagement in relation to the Blue Zones, it is also good to look at it in relation to the social connection theory, which is the feeling that a person belongs to a group and feels close to other people. This is important when looking at the Power Nine and how the people in them feel the importance of belonging to something but also having those close connections with not only their family but their friends as well. This theory will help to understand why humans search for that sense of belonging and feel a sense of satisfaction in their life (*Social Connection Definition / What Is Social Connection*, n.d.).

The goal of this paper is to examine the idea that community engagement will make an impact on residents' lives in regard to their health. In today's world, the idea of community engagement is a little hard to achieve with the ever-changing global pandemic and the social distancing that comes with it. This study will examine community engagement and how it can influence a person's health in relation to the Power Nine using research and personal experience. This will be done by looking at a survey conducted by the Murray State School of Nursing and Health Professions that asked residents of western Kentucky about their community engagement and their health.

## **Review of Literature**

### **Blue Zones**

When reviewing the literature about Blue Zones, one key factor that can be seen across all studies is the diet that the residents of these communities eat. In a study done by Ansello (2019), the diet of Blue Zone residents is analyzed to determine what makes each Blue Zone unique and what the different places each have in common. The author started by explaining the significance of Sardinia's diet, which consists mainly of grains of all varieties, then fresh vegetables, and then dairy from the local sheep and goats.

When looking at Okinawa's diet, it is important to remember that this Blue Zone is known for its low rate of cardiovascular disease, since it is one-sixth of what the rate is in the western hemisphere (Buettner, 2008). This Blue Zone also has the oldest- lowest disability rate in the world. The diet in Okinawa is mainly plant based, where they average seven servings of vegetables a day. The rest of their diet is made up of meat consisting of fish and pork. One way that they try to make their proteins a little healthier is to cook their meat twice to get rid of any of the harmful fats. Ikarians are shown to eat mainly potatoes, fruits, and greens. This article stated that many of the residents on this island have eaten this diet for the majority of their lives. In Loma Linda, many of the citizens tend to become vegetarian and differ from the other zones since they rarely eat meat and do not drink wine. Eating very little meat is something that all the Blue Zones have in common, many of them follow the Mediterranean diet lifestyle, which is mainly plant based, but includes fish and dairy in moderation.

When comparing all the Blue Zones, it can be determined that a simple diet and active lifestyle can be part of the key to a long and healthy life. It was also discussed that the residents of these communities do not exercise during the day, but stay active by walking wherever they go, visiting their neighbors, or even gardening (BluLong). When discussing the Blue Zones, it is important to acknowledge the evidence-based common factors that happen in all five of these places. These factors are known as the Power Nine and were discovered by a team of medical researchers, anthropologists, epidemiologists, and demographers. As previously stated, the Power Nine include the following: move naturally, purpose, down shift, 80% rule, plant slant, wine at five, belong, loved ones first, and right tribe (Buettner, n.d.). When analyzing each of these, one might notice that some of them revolve around engagement, more specifically community engagement.

The Power Nine can be broken down into four different categories: move, right outlook, eat wisely, and connect. The three that are considered under connection are the right tribe, loved ones first, and belong. Right tribe is important because it has been shown that being active in social networks have shaped the health behaviors of people with long lives (Buettner, n.d.). In the Blue Zone, Okinawa, they form social circles called "moais," which are groups of five friends that are committed to each other for

life (Buettner, n.d.). Loved ones first is very important to the individuals in these communities in many different ways. When looking at aging parents and grandparents, they value keeping these individuals close or even in their home, which also has been shown to lower disease of children in the home as well as mortality rates (Buettner, 2008, #). In regard to their spouses, they have committed to them for life, which has been proven to add up to three years of life expectancy. They also invest in their children by giving them their time and love, which then in return encourages them to care for their parents when they get old since they have that bond and connection (Buettner, n.d.).

In the Blue Zones, faith is considered very important, and research has shown that attending some sort of faith-based service at least four times a month will add anywhere from 4-14 years onto one's life (Buettner, n.d.). When the medical researchers were studying the Blue Zones, they found that out of the 263 centenarians they interviewed only five did not belong to some sort of faith-based organization (Buettner, n.d.).

### **Community Engagement**

When looking at the Blue Zones and articles related to the subject, community involvement is always involved in some aspect. All five of the Blue Zones value the importance of being involved within the community and with each other. An article by Doolittle (2020) stated how community engagement can help improve the quality of life in many people, but also enhance one's purpose and help them feel important and valued. The author discussed physician fatigue and how 40-50% of physicians experience burnout. But if people took time to spend time with their children or do activities to help their mindset such as yoga, then it would improve the feeling of burning out. When looking at the community in a hospital involving everyone from nurses, social workers, and anyone else in the hospital, much of the happiness a person will experience at their work will come from these people. They also took other aspects of the Blue Zones to analyze at their institution such as a person's purpose or creating new opportunities for people to grow and improve within the "community." They proposed that many institutions should adopt a "Blue Zones Model" to not only take care of their patients but also the employees and create a thriving community to help prevent burnout (Doolittle, 2020).

As previously discussed in the article by Ansello (2019), the residents of the different Blue Zones stayed active by involving themselves in activities such as visiting with neighbors or being active within the religious aspects of the community. These communities are described as big support groups since most of the members have grown up together and maintained friendships throughout their lives. Typically, the Blue Zones have been regarded as low stress environments, especially Ikaria where they do not let time dictate their lives; however, Okinawa and Sardinia's older residents are currently under the stress of losing their traditional values, religion, and even their ancient languages due to the younger generations leaving the region (BluLong).

### **Benefits**

When looking at community engagement and how it is implemented throughout the Blue Zones, it is important to look at how it benefits those who engage in it. Community engagement is related to improved mental health and personal life. In the study by Schatteman (2014), she looks into what motivates community engagement in college students and how community engagement can benefit them. She analyzes the different barriers and motivators of these college students and discusses how this can benefit them in the long run. In the study, it was found that if students are involved in different engagements, it can benefit not only their career choice but also their employability after graduation. She discussed the different barriers that college students face now that can interfere with them being more involved such as a lack of time as well as an increased cost of education and living. But she also described what motivated students to be involved and found that students get involved to build their resume as well as gain work experience for the future (Schatteman, 2014, #). In the long run, students being involved in college can help them further their career and personal life to be successful. This also can aid them in finding a group of people to be associated with that may share similar interests or common career goals. As stated with the Power Nine in the Blue Zones, a sense of community or the right tribe, can help extend a person's quality of life and help them live a longer life.

Another study by Nedelcu (2018), researched the benefits of social engagement also using the Blue Zones for reference. This study looked at individuals from Romania and the challenges they faced

but also the benefits the community members got from being involved. This study was able to note that while other factors such as food and exercise play important roles in health and longevity, it cannot be denied that there are positive effects to having social relationships. This study also used Blue Zones to analyze how it can contribute to a positive, healthy lifestyle and stated that they chose this topic because many people forget to look into the social relationships aspect of health and just look at diet and exercise. In their study they mentioned that members of the Blue Zones had mentioned the most beneficial social activities that they had found were meeting friends to talk, going to karaoke and “getball” games with friends and family (Nedelcu, 2018, #).

In another study by Kiely, Sutherland, Butterworth, and Reavley (2020), they analyzed the association between social connectedness and mental health. In the study, it is mentioned that when individuals have low social connectedness, they have a higher risk for poor physical and mental health. They found that in older adults especially, social connectedness can be beneficial to their mental health (Kiely et al., 2020, 1070). Social connectedness is a theory that has been embedded in human biology and evolutionary history. Without social connection, a person can experience many different consequences such as loneliness but also health consequences such as inflammation and cardiovascular health risks.

## **Methods**

### **Survey**

To prepare for this study, a group of faculty members and students from five different departments came together to create the questions for the survey that was to be distributed. The five different departments were nursing, psychology, nutrition, occupational safety and health, and exercise science. The faculty members were able to select certain undergraduate students to assist in this study. The original plan for the study was to have the survey distributed widely throughout Calloway County, Kentucky. However, when it was time to administer the survey after receiving IRB approval, the COVID-19 pandemic was at a peak. This altered the whole course of their questionnaire, and the group edited the questions to include questions about how COVID-19 had affected the different areas of their lives. The

original plan was to attend meetings at different locations such as nursing homes and other community places to have people fill out the surveys in person. However, the pandemic prevented the study group from doing that, so instead the survey was put on Facebook and emailed, and the faculty and students encouraged their family and friends to fill out the survey. The goal for the study was to get 100 completed surveys to analyze and research and, in the end, they managed to get 216 completed surveys. While they will not be able to use all the survey results since some people who filled out the survey were not in the criteria range of being citizens of Calloway County, they still will have 185 surveys to analyze.

Since I was not a part of the original study group who developed the questionnaire, I had to do the CITI training and IRB application so that I could join Dr. Naber and Dr. Dodd to analyze the results of the survey to review the different levels of community engagement in Western Kentucky. Upon IRB approval, I was given access to look at the results and sat down with both Dr. Naber and Dr. Dodd to see what questions they had utilized in their survey, and they explained how much had to change when COVID-19 happened as well as how interesting it was going to be to see how these answers possibly could have changed due to the pandemic if they had been able to distribute the survey before, during, or after.

### **Personal Experience**

Before the survey was created, I was able to visit the Blue Zone in Ikaria, Greece, during the summer of 2019. I studied abroad with the School of Nursing and Health Professions at Murray State for two weeks in Athens and Ikaria. The second week I was able to experience what life is like in a Blue Zone and speak with a couple of centenarians and listen to their life stories and advice that they had to share. They shared with us what their daily life was like and shared different pieces of advice that they lived by. We met one man who was a beekeeper with his own business and one piece of advice he gave us was to always be smiling in your life. Another woman we met stressed to us the importance of family and wished upon us a good marriage and families who care and are good to you. This can be related back to the Power Nine principle of always putting family first. We were able to see on the island how they ate and many of the restaurant menus we saw reflected the seafood and plant-based diets many of the Blue



Zones implemented. We also passed by a grocery store every morning on our walk that was mainly fruits and vegetables. One piece of advice that was also given to us by many citizens was to always have a glass of wine at each meal. Additionally, if we were to drink, we should not drink to get drunk.

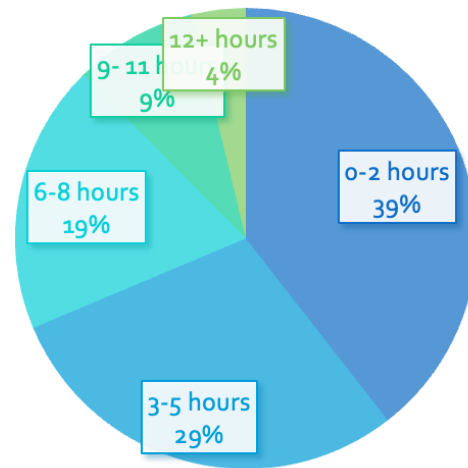
Another experience we had in Ikaria was a massive community celebration, where the community we were staying at invited us to attend. We all gathered in this community center and ate local food which consisted of smoked goat, salad, and bread. After the majority of the participants had eaten, that's when we got to experience the traditions of the island. Community members made a dance floor and started doing traditional dances that we got to join in on and have them guide us and teach us how to participate in. This was the highlight of my entire trip, and I got to experience how kind and inviting these individuals were as they kindly showed me the right steps and how involved they are. This was a prime example of community engagement in this Blue Zone.

## **Results**

The research team was able to collect a total of 216 responses for their questionnaire about diet, community engagement, exercise, and mental state. The original goal for the study was 100 responses, and while they were able to get 216, they did have to exclude 31 respondents due to them not being residents of Calloway County. The main demographics of the respondents was 96.2% white, 4% Asian, and 1.5% of respondents were either from multiple races or preferred not to answer. The marital status of those who filled out the survey was 66.5% married, 21.6% never married, 8.1% divorced, 2.2% separated and 1.6% widowed. Many respondents were also in their 30s and 40s, with only 2 people in their 70s and the youngest person being 19. The questions that will be discussed are the ones regarding their community engagement and how COVID-19 affected their engagement, but also how they prioritize community engagement in their life. The first question they were asked was how many hours a day do they spend alone, and one thing to consider when looking at the results is that the study was disrupted during the pandemic, so the respondents might have altered their answers to reflect their time during COVID. When looking at the different answers, 73 respondents (39.5%) answered that they spent 0-2 hours alone in a day, whereas only 7 (3.8%) people responded that they spend 12+ hours or the majority

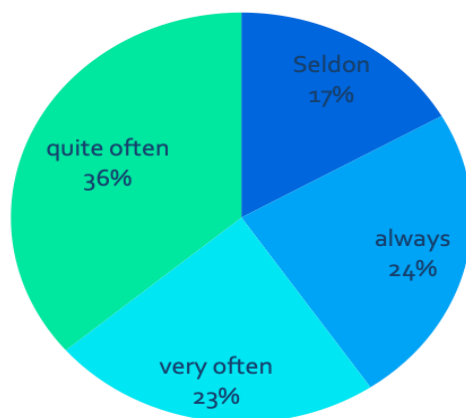
of the day alone. Fifty four people (29.2%) answered that they spend 3-5 hours alone, 16 people (8.6%) said that 9-11 hours of their day is spent alone and 35 (18.9%) respondents answered that they spend 6-8 hours alone.

## HOURS SPENT ALONE



One of the next questions asked was how often they felt like they had a meaningful conversation with someone else. While communication became easier during the pandemic, and they could still communicate via text message or phone call, this did not affect how much people had meaningful conversations, since 31 respondents (16.8%) very seldom had these conversations. However, some people managed to always have these conversations resulting in 44 respondents (23.8%) answering this way and 43 respondents (23.2%) saying they have meaningful conversations very often, which was 4-5 times a week. Around 36% of those who filled out the questionnaire or 67 people (36.2%) responded that they have meaningful conversations quite often or 2-3 times a week.

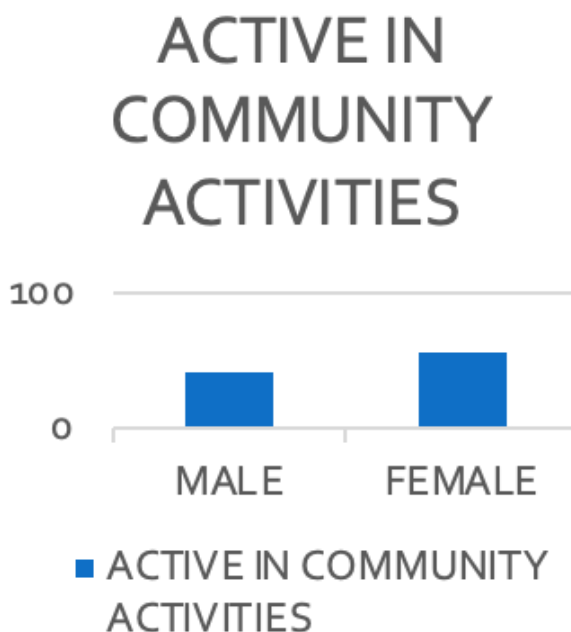
## MEANINGFUL CONVERSATION



While looking at the data, there were many different correlations that could be examined between some of the questions, including one about the relationship between age and religious activity. When analyzing the data, it was found that people in their 40s are more likely to spend 1-5 hours doing religious activities than any other age. It was also discovered that of the people who answered that question, people in their 20s and 30s are least likely to attend religious activities since 7 people from each age group answered zero hours. Based on the data received, people in their 40s and 50s are more likely to attend but it decreases again within the 60s and 70s. Another correlation that was analyzed from the survey was that between employment and how often they leave their house. There were three main answer options they could choose from: employed, retired, and not employed. Based on the data, people who are employed are 55% more likely to leave their house at least 6-7 times a week than people who are retired or not employed. Also, looking at that correlation, employed people who leave the house at least 4-5 times a week were 21% of respondents compared to people who are retired or not employed at all.

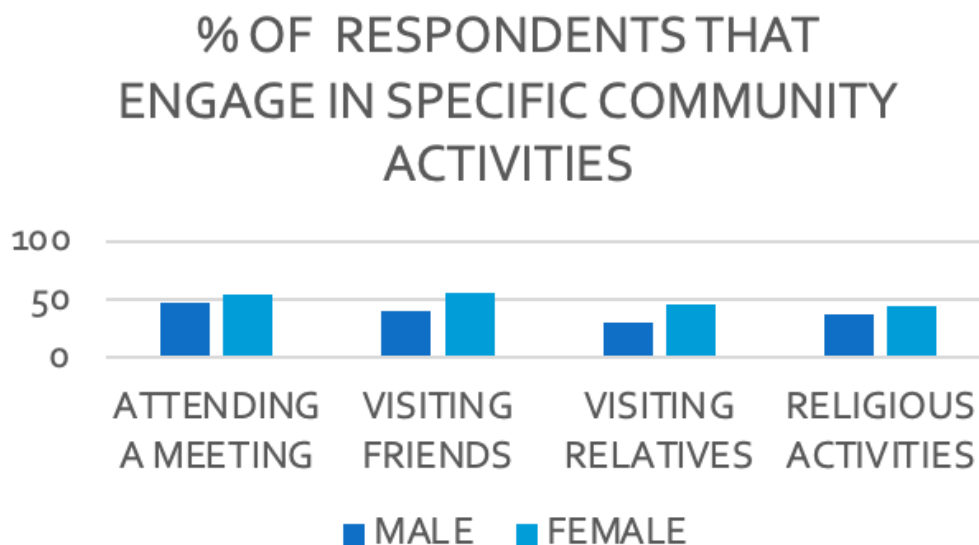
Another important correlation that was analyzed was between gender and participating in community activities. There were more females that filled out the survey than males, 153 respondents being female, 30 being male, 1 identifying as gender fluid, and 1 person preferring not to answer. When analyzing the responses on if they engage in community activities, it was surprising how few females who

were not active in community activities, figuring the responses would be heavy on participation. This is based on previous experiences as well as observations within different organizations and activities. However, when looking at the data, 58% of women said they were active in the community. The data collected from males was not surprising that 53% of the male respondents were not active in community activities. After doing that, the next correlation that was analyzed was between the genders and specific community activities such as attending meetings, visiting friends and relatives, and attending religious activities. These activities were specifically chosen since they related back to the values of the Blue Zones as shown through the Power Nine.



The survey allowed the participants to select how often they participated in these activities, and while there was an answer option for zero hours, not all participants answered the questions. So, for the question about attending meetings, only 97 of the 185 selected an answer for this question. The data shows that more women attend meetings during the week than males, but almost half the male participants attend meetings during the week with 14 men responding. For all the activities the correlations show that women are more likely to participate in these activities than males, but that data could also be skewed since the vast majority of respondents were female. For visiting friends, 55% of

women responded that they do this on a regular basis and 40% of men visit their friends as well. Only 30% of male respondents and 46% of female respondents visit their relatives on a weekly basis. As the correlations regarding religious activities have already been reported, it can be concluded that 44% of females are attending some sort of religious activity per week and 37% of males are as well.



### **Discussion**

After reviewing the data collected from the surveys, there are conclusions that can be drawn in relation to community activities and one's health. Overall, the 185 participants that filled out the survey were not overly active within the community. When looking at the question where they could input how many hours, they spent doing certain activities, many respondents either did not answer the question or answered zero hours spent. One question that sparked some attention was the question asking how many hours they spend watching television. This question had numerous answers, few responding zero hours spent. While they are active in this activity, this is not one that can be very beneficial to their health. This is because watching television is classified as a form of non-active sitting, which has been linked to cause 25% higher body mass index and body fat percentages (Scherer & Young, 2020). The activities that get

them out, moving and active, were not heavily answered, one thought as to why is that the majority of people were in their 30s-40s and 92% were employed, either part time or full time. This could mean that people have spent the majority of their day working and do not have the time or energy to participate in the health beneficial activities.

While looking at the data, it can also be observed that there are a lot more women who are active in community activities than men are. While this isn't surprising, the data did give the research group an interesting look into how active men are. Since the majority of respondents were female (153) and there were 30 males, and it was recorded that 14 men are active within the community, then that is over half of the men who were surveyed. This was very surprising since men aren't as interested in doing community activities, which can be supported by many studies done such as one by the Bureau of Labor Statistics that showed 21.8% of men participate in community organizations (*Volunteering in the United States, 2015, 2016*). But as it was also observed in the data, many people answered highly to activities such as attending meetings and going to church, which are common activities done throughout the week. Many people can say they spend a couple of hours throughout their week attending meetings for their job or other organizations that they are involved in. When looking at activities that are beneficial to one's health such as playing a sport or gardening, the majority of people who answered that question responded that they did zero hours. Activities that are not beneficial to one's health resulted in the majority of people responding that they did this quite frequently throughout the week such as watching television.

When looking at the barrier survey, two important questions that were analyzed were how many hours they spend alone and how often they feel like they are having meaningful conversations. This was important because Blue Zones inhabitants stress the importance of connection and having a group of friends that are kept throughout their lives. It was found in the survey that the majority of people were not spending very much time by themselves, which is a good thing because it can be assumed that since the majority of people were also employed that they are leaving their homes to go to work and are seeing other people throughout their day. Another assumption that could be made is that they are married and/or have children so they aren't able to have much alone time but are still getting that meaning connection

with other people since residents in Blue Zones also put importance on family. Meaningful conversations are another important factor of the Blue Zones, and it was found in the barrier survey that 60% of respondents were either having these conversations quite often (36%) or always having them (24%). This was an important question to analyze because by being able to have these meaningful conversations means that the respondents have found a personal connection to someone enough to be able to spend time talking to them. It is also important because it means that they have found a way to have social connectedness which can improve their personal wellbeing in numerous ways. By finding these people in their lives, they are able to accomplish a sense of belonging and a connection with another person. This can also fulfill their social dimension of wellness which can then help them achieve filling their other aspects to improve their overall wellbeing.

One of the correlations that was calculated was the relationship between age and how active they are in religious activities. It was found that people in their 40s and 50s were the most active in religious activities, but when looking at people in their 50s+ their participation in religious activities decreased. It was also found from that correlation that people in their 20s to 30s are least likely to attend this activity. This was an interesting correlation because the activity peaks when people are considered to be middle aged but decreases immediately after. It is also interesting because it could also be related to the COVID-19 pandemic as to why only that age group seemed to be attending religious activities, the older adults were much less likely to be going out in public, especially to church to decrease risk of exposure. Another correlation that was analyzed was the relationship between if they were employed and how often they leave their home. For the question on if they were employed or not there were a couple different answers such as yes (40+ hours), yes (0-39 hours), no (actively looking for work), no (not looking for work), and retired. It was found that 93% of people who answered the survey were employed in some fashion, and the correlation between how often they leave the house and if they were employed was 55% more likely to leave the house six to seven times a week. This makes sense since a typical work week is 5 days and then additional activities such as church, school, or grocery shopping could account for the extra two days.

## **Limitations**

The biggest limitation for this study is that it was distributed in a peak of the COVID-19 pandemic. This resulted in the research group having to change their plans of attending different meetings around Calloway County and instead having to post the survey on Facebook along with numerous other social media platforms as well as email. This resulted in the group having to edit the survey to incorporate questions about how the COVID-19 pandemic had affected their lives in regard to nutrition, stress, community engagement, and rest. One example of this affecting the answers of the survey can be seen in the question regarding the frequency people were visiting friends and relatives. For visiting relatives, it was intriguing that fewer people visit their relatives on a regular basis, but this could be that their families do not live in this area, or that this survey was disrupted during COVID, so that could also be a factor as well.

Since the questionnaire was posted on Facebook and shared by the research group, it resulted in people completing the survey that were not residents of Calloway County. These responses then had to be removed from the data collected since they did not fit the criteria of the research study. Another limitation that was discovered was that the majority of respondents were white, employed females. This skewed the data by not showing a diverse population.

## **Recommendations**

When thinking about recommendations for this study, it is important to remember that this study was limited by major outside factors such as global pandemic. One recommendation I would make is to change the targeted population from Calloway County to Kentucky residents. If it is changed to all of Kentucky, then the research group would not have to exclude as many respondents. This also opens another interesting research point since statistically Kentucky residents ranks 46th out of 50 states as being the unhealthiest state (Ellison, 2021). By having the whole state fill out the barrier survey, it would show data that could explain why the state as a whole is so unhealthy. This has been mentioned by the



research group as future plans they would like to do, by using the Calloway County barrier survey as a pilot study to see how it would go and be able to make changes and improvements.

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## Appendices

### Appendix A

IRB approval email:

Subject: Re: Honors Student  
To: Jessica Naber <[jnaber@murraystate.edu](mailto:jnaber@murraystate.edu)>

Great! Lindsey has been added to the protocol and she can begin assisting you on the project.

Thanks!

On Tue, Sep 14, 2021 at 11:28 AM Jessica Naber <[jnaber@murraystate.edu](mailto:jnaber@murraystate.edu)> wrote:

Hello! I am attaching the information needed for Honors Student Lindsey Shelton to join in with the research project. Attached you will find her CITI certificate. The protocol number is **IRB#20-142**.

Thank you!

Jessica

**Jessica Naber, RN, PhD**

Associate Professor

School of Nursing and Health Professions

Murray State University

Office 270.809.6690

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