The Influence of Social Support on Adoption of Healthy Behaviors in a Faith-based Setting

by

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Abstract

Overweight and obesity are national epidemics affecting 42.4% of adults in the U.S.; with the southeastern region exhibiting higher obesity rates than most other regions in the U.S. (National Center for Health Statistics, 2020; U.S. Department of Health and Human Services & Centers for Disease Control and Prevention, 2009). Alabama ranks 3rd nationally with 39% of adults being obese (Robert Wood Johnson Foundation, 2021). Minority populations tend to have higher rates of obesity when compared to non-minority populations. Almost half (48.1%) of Non-Hispanic Blacks are obese, compared to 34.5% of non-Hispanic Whites (Ogden et al., 2018).

Faith-based organizations are increasingly common settings in which to conduct health promotion programs because of their existing integration and influence within high-risk communities. By using the Social Ecological Model (SEM), the opportunity to create a multi-level intervention was available with the development of the Live Well Faith Communities (LWFC) program. Participants received education during nine, weekly small-group lessons focusing on behaviors around eating healthy and physical activity. Participants also received support on the interpersonal level from a designated lay leader who was present for all lessons and advocated for healthy living throughout the faith community.

The study was conducted in 14 individual faith communities in 8 rural counties. The average individual participant was a middle-aged, non-Hispanic Black woman. This study's primary purpose was to examine LWFC participant's perception of social support from within their faith community and the effect, if any, it had on fruit and vegetable consumption and physical activity participation. It was determined that participant demographic characteristics did not influence completion of the LWFC program. Findings indicated that participants who

completed LWFC were successful in increasing fruit and vegetable consumption, but not physical activity participation. Overall, the study found that social support and demographics were not factors in increasing fruit and vegetable consumption or physical activity participation.

Educators and policy makers must realize that a person's health outcomes are not based on only the individual's choices but exist within an environment that can directly impact one's health. Through direct education, support, and policy changes at both the local and national levels, health outcomes can improve.

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ACES	Alabama Cooperative Extension System
EFNEP	Expanded Food and Nutrition Education Program
LWFC	Live Well Faith Communities
SEM	Social Ecological Model
SNAP-Ed	Supplemental Nutrition Assistance Program – Education

Chapter 1

Introduction

Overweight and obesity are national epidemics affecting 42.4% of adults in the U.S.; with the southeastern region exhibiting higher obesity rates than most other regions in the U.S. (National Center for Health Statistics, 2020; U.S. Department of Health and Human Services & Centers for Disease Control and Prevention, 2009). Alabama ranks 3rd nationally with 39% of adults being obese (Robert Wood Johnson Foundation, 2021). Not only is obesity a public health issue itself, but obesity leads to many other health problems, such as cardiovascular disease, cancer, diabetes, and/or respiratory disorders.

Obesity is a complex issue stemming from a number of factors. Poverty is one key factor contributing to poor health indicators, and Alabama consistently has one of the highest statewide poverty rates. Alabama's poverty rate is 15.6% compared to the national rate of 12.3% (Alabama Possible, 2021).

Another factor contributing to poor health indicators is population density. Rural areas tend to exhibit higher rates of obesity for the same reasons as economically depressed areas. The overall lack of resources leads to an environment with lower access to grocery stores, health care, and places for physical activity (Lee, Cardel, & Donahoo, 2019).

Minority populations tend to have higher rates of obesity when compared to non-minority populations. Almost half (48.1%) of Non-Hispanic Blacks are obese, compared to 34.5% of non-Hispanic Whites (Ogden et al., 2018). African Americans in Alabama have a poverty rate of 27%, with Whites at 11.7% (Alabama Possible, 2021; Robert Wood Johnson Foundation, 2021).

Recent shifts in public health approaches to reduce and prevent chronic disease expand the focus from individual level behavior change interventions to multi-level interventions

encompassing policy changes, environmental changes, other adaptations in community settings, and individual level behavior changes. Faith-based organizations are increasingly common settings in which to conduct such multi-level health promotion programs because of their existing integration and influence within high-risk communities. Growing evidence supports the efficacy of faith-based health interventions (Bopp & Fallon, 2013; Campbell et al., 2007; DeHaven, Hunter, Wilder, Walton, & Berry, 2004; Newlin, Dyess, Allard, Chase, & D'Eramo, 2012; Peterson, Atwood, & Yates, 2002).

In a 2019 editorial for the *American Journal of Public Health*'s special section on public health and faith communities, the following best practices were identified: (a) Empower faith community leaders to identify existing strengths and the needs of their community to ensure any outreach and intervention efforts are based on the people in the community, not on the needs or desires of public health practitioners. (b) Recognize that faith community leaders and public health practitioners have extensive knowledge in their fields and are bringing their strengths together to meet the identified needs. (c) Distinguish the desired outcomes for both public health and faith practitioners to ensure community needs for health and faith are addressed, while recognizing that ideological differences exist, but should not create unnecessary barriers. (d) Both parties should prioritize maintaining the relationship. In the event of a future public health crisis or the recognition of additional needs in the faith community, maintaining the relationship will allow for a quicker and more tailored response (Idler, Levin, VanderWeele, & Khan, 2019).

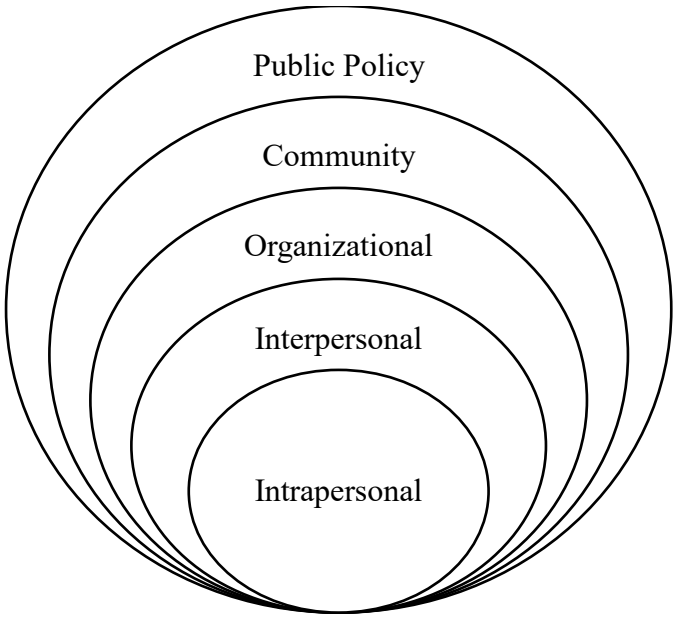
Cooperative Extension professionals excel in creating and maintaining relationships throughout the communities they serve. These professionals collectively have the breadth and depth of science-based knowledge of thousands of Extension professionals across the nation and serving a faith community is another way to translate this information to a wider section of the

community. Alabama Cooperative Extension System (ACES) has a number of collaborative programs with efforts geared toward building and supporting healthy communities. In rural Alabama, faith communities, particularly African American faith communities, offer a strong connection to family, community, and service for members. Conducting health promotion programing in a faith community is an opportunity for ACES to provide services and education to people from different ages, incomes, and education levels at one time. This broad reach in a supported community can allow for impact through multiple levels of the organization.

As stated in Cooperative Extension's National Framework for Health and Wellness ((Braun et al., 2014), the Social Ecological Model (SEM) is used as a theoretical base for their outreach and interventions. The social ecological approach acknowledges that behavior both affects and is affected by multiple levels of influence. Figure 1 displays the levels of influence included in the SEM (Glanz & Rimer, 1997).

Figure 1

Social Ecological Model



To address the need for multi-level obesity prevention in collaboration with faith-based communities, ACES developed the Live Well Faith Communities (LWFC) program based on North Carolina State University's *Faithful Families Eating Smart and Moving More* (Faithful Families) curriculum. The curriculum was updated in 2018 to better reflect the mission and vision of the organization, and the name was changed to *Faithful Families, Thriving Communities*. The primary levels of influence from the SEM targeted in the development and evaluation of LWFC were the interpersonal and intrapersonal levels. At the intrapersonal level, participants received education during nine, weekly small-group lessons focusing on behaviors around eating healthy and physical activity. Participants received support on the interpersonal level from a designated lay leader who was present for all lessons and advocated for healthy living throughout the faith community. Additionally, the organizational level was integrated into the LWFC programming through encouraging faith communities to make policy, system, or environmental changes.

Statement of the Problem

Communities with sociodemographic characteristics associated with a higher risk of obesity, including poverty, racial minority status and rural geography, are prominent in Alabama. Faith-based settings are an increasingly popular place to reach these high-risk populations. For example, African American women tend to have high rates of both chronic disease and church attendance. There is evidence to suggest the social support found in a faith community can have a positive effect on health behavior change (Cheryl L. Holt, Roth, Huang, & Clark, 2018; Nam et al., 2019; Story et al., 2017), but the effectiveness of this type of intervention in rural Alabama is not known.

Purpose of the Study

The purpose of this study was to examine the Live Well Faith Communities (LWFC) course participant's perceived social support and the effects on the increase of (a) fruit consumption, (b) vegetable consumption and/or (c) physical activity in participants. The LWFC design utilized the Social Ecological Model (SEM) to provide a multi-level intervention to influence health behaviors. The evaluation of this study will focus on the personal characteristics and original perceived social support of participants, increases in healthy behaviors by participants, and determine if an increase in healthy behaviors is in response to LWFC participation and increases in social support.

Significance of the Study

Faith communities are often an effective channel for reaching minority populations in rural areas. This study will build upon the evidence base for effective methods of changing individual behaviors within a rural, African American population in Alabama through direct education and social support.

Research Questions

The following research questions were used in this study:

1) What is the relationship between personal characteristics and those completing the Live Well Faith Communities program?
2) What are the fruit consumption, vegetable consumption, and physical activity levels for those completing the Live Well Faith Communities program?
3) What is the relationship between fruit consumption, vegetable consumption, and physical activity levels and perceived social support for those completing the Live Well Faith Communities program?

Assumptions

The following assumptions were made in this study:

1) The sample is representative of African Americans living in rural Alabama and participating in a faith community.
2) Participants answered survey questions honestly.

Limitations

The findings of this study must be seen in the light of some limitations. The first of these limitations is the small sample size. With LWFC only taking place in rural communities, the overall sample is smaller due to a lower population in the areas. Next, the low number of post-tests completed by participants provided a lower sample size. With the LWFC program being part of a research study, it could have been a barrier to having more participants. Due to the nature of community-based interventions, which take place in an uncontrolled environment, there can be no guarantee that any changes in intentions or behaviors were the sole result of the LWFC program.

Definitions

1) Faith community - A community of people who hold regular religious services in an established place. Organized worship, service and fellowship are directed by a formal leadership structure.
2) Live Well Faith Communities (LWFC) – A program designed to promote healthy eating and physical activity in churches through individual behavior change and policy, system, and environmental changes at the faith community level.

3) Obesity – “Overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health. Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m2)” (*Obesity and overweight*, 2021)
4) Religiosity – Measure of attendance at religious services (Morton, Lee, & Martin, 2017)

Organization of the Study

Chapter 1 introduces the problem of health disparities in rural Alabama, particularly in African Americans and the role faith communities can have in health promotion and prevention strategies. This study is described in terms of the problem, approach, research questions, limitations, and definition of terms. Chapter 2 includes a review of related literature, with a focus on health promotion within faith communities. Chapter 3 reports the methods utilized in this study, including the population and sample; instrumentation; the data collection; and the data analysis. The findings of the study are presented in Chapter 4. Chapter 5 includes a summary of the study, and recommendations for further practice and research.

Chapter 2

Introduction

Chapter 1 introduces the problem of health disparities in rural Alabama, particularly in African Americans and the role faith communities can have in health promotion and prevention strategies. This study is described in terms of the problem, approach, research questions, limitations, and definition of terms. Chapter 2 includes a review of related literature, with a focus on health promotion within faith communities, adult education theory, the history of Alabama Extension and adult education, social support, and use of the SEM to improve health outcomes.

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Overview of Religion in the United States

Religious Affiliation in the United States

The religious landscape in America has undergone a shift in recent years where white Christians, formerly the majority, are now less than half of the population. These changes have created a more diverse religious landscape today than any other time since modern sociological measurements began (Jones & Cox, 2017).

The largest religious group in the U.S., at 24%, are unaffiliated from religion. When looking at the generational breakdown, the religiously unaffiliated gets bigger with each younger generation. In the Public Religion Research Institute (PRRI) 2016 American Values Atlas (Jones & Cox, 2017), only 12% of those 65+ identify as unaffiliated in contrast to 38% of those 18-29. The largest Protestant denomination in the U.S. is Baptist (32%), followed by Methodist (10%), Pentecostal (10%) and Lutheran (8%). Only 5% of Protestants identify as Church/Disciples of Christ or Presbyterian. Only 1.5% of the American population responding to a question about their religious affiliation identified as Jewish (Jones & Cox, 2017). Non-Christian religious groups such as Muslims, Buddhists and Hindus make up less than one percent of the American population. In 2016, 1.9% of Americans identified as Mormon, the same as 2011 (Jones & Cox, 2017). There are regional differences in religious affiliation in the U.S. The evangelical Protestant (those who self-identify as Protestant Christians who also identify as evangelical or born again) population is twice as numerous in the South (22%) and Midwest (20%) as in the Northeast (8%). The religiously unaffiliated make up the majority in 20 states. In the Northeast

there is a cluster of states whose citizens are majority Catholic. Mainline Protestants (Lutherans, Methodists, Presbyterians, and Episcopalians) are more numerous in North Dakota (30%) than any other state. The least religiously diverse region of the U.S. is the South. The most religiously diverse states are primarily located in the Northeast, with California being the state with greatest degree of religious diversity (Jones & Cox, 2017).

Religious Affiliation by Race, Ethnicity, and Education Level

Historically the U.S. has been an overwhelmingly majority white Christian country. In 1976, 81% of American's identified as both white and with a Christian denomination. At the same time, 55% of this group identified as Protestants. The 2016 American Values Atlas reports only 43% of Americans identified as white and Christian, and only 36% of this group identified as Protestant. In a nine-year period from 2007 to 2016, the number of states with a majority white population dropped from 39 to 23. As far as white evangelical Protestants, in 2006 23% of the public identified with this group and ten years later this has dropped to 17% (Jones & Cox, 2017).

In the 2016 PRRI report, only 30% of Americans identified as white Protestant down from 50% in 1991. The Protestant population in America now identifies as 33% nonwhite. Within mainline Protestant denominations, white participation remains in the eightieth and ninetieth percentiles. In contrast, only 58% of Baptists are white, with 30% of members identifying as Black and 5% as Hispanic. The Catholic church is also experiencing this changing demographic with only 55% of Catholics identifying as white and 36% identifying as Hispanic. Despite these demographic shifts, the South remains dominated by white evangelical Protestants. Mississippi holds the largest percentage of Black Protestants (25%), but they are still second to white evangelical Protestants in the state (Jones & Cox, 2017).

The level of educational attainment tends to be inconsistent between religious groups. Unitarian Universalists and Hindus are, on average, the most educated, while Hispanic Catholics tend to be the least formally educated group. Nonwhite Christian groups tend to have considerably lower education levels. Black Protestants (52%), Hispanic Protestants (65%), and Hispanic Catholics (70%) report only having a high school degree or less. Similarly, Christians from racial and ethnic minority groups tend to have the lowest levels of household income. Nearly half of these groups report household incomes of less than $30,000 per year (Jones & Cox, 2017).

Faith Communities and Adult Education

Influence of Faith Communities on Health

"Or do you not know that your body is a temple of the Holy Spirit within you, which you have from God, and that you are not your own? For you were bought with a price; therefore, glorify God in your body." 1 Corinthians 6:19-20 NIV

Since the mid-1900s and for centuries prior, religious institutions, people, and organizations have worked with healthcare professionals and institutions to advance the fields of public health and preventative medicine (J. Levin, 2016). "Among the professions outside of public health none affords greater opportunities to advance the cause of public health than the ministry, with the possible exception of school teaching. Clergymen daily come into contact with cases of distress, crime, delinquency, mental and religious unrest which have their cause and motive power in physical conditions and surroundings" ("The clergy and public health," 1925). As faith communities and public health are frequently brought together, one needs to remember they are both powerful representatives for health and justice (Morabia, 2019).

Using this connection between the sciences and faith is in the interest of both parties. During his time as U.S. Surgeon General, David Satcher said, “Through partnership with faith organizations and the use of health promotion and disease prevention sciences, we can form a mighty alliance to build strong, healthy, and productive communities” (Centers for Disease Control and Prevention, 1999, p. 3). Faith communities became a popular place for public health programs in the 1950s and 1960s with the evolution of the field of pastoral care. Specifically, African American faith communities attracted interventions focused on the elimination of health disparities as compared to their white counterparts (J. Levin, 2016). With the lack of social and economic resources often found in communities of color, the most known and present organizations are often faith communities. They provide their community with leadership and the capacity to serve (Idler et al., 2019).

Adult Education Theory

Each individual learner has their own reason for being in a learning setting, which affects how they will learn and often how much knowledge they will take from their education experience. Using the knowledge of those before us, the broad goals of a class can be met, while meeting individual students where they are in the learning journey and helping them reach their full potential. Adults generally have a purpose or motivation for being in a learning situation. An adult educator must be attuned to recognize and understand the differences between adult learners and traditional students (Campbell, S., 2016).

In ancient times, all we know about learning is from those who taught adults. Confucius, Socrates, and Cicero all taught adult learners, and perceived adult learning as mental inquiry, not passive learning. These teachers developed methods that were more processes and steps on the way to resolution, rather than a rote memorization of facts. After World War 1, more research

went into the characteristics of adult learners and the best methods for teach the adult. In the following century, andragogy, the teaching of adults, became its own field separate from pedagogy, the teaching of children (Knowles, Holton, & Swanson, 2005).

Adult Education in the Modern Era

In 1926, the American Association of Adult Education was founded with funding behind the organization to support research and publication. Within the research, there were clearly two streams of research. One of those was the scientific stream. The scientific stream was led by Edward L. Thorndike. Thorndike set out to determine if in fact adults had the ability to learn. Previous educators had proceeded with faith that adults had the ability to learn. By the start of WWII, more work from Thorndike and Herbert Sorenson had built up the knowledge base with evidence adults had interest and abilities that were different from those of children. The other stream of research focused on how adults learn (Knowles et al., 2005). As this new thinking emerged about how adults learn, Eduard Lindeman, a pioneer in examining adult education theories, developed assumptions which became part of the foundation of adult learning theory (1926).

Lindeman's Key Assumptions about Adult Learners:

1. Adults are motivated to learn as they experience needs and interests that learning will satisfy; therefore, these are the appropriate starting points for organizing adult learning activities.
2. Adults' orientation to learning is life-centered; therefore, the appropriate units for organizing adult learning are life situations, not subjects.
3. Experience is the richest resource for adults' learning; therefore, the core methodology of adult education is the analysis of experience.

4. Adults have a deep need to be self-directing; therefore, the role of the teacher is to engage in a process of mutual inquiry with them rather than to transmit his or her knowledge to them and then evaluate their conformity to it.
5. Individual difference among people increases with age; therefore, adult education must make optimal provision for difference in style, time, place, and pace of learning.

Lindeman surmised that adult learning was essentially an experience. One where the learner knows what is happening and is able to recognize the significance in turn evaluating the experience (Knowles et al., 2005).

In the 1950's Cyril O. Houle began exploring the process of adult learning. Prior to this work educators were basing andragogical processes on pedagogical theories. From studying 22 subjects and analyzing characteristics that were apparent in their interview, Houle was able to identify three types of adult learners based on motivation. The three types were 1) goal-oriented learners, 2) activity-oriented learners, and 3) learning-oriented learners (Knowles et al., 2005).

The goal-oriented learner has a clear objective in mind. They know what they want to achieve and therefore gain the knowledge needed to accomplish the set goal. This type of learner never finishes their education because they continue to have different goals throughout their life. Once another interest comes to light, the learner starts the process of obtaining the needed knowledge to be successful in the new interest (Knowles et al., 2005).

The activity-oriented learner is there to be a part of something. This type of learner's motivation is oftentimes not connected to the material being learned. The activity-oriented learner is there for just that, any type of activity. This activity can be a class on photography or learning about the American Revolution and once the learner achieves the desired human relationships they will move on to other pursuits (Knowles et al., 2005).

The learning-oriented learner is a life-long student. They have always loved learning and can often be found reading a book or watching a documentary on a subject they find particularly interesting. This type of learner is one who accepts jobs or makes other moves in life so they can continue to learn; they will always be engaged in some form of learning (Knowles et al., 2005).

In *The Design of Education*, Houle (1972) defined adult education as:

> The process by which men and women (alone, in groups, or in institutional settings) seek to improve themselves or their society by increasing their skill, knowledge, or sensitiveness: or it is any process by which individuals, groups, or institutions try to help men and women improve in these ways (p. 32).

Adult learners have a motivation whether that be a promotion or a genuine interest in something new. An adult has a reason learn beyond the law of the land, which says they need to be in a classroom.

Pedagogy and Andragogy

In the modern era, pedagogy was the priority. Pedagogy translates from the Greek as, the art and science of teaching children. To fully comprehend andragogy, which translates from the Greek, as the art and science of teaching adults, understanding its beginnings in pedagogy will allow for the full picture of andragogy. The art of pedagogy began with the teaching of young boys in the Middle Ages. This education was done by monasteries or church schools. This model of education is what the U.S. built the public education system, begun in the early twentieth century, to mimic. From primary school, through secondary education, and onto higher education, were all using the same model from 1,000 years in the past. As a result of this, adults have been taught as if they were children through lectures, worksheets, and rote memorization (Knowles et al., 2005).

When using the pedagogical model, the educator is solely in charge of what students will learn and how the students will learn the material. Educators also deem what is important for the students to learn. According to Knowles and colleagues (2005), pedagogy is based on the following assumptions about the learner:

1. The need to know. When children are learning, they do not need to know why they are learning the material or how the material will be applied later in their life. They only need to know what their teacher teaches them and be able to recall the material.
2. The learner's self-concept. Learners become dependent on educators teaching them what they need to know. Learners do not seek out knowledge early on in life, and therefore, have trouble learning on their own as they grow.
3. The role of experience. In classrooms across the nation, the experience of a young learner is not important. Often, the learner's experiences are not incorporated into lessons. Only the experiences in a textbook or from and educators point-of-view are incorporated into a lesson. This method leaves a young learner out of the process instead of using their wealth of experiences to make a lesson relevant.
4. Readiness to learn. Learners are not given the opportunity to learn when they are ready. They are told when they will learn, and no thought is given to the readiness of the child.
5. Orientation to learning. Learners are boxed into subjects and concepts will only fit into the current subject. Cross-learning between subjects is not allowed.
6. Motivation. Young learners are usually only motivated by external forces such as, praise from teachers and parents or grades.

Due to the lack of self-direction in pedagogy, many learners do not develop the ability to solely make the decisions that affect their lives until they are out of school and have a job and responsibilities they are expected to meet (Knowles et al., 2005).

When studying the assumptions made about adult learners, there is a distinct difference in the description of each assumption.

1. The need to know. Adults will always need to understand why they are learning something before they will agree to learn the material. The task of teaching this understanding is usually left to the educator. Adult students will be helped through understanding how the knowledge can help them grow both intellectually and in the quality of their lives. If an adult knows they need to complete three classes to obtain a job promotion, they are more likely to willingly participate in the learning experience.
2. The learners' self-concept. Adults who return to a classroom for the first time in many years are often very uncomfortable because they remember the lectures, rote memorization, and the expectation you will learn exactly what the teacher is teaching. It is due to these uncomfortable memories many adult learners do not complete the education they started. Educators should assist adult learners in determining what they are there to learn and be able to offer students different types of learning opportunities. By doing this, students can assert their desires for their education.
3. The role of the learners' experiences. Adults bring a vast array of experiences with them to a classroom. An adult with ten years of management experience will be able to offer this expertise as part of an educational activity. The educator should be able to use these experiences to the advantage of their curriculum and the students. Teachers can use group

discussions, simulations, and case studies. Using these methods allows for reflection and learning for students as they learn new techniques and learn from others' experiences.

4. Readiness to learn. Adult learners do not wish to learn about things that do not apply to their current life situation. An adult must see why learning something is necessary to be able to understand how they will use gained knowledge in current roles.
5. Orientation to learning. Adult learners do not want to learn Algebra I. They would like to know how to establish and maintain budgets. While some of the skills learned may be the same, the reason for learning the skill is what matters. Adult learners will be ready to learn something they see as relevant to their current role and framing the concepts in their current context will allow for more effective learning.
6. Motivation. Adults have both intrinsic (self-esteem, quality of life, and ability to reach goals) and extrinsic (job change or promotion or a raise) incentives for learning. If learning situations can meet the expectations of the learner, the motivation will follow.

The lists above may contain the same assumptions but educating a child and educating an adult take very different methods. Most adults do not appreciate being taught at with things such as long lectures and long reading assignments. They want to have discussions and bring their experiences in as a learning opportunity (Knowles et al., 2005).

The Adult Education Process

In an effort to meet the needs of adult learners, the pedagogical theory and the assumptions made about it were crafted into a process model. Teaching adults is much more process driven than pedagogy which relies on a content driven model of education. Most researchers agree that there are eight steps, described below, to the process of helping adult learners.

In the first step of the process, the educator must think about the best way to prepare the adult learners on how their new encounter with learning will be different from what the students have encountered before. This preparation may include a discussion on the difference between proactive and reactive learning helping the students identify the experiences the other students in the room have had, and a learning experience to introduce the students to proactive learning (Knowles et al., 2005).

The second step is for the educator to create a conducive climate that encourages learning for all adult students. The steps to create that type of environment may include the physical environment of the room being used to learn, the resources that are available to the students in the environment, and the attitude of the teacher/facilitator that fosters a class of adult students that are empathetic, collaborative, and open to others. Knowles (2005) also acknowledges that a reward system must be in place to create an environment conducive to learning. He notes this step is probably the most important for the success of adult learners.

Third, the educator must work with the student to mutually plan for learning. Studies show that when someone feels committed to a decision or activity, it is directly related to how much they participate in planning and decision making. in direct proportion to their participation in or influence on planning and decision making. Successful education programs almost always will have participation from those seeking development in every level and phase of planning and implementation (Knowles et al., 2005).

The fourth step of the process, the diagnosing of needs, calls for a mutual assessment between the learner, the educator, and the larger community. This is often done by using a model that represents each of these sources to create a road map to represent each part of the process. This model will allow learners to have a better understanding of how the knowledge or skills

they will be learning will add to their ability to perform in life, and create a clearer sense of purpose for their learning path (Knowles et al., 2005).

Fifth, the objectives that the adult learner aims for should be created by mutual consent between the educator and the learner. The use of learning objectives is debated between theorists. Some see no use for an objective unless it has a precise and measurable end. Others would like to see the learners develop their self-directed inquiry with the belief objectives will come during that process. It is more likely that these methods can be true with some learners but involving the learner in the process of determining the final outcomes, as they are relevant to their needs, will probably work well for the most learners (Knowles et al., 2005).

The sixth step in the process model of andragogy is using all the information in steps three, four, and five to design learning plans. Whether these plans are designed to usher adult students through learning a mechanical process or through group discussions and projects where everyone assists with the learning process, they are designed in order to maximize the student meaning and lead students to proactive learning (Knowles et al., 2005).

Seventh, the activities that students participate in should be inquiry based and focused on the facets of the subject about which the student is curious. Research shows that most educators do not know how to teach in this method since so little of pedagogical teaching, which is what most people have experience with either as students or teachers, uses an inquiry-based model. Therefore, educators need training in how to incorporate these ideas into their class (Knowles et al., 2005).

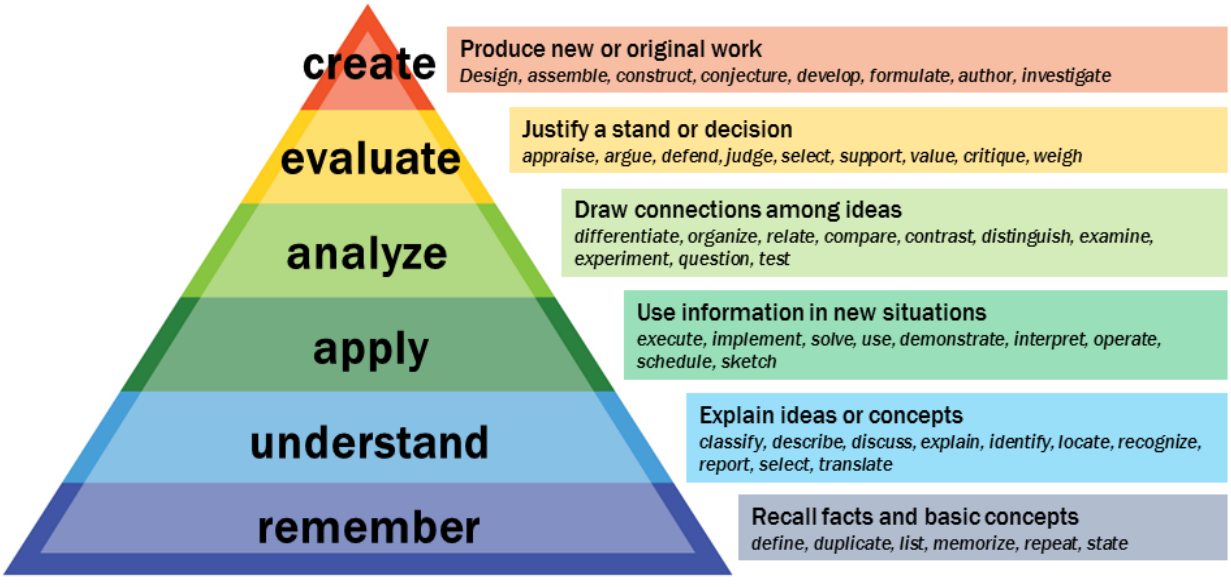
The last portion of the process model of andragogy focuses on evaluation. This is often the area of greatest controversy as there are so many difficult variables in the evaluation of a program. Donald Kirkpatrick's The four step evaluation process developed by Donald

Kirkpatrick seems to be the most helpful from an andragogical perspective. The four steps are reaction evaluation, learning evaluation, behavior evaluation, and results evaluation (Knowles et al., 2005).

As previously mentioned, prior experiences and learning are what guide many adults. When an adult gains new knowledge, they rely on past experiences to assist with their understanding and response. As an educator of adults, you must know that students will bring these experiences with them into a classroom. Adults come to a classroom with a reason, whether that be a job promotion, learning a new skill, or an intrinsic motivation. Bloom's Revised Taxonomy (Armstrong, 2010), seen in Figure 2, notes that the education process should be dynamic and the action words describe the processes by which people encounter and work with knowledge.

Figure 2

Bloom's Revised Taxonomy



Becoming an Adult Educator

In order to understand what we do in the classroom and why we do it (Conti, 2007), we must understand our values, beliefs and attitudes. These factors are what make up one's teaching philosophy. The way your life has been influenced, your life experiences, moral foundations, and comfort levels, among others determine your teaching philosophy. Discovering who you are as a teacher is imperative when teaching adults, as they know when you are not being authentic (Conti, 2007).

The first step into discovering one's teaching philosophy is to know your beliefs, values and attitudes. In order to do this, you must open yourself up to questioning and understanding the way you see and think. What you accept as a truth is the foundation of your beliefs. Discovering your beliefs and investigating them will help you in the journey to discovering who you are as a teacher. Values will guide you to a realization of what is important to who you are as a teacher. Knowing both your personnel and professional values will create a well-rounded sense of your teaching style. Gailbraith and Jones (2008) ascertain the attitudes you hold will influence the direction and action you take as a teacher. The beliefs, values, and attitudes one holds as an educator will directly impact the way they design, implement and facilitate learning (Galbraith & Jones, 2008).

There are many philosophical and personal visions one may find as they begin the process of discovering who they are as a teacher. The first step of this process, discovering your beliefs, values, and attitudes, will provide the base of your philosophy and vison for teaching. Having an understanding what an educator does in the classroom and why it is done will provide both the educator and student with a sense of direction. Developing a self-awareness and

philosophical direction will allow an educator to be the best they can be, for both student and teacher (Conti, 2007).

To be authentic and credible as an instructor, you must be comfortable with not only the materials but with yourself as a teacher. The comfort comes from being your true self. Adult learners can discern when you are trying to be someone different and are not comfortable in your teaching style. Developing a teaching perspective will come from knowing your beliefs, values, attitudes, and the actions you take as you teach. Developing perspective, or set of beliefs, will assist an educator in improving philosophical and practical aspects of teaching (Galbraith & Jones, 2008).

The journey to self-awareness is important to developing who you are as a teacher. There are many tools to help you on this journey of authenticity and credibility in teaching. Realizing learning takes place in many different shapes and forms and knowing how you see the learning process can greatly influence the way you help learners on their education journey.

Our understanding and basic knowledge of general adult learner characteristics can guide the planning, implementation, and evaluation of educational programs. In *How We Learn*, Illeris (2017) determines learning has three dimensions: content, incentive and interaction. An adult educator must consider these dimensions in the planning process to determine if a learning situation will be adequate. For adults to be engaged in the learning process, the instructor must ensure the content presented to students is useful and meaningful for their learning journey. Through mastery of the content, learners develop their abilities, insight, and understanding. The content dimension aligns with Knowles' assumption that adult students need to understand how what they are being taught will be useful and to fully grasp the teachings through experiences. A learner's understanding of why they are learning something and their readiness to learn adds to

their incentive and motivation to learn. As learners interact with others and discover how the acquired knowledge relates to their everyday lives, these interactions develop a further confidence in their ability to appropriately and knowledgably complete tasks. When a learner is able to develop confidence in the skills and knowledge they have learned, interactions in their world become easier and more fulfilling (Illeris, 2017).

The Formation and History of Cooperative Extension

Cooperative Extension was formed because of the need to translate current research into applicable knowledge for the community. As research in agricultural practices increased, the need became increasingly clear. In 1862 the Morrill Act create land-grant universities (LGU) with the mission to teach agriculture and mechanic arts. These universities began instructing courses in the recommended subjects, including plants, livestock, and soil. With limited books or periodicals about the subjects, teachers realized the need for hands-on learning, and local farms became the first laboratories. This led to the Hatch Act being passed in 1887, authorizing the creation of Agriculture Experiment Stations within the LGU. With these two types of formal education existing, the need for presenting the findings through community-based education became apparent. Translating the science into practical application throughout the state become commonplace and eventually led to formal funding for this practice and thus Extension educators were conceived. With the passage of the Smith-Lever Act in 1914, Cooperative Extension was authorized and funded to teach agriculture and home economics (Cornell Cooperative Extension, 2021).

With permanent funding, there was the establishment of permanent county offices. Today in Alabama, all 67 counties are served by their own extension office and dedicated county coordinator. In the years following, many improvements were made in the education available to

the public in each county. At the state-level, subject matter specialist were hired to bring more relevant research into the state. Through this process, focus was broadened to include more on-farm concerns, such as entomology, agronomy, marketing, and plant and animal diseases. These efforts allowed up-to-date research-based to be disseminated throughout the state. With the onset of World War 1, extension began to focus on more than farm practices. The federal government assigned Cooperative Extension services throughout the United States with domestic assistance. This assistance included education on food production and conservation with both farmers and homemakers, promoting war bonds, and addressing farm labor shortages. The assistance from extension again became critical during World War 2. With food shortages commonplace, publications and programs to assist with the moderation of resources associated with war rationing. There was assistance with other ways to serve the country while remaining at home, including getting more wear out of shoes and how to endure long separations from loved ones (Langcuster, 2012). Throughout the years, Cooperative Extension has become known as the only education institution for the public to cover the entire lifespan with proven, reliable information.

In the most recent era of Alabama Extension, a model focusing on regional agents specializing in one of 14 program areas was introduced to delivery programs across regional and disciplinary lines. Within each of the 14 program areas, there are regional agents who are content experts in their field allowing specialized technical assistance at the regional level. Each county has a coordinator who works with regional agents to ensure constituent needs are met (Langcuster, 2012).

In 2022, Alabama Extension released its latest five-year strategic plan. Within the strategic plan are a new mission of, “Transforming lives through science-based information, practical solutions, and meaningful experiences,” and a vision of, “Serving communities to grow

a better Alabama and a better world." The plan identifies key external priorities in 1) programming, 2) diversity, equity, and inclusion, and 3) marketing, along with the key internal priorities of 4) stewardship of resources, 5) cooperation, 6) workforce development, and 7) technology (Alabama Cooperative Extension System, 2022).

Cooperative Extension and Adult Education

As previously stated, Cooperative Extension offers a wide variety of educational and community programming not only for agriculture, but also to increase the quality of life for its constituents. Programming delivered by Cooperative Extension around the nation has always stood by the learning goal of not telling people what to do, but teaching them how to solve their problems and learn from others who have encountered the same problems (Zacharakis, 2008).

Cooperative Extension communicates frequently within their communities to ensure needs are being met. This is done through needs assessments, request from organizations and groups, and through extension employees being engaged in their community and seeing where they can offer support. The increase in acknowledgement, by the community, of the role extension plays in community resource development will continue the long-time work of extension professionals as powerful tools to increase knowledge and capacity. Cooperative Extension brings communities together to reflect and learn with each other, which in turn builds a powerful force to understand and build better and healthier communities (Bowling & Brahm, 2002).

As previously described, Cooperative Extension takes the lead on translating research into practical applications. Alabama Extension brings relevant information to the people of the state. As extension learns more about the methods of adult education, teaching techniques have evolved. Teaching the community occurs through both digital and in-person classes. Varied

teaching methods are used depending on the content, such as demonstration trailers, nutrition classes with hands-on cooking demonstrations, and going into the field with farmers.

While Alabama Extension has a large presence in urban areas, it excels at reaching rural populations with few other options for such education. Even with their expertise, educators must remember that the limited access to transportation, education, internet, and healthcare affects where, when, and how residents learn. These issues lead to poor outcomes and influence behavior and choices (Moy et al., 2017). Part of rural life is dealing with long physical distance to many resources. Having an office in all 67 Alabama counties brings the breadth of knowledge available within Alabama Extension to your local community.

The Influence of African American Churches on the Health and Well-being of Members

Faith communities, because of their organization and programming, often create a space of connectedness and support among their participants. Participants regularly meet to discuss common values and how those values influence everyday life. Because the realities for minority populations of lower socioeconomic status disproportionally include health problems, faith communities consisting of these populations can become avenues for addressing health issues and finding support for behavior change.

Estimates suggest that nine out of ten faith communities in the U.S. contain more than 80% of the same race (Emerson & Woo, 2006). Historical racial segregation between Black and White in America, particularly in the Southeast, permeated all areas of life, including religious observations, leading African Americans to create their own congregations. With the creation of their own house of worship, African Americans were able to worship in a way that was meaningful and relevant to their experiences as a population in the United States. Worshiping with each other allowed them to provide mutual support, liberation and empowerment, and a

connection often not found in other American religious experiences. The ethos of the African American church meets the social, moral, and spiritual needs to ensure both physical and mental health for its members. The Black Church plays a unique role in the lives of its members and the community it serves (Brewer & Williams, 2019; Cosby, 2020; Cheryl L. Holt, Clark, Wang, Williams, & Schulz, 2015).

To those who are not African American or do not have an intimate knowledge of the Black Church in America, fully understanding its place and importance will never happen. The culture of African American churches goes back to members' African roots with song, dance, and a collective culture. The Black Church has long been a place of refuge for the oppressed and marginalized. It is a place of rest, hope and spiritual support. It is the centerpiece of mobilization for African American causes. It leads its' people in the charge of change and reform and epitomizes resilience. It has lasted through many adversities and has come out on the other side stronger. An African American faith community is a phenomenal place to empower one's self and others (Brewer & Williams, 2019).

The ability to create the type of community where many worship in the same church their entire lives allows African American church members to function as an extended family (Cheryl L. Holt et al., 2015). Friendships created and nurtured within a faith community create what some call social capital. Faith communities are recognized as producers and facilitators of social capital with participants often viewing each other as family members. This asset not only makes people happier, but it gives them a sense of purpose and belonging (Gillum, King, Obisesan, & Koenig, 2008).

As stated earlier, African Americans have disproportionately higher rates of chronic diseases compared to other racial groups. Johnson and colleagues (2014) stated that African

American women in the rural Deep South, deeply influenced by their social environment, are disproportionally obese. African Americans also have reported high levels of distrust in the health care system, leading to a challenge of how to provide trusted guidance in a manner that could possibly be internalized and acted upon. One of the most trusted institutions within the African American community is one's community of faith, which African Americans identify as a primary location for receiving social support and providing community leadership. By partnering with a faith community, public health entities can reach an underserved population. Partnering with the faith community to collaboratively design a health promotion program can ensure compatibility between the curriculum and the learners. This partnership can reach African Americans by using religious-based, culturally sensitive health education programs (Brand, 2019; Newlin et al., 2012; Sanderson et al., 2003). Drayton-Brooks and White (2004) determined church nurses work effectively in the faith community social system to prepare and design appropriate and relevant community-based health promotion interventions.

Krause (2002) explored the relationship between church-based support and health in search of differences between the relationships for older white and African American populations. The findings of the study suggested health-related benefits of church-based support may be primarily associated with spiritual support provided by fellow church members. The results showed pronounced race differences, in that older Black people may be more likely to receive benefits from religious involvement because they are more heavily involved in their religious practices. This was also found to be true in a review of literature by Merino (2014) who wrote that older African American church goers rely more heavily on faith-based social support than their white counterparts.

Leveraging Social Capital and Social Support for Better Health Outcomes in Faith Communities

Using data from the longitudinal Alameda County Study, Strawbridge and colleagues (2001) ascertained that those who frequently attend religious services increase their chances of a long life through the improvement and maintenance of health behaviors, mental health, and social relationships. In a 2006 study, researchers found religious participation had a strong impact on happiness in highly religious people with many friends in their congregation, but not among those with few friends in their congregation (Greeley & Hout, 2006). In a 2017 study, the authors found attending religious services provides the most benefit to those who internalize their religious beliefs and live out their religious beliefs in their daily lives. The same study found the relationship between attending religious services to be a more prominent role with depressive and anxiety symptoms than with social support. The authors suggest these findings do not mean types of social support found in faith communities are of no consequence, but that one's intrinsic religiosity is a more powerful mediator. Finding that the mental health benefits of participant's attendance at a faith-based service is not just associated with social support, but that participant's relationship between the two could partly be the result of trying to live out their religion in their daily lives. This study is limited by its use of college students as their sample, and 85% of the participants were white and 71% were female. This leaves out older populations and populations of color. (Steffen, Masters, & Baldwin, 2017).

Drayton-Brooks and White (2004) determined, "Perceptions, beliefs, and attitudes are not developed outside of social systems, therefore, the facilitation of healthy lifestyles may be best assessed and influenced within a context of reciprocal social interaction such as the church" (p. 88). It has been shown faith-based leaders prefer activities to be within their congregations in

order to provide a holistic approach to health and provide deeper relationships for those involved (Gee, Smucker, Chin, & Curlin, 2005). Some research has indicated that social ties within religion are often stronger than secular. It is thought these stronger ties are due to similar beliefs, values, and characteristics often found among those who chose to participate in the same faith community (Merino, 2014).

Social Capital in Religious Settings

Social capital means having a faith community to rely on for information, both formal and informal advice, and support and help during both good and bad times (Gillum et al., 2008). Faith communities serve as a population determinant of health by providing social capital to those in its community. In African American faith communities, the pastor is the head of the church family, and along with the church nurse, provides relevant, credible, and trusted messages about health (Drayton-Brooks & White, 2004). The pastor's endorsement of a program critically influences recruitment efforts and participation (Newlin et al., 2012).

Holt and colleagues found African Americans who engage in religious participation report more trust in and commitment to their communities, and this is associated with health benefits (Cheryl L. Holt et al., 2015). Sharing beliefs and values creates a context in which to provide help and support (Merino, 2014). The relationships created within this context may help worshipers cope with stress and reinforce positive health behaviors (Gillum et al., 2008).

Social Support Measures

In recent history, the African American church has become a place to receive health education, screenings, and healthcare services because of the social capital a faith community provides. Specifically, the role of social support in the religion-health connection is a core element in understanding social capital and has been a common subject of research (Cheryl L.

Holt et al., 2015). Social support generally refers to "any process through which social relationships might promote health and well-being" (Cohen, Underwood, & Gottlieb, 2000, p. 4).

In the mid-1980's public health officials, researchers, and medical professionals responded to the need to find effective ways to reduce cardiovascular disease risk factors in the general population. Researchers understood that altering eating and exercise habits led to improved health but needed to understand the mediators involved to design effective interventions. Although findings were not always consistent, social support did seem to be an important determinate in changing habits related to one's health. It had been linked to success in smoking cessation and adherence to medical regimens (Sallis, Grossman, Pinski, Patterson, & Nader, 1987).

Sallis and colleagues (1987) found multiple studies related to spousal support around exercise programs, but there were no studies on the specific components of supportive behavior related to healthy eating or exercise. The researchers set out to determine which types of support were the most and/or least effective. They concluded there were no existing scales that were appropriate for use in measuring social support related to diet and exercise habits, and that developing measures was strongly supported.

Sallis and colleagues were able to develop a scale appropriate for health promotion interventions with instruments of known psychometric properties. With health promotion interventions often encouraging support from those participating with and surrounding participants, having a scale to assess the effectiveness has allowed researchers to investigate and better understand social support as a determining factor in health behavior change. Table 1 provides a description of the scales (Sallis et al., 1987).

Table 1

Description of Social Support Scales

Social Support for Diet: Survey	Assessment of the level of support individuals making health-behavior changes (eating habits) felt they were receiving from family and friends.
Social Support for Exercise: Survey	Assessment of the level of support individuals making health-behavior changes (exercise) felt they were receiving from family and friends.

Verheijden and colleagues (2005) contend that although social support can effect change in the health of participants in that social system, that there are still many questions that need to be addressed before one can fully understand the effectiveness of certain social supports. First, the study discusses the difference between structural and functional social supports. Structural support is defined as family, friends, co-workers, etc. whether they are supportive or not. Functional support is the perception of support and is highly influenced by personal characteristics. The study asserts that the focus of interventions should be increasing levels of structural support rather than structural support (Verheijden et al., 2005).

In the author's review of previous studies, they found that cross-sectional studies have related social support to health, and social support also has been shown to be key in achieving and maintaining behavior changes. This, however, can have both negative influences from support systems and can also have effects on mental, emotional, and physical health. Through the review of these interventions, most of the studies were beneficial for the participants, although providing a true evaluation of the effectiveness of the social support component of the interventions is difficult. Social support was not always clearly defined, combined in an intervention with other intervention activities, or not included as an outcome measure (Verheijden et al., 2005).

The authors note to improve studies in this area, researchers must more clearly define social support interventions. Furthermore, because changing behaviors is a difficult process, multi-component interventions are needed to better help participants with the changes they must make to become healthier. The study also advocates lifestyle counseling needs to become more readily available for participants, and more prevalent to ease the burden on health care professionals. Social support interventions do have the potential to help effect change in the lives of those who have a strong functional support system (Verheijden et al., 2005).

Social Support in Religious Settings

In 2016, Le and colleagues set out to determine if religious beliefs and behaviors were associated with change in religious social support over time. For comparison, they analyzed general social support. The study showed a relationship between religious participation and an increase in religious social support. Those who attend religious services or classes, participated in church committees, and sang in the choir were more exposed to other church members. Therefore, they were more likely to receive religious support from others involved in the same activities (Le, Holt, Hosack, Huang, & Clark, 2016).

Merino (2014) found that religious discussion is one of the strongest predictors of support, and analyzed data from the 2006 Portraits of American Life Study (PALS), a nationally representative study focused on religion, to find associations between religion and social support. The PALS sample closely reflects the American Community Survey three-year average sample allowing the data to be aligned with the U.S. population. An interesting finding was that family members were significantly more likely to provide help in times of need, but not provide advice for significant decisions. The analysis found that frequency of interaction with others matters in areas of support. People who interact with each other by phone or email weekly are profoundly

more supportive in providing help and advice. People with the same set of beliefs tend to seek out each other as they tend to provide the same types of support and help to each other. The importance of applying the same set of beliefs to daily life could explain how religious sameness provides a more relational context for social support.

Another aspect of this perceived religious support can be related to the size of the congregation. Those attending larger congregations may be able to blend into the crowd and not have the number of negative interactions those in a smaller faith community may be prone to having. African Americans who are active in any type of faith community showed increases in all types of religious social support, including negative interactions. The church as a social network plays a strong role in the lives of those who participate. With these results, churches should become more aware of the influences ministries can have on the life of participants, including health ministries (Le et al., 2016).

The Connection between Social Support and Health

Morton and colleagues (2017) concluded that many, but not all, previous studies found social support plays a mediating role between religiousness and health outcomes. A study on physical activity participation in African American churches found that individuals with more interpersonal support from other church members were significantly associated with meeting physical activity recommendations thus showing the importance of faith communities promoting physical activity and, by association to healthier lifestyles, fruit and vegetable consumption (Melissa Bopp, Wilcox, Laken, & McClorin, 2009).

A telephone survey of African American women in three rural Alabama counties (Greene, Lowndes, & Wilcox) was conducted to determine if a correlation between personal, social, and physical environments and physical activity was present. Participants physical

activity levels were divided into three categories, those who engaged in an amount of physical activity that met current recommendations (39%), those who were insufficient in meeting recommendations (46%) and those who were inactive (15%). Interestingly, women who met recommendations (compared with those who did not) were more than twice as likely to see people who exercise in the neighborhood and to attend religious services. In the group of women who reported any activity (compared to those who were inactive), they were more likely to know someone who exercised and three times as likely to attend religious services. Meaning religious service attendance was the only social variable that remained important across both groups. The researchers also noted no physical environment variables were not significant in either group. The authors concluded the higher prevalence of religious attendance along with the positive association with physical activity suggests that faith communities may be an ideal location to conduct health promotion activities (Sanderson et al., 2003).

A study to determine the effectiveness of encouragement from fellow church members had on older people developing and maintaining a healthier lifestyle found support was effective with older African Americans but not older whites. The results indicated that both church-based support and church-based programming did not have a significant effect on the decision to adopt a healthier lifestyle. However, the researchers considered the influence of race and a sense of belonging along with support from fellow church members and found a significance that was not found with a three-way interaction involving formal church programs. Upon subgroup analyses of results, researchers discovered these results were only true for African American church members who felt they belonged or identified with their faith community (Neal, Benjamin, & Jersey, 2011).

In a study by Holt and colleagues (2013), the researchers studied the mediating role of religious social support between religious involvement and physical and mental health functioning among African Americans. The study found African Americans who are active in their faith communities experience better emotional functioning, in part due to the emotional support they receive from fellow members of the faith community. There was no evidence of mediation for physical health, although the impact to mental health could have a secondary impact on physical health. These findings indicate a need for further research into the emotional support provided by a faith community and any positive impacts it may have on the health outcomes in the African American community. In a follow-up study, Holt and colleagues (2014) found religious behaviors such as attendance may foster support such as having people to do things with or help with tasks, which may play a role in better physical function and fewer depressive symptoms.

However, when Holt and colleagues (2018) studied the connection between social support and physical health behaviors, they did not find an association. They found evidence of religious social support providing a protective role in mental health outcomes but found there is little evidence of social support in health-protective behaviors such as fruit and vegetable consumption or physical activity. Notably, this study by Holt and colleagues relied on a nation-wide phone survey, while another, more localized study in urban New Haven, Connecticut, by Nam and colleagues (2019) found that networks which were well connected had more efficacious group health interventions. African American faith communities are often close-knit and service-oriented with an emphasis on the importance of maintaining health as a practice of their faith (Jeff Levin, 2013). This could lead them to success in the promotion of positive health behaviors (Newlin et al., 2012).

In findings from a 2014 (Johnson et al.) study on obesity prevention behaviors, researchers found friends and family can provide both encouragement and discouragement for healthier habits. The study, which focused on African American women in the rural Deep South, found that positive and negative influences are independent of each other. Sources of discouragement may come from preparing a different meal for family while preparing oneself a healthier meal, being unable to find healthy options at a social gathering, or having friends and family who do not have similar goals around health. Being encouraged through positive feedback is imperative to meeting and maintaining a healthy body. Finding this encouragement through natural social connections provides a greater motivation to continue healthy actions. If this type of network is not available, a trained lay leader can also be effective as providing support and encouragement to promote healthy behaviors. The study also found that family members are more supportive than friends around healthy behaviors. While support from friends may be less important than family support, they both are an essential component in providing social support to increase healthy behaviors.

Health Promotion and Health Behavior Theory

Another factor that may increase the possibility of success in a health intervention is the use of a theoretical framework. In order to improve people's health, reduce disease risks, and manage chronic illness, there needs to be effective public health, health promotion, and chronic disease management programs. These programs can reduce risks through improving how individuals, families, and communities support their health (*Theory at a glance: A guide for health promotion practice*, 2005).

Health educators and practitioners have learned that in order to be successful and meet desired outcomes, they must take in the context of the environment and health behaviors of

targeted populations. Most theories used in public health are adapted from social and behavioral science. Public health educators should take the time to familiarize themselves with aspects of consumer behavior and marketing, along with having a vast range of knowledge their field (*Theory at a glance: A guide for health promotion practice*, 2005).

Health promotion in the current day is about more than education. Analyzing and understanding the environment including organization and community behaviors is key to developing a well-rounded education program that is based on multiple levels of influence. If you tell someone an apple is healthy, but they do not have access to one or cannot afford the apple the education is useless. If you help the community locate apples and ensure they can be stored and sold at an affordable price by working with local organizations, businesses, and municipalities, then the education can be beneficial because the learner can by a good affordable apple. The same goes with physical activity. If we are able to encourage people to be physically active and work to ensure they have a safe, affordable place to do so, then we have influenced a person and a community. By having a local government formally agree to maintain this new place for physical activity, a policy has been made to ensure long-term sustainability. Ensuring that health promotion activities are tied to a theory of change is a key step in creating a successful program (U.S. Department of Health and Human Services & Centers for Disease Control and Prevention, 2009).

Use of the Socio-ecological Model in a Religious Setting to Improve Health Outcomes

Newlin and colleagues (2012) affirm through their review of faith-based health promotion literature that significant health outcomes can be achieved, but without a theoretical framework, things such as social support are often not measured. Before the introduction of what is now known as the Socio-ecological Model (SEM), researchers recognized the need to move

away from narrowly focused interventions to interventions that examined and addressed multiple areas of participant's lives. Broad strategies for health promotion practice would be needed to improve the health and lifestyles of vulnerable populations; public health challenges require a comprehensive approach that may include psychological, organizational, cultural, community planning, and regulatory strategies (Stokols, 1996; Stokols, Allen, & Bellingham, 1996).

The SEM provides a multi-level approach to influence health behavior and outcomes. Social Ecological Theory notes the importance of changes within a community that provide leverage to those making changes in their personal practices. The levels of influence, which are layered within each other include intrapersonal, interpersonal, organizational, community and public policy. SEM's most basic level of influence is intrapersonal, or individual. In practice, this usually looks like one-on-one counseling and patient education. Even though it is the most basic, it is required to work through the other levels to reach the all-compassing community and public policy levels. Intrapersonal influences include knowledge, attitudes, beliefs, motivation, self-concept, developmental history, experiences, and skills. The next level of influence is the interpersonal. The interpersonal considers that individuals do not live in a bubble and are influenced by the opinions, thoughts, behavior, advice, and support of the people and groups around the individual. (Robinson, 2008; Stokols et al., 1996; *Theory at a glance: A guide for health promotion practice*, 2005). Table 2 provides a description of the levels of the SEM from Stokols and colleagues (1996).

Table 2

Description of the Social Ecological Model levels

Intrapersonal	Individual characteristics that influence behavior, such as knowledge, attitudes and beliefs and personality traits.
Interpersonal	Interpersonal processes and primary groups including family, friends, peers that provide social identity, support and role definition.
Organizational	Rules, regulation, policies and informal structures, which may constrain or promote recommended behaviors.
Community	Social networks and norms, or standards, which exist as formal or informal among individuals, groups and organizations.
Public Policy	Local, state, federal policies and laws that regulate or support healthy actions and practices for disease prevention, early detection, control and management.

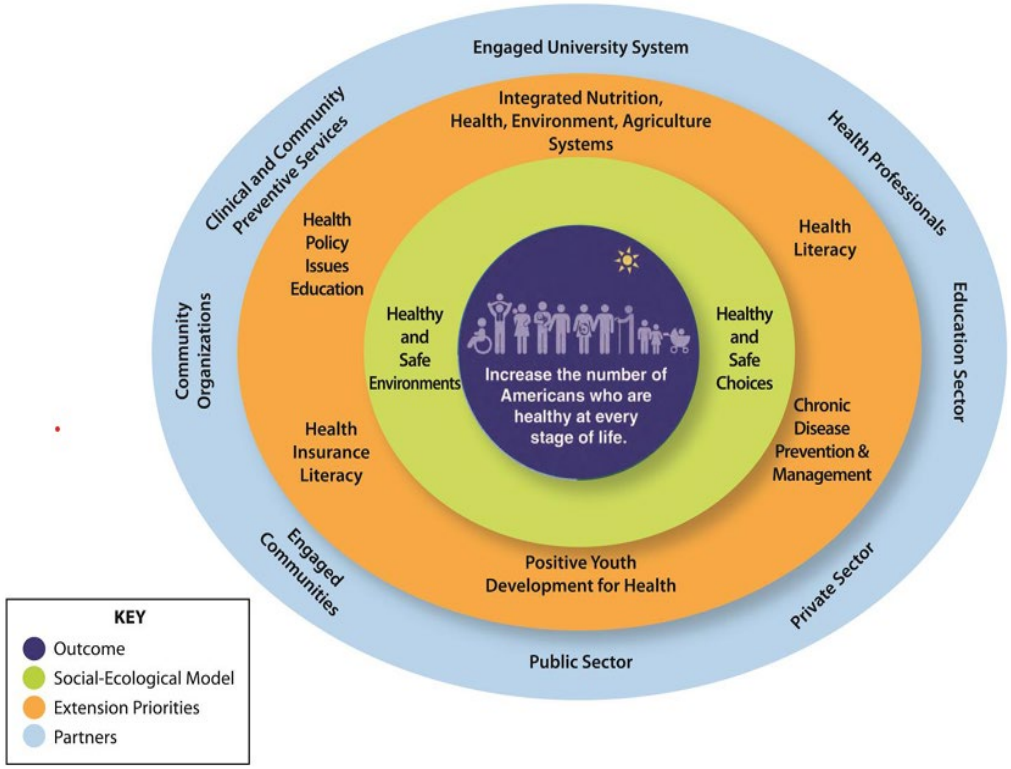
The SEM allows for a focus outside of just the person to include their social and community circles. Peers, environmental factors, and community policies in a familiar and important environment can influence how a person internally processes and uses information from a health intervention to potentially effect health outcomes. One's socio-cultural norms and beliefs can be changed if enough influence and modeling is provided by varying levels of their sphere of influence (Johnston, Konda, & Ablah, 2018; Robinson, 2008). Focus on not just a single aspect of a person's life, but on how they feel (intrapersonal), how much enjoyment they have when participating with others (interpersonal), creating a welcoming space (organizational), including outreach that is open and inclusive (community), and ensuring that access is supported (policy) to benefit and appeal to the highest number of people (Boulton, Horne, & Todd, 2018).

The Executive Committee on Policy within the Association of Public and Land-grant Universities released Cooperative Extension's National Framework for Health and Wellness (Braun et al., 2014). This report affirmed that the use of the SEM as a theoretical base for extension health and wellness work provided consideration of the complex relationship between

individual, community, and societal factors. By using this as a theoretical base, it provides the acknowledgment of where constituents live, work, play, and worship and the influence these factors contribute to one's lifestyle. Work in the public health sector can often be very focused on one or two factors influencing someone's health. This report aligned Cooperative Extension's health and wellness framework with that of the U.S. Department of Health and Human Services' Nation Prevention Strategy Action Plan. With the ability to include experts from across a wide variety of fields within one system, Cooperative Extension has a notable advantage of touching many aspects of one's lifestyle. Figure 2 describes the health and wellness framework from Cooperative Extension (Braun et al., 2014).

Figure 3

Cooperative Extension's National Framework for Health and Wellness



In 2021, the Extension Committee on Organization and Policy acknowledged through their National Framework for Health Equity and Well-being (Burton et al., 2021) that a person's health outcomes cannot be completely based on their individual choices. Instead, one must look at the system of factors that influence their health outcomes at a greater level than their personal choices. Through acknowledgement of systemic health inequities, policy makers could enact policies and practices that provide everyone the ability to be the healthiest person they can be.

Johnston and colleagues (2018) examine the idea of the church as a social health change agent. Examining how the Kansas United Methodist Church began to implement a health program through its congregations shows the ways in which a congregation, as well as a group of churches, can work together to promote and improve the health of its congregations. Most prior scholarship based on churches and health promotion were implemented in African American congregations, which historically are much more closely knit than European-American churches. This study shows the results are similar between churches of different ethnicities (Johnston et al., 2018).

Using the Social-Ecological Model, Johnston and colleagues (2018) note churches "offer opportunities for individual-level instruction, … as well as social support through group activities, family-focused events, and age/gender groups" (p. 1277). Using the church to promote healthy living can reach different types of demographics, unlike school or work-based promotion, since churches are open to serve all ages, socio-economic, and ethnic groups. Furthermore, as people are comfortable in their churches, they are more likely to assimilate the ideas into their daily lives (Johnston et al., 2018).

Faith Communities in the Socio-ecological Model and Public Health Interventions

Fruit and Vegetable Consumption and Physical Activity Interventions

A study using the Faith, Activity, and Nutrition (FAN) Program was conducted at thirty-six African American faith communities in South Carolina. FAN focused not on individual changes but on changes to the environment and policies within each faith community. The changes were enacted to create an environment that makes it easier to make healthy choices. For example, participants received health education on nutrition and physical activity and some simultaneously made changes to recipes used in church functions or made group exercise available. During the study period, the pastor preached on physical activity and healthy eating and the congregation was provided information about those topics. FAN was able to show that through a multifaceted program, half of the program participants made at least two changes in health behaviors (Baruth & Wilcox, 2013).

Boulton and colleagues (2018) discussed the SEM in the context of a physical activity intervention with older adults, and found social interactions were an important motivator. Personal attributes tended to override external factors in organized physical activity; one's health, mobility, desire to be physically active (or not), and motivation tended to be the driving factors of physical activity participation. In this study, older adults were more likely to try activities that were more flexible and adaptive. Activities with maximum appeal was a key element in older adult participation. The authors found using the relationships between all five levels of the SEM help in the development of engaging interventions. Instead of merely promoting the health benefits of physical activity, organizers also should focus on social engagement and ease of participation on both emotional and practical levels.

Eyler and colleagues (1999) used shortened and altered version of Sallis' physical activity social support questions to conduct a national telephone survey on Hispanic, African American, and American Indian women over age 40. They found that those with low physical activity social support were less likely to be active and lead a more sedentary life. Social support around physical activity from both family and friends seem to provide the necessary motivation for this sample of the population to begin and maintain physical activity. The authors determined that interventions should focus on creating supportive communities (worksite, community center, or place of worship) around intervention participants to increase the likelihood for a successful behavioral change.

Hermstad and colleagues (2018) explored if a change in the perception of a faith community social environment would influence a healthier lifestyle, including healthy eating and physical activity, both in and out of church. The study was conducted in six mostly African American faith communities in Georgia. This study included interventions in multiple levels of the SEM to include social-environmental (social support, social norms) and environmental changes to support healthy eating and physical activity. To measure the socio-environmental factors, the study used questions from Sallis' social support questions. Members at three faith communities reported significant improvements in the socio-environmental aspects of social support for health eating and physical activity, and social norms for participating in physical activity. The socio-environmental changes were not only noted in the faith community environment, but also in participants' lives in general. Members at two faith communities reported significant improvements in social support for physical activity. This study found that including social support and social norms as components along with changes in the physical

environment is consistent with findings from other interventions using a SEM based intervention.

Holt and colleagues (2012) adapted a previous study's validated, theory-based, social capital instrument to examine religious and spiritual capital. The intention of the study was to address the questions of how one defines and assesses religious/spiritual capital and are the ideas different from religiosity/spirituality itself. The study found the sampled received a substantial amount of capital from their faith-based community, and the religious/spiritual capital instruments appeared to have good initial reliability and validity in their sample of African Americans. While not associated with health-related outcomes, the study showed an association with lower reported depressive symptoms for spiritual capital in the form of community participation. However, this analysis examined general social support and did not distinguish between general and religious social support, which is something the researchers found could be examined in future studies.

In an adaptation of the Faithful Families program delivered in 18 faith communities and four low-income housing developments in South Carolina, researchers found that using a SEM approach to planning and implementation may be effective at increasing the number and quality of healthy behaviors completed by participants (Torrence, Griffin, Rolke, Kenison, & Marvin, 2018).

A multi-state study of Faithful Families had results that suggested providing comprehensive programming across the SEM will reach more people than traditional direct education interventions. The researchers also noted that SEM work within a faith community requires a bigger commitment from public health educators to assess and understand the environment within each individual community of faith. The study suggested a comprehensive

training for faith community lay leaders and additional support for public health educators on recruitment and evaluation since these are not a normal practice for a faith community (Hardison-Moody et al., 2020).

Faith communities in public health and SEM interpersonal

The CDC recommends community partners, including faith-based organizations, as a method to reach minority populations for its Diabetes Self-management Education program. The organizations can provide culturally appropriate education in partnership with certified educators (Centers for Disease Control and Prevention, 2021).

Hardison-Moody and Yao (2019) concluded that health promotion practitioners must shift from conducting "faith-placed" interventions to "faith-based" interventions (p. 368). To ensure long-term sustainability, public health educators must design and implement the program in close coordination with faith community leadership. Ensuring the organizational leadership is involved provides the greatest chance to ensure materials are compatible with the mission and ministry of the faith community, along with allowing a faith community leader to be involved in preparation and delivery of classes allows them to continually show support from leadership. A faith community can also assist with sustainability of health-related programs through their commitment to making and updating policy, system, and environmental changes within the community and supporting members on their health journeys.

Collaboration from faith community leaders and public health practitioners can ensure a well-balanced intervention. Social support can enhance interventions in faith communities and help lead to positive change. Evaluations that consider how social support mediates change may help practitioners better understand how to impact multiple levels of the SEM.

Summary

This chapter offered a review of relevant literature, including an overview of religion in America. The overview included religious affiliation by race, ethnicity, and education level. An overview of faith communities and adult education provided information on how much influence faith communities have in the lives of their members, especially in African American churches. Adult education history and theory are discussed. The discussion included the differences between pedagogy and andragogy, the formation and history of Cooperative Extension, and how Cooperative Extension provides relevant and science-backed information to adults. Social support in the faith community was reviewed for its influence on health. The chapter concludes by discussing how the SEM provides a multi-level approach in faith community public health interventions to increase in healthy habits, specifically fruit and vegetable consumption and physical activity.

Chapter 3

Data Collection Methods

Introduction

This chapter describes the data collection methods used to evaluate LWFC course participant's perceived social support and the effects on the increase of (a) fruit consumption, (b) vegetable consumption and/or (c) physical activity in participants. Chapter 2 describes the intersection of religion in America and health promotion activities. Using a faith community as a delivery method for public health messaging has proven to be effective, especially in African American faith communities. Social support in the faith community was reviewed for its influence on health. The chapter concludes by discussing how the SEM provides a multi-level approach in faith community public health interventions to increase in healthy habits, specifically fruit and vegetable consumption and physical activity. Chapter 3 describes the intervention development, implementation, and the data collection and analysis for this study.

Purpose of the Study

The purpose of this study was to examine the Live Well Faith Communities (LWFC) course participant's perceived social support and the effects on the increase of (a) fruit consumption, (b) vegetable consumption and/or (c) physical activity in participants. The LWFC design utilized the Social Ecological Model (SEM) to provide a multi-level intervention to influence health behaviors. The evaluation of this study will focus on the personal characteristics and original perceived social support of participants, increases in healthy behaviors by participants, and determine if an increase in healthy behaviors is in response to LWFC participation and increases in social support.

Research Questions

The following research questions were used in this study:

1) What is the relationship between personal characteristics and those completing the Live Well Faith Communities program?
2) What are the fruit consumption, vegetable consumption, and physical activity levels for those completing the Live Well Faith Communities program?
3) What is the relationship between fruit consumption, vegetable consumption, and physical activity levels and perceived social support for those completing the Live Well Faith Communities program?

Methods

For this dissertation, a secondary retrospective analysis was conducted using data previously collected by a research team under Auburn University's Institutional Review Board, Protocol #17-045 EP 1703 (Appendix A). In 2017, Alabama Extension's EFNEP, SNAP-Ed, ALProHealth, and Human Sciences programs implemented a curriculum for use in Alabama faith communities. The curriculum, *Live Well Faith Communities*, was a component of an overall effort by Alabama Extension to help communities become a healthier place to live. The focus of this study is on perceived social support and its effects on fruit and vegetable consumption and physical activity. Participants signed a written consent form including an agreement to participate in data collection via a pre and post-test. The secondary research for this dissertation was granted Exempt status by Auburn University's Institutional Review Board, Protocol #22-162 (Appendix B).

Study Design

The Faithful Families program, developed in 2007 by the North Carolina Division of Public Health and North Carolina State University Extension, emphasizes building strong relationships with and maintaining respect for faith communities ("Our History," 2022). It promotes healthy eating and physical activity across multiple levels of the SEM. The program provides direction on developing the capacity of lay leaders as part of the partnership through a co-delivery system with a public health educator (Hardison-Moody et al., 2020). Live Well Faith Communities (LWFC) was developed using North Carolina State University's *Faithful Families Eating Smart and Moving More* (Faithful Families) curriculum. While Faithful Families uses the Stages of Change model as the basis for curriculum development, LWFC was designed using the SEM to determine how a multilevel initiative would be effective at changing participant outcomes (Dunn et al., 2016). In 2016, Alabama Extension faculty modified the Faithful Families curriculum to include the introduction and implementation of policy, system, and environmental changes at the faith community level. This modification was in keeping with the SEM theoretical model to address multiple levels of participant influence.

The study included a roles and responsibilities agreement detailing the roles and responsibilities of faith communities, lay leaders, and ACES at participating faith communities. The participant pre-assessment and post-assessment evaluation included collecting demographic data, along with the fruit and vegetable consumption, physical activity participation, and perceived social support.

Population and Sample

This study used a convenience sample of faith communities who were recruited within Alabama by Alabama Extension professionals to participate in the LWFC intervention.

Participants in LWFC were offered a nine-week program. From attendance taken by ACES educators, participants attended 667 lessons. The sample included 14 individual faith communities in 8 rural counties. Individual participants were members or regular attendees of a participating faith community. The average individual participant was a middle-aged, non-Hispanic Black woman. The pre-test was completed by 79 participants, and the post-test was completed by 48 participants. It should be noted, some participants did not complete or only partially completed a survey. Demographic questions were completed more often than questions about eating and exercise habits and social support.

Table 3

Frequencies and Percentages for Pre and Post-test Demographic Variables

Characteristics	Pre-test		Post-test	
	f	%	*f*	%
Age, in Years				
18-45	17	18.60	11	15.7
46-65	49	53.80	35	50
66-80	21	23.10	18	25.7
81+	4	4.40	6	8.6
Gender				
Male	23	24.4	14	19.7
Female	71	75.5	57	80.3
Race				
American Indian/Alaska Native	1	1.1	0	0
Asian	1	1.1	0	0
Black/African American	75	81.5	60	85.7
White/Caucasian	15	16.3	10	14.3
Education				
Some High School	14	15.1	5	7.1
Graduated High School	14	15.1	17	24.3
Some College	30	32.3	22	31.4
Graduated College	35	37.6	26	37.1
Monthly Income				
$0 - 500	1	2.3	0	0
$501 - 1,000	6	13.6	5	14.3
$1,001 - 2,500	23	52.3	20	57.1
$2,501 - 4,000	10	22.7	7	20
More than $4,000	4	9.1	3	8.6

*Note. Data are from all pre and post-tests where demographic questions were answered.

Implementation

Alabama Extension Educators received in-person training during the January 2017 LWFC Training Summit on administering the program, including engaging partners, conducting assessments, conducting Lay Leader training, preparing for and delivering nine lessons, evaluation, and policy, system, and environmental change sustainability. Goals for faith community participants were 1) improve planning, shopping, and preparation practices, 2) increase fruit and vegetable consumption, 3) increase water consumption, and 4) increase participation in regular physical activity. Each lesson began with an opening presentation on the lesson topic. They also included a food demonstration and lesson, Move More activity, and a policy, system, and environmental change discussion.

Implementation of LWFC was conducted by ACES Human Nutrition, Diet, and Health Regional Extension Agents (REA), Supplemental Nutrition Assistance Program-Education Educators (SNAP-Ed), Enhanced Food and Nutrition Education Program Educators (EFNEP), and County Extension Coordinators (CEC). A total of 16 ACES educators launched the LWFC pilot program in 14 faith communities in eight rural Alabama counties throughout 2017. In Sumter and Greene counties, multiple faith communities completed the program with joint sessions allowing for multiple small, rural churches to be involved. These ACES educators were able to engage local faith communities leading them through a faith community assessment, identification of lay leaders, program planning, implementation, and evaluation in a collaborative manner.

An integral part of the partnership between ACES and faith communities was the Memorandum of Understanding (MOU). The MOU outlines the roles and responsibilities for ACES, the faith community, and the lay leader. Having the MOU presented the expected

commitment for all involved parties. The MOU also assured that the entire faith community was involved in the process, with the pastor/minister supporting the program through the selection of a lay leader and wellness committee, encouragement of a healthy lifestyle through messaging in sermons and communications, and the cultivation of a healthy faith community.

To ensure long-term sustainability, educators must design and implement each LWFC program in close coordination with faith community leadership. Ensuring the organization is involved provides the greatest chance to ensure materials are compatible with the mission and ministry of the faith community. Allowing a faith community leader to be involved in preparation and delivery of classes allows them to continually show support from leadership. A faith community can also assist with sustainability of health-related programs through their commitment to making policy, system, and environmental changes to the community governance and grounds.

The intervention consisted of a nine-lesson curriculum, co-led with a lay leader, designed to increase access to and appeal for fruit and vegetable consumption and physical activity participation in communities of faith. This was accomplished by promoting healthy eating and active living to faith community members through the use of direct education; social marketing strategies; and policy, system, and environmental change efforts. Each lesson began with an opening presentation on the lesson topic (see Table 4). They also included a food demonstration, Move More activity, and a Policy, System, and Environmental change discussion.

Table 4

Live Well Faith Communities Lessons

Lesson Number and Topic	Direct Education Topic	Policy, System, and Environmental Change Topic
Lesson 1 Plan: Know What's for Dinner	Plan meals to eat better and save time and money.	Plan health meals to serve at the faith community.
Lesson 2 Shop: Get the Best for Less	Shop with a list to eat better and save money.	Work with local farmer(s) to sell low-cost produce on faith community grounds.
Lesson 3 Shop for Value, Check the Facts	Check the Nutrition Facts label when shopping to eat better.	Shop for health foods to serve at the faith community.
Lesson 4 Fix it Fast, Eat at Home	Fix and eat more meals at home to eat better and save money.	No policy, system or environmental change topic for discussion this lesson.
Lesson 5 Choosing more Fruits and Vegetables	Include a variety of colors of fruits and vegetables in your snacks and meals each day to eat better.	Discuss a faith community policy requiring fruits and vegetables be served at any faith community gathering.
Lesson 6 Fix it Safe	Clean, separate, cook and chill to keep foods safe.	No policy, system or environmental change topic for discussion this lesson.
Lesson 7 Making Smart Drink Choices	Choose water in place of sugary beverages to eat better.	Discuss a faith community policy requiring water be served at any faith community gathering.
Lesson 8 Choosing Move More throughout the Day	Move more to be healthy.	Start a walking or exercise group at the faith community.
Lesson 9 Making the Connection	Make a change to last a lifetime.	Identify one policy, system or environmental change to begin or continue to discussing and/or implementing.

Instrumentation

The evaluation proposed for this dissertation is based on the participant pre and post-test (Appendix C) from the pilot implementation phase of LWFC conducted by the ACES in 2017.

The pre and post versions of the assessment are identical. Questions on the assessment include fruit and vegetable consumption, physical activity participation, social support, and demographics. This dissertation proposed to conduct an analysis of participant outcomes using the existing dataset to assess the effects of LWFC participation and social support on healthy behaviors and to answer the primary research focus, "Does Alabama Live Well Faith Communities course participation and/or perceived social support increase (a) fruit consumption, (b) vegetable consumption and/or (c) physical activity in participants?"

For this study, fruit and vegetable consumption was measured using the Starting the Conversation (STC) tool. Paxton and colleagues (2011) developed and validated the STC as a simplified screening instrument for use in primary care and health promotion settings. The STC tool allows for a broader look at overall dietary habits rather than specific nutrient qualities. This study specifically used two of the eight questions to identify the frequency of participant's fruit and vegetable intake.

To measure participant physical activity in this study, a question from the Supplemental Nutrition Assistance Program – Education's Evaluation Framework (United States Department of Agriculture, 2016) was used. The question asked participants on how many days had they exercised for 30 minutes where they breathed harder than normal. This question was used to show progress toward meeting the Physical Activity Guidelines for Americans.

Social Support was measured using questions from the validated Social Support and Eating Habits and Social Support and Exercise Surveys developed by Sallis and colleagues (Sallis et al., 1987). The surveys were designed to capture social support for dietary and physical activity changes.

The pre and post-test questions provided insights into both the intrapersonal and interpersonal levels of the SEM. The fruit and vegetable consumption and physical activity participant questions considered participant's intrapersonal healthful behaviors and practices. Questions from the Social Support and Eating Habits and Social Support and Exercise Surveys considered participant's interpersonal interactions regarding perceived social support from faith community members.

The final versions of the participant pre and post-tests were approved by Auburn University's Institutional Review Board, Protocol #17-045 EP 1703.

Summary

This chapter provided an overview of the curriculum design and methods used in this study. A summary of the participant demographics was presented and revealed the average participant was a middle-aged non-Hispanic Black woman. An overview of the LWFC curriculum was provided, along with program implementation and data collection methods. This chapter also discussed the proposed evaluation for this study.

Chapter 4

Analysis and Results

Introduction

This chapter describes the analysis and results of the LWFC pilot program described in Chapter 1. A literature review was presented in Chapter 2 that supported the methods of this study. These methods were described in Chapter 3. Chapter 4 provides an overview of the analysis of the data from the LWFC pilot program and the results from the three research questions.

Purpose of the Study

The purpose of this study was to examine the Live Well Faith Communities (LWFC) course participant's perceived social support and the effects on the increase of (a) fruit consumption, (b) vegetable consumption and/or (c) physical activity in participants. The LWFC design utilized the Social Ecological Model (SEM) to provide a multi-level intervention to influence health behaviors. The evaluation of this study will focus on the personal characteristics and original perceived social support of participants, increases in healthy behaviors by participants, and determine if an increase in healthy behaviors is in response to LWFC participation and increases in social support.

Research Questions

The following research questions were used in this study:

1) What is the relationship between personal characteristics for those completing the Live Well Faith Communities program?
2) What are the fruit consumption, vegetable consumption, and physical activity levels for those completing the Live Well Faith Communities program?

3) What is the relationship between fruit consumption, vegetable consumption, and physical activity levels and perceived social support for those completing the Live Well Faith Communities program?

Data Analysis

Data were analyzed using IBM SPSS 26. There were three types of participants. Those who only completed the pre-test (n = 94), those who only completed the post-test (n = 71), and those who completed both the pre and post-tests (n = 48). In order to determine if personal characteristics and original perceived social support are associated with successfully completing the program, three tests were conducted. First, a two-proportion z-test for each personal characteristic to determine if participant's personal characteristics (e.g. gender, age, race, and income) affected whether or not they completed the LWFC program. Secondly, paired means t-tests were used to determine if (a) fruit consumption, (b) vegetable consumption and/or (c) physical activity increased in response to course participation. Third, a linear regression was used to determine if fruit consumption, vegetable consumption, and/or physical activity increased in response to course completion and increases in various perceived social support.

Research Question 1

The first research question asks, what is the relationship between personal characteristics for those completing the LWFC program? In other words, the test will determine if participant's personal characteristics (e.g. gender, age, race, and income, defined by x in the hypotheses below) affected whether or not they completed the LWFC program.

Null Hypothesis: The percentage of those, with characteristic x, who completed LWFC is equal to the percentage of those, with characteristic x, who did not complete LWFC ($p_{LWFC\ completed,x} = p_{LWFC\ not\ completed,x}$).

Alternate Hypothesis: The percentage of those, with characteristic x, who completed LWFC is not equal to the percentage of those, with characteristic x, who did not complete LWFC $(p_{LWFC\ completed,x} \neq p_{LWFC\ not\ completed,x})$.

A two-proportion z-test will be used to determine what personal characteristics are statistically associated between those who completed LWFC and those who did not. For this test, I am using a 95% confidence level resulting in α/2 = .025% and a z critical of ±1.96. Assumptions for this test include a large enough sample size for normal distribution and a random sample to ensure observations are independent of each other. For this test attendance records were used to determine which participants attended the first class (i.e. started the program) and which participants attended the last class (i.e. finished the program). Next, the number of participants within 12 different demographic categories were counted from those participants that attended the first class and those participants who attended the last class. These counts are shown in Table 5.

Table 5

Demographics for Participants who Attended the First Class and Participants who Attended the Last Class

	Attended first class	Attended last class
Total Number	77	44
Gender		
Male	13	9
Female	39	24
Age, In Years		
18-45	11	4
46-65	23	15
66-80	13	10
81+	3	2
Race		
Black	46	30
White	2	0
Income		
$0-1000	3	1
$1001-2500	16	12
$2501-4000	4	2
$4001+	1	0

**Note*. Demographic categories do not add to the total number of people in each group due to participants not sharing all personal information.

As seen in Table 6, every demographic category fails to reject the null hypothesis, as there is not a statistical difference between the percentage of those who completed LWFC and the percentage of those who did not complete LWFC. This shows that everyone across all demographic groups is equally as likely to finish this program.

Table 6

Two-proportion Z-test Results

Demographic characteristics	Two-proportion Z-test Value
Gender	
Male	-0.489
Female	-0.412
Age	
18-45	0.834
46-65	-0.481
66-80	-0.788
81+	-0.172
Race	
Black	-0.924
White	1.077
Income	
$0-1000	0.480
$1001-2500	-0.814
$2501-4000	0.158
$4001+	0.759

Research Question 2

The second research question asks, what are the fruit consumption, vegetable consumption, and physical activity levels for those completing the Live Well Faith Communities program? In other words, the test will determine if participation in LWFC increased (a) fruit consumption, (b) vegetable consumption, or (c) physical activity participation. Therefore, there were three hypothesis to test:

Fruit Consumption

Null Hypothesis: Mean difference in number of cups of fruit participants consumed between post and pre LWFC participation is less than or equal to zero ($\mu_{fruit,post-pre} \leq 0$).

Alternate Hypothesis: Mean difference in number of cups of fruit participants consumed between post and pre LWFC participation is greater than zero ($\mu_{fruit,post-pre} > 0$).

Vegetable Consumption

Null Hypothesis: Mean difference in number of cups of vegetables participants consumed between post and pre LWFC participation is less than or equal to zero ($\mu_{vegetable,post-pre} \leq 0$).

Alternate Hypothesis: Mean difference in number of cups of vegetables participants consumed between post and pre LWFC participation is greater than zero ($\mu_{vegetable,post-pre} > 0$).

Physical Activity Participation

Null Hypothesis: Mean difference in number of days in which participants exercised (e.g. breathed harder than normal for at least 30 minutes) between post and pre LWFC participation is less than or equal to zero ($\mu_{physical\ activity,post-pre} \leq 0$).

Alternate Hypothesis: Mean difference in number of days in which participants exercised (e.g. breathed harder than normal for at least 30 minutes) between post and pre LWFC participation is greater than zero ($\mu_{physical\ activity,post-pre} > 0$).

For this question the analysis will be a paired means t-test for the difference between post and pre-tests fruit consumption, vegetable consumption, and physical activity participation. Fruit consumption was measured in cups per day. Vegetable consumption was measured in cups per day. Physical activity participation was measure in the number of days participants exercised, while breathing heavy, for at least 30 minutes. The paired means test is appropriate for these three dependent variables because post and pre-tests data exist for each participant in the test sample (n = 48). Assumptions for this test include independent subjects, that each paired measurement is obtained from the same subject, and that there is normal distribution. It is important to note that the program was open to anyone in the faith community, and participants

could have been from the same household or friend group. As a result, the independent assumption may be relaxed. For these three tests, I assume a 95% confidence level (α = .05%).

For fruit consumption, the mean number of cups of fruit consumed before the intervention was 1.27 cups (*SD* = 1.005). Additionally, the mean number of cups of fruit consumed increased to 1.67 (*SD* = .834) after the intervention. The mean difference in fruit consumption from pre to post-test was .396 (*SD* = .984). The paired means test result, $t(47) = 2.788$ and $p = .008$, indicates fruit consumption significantly increased by about .4 cups, on average per day for those who completed LWFC.

For vegetable consumption, the mean number of cups of vegetables consumed before the intervention was 1.35 cups (*SD* = .758). Additionally, the mean number of cups of vegetables consumed increased to 1.88 (*SD* = .733) after the intervention. The mean difference in vegetable consumption from pre to post-test was .521 (*SD* = .714). The paired means test result, $t(47) = -5.052$ and $p < .0001$, indicates vegetables consumption significantly increased by about .5 cups, on average per day for those who completed LWFC.

For physical activity participation, the mean days of the week where participants exercised for at least 30 minutes while breathing hard before the intervention was 2.29 days (*SD* = 1.856). Additionally, the mean number of days per week with at least 30 minutes of physical activity while breathing hard was 2.52 (*SD* = 1.502) after the intervention. The mean difference in physical activity participation from pre to post was .229 (*SD* = 1.765). The paired means test result, $t(47) = .899$, $p = .373$, indicates physical activity participation was not statistically different from pre to post-test for those who completed LWFC.

Research Question 3

The third research question asks, what is the relationship between fruit consumption, vegetable consumption, and physical activity participation and perceived social support for those completing the Live Well Faith Communities program? In other words, the test will determine which demographic or social support/eating habit factors significantly influenced the change in (a) fruit consumption, (b) vegetable consumption, or (c) physical activity participation from pre to post-test.

For Each Factor Influencing Fruit Consumption

Null Hypothesis: This factor does not influence the change in the number of cups of fruit participants consumed from pre to post-test ($\beta_{x,\Delta fruit} = 0$).

Alternate Hypothesis: This factor does influence the change in the number of cups of fruit participants consumed from pre to post-test ($\beta_{x,\Delta fruit} \neq 0$).

For Each Factor Influencing Vegetable Consumption

Null Hypothesis: This factor does not influence the change in the number of cups of vegetables participants consumed from pre to post-test ($\beta_{x,\Delta vegetable} = 0$).

Alternate Hypothesis: This factor does influence the change in the number of cups of vegetables participants consumed from pre to post-test ($\beta_{x,\Delta vegetable} \neq 0$).

For Each Factor Influencing Physical Activity Participation

Null Hypothesis: This factor does not influence the change in the number of days participants engaged in physical activity for 30 minutes, while breathing hard ($\beta_{x,\Delta physical\ activity} = 0$).

Alternate Hypothesis: This factor does influence the change in the number of days participants engaged in physical activity for 30 minutes, while breathing hard ($\beta_{x,\Delta physical\ activity} \neq 0$).

For this question, a series of multiple linear regressions will be used to measure the impact that various demographic and social support/eating habit factors have on changes in fruit consumption, vegetable consumption, and physical activity participation. Fruit consumption change was measured as the difference between cups per day post-survey and cups per day pre-survey. Vegetable consumption change was measured as the difference between cups per day post-survey and cups per day pre-survey. Physical activity participation change was measured as the difference in the number of days participants exercised, while breathing heavy, for at least 30 minutes post-survey and pre-survey. The multiple linear regression is appropriate for these three tests because it measures the relative importance between all variables on the changes in fruit consumption, vegetable consumption, and physical activity participation. All three regressions were run on the same sample of participants who completed both pre and post-tests (n = 48). Assumptions for this test include a linear relationship between predictors and demographics, there is not a high correlation between predictors, independent observations by participants, homoscedasticity exists, and normal distribution. For these three regressions, I assume a 95% confidence level ($\alpha = .05\%$).

Fruit Consumption Results

A multiple linear regression was calculated to predict a change in fruit consumption based on three variable types: (a) four demographic variables, (b) seven social support/eating habits factors from before LWFC participation, and (c) seven changes in social support/eating habits factors resulting from completing LWFC participation. The model estimation can be seen in Table 7. The overall regression has a high $R^2 = .832$, but once the number of variables were considered, there is not as strong a fit (Adjusted-$R^2 = .077$). Additionally, an F test comparing our model with a constant-only model indicates that there is no statistical difference ($F_{18, 4} =$

1.102, $p = .519$). Still, one variable (People in my faith community complemented me on changing my eating habits prior to participating in LWFC) positively influenced changes in fruit consumption. This significant finding could be due to a number of factors, such as participant bias, availability of healthier foods, or length of survey.

Table 7

Regression Coefficients of Fruit Consumption on Social Support and Eating Habits Survey and Demographics

Variable	*Coeff.*	*p-value*
(Constant)	0.684	0.775
Sex	1.850	0.219
Marital status	0.827	0.503
Income (in thousands of dollars)	-2.018E-06	0.993
Age	-0.039	0.274
Pre-test: During the past three months, people in my faith community encouraged me not to eat "unhealthy foods" when I was tempted to do so.	-0.552	0.176
Pre-test: During the past three months, people in my faith community complimented me on changing my eating habits.	1.432	0.042
Pre-test: During the past three months, people in my faith community commented if I went back to my old eating habits.	-0.820	0.279
Pre-test: During the past three months, people in my faith community ate "unhealthy foods" in front of me.	0.491	0.358
Pre-test: During the past three months, people in my faith community refused to eat the same foods I eat.	0.779	0.127
Pre-test: During the past three months, people in my faith community brought foods I am trying not to eat to faith community events.	-0.284	0.568
Pre-test: During the past three months, people in my faith community offered me foods I am trying not to eat.	-0.904	0.174
Change in: During the past three months, people in my faith community encouraged me not to eat "unhealthy foods" when I was tempted to do so.	0.425	0.312
Change in: During the past three months, people in my faith community complimented me on changing my eating habits.	0.577	0.109
Change in: During the past three months, people in my faith community commented if I went back to my old eating habits.	-0.311	0.605
Change in: During the past three months, people in my faith community ate "unhealthy foods" in front of me.	0.095	0.847
Change in: During the past three months, people in my faith community refused to eat the same foods I eat.	0.458	0.352
Change in: During the past three months, people in my faith community brought foods I am trying not to eat to faith community events.	-0.251	0.694
Change in: During the past three months, people in my faith community offered me foods I am trying not to eat.	-0.407	0.666

**Note.* Scores were measured on a Likert scale and coded as 0 = None, 1 = Rarely, 2 = A few times, 3 = Often, and 4 = Very often.

Vegetable Consumption Results

A multiple linear regression was calculated to predict a change in vegetable consumption based on three variable types: (a) four demographic variables, (b) seven social support/eating habits factors from before LWFC participation, and (c) seven changes in social support/eating habits factors resulting from LWFC participation. The model estimation can be seen in Table 8. The overall regression has a high $R^2 = .698$, and once the number of variables were considered, the fit is just as strong (Adjusted-$R^2 = .658$). Additionally, an F test comparing our model with a constant-only model indicates that there is no statistical difference ($F_{18, 4} = 0.515$, $p = .853$).

Table 8

Regression Coefficients of Vegetable Consumption on Social Support and Eating Habits Survey and Demographics

Variable	*Coeff.*	*p-value*
(Constant)	-1.998	0.399
Sex	1.560	0.265
Marital status	0.261	0.819
Income (in thousands of dollars)	3.810E-05	0.868
Age	-0.007	0.828
Pre-test: During the past three months, people in my faith community encouraged me not to eat "unhealthy foods" when I was tempted to do so.	-0.195	0.573
Pre-test: During the past three months, people in my faith community complimented me on changing my eating habits.	0.821	0.148
Pre-test: During the past three months, people in my faith community commented if I went back to my old eating habits.	-0.428	0.529
Pre-test: During the past three months, people in my faith community ate "unhealthy foods" in front of me.	0.422	0.401
Pre-test: During the past three months, people in my faith community refused to eat the same foods I eat.	0.624	0.181
Pre-test: During the past three months, people in my faith community brought foods I am trying not to eat to faith community events.	-0.369	0.444
Pre-test: During the past three months, people in my faith community offered me foods I am trying not to eat.	-0.168	0.763
Change in: During the past three months, people in my faith community encouraged me not to eat "unhealthy foods" when I was tempted to do so.	0.373	0.346
Change in: During the past three months, people in my faith community complimented me on changing my eating habits.	0.405	0.203
Change in: During the past three months, people in my faith community commented if I went back to my old eating habits.	-0.053	0.925
Change in: During the past three months, people in my faith community ate "unhealthy foods" in front of me.	0.108	0.817
Change in: During the past three months, people in my faith community refused to eat the same foods I eat.	0.690	0.170
Change in: During the past three months, people in my faith community brought foods I am trying not to eat to faith community events.	-0.434	0.484
Change in: During the past three months, people in my faith community offered me foods I am trying not to eat.	0.171	0.846

**Note.* Scores were measured on a Likert scale and coded as 0 = None, 1 = Rarely, 2 = A few times, 3 = Often, and 4 = Very often.

Physical Activity Participation Results

A multiple linear regression was calculated to predict a change in physical activity participation based on three variable types: (a) four demographic variables, (b) eight social support/exercise habits factors from before LWFC participation, and (c) eight changes in social support/exercise habits factors resulting from LWFC participation. The model estimation can be seen in Table 9. The overall regression has a high $R^2 = .915$, and the number of variables were considered the number of variables, the fit is still relatively as strong (Adjusted-$R^2 = .775$). Additionally, an F test comparing our model with a constant-only model indicates that there is no statistical difference ($F_{20, 1} = 0.542$, $p = .811$).

Table 9

Regression Coefficients of Physical Activity Participation on Social Support and Exercise Habits Survey and Demographics

Variable	Coeff.	*p-value*
(Constant)	27.904	0.290
Sex	-4.440	0.400
Marital Status	5.404	0.346
Income (in thousands of dollars)	-0.003	0.413
Age	-0.368	0.265
Pre-test: During the past three months, people in my faith community exercised with me.	-6.035	0.271
Pre-test: During the past three months, people in my faith community offered to exercise with me.	2.176	0.650
Pre-test: During the past three months, people in my faith community gave me helpful reminders to exercise.	-3.095	0.416
Pre-test: During the past three months, people in my faith community changed their schedule so we could exercise together.	-5.708	0.490
Pre-test: During the past three months, people in my faith community gave me rewards for exercising.	-2.713	0.488
Pre-test: During the past three months, people in my faith community planned for exercise.	1.385	0.730
Pre-test: During the past three months, people in my faith community asked me for ideas on how to get more exercise.	7.944	0.407
Pre-test: During the past three months, people in my faith community talked about how much they like to exercise.	0.904	0.682
Change in: During the past three months, people in my faith community exercised with me.	-5.807	0.319
Change in: During the past three months, people in my faith community offered to exercise with me.	-0.224	0.932
Change in: During the past three months, people in my faith community gave me helpful reminders to exercise.	-2.517	0.629
Change in: During the past three months, people in my faith community changed their schedule so we could exercise together.	0.064	0.992
Change in: During the past three months, people in my faith community gave me rewards for exercising.	-3.496	0.512
Change in: During the past three months, people in my faith community planned for exercise.	-1.541	0.589
Change in: During the past three months, people in my faith community asked me for ideas on how to get more exercise.	4.948	0.430
Change in: During the past three months, people in my faith community talked about how much they like to exercise.	3.889	0.408

*_Note._ Scores were measured on a Likert scale and coded as 0 = None, 1 = Rarely, 2 = A few times, 3 = Often, and 4 = Very often.

Summary

This study's primary purpose was to examine LWFC participant's perception of social support from within their faith community and the effect, if any, it had on fruit and vegetable consumption and physical activity participation. It was determined that participant demographic characteristics did not influence completion of the LWFC program. Findings indicated that participants who completed LWFC were successful in increasing fruit and vegetable consumption, but not physical activity participation. Overall, the study found that social support and demographics were not factors in increasing fruit and vegetable consumption or physical activity participation.

Chapter 5

Summary, Conclusions, Implications, Recommendations for Future Research

Introduction

The final chapter provides a review of the purpose of this study and brief summary of findings before comparing and contrasting with other findings from previous research. This is followed by a discussion of the significance and implications this study has for future faith-based initiatives. This dissertation includes recommendations for future research to advance the field of health promotion within African American faith communities.

Purpose of the Study

The purpose of this study was to examine the Live Well Faith Communities (LWFC) course participant's perceived social support and the effects on the increase of (a) fruit consumption, (b) vegetable consumption and/or (c) physical activity in participants. The LWFC design utilized the Social Ecological Model (SEM) to provide a multi-level intervention to influence health behaviors. The evaluation of this study will focus on the personal characteristics and original perceived social support of participants, increases in healthy behaviors by participants, and determine if an increase in healthy behaviors is in response to LWFC participation and increases in social support.

Research Questions

The following research questions were used in this study:

1) What is the relationship between personal characteristics and those completing the Live Well Faith Communities program?
2) What are the fruit consumption, vegetable consumption, and physical activity levels for those completing the Live Well Faith Communities program?

3) What is the relationship between fruit consumption, vegetable consumption, and physical activity levels and perceived social support for those completing the Live Well Faith Communities program?

Summary

This study's primary purpose was to examine LWFC participant's perception of social support from within their faith community and the effect, if any, it had on fruit and vegetable consumption and physical activity participation. The pre-test included responses from 79 participants, while the post-test had 48 participants.

In an effort to determine if personal characteristics were associated with completion of the LWFC program, a two-proportion z-test was performed. Findings showed there was not a statistical difference between those who completed LWFC and those who did not. Through this measure, it was determined that demographics did not affect completion of the program.

Findings from this study indicate that participants who completed LWFC were successful in increasing fruit and vegetable consumption, but not physical activity participation. Overall, the study found that social support and demographics were not factors in increasing fruit and vegetable consumption or physical activity participation. Only one social support question showed any significance. The question asked participants if they were being complimented by faith community members about their changed eating habits at the pre-test. While the same question in the post-test did not show significance, it did have a higher significance than others at $p = 0.109$.

This study utilized a one-group pretest-posttest design, and therefore, lacked a comparison group. This design did not allow researchers to determine if any changes were achieved due to the intervention or because participants were already participating in lifestyle

changes. Participant changes were also self-reported which means responses could reflect a self-perceived change where no change occurred.

Conclusions

Being a pilot program, this study had a small number of participants. In public health practice, it is generally better to reach a large number of participants with smaller effectiveness than to be highly effective and only reach a small number of people. In order to have true public health change, programs need to be broad enough to engage a large portion of the population (Wilcox et al., 2013). With this study being in rural Alabama, its population reach was limited, but being conducted in a rural faith community allowed for reaching a larger portion of those living in a rural area.

Brand (2019) discussed the successes of implementing health promotion programs within the African American church, but also noted that programs with a research intent can be a barrier. As it was discussed in Chapter 2, partnerships with faith community lay leaders can produce culturally relevant and leadership-endorsed health education programs in order to minimize this barrier. Another barrier is size, and during this study, several small churches participated in LWFC classes together. This type of partnership provides access to health education and an opportunity for collaboration among faith communities.

The original curriculum for this program, Faithful Families Eating Smart and Moving More, was designed in conjunction with an advisory committee of faith community leaders to ensure cultural appropriateness (Hardison-Moody & Yao, 2019). By partnering with faith community leadership, including pastors, nurses, and lay leaders, public health practitioners can assure they integrate religious practices, beliefs, and scriptures into each lesson. Having lay leaders co-teach the program is essential to ensure program delivery by helping participants

connect their faith and health (M. K. Campbell et al., 2007). In 2021, Cooperative Extension's National Framework for Health Equity and Well-being recommended the "move from an expert model of program delivery to a model based on authentic community engagement is helping community members with lived experience become equal partners with agency professionals in the process of developing strategies and actions for community improvement" (Burton et al., 2021, p. 7). The LWFC program established a committee to oversee implementation and identified a lay leader to co-deliver the weekly lesson. The committee and lay leader were able to ensure lessons included content relevant to the belief system of the faith community and was delivered in way that genuinely engaged participants.

Rural congregations are usually smaller and often do not have the financial resources to directly support health promotion programing. If a public health organization has the ability to compensate the faith community and/or participants, this could result in greater participation from both the congregation and participants (Melissa Bopp & Fallon, 2013). There is a possibility that a financial incentive for participants could provide the motivation and interest needed to further link physical and spiritual health. As noted in Table 3, 71% of participants in this study had an income less than $2,500 per month. Providing an incentive through a direct payment to participants and faith communities will acknowledge the value of their time. One of three recommendations from the Cooperative Extension's Framework for Health Equity and Well-being (Burton et al., 2021) was to compensate community members who partner with Extension to promote health and wellness. The irony of expecting low-income participants to commit time to a program they may not have the resources to implement can be overlooked by organizers. On the opposite side of this situation is organizations who are themselves working with a limited budget and resources and providing assistance to help people lead healthier lives

within their means. There are no easy answers in this situation, only the motivation to continue helping communities.

Implications

As Sanderson and colleagues (2003) noted a large portion of their study participants of Black women from rural Alabama counties did not participate in the recommended amount of physical activity, but that all participants noted participation in a faith community was important. The lack of a safe and available space for physical activity also could factor into why rural populations are not meeting the recommended amount of physical activity. While this dissertation study also found a lack of participation in the recommended amount of physical activity, there was also no significant increase in the perceived social support of participants.

If social support was actively part of a health promotion curriculum, there is the possibility it could lead to increases in group fruit and vegetable consumption and physical activity participation. In this study, the social support was not a focus of the curriculum but was measured to assess the correlation between social support and increases of healthy behaviors. Including social support in a curriculum at multiple stages of the SEM could also play an important role (Boulton et al., 2018). The interpersonal, organization, and community levels could not only support active participants, but those who hear the message and receive internal motivation. Verheijden and colleagues (2005) suggest that social support may trigger healthy behavior changes by providing information, reassurance, or increasing compliance.

Krause and colleagues (2011) noted that the evaluation of perceived social support alone in not enough. Researchers must take into account the relationship study participants have with others in their faith community. If a participant does not identify with others participating in the study, they may resent or ignore means of support from others. Identifying how faith community

members interact with each other, especially around the encouragement of healthy behaviors and how the encouragement is framed, will help establish guidance on how peer education could be more effective.

Recommendations for Future Research

This study was conducted in 2017, before COVID-19. Adult education practitioners learned a great deal about virtual classes and online engagement during the global pandemic. Future research could explore the differences in healthy behavior changes between participants in virtual and in-person programs. Another area of future research could be the creation of online forums using social media that form around the common interest of increasing healthy behaviors compared to those only receiving in-person support.

To provide adjustments and improvements to the program and curriculum, a follow-up focus group with participants and each faith community's LWFC committee could provide insight. Knowing what programming was relevant to one's faith and the consideration of making healthy choices would provide program researchers with input on possible enhancements to the curriculum and protocol.

Merino (2014) concluded that further research on how support from faith community members affects healthy behaviors should be conducted. This study was able to show that while there was an increase in fruit and vegetable consumption, this increase was not tied to social support from members of the faith community. Further investigation into the depth and breadth of relationships within faith communities could reveal a more optimal means of provided social support to one another.

Conducting further post-program assessment also is necessary to study long-term sustainability (M. K. Campbell et al., 2007). Although not examined by this dissertation, policy,

system, and environmental changes made by members of the faith community and by the organization as a whole could provide an increased level of sustainability. While LWFC was piloted in Alabama in 2017 and policy, system, and environmental changes were included in its curriculum, the original Faithful Families curriculum was not updated until 2018 to include policy, system, and environmental changes. The policy, system, and environmental work allows members of the community to create lasting changes at the organizational level that make being healthier easier. Some of these changes could be ensuring water is always available or that there is always a vegetable during meals. Using policy, system, and environmental changes to change an environment or organization allows for people to make the healthy choice the easy choice. Studying the long-term effects of policy, system, and environmental changes on individuals and the organization would provide data on the sustainability of efforts.

Planning efforts for future research and programming should include a theoretical base for the programming and evaluation to increase the strength of evidence for future interventions (M Bopp, Peterson, & Webb, 2012). As previously mentioned, one that is commonly used in faith-based organizations is the SEM (Boulton et al., 2018; M. K. Campbell et al., 2007; J. Levin, 2016; Stokols, 1996). By using a socio-ecological approach during planning and implementation, it may provide an increase in effectiveness and improve healthy behaviors. Involving influence at a range of levels will provide members of the community multiple levels of support and encouragement. It will also offer the ability to meet specific needs for individuals and the community as a whole (Torrence et al., 2018). Educators and policy makers must realize that a person's health outcomes are not based on just the individual's choices but exist within an environment that can directly impact one's health. Health inequities due to one's environment can only change when those who have influence and power collectively work together to change

policies and practices (Burton et al., 2021). Through direct education, support, and policy changes at both the local and national levels, health outcomes can improve.

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Appendix A

IRB Approval Form for Primary Study for Data Collection

#17-045: Live Well Faith Communities Evaluation

AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMAN SUBJECTS

RESEARCH PROTOCOL REVIEW FORM

FULL BOARD or EXPEDITED

For information or help contact **THE OFFICE OF RESEARCH COMPLIANCE (ORC)**, 115 Ramsay Hall, Auburn University
Phone: 334-844-5966 **e-mail:** IRBAdmin@auburn.edu **Web Address:** http://www.auburn.edu/research/vpr/ohs/index.htm

Revised 2.1.2014 **Submit completed form to IRBsubmit@auburn.edu or 115 Ramsay Hall, Auburn University 36849.**

Form must be populated using Adobe Acrobat / Pro 9 or greater standalone program (do not fill out in browser). Hand written forms will not be accepted.

1. **PROPOSED START DATE of STUDY:** 02/02/2017

PROPOSED REVIEW CATEGORY (Check one): ☐ FULL BOARD ☑ EXPEDITED

SUBMISSION STATUS (Check one): ☐ NEW ☑ REVISIONS (to address IRB Review Comments)

2. **PROJECT TITLE:** Live Well Faith Communities Evaluation

3. Alicia Powers	Extension Specialis	SNAP-Ed, Alabama Coo	arp0042@auburn.edu
PRINCIPAL INVESTIGATOR	TITLE	DEPT	AU E-MAIL
206 Duncan Hall		334-844-2209	alicia.pwers@gmail.com
MAILING ADDRESS		PHONE	ALTERNATE E-MAIL

4. **FUNDING SUPPORT:** ☐ N/A ☐ Internal ☑ External Agency: AL Dept of Human Resources ☐ Pending ☑ Received

For federal funding, list agency and grant number (if available). AL DHR-AGREE 4153-FY17; FOP: 376378 403501 3000

5a. List any contractors, sub-contractors, other entities associated with this project:

b. List any other IRBs associated with this project (including Reviewed, Deferred, Determination, etc.):

PROTOCOL PACKET CHECKLIST

All protocols must include the following items:

☑ **Research Protocol Review Form** (All signatures included and all sections completed)
(Examples of appended documents are found on the OHSR website: http://www.auburn.edu/research/vpr/ohs/sample.htm)

☑ **CITI Training Certificates** for all Key Personnel.

☑ **Consent Form or Information Letter** and any Releases (audio, video or photo) that the participant will sign.

☑ **Appendix A**, "Reference List"

☑ **Appendix B** if e-mails, flyers, advertisements, generalized announcements or scripts, etc., are used to recruit participants.

☑ **Appendix C** if data collection sheets, surveys, tests, other recording instruments, interview scripts, etc. will be used for data collection. Be sure to attach them in the order in which they are listed in # 13c.

☐ **Appendix D** if you will be using a debriefing form or include emergency plans/procedures and medical referral lists (A referral list may be attached to the consent document).

☑ **Appendix E** if research is being conducted at sites other than Auburn University or in cooperation with other entities. A **permission letter** from the site / program director must be included indicating their cooperation or involvement in the project. NOTE: If the proposed research is a multi-site project, involving investigators or participants at other academic institutions, hospitals or private research organizations, a letter of **IRB approval** from each entity is required prior to initiating the project.

☐ **Appendix F** - Written evidence of acceptance by the host country if research is conducted outside the United States.

FOR ORC OFFICE U

DATE RECEIVED IN ORC: _____ by _____ PROTOCO

DATE OF IRB REVIEW: _____ by _____ APPROVA

DATE OF IRB APPROVAL: _____ by _____ INTERVAL

COMMENTS:

The Auburn University Institutional Review Board has approved this Document for use from
03/26/2017 to 03/25/2018
Protocol # 17-045 EP 1703

Appendix B

IRB Approval Form for Secondary Dissertation Study

Revised 02/01/2022

The Influence of Social Support on Adoption of Healthy Behaviors in a Faith-based Setting

AUBURN UNIVERSITY HUMAN RESEARCH PROTECTION PROGRAM (HRPP)

EXEMPT REVIEW APPLICATION

For assistance, contact: **The Office of Research Compliance (ORC)**
Phone: **334-844-5966** E-Mail: IRBAdmin@auburn.edu Web Address: http://www.auburn.edu/research/vpr/ohs
Submit completed form and supporting materials as one PDF through the IRB Submission Page
Hand written forms are not accepted. Where links are found hold down the control button (Ctrl) then click the link..

1. Project Identification **Today's Date: March 25, 2022**

Anticipated start date of the project: April 1, 2022 Anticipated duration of project: 1 Year

a. Project Title: The Influence of Social Support on Adoption of Healthy Behaviors in a Faith-based Setting

b. **Principal Investigator (PI): Ruth W. Brock** Degree(s): M.Ed.
Rank/Title: Extension Specialist/ Doctoral Candidate
Department/School: Alabama Extension/Adult Education
Role/responsibilities in this project: **data analysis and reporting**
Preferred Phone Number: **334-734-4865** AU Email: rlw0031@auburn.edu

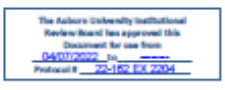
Faculty Advisor Principal Investigator (if applicable): James Witte
Rank/Title: Chair, Professor Department/School: Aviation
Role/responsibilities in this project: **data review**
Preferred Phone Number: **334-844-1905** AU Email: witteje@auburn.edu

Department Head: James W. Satterfield Department/School: EFLT/Education
Preferred Phone Number: **334-844-3060** AU Email: jws0089@auburn.edu
Role/responsibilities in this project: Click or tap here to enter text.

c. **Project Key Personnel** – Identify all key personnel who will be involved with the conduct of the research and describe their role in the project. Role may include design, recruitment, consent process, data collection, data analysis, and reporting. (To determine key personnel, see decision tree). *Exempt determinations are made by individual institutions; reliance on other institutions for exempt determination is not feasible. Non-AU personnel conducting exempt research activities must obtain approval from the IRB at their home institution.*

Key personnel are required to maintain human subjects training through CITI. Only for EXEMPT level research is documentation of completed CITI training NO LONGER REQUIRED to be included in the submission packet. NOTE however, **the IRB will perform random audits of CITI training records to confirm** reported training courses and expiration dates. Course title and expiration dates are shown on training certificates.

Name: Ruth W. Brock Degree(s): **M.Ed.**
Rank/Title: Extension Specialist/ Doctoral Candidate Department/School: Alabama Extension/Adult Education
Role/responsibilities in this project: **data analysis and reporting**
- AU affiliated? ☒ Yes ☐ No If no, name of home institution: Click or tap here to enter text.
- Plan for IRB approval for non-AU affiliated personnel? Click or tap here to enter text.
- Do you have any known competing financial interests, personal relationships, or other interests that could have influence or appear to have influence on the work conducted in this project? ☐ Yes ☒ No
- If yes, briefly describe the potential or real conflict of interest: Click or tap here to enter text.
- Completed required CITI training? ☒ Yes ☐ No If NO, complete the appropriate CITI basic course and update the revised Exempt Application form.
- If YES, choose course(s) the researcher has completed: Human Sciences Basic Course 1/4/2024



Appendix C

Live Well Faith Communities Participant Assessment

Live Well Faith Communities Participant Assessment

This part of the survey asks about ways you **plan, shop, and fix foods for your family to eat**. As you read each question, think about the recent past. This is not a test. There are not any wrong answers.

1. How often do you plan meals ahead of time?

Never	Rarely	Sometimes	Often	Always

2. When deciding what to feed your family, how often do you think about healthy food choices?

Never	Rarely	Sometimes	Often	Always

3. How often do you check foods you have at home before shopping for food?

Never	Rarely	Sometimes	Often	Always

4. How often do you shop with a grocery list?

Never	Rarely	Sometimes	Often	Always

5. How often do you compare prices before you buy food?

Never	Rarely	Sometimes	Often	Always

6. How often do you use the "Nutrition Facts" on the food label to make food choices?

Never	Rarely	Sometimes	Often	Always

7. How often do you run out of food before the end of the month?

Never	Rarely	Sometimes	Often	Always

8. How often do you buy low-fat or fat-free milk or dairy foods?

Never	Rarely	Sometimes	Often	Always

9. How often do you buy food with lower added sugar?

Never	Rarely	Sometimes	Often	Always

10. How often do you buy food with lower added salt (sodium)?

Never	Rarely	Sometimes	Often	Always

1

11. How often do you let meat or dairy foods sit out for more than 2 hours?

Never	Rarely	Sometimes	Often	Always

12. How often do you thaw frozen foods at room temperature?

Never	Rarely	Sometimes	Often	Always

13. How often do you prepare foods without adding salt?

Never	Rarely	Sometimes	Often	Always

14. How often do you eat more than one kind of vegetable a day?

Never	Rarely	Sometimes	Often	Always

15. How often do you eat more than one kind of fruit a day?

Never	Rarely	Sometimes	Often	Always

16. When you have milk, how often do you choose low-fat milk (skim or 1%)?

Never	Rarely	Sometimes	Often	Always

17. When you eat dairy products, like yogurt, cheese, cottage cheese, sour cream, how often do you choose low-fat or fat-free options?

Never	Rarely	Sometimes	Often	Always

This part of the survey asks about the **foods you usually eat each day** and the **activities you usually do each day**. As you read each question, think about the recent past. This is not a test. There are not any wrong answers.

18. On average, how many cups of vegetables did you eat each day? This includes fresh, frozen, canned and 100% juice.

None	1 cup	2 cups	3 cups	4+ cups

19. On average, how many cups of fruit did you eat each day? This includes fresh, frozen, canned, dried or 100% juice.

None	1 cup	2 cups	3 cups	4+ cups

20. On average, how many days did you exercise when you breathed harder than normal for at least 30 minutes?

None	1 day	2 days	3 days	4 days	5 days	6 days	7 days

This part of the survey asks about **support you may get from people in your faith community to change your eating habits**. This is not a test. There are not any wrong answers.

21. During the past three months, people in my faith community encouraged me not to eat "unhealthy foods" when I was tempted to do so.

None	Rarely	A few times	Often	Very often

22. During the past three months, people in my faith community discussed my eating habit changes with me (asked me how I am doing with my eating changes).

None	Rarely	A few times	Often	Very often

23. During the past three months, people in my faith community reminded me not to eat "unhealthy foods".

None	Rarely	A few times	Often	Very often

24. During the past three months, people in my faith community complimented me on changing my eating habits.

None	Rarely	A few times	Often	Very often

25. During the past three months, people in my faith community commented if I went back to my old eating habits.

None	Rarely	A few times	Often	Very often

26. During the past three months, people in my faith community ate "unhealthy foods" in front of me.

None	Rarely	A few times	Often	Very often

27. During the past three months, people in my faith community refused to eat the same foods I eat.

None	Rarely	A few times	Often	Very often

28. During the past three months, people in my faith community brought foods I am trying not to eat to faith community events.

None	Rarely	A few times	Often	Very often

29. During the past three months, people in my faith community got angry when I encouraged them to eat healthy foods.

None	Rarely	A few times	Often	Very often

30. During the past three months, people in my faith community offered me foods I am trying not to eat.

None	Rarely	A few times	Often	Very often

This part of the survey asks about **support you may get from people in your faith community to change your exercise habits**. This is not a test. There are not any wrong answers.

31. During the past three months, people in my faith community exercised with me.

None | Rarely | A few times | Often | Very often

32. During the past three months, people in my faith community offered to exercise with me.

None | Rarely | A few times | Often | Very often

33. During the past three months, people in my faith community gave me helpful reminders to exercise.

None | Rarely | A few times | Often | Very often

34. During the past three months, people in my faith community encouraged me to stick with my exercise program.

None | Rarely | A few times | Often | Very often

35. During the past three months, people in my faith community changed their schedule so we could exercise together.

None | Rarely | A few times | Often | Very often

36. During the past three months, people in my faith community discussed exercise with me.

None | Rarely | A few times | Often | Very often

37. During the past three months, people in my faith community complained about the time I spend exercising.

None | Rarely | A few times | Often | Very often

38. During the past three months, people in my faith community criticized me or made fun of me for exercising.

None | Rarely | A few times | Often | Very often

39. During the past three months, people in my faith community gave me rewards for exercising.

None | Rarely | A few times | Often | Very often

40. During the past three months, people in my faith community planned for exercise.

None | Rarely | A few times | Often | Very often

41. During the past three months, people in my faith community helped me plan activities around my exercise.

None | Rarely | A few times | Often | Very often

42. During the past three months, people in my faith community asked me for ideas on how to get more exercise.

None | Rarely | A few times | Often | Very often

43. During the past three months, people in my faith community talked about how much they like to exercise.

None | Rarely | A few times | Often | Very often

This part of the survey asks about **you**. Your responses will be kept confidential.

44. What is your name?

45. What year were you born?	19 _____	
46. Are you male or female?	Male	Female
47. Are you married or single?	Married	Single
48. Are you Hispanic or Latino?	Yes	No

49. What is your race? (Circle all that apply.)

American Indian or Alaska Native	Native Hawaiian or Other Pacific Islander
Asian	White/Caucasian
Black/African American	Other, please specify _____

50. What is the highest level of education you have completed?

Some High School	Some College
Graduated High School/GED	Graduated College

51. Do you or your children receive any of the following? (Circle all that apply.)

Child Nutrition (Free/Reduced Lunch)	SNAP (EBT Card)
Head Start	WIC
Medicaid	Other, please specify _____

52. What is your monthly income?	$_____		
53. How many children live with you?	_____		
54. Write the age of the children.	Age: _____	Age: _____	Age: _____
	Age: _____	Age: _____	Age: _____
55. How many adults live with you?	_____		

This material was funded in part by USDA's Supplemental Nutrition Assistance Program (SNAP). USDA is an equal opportunity provider and employer. www.aces.edu/nep
The Alabama Cooperative Extension System (Alabama A&M University and Auburn University) is an equal opportunity educator and employer. Everyone is welcome! 5