

AN EXPLORATION INTO PUBLIC HEALTH EXPERIENCES OF RURAL RESIDENTS TO
FACILITATE UNDERSTANDING OF CHRONIC POOR HEALTH HABITS: A
PHENOMENOLOGICAL STUDY

by

Marybeth Ellen Mitcham

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

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ABSTRACT

The purpose of this hermeneutic phenomenological study was to interpret the public health education experiences of rural residents in one predominantly rural county. This county was identified by its pseudonym, Middlesex County, for the purposes of this paper. The research was done to identify causal factors contributing to the problem of non-compliance exhibited by many rural residents. The non-compliance has resulted in many of those residents choosing to not implement beneficial practices and information from public health education. The guiding behavioral theory for this study was Maslow's behavioral theory of a hierarchy of needs. This theory describes the rationale behind why people make the choices that they do. The guiding methodology for this study was hermeneutic phenomenology, as that research design enabled the researcher to better understand the subjective experiences of the research participants. Purposeful sampling was conducted to obtain 12 participants. Data was collected via in-person interviews, surveys, and focus groups, and analyzed using thematic analysis to interpret the data patterns. Additionally, the researcher journaled her experiences throughout the research process to eliminate additional points of bias. From this approach, the following primary themes emerged: (a) the importance of personal connectedness, (b) the importance of personal applicability of information, (c) making good choices promotes good health, (d) the ability to ask questions, and (e) the preference of interactive education. These findings will ultimately allow her and other public health educators who serve rural populations to more effectively design their educational efforts.

Keywords: public health education, experiential education, rural public health education, public health

Copyright Page

Dedication

To Andy. *Ignis aurum probat, miseria fortes viros.*

Acknowledgments

Great things develop from a community that supports the people lucky enough to be counted as members. This project is no exception. I am exceedingly grateful for the support, encouragement, and assistance of the following people and groups: Dr. Coker, for patiently and graciously journeying with me through this entire dissertation process (during a global pandemic, no less!) and Dr. Park for her time, expertise, and detailed input. Barb and the amazing people of the best senior center in the whole world, for being part of my crazy projects (like this one!). Jen, for friendship and mentorship over the past few years, and for choosing to see the best in me. Sue, for making me back away from my computer and go on fairy walks. Chris, for graciously allowing me to interrupt her work, regularly, so that I could ask for help selecting synonyms. Dan, for being willing to tackle work projects like decalcified egg osmosis or attempts at making lemon batteries, which provided the mental fuel to keep writing. Mrs. J, for fueling a passion for excellence in literary pursuit, and for WR. Sig, for unconditional love.

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but am so very grateful that God has an odd sense of humor. My Wyrld Sisters, for being the very best sisters anyone could ever have, and for forming the center of my fierce and glorious Tribe (“Listen -- strange women lying in ponds distributing swords is no basis for a system of government. Supreme executive power derives from a mandate from the masses, not from some farcical aquatic ceremony.”— Michael Palin).

Brianna and William, my babies, who will always be my babies, even though they both have been much taller (yes, and stronger) than I for some time. You two are my world. I love you more than words can say (and this document proves that I can use a lot of them, as you both know very well!), and am exceedingly grateful to be your mom. You two are the very best thing that has ever happened to me, and I can't imagine my life without either of you. Thank you for putting up with your nerdy mom, and for teaching me more than I could have ever learned in a classroom. Andy, 25 years ago, you offered to give up your full scholarship so that I would not have to leave college. When we agreed that it would be better for you to finish your degree first, you promised that I would be able to finish mine someday. Thank you for keeping that promise, even amidst extremely challenging circumstances. Your sacrifices to make it happen have not gone unnoticed. Nor has your insistence that I could do this when I had convinced myself that I could not. Thank you for always believing in my abilities, no matter what, and for pushing me to reach potentials that I could not see. Mountains are one excellent example of this. This project is another. I love you more than you realize.

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List of Abbreviations

Adirondack (ADK)

Body Mass Index (BMI)

Institutional Review Board (IRB)

Women, Infants, and Children (WIC)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this hermeneutic phenomenological study is to interpret the experiences in public health education of rural residents in one predominantly rural county in New York State, referred to by its pseudonym of Middlesex County for this paper. Although public health education is extremely effective when implemented, by converse logic, it is highly ineffective if not implemented. As such, it is important to gain a better understanding of how receipt of public health education is experienced by recipients of that education. This information provides the researcher insight into why some information from public health education is implemented and some information is not.

To this end, chapter one includes the background of the historical, social, and theoretical factors contributing to the choice to undergo research into public health educational efficacy. The terms public health, public health education, and public health informatics are defined, as the understanding of those terms is pivotal to this study. After that, a discussion follows of the researcher's observations and philosophical perspectives that have contributed to selecting this topic and method of research. Next is an overview of the problem. That is followed by the purpose statement of the research, the significance of the study, and the questions driving this research. Finally, chapter one concludes with the research findings, the applications for this research in other locations, and potential further areas of research. From these efforts, the framework of this study should become apparent to the reader.

Background

The greater context of public health education is important. However, the specific problem being addressed in this research project is the issue of non-compliance by the rural residents of Middlesex County to implement public health education. As such, it is important to reflect on the historical, social, and theoretical frameworks that will help to shape the proposed research.

Historical

The field of education in the twentieth century was characterized by many global and regional educational reforms as educational standards became more streamlined (Frank et al., 2015). These reforms were largely due to increased governmental neglect. Despite consistent efforts on the part of the government toward improving the field of scientific-based medical education for practitioners and nurses, the area of public health education in the United States was widely untouched by reform for the majority of the twentieth century (Madsen, 2016). This oversight, in a field whose official institutes of education had only been in existence in the United States since 1914, contributed to a long-term stagnation in the design and delivery of public health education that is still affecting modern-day public health education (Loving, 2017). Additionally, some experts believe that this stagnation, resulting in inconsistent design and delivery of public health education, may possibly have contributed to non-compliance on the part of the general public to implement the public health education that they learned (Rosenstock et al., 2011).

Although some public health educational efforts, such as immunization promotion, have been globally successful in resulting in noticeable patterns of changed behavior on the part of the suburban and urban public, those efforts have not borne fruit in some rural regions (Madsen,

2016). One example of an unsuccessful public health campaign in Middlesex County was the cessation of tobacco product use. Despite consistent public health educational efforts since the 1960s to encourage residents to stop using all tobacco products, many of these initiatives – all of which have been successfully employed in many urban and suburban regions of the United States - have not garnered the same success in rural regions like Middlesex County (May et al., 2019).

Tobacco cessation efforts are not the only examples of recent public health initiatives that were successful in other regions but were unsuccessful in rural populations such as Middlesex County (“ADK,” 2021). Some other efforts have been successful in convincing suburban populations to alter their patterns of behavior but have not resulted in great success among rural populations such as those of Middlesex County. These efforts include education on patterns of diet and physical activity. The public health improvement initiatives have incorporated emphases on reducing the prevalence of obese and overweight populations by encouraging residents to consume greater quantities of fresh fruits and vegetables, by encouraging community members to engage in exercise regularly, to avoid sugary drinks, and to follow an overall healthy diet (Mitcham, 2016).

Although the message and modes of delivery of public health education have been largely the same, regardless of the demographic of the target audience, the members of the rural population of Middlesex County have been less likely than their suburban and urban counterparts to implement what they have been taught (Mitcham, 2016). This phenomenon is not just limited to Middlesex County, but has been historically observed in other rural regions of the United States (May et al., 2019). As such, despite more recent evolution of educational theory, modes of

communication, and notable developments in technology – all of which should assist public health educators in more effectively delivering their messages to rural population - efforts made to deliver public health-based education to members of the local rural community still remain largely ineffective. Regardless of the methods of education or the modes of delivery, many rural recipients of public health-based education continue to refuse to implement what they have been taught (Hoekstra et al., 2016).

Social

Despite the broad scope of subjects that can potentially be covered by public health education, most topics chosen for community education are ones that public health educators consider to be of the greatest importance to their target audience. Public health education exists to help guide individuals toward health practices that are beneficial not only for them but for their families, their communities at large, and, ultimately, the entire world (Levy et al., 2015). As such, topics can range from something as simple as the benefits of implementing proper handwashing techniques to as complex as the best practice procedures when encountering a particularly dangerous pathogen such as Ebola Marburg. The goal of public health education is, therefore, to not only encourage individuals to implement what they have learned, but to promote a ripple effect, as more people are convinced to also implement the same information (Langford et al., 2015).

When recipients implement the information presented via public health education or informatics, the individual and others in their sphere of influence have a much higher likelihood of living healthy lives. When that information is not implemented, the possible ensuing health complications are not solely experienced by the individual. Instead, they potentially can reach a

scale of global proportions, as a personal choice results in widespread effects (Rosenstock et al., 2011).

Theoretical

This problem of non-compliance in implementing public health education can be applied to every aspect of public health research relating to rural populations. Therefore, it is imperative for researchers to better understand the experiences of the public in public health education, as this information may provide an insight into the underlying reasons for non-compliance (Madsen, 2016). When considering the problem of non-compliance on the part of rural residents of Middlesex County to implement public health knowledge, it is clear that an exploration into the experiences of those residents is necessary. By these efforts, the researcher should be able to better uncover the underlying reasons for non-compliance (Madsen, 2016).

To more easily recognize the reasons for non-compliance, the underlying theoretical models that frame and drive the research should be considered. The concept of the interaction between members of the general public and the delivery and receipt of public health education is grounded in several socio-behavioral and socio-ecological theories (Madsen, 2016). While the socio-behavioral theories frame the rationale for the choices that people make (Greenberg et al., 2017), the socio-ecological theories consider the interaction between people and their environments (Schölmerich & Kawachi, 2016). Together, socio-behavioral theories such as Maslow's hierarchy of needs, Rosenstock's health belief model, Connor and Norman's protection motivation theory, and Ajzen and Fishbein's theory of reasoned action, provide the framework to consider the underlying contributive causal factors toward non-compliance (Greenberg et al., 2017). Socio-ecological theories such as Bronfenbrenner's social-ecological

model and Krieger's ecosocial theory provide the framework to consider the context of the environment in which the individual lives as a contributive factor toward their choices and subsequent health behaviors (Schölmerich & Kawachi, 2016). Each of these socio-behavioral and socio-ecological theories is appropriate to this research, as the research is being conducted with the intent of interpreting the experiences of rural residents in public health education to gain a better understanding of why those residents are non-compliant with implementing the public health measures delivered via public health education.

Situation to Self

I love knowledge. I love the pursuit of it, the acquisition of it, and the application of it to other scenarios and situations. I especially enjoy how the acquisition of knowledge can be practically applied in problem-solving strategies and that one facet of knowledge does not necessarily negate another. The epistemological assumption, which entails understanding and then explaining what is understood (Creswell, 2018), is what usually provides the driving focus for any study design that I propose. The ontological assumption is that the problem of some rural residents' non-compliance to implement public health recommendations is real. The axiological assumption that my proposed research topic is important also drives this entire project. In a similar vein, I also thoroughly enjoy incorporating constructivist methodologies in any educational or research efforts that I undertake by incorporating natural exploration into each lesson, and incorporating opportunities for people to learn through the act of doing. I believe that the experiences of an individual frame their perception of their surroundings, dictating not only what aspects of information they grasp but also the method in which they are able to grasp it.

I believe that each individual's wiring, learning styles, and experiences are unique to

them. I also believe that it is extremely important for every educator to design their lesson delivery structure to reflect this individual uniqueness. Although this does not mean that educators should have to restructure a lesson for each separate student, it should mean that educators should not rely on a one-size-fits-all approach to education. If this approach is adopted by educators, simple concepts can first be delivered to learners, followed by ample opportunities embedded in each learning experience for the learner to be able to build upon that knowledge. As public health education is imperative in assisting members of the community to live healthier lives, I also feel that it is vitally important for the education to be easily absorbable and applied by learners.

Although there are some rural residents of Middlesex County who have moved to the county from other regions and who do not exhibit non-compliance to implement public health information, these residents are a minority of the overall population. Their characteristics are not reflective of the characteristics of the overall population. As such, I believe that it is not only pragmatic but necessary to consider what factors are contributing toward non-compliance on the part of local rural community members to implement the public health information that they have received. Many of the community members from Middlesex County are from families who have lived in that region for multiple generations. They are also characterized by a pride in their independence and an attitude of distrust toward outsiders and any new information that outsiders might share. Many of these rural residents also are minimally educated, income compromised, either underemployed or rely heavily on Federal assistance, and rarely seek preventive dental or health care. These factors make the importance of implementing beneficial public health information even more significant.

Problem Statement

The problem addressed in this study is the non-compliance of many rural residents of Middlesex County to implement public health practices. Despite accessing readily available public health resources and participating in educational opportunities geared toward encouraging the public to embrace healthier lifestyles, many rural residents still do not implement what they have learned. Rather, those residents continue to regularly practice poor health habits (Mitcham, 2016; Calgary, 2021). The effects of this pattern of behavior are easily observable in the growing percentages of overweight and obese individuals and associative comorbidities such as type 2 diabetes and cardiovascular disease as exhibited in the population (“ADK,” 2021; Calgary, 2021). Unaltered, unhealthy patterns of behavior place a growing burden on healthcare practitioners and on the taxpaying public. In addition, poor health habits are regularly mimicked by the children of those who practice the poor health habits, effectively creating a problem that is generational, rather than simply one that exists as a point-in-time problem (Levy & Klesges, 2015).

To further exacerbate the problem, the already existing field of public health education has several challenges. These challenges include a vastly diverse audience with varied health needs and a largely ineffective mode of information delivery, as evidenced by widespread non-compliance to implement public health information (Frenk et al., 2015). As such, a one-size-fits-all approach to educational design does not work. When considering the potential negative long-term effects of a lack of solid public health education on a population, the need to deliver information that is easily and readily implemented is even more apparent. To better understand how to address the problem of non-compliance on the part of rural residents of Middlesex

County to adopt public health educational measures, it is necessary to facilitate research into those rural residents' perceptions of public health education (Marriott et al., 2015).

Purpose Statement

The purpose of this hermeneutic phenomenological study was to interpret public health education experiences of rural residents in Middlesex County. At this point in the research, public health education would be defined as any delivery of public health information, whether via traditional educational methods, remote education, or dissemination of public health informatics. The theory guiding this study is the behavioral theory of Maslow's hierarchy of human needs, since that theory describes how certain lower-level needs must first be fulfilled before an individual can fulfill their higher-level need of attaining and implementing educational information (Maslow, 1954).

Significance of the Study

This hermeneutic phenomenological study has empirical, practical, and theoretical significance. This significance is not solely pertinent to the practice of rural public health educators or researchers of public health. In addition, it applies to designers of public health education, rural medical providers, and staff at rural healthcare facilities. This study should be of great benefit to the study population, as well.

Empirical

This study is empirically significant because it fills a notable gap in the literature on the overall perceived efficacy of public health education design and delivery. Previously published studies consider factors such as the effect of emotion on learning (Greenberg et al., 2017), the effect of blended versus non-blended learning opportunities (Liu et al., 2016), or aspects of the

availability or design of digital public health informatics (Dixon et al., 2015). However, there are very few, if any, studies that simply consider the effectiveness of public health education and informatics from the perspective of the recipients of that education and information. As such, it is vitally important to research public health education recipients' perspectives and interpretations of their experiences in public health education. By including this information in research, public health education will be timelier and effectively applicable to the target audience.

Practical

Despite regular delivery and receipt of public health education in Middlesex County, many rural residents remain non-compliant in implementing the information and recommendations that have been presented to them. Non-compliance has led to a high percentage of this population presenting with unhealthy body mass indexes (BMIs), largely sedentary behaviors, instances of type 2 diabetes and cardiovascular disease, and unhealthy patterns of alcohol, tobacco, prescription drug abuse, and illegal drug use. As a result, the indicators of preventable poor health conditions experienced by these rural residents are often generational, as each new generation continues to follow in the same poor health patterns as previous generations. Research into interpreted experiences in public health education of community members in Middlesex County may then help researchers better understand how to design public health education for their target audiences more effectively. This strategy will help public health education to more efficiently meet the health needs of the target audience ("ADK," 2021).

Even though this study would focus on the interpreted experiences of the one target population of Middlesex County, the benefits would not solely be experienced by that one population. Instead, just as those rural residents will be able to reap the benefits of public health education, adjusted to become more effectively absorbed and applied, the findings from this study might possibly be able to be used for research in other settings. By examining this approach, it can later be determined if the findings from this study easily translate to other populations or if they are limited to the residents of Middlesex County.

Theoretical

The underlying problem of rural residents not implementing information shared from public health education may potentially be reflective of challenging life circumstances. Many rural residents may not understand the personal benefits that could arise from applying public health information. This reason may gain greater validity when considered within the context of the extra work and effort that might be needed to implement the recommended public health measures. One behavioral theoretical perspective, Maslow's hierarchy of needs (Maslow, 1954), describes that all individuals have needs that must be met. These needs are tiered, with more fundamental needs placed lower, thus needing to be fulfilled before higher, less fundamental needs can be met.

As previously described, some rural residents of Middlesex County regularly experience hardships relating to poverty, a lack of educational attainment, and a scarcity of regular, stable employment. As such, these residents are often reticent to willingly engage in any recommended activities or strategies that they do not believe will provide a quick and notable benefit in exchange for a little amount of work. When considering this phenomenon within the context of

the problem of non-compliance of implementing public health recommendations, the experiences in public health education of rural residents of Middlesex County may be affected by the inability for rural residents' lower-level needs, such as physiological and safety needs, to be met on a regular basis.

Research Questions

This hermeneutic phenomenological study will focus on interpreting the experiences of rural residents of Middlesex County in public health education. It will be guided by the theoretical framework of Maslow's hierarchy of human needs to better understand the role of rural residents' environments and previous life experiences (van Manen, 1990; Maslow, 1954). To determine the perceived effectiveness of public health education in Middlesex County, as outlined above, the following questions will be answered by this study:

Central Research Question

How do rural residents of Middlesex County describe their experiences in public health education?

The information provided by public health education is vitally important to ensuring the good health of the general public. However, it does not provide any benefit if the recipients of that education do not implement what they have learned. This central question allows the researcher to recognize why non-compliance of public health educational recommendations exists among the research population and to better understand their experiences (Frenk et al., 2015; Greenberg et al., 2017).

Guiding Question One

What are the expectations of rural residents of Middlesex County for public health education, before receipt of that education?

To understand rural residents' experiences in public health education, the expectations for that education by the residents must first be understood. As the underlying behavioral theory for this research is Maslow's hierarchy of human needs (Maslow, 1954), it is important to understand the expectations of the recipients regarding the education that they have received. As such, this question aims to understand the rural residents' perception of the relative importance of public health education in light of their needs.

Guiding Question Two

What factors of the public health education did rural residents of Middlesex County find meaningful to them?

As with question one, guiding question two aims to afford the researcher a better understanding of the public health education experience of the research participant. By determining which factors, if any, were perceived to be meaningful, the needs of the research participants, which potentially contribute toward the participants' experiences in public health education, may become clear (Maslow, 1954; Greenberg et al., 2017).

Guiding Question Three

What factors of the public health education did rural residents of Middlesex County find irrelevant or unimportant?

As with question two, this question aims to provide the researcher with a better understanding of the experiences in public health education of rural residents of Middlesex County by focusing on aspects of the education that the research participants may have

considered inapplicable to them. This could also contribute toward an improved realization of the needs of the rural residents (Maslow, 1954; Levy & Kleseges, 2015).

Guiding Question Four

How do rural residents of Middlesex County describe how well public health education addresses their perceived current health needs?

As with questions one, two, and three, this question also aims to offer the researcher greater insight into the experiences in public health education of rural residents of Middlesex County. While question one focused on expectations prior to the education, and questions two and three focused on factors during the education, question four focuses instead on the perception of the recipient of the education. Considering how applicable the public health education is to the perceived health needs of the target audience could help the researcher better understand the factors possibly contributing to non-compliance (Maslow, 1954; Dixon et al., 2015).

Definitions

1. *Public Health* – The field of public health is a comprehensive overview of the health of individuals, from consideration of a global or community perspective (Frenk et al., 2015).
2. *Public Health Education* – The educational arm of public health, founded on research (Frenk et al., 2015).
3. *Public Health Informatics* – Materials developed and distributed as part of public health educational efforts (Frenk et al., 2015).

Summary

Despite ongoing efforts to make public health education timelier and more easily applicable for recipients of that education, those efforts have not been widely successful (Frenk et al., 2015). The apparent lack of success is indicated by the non-compliance on the part of rural residents of Middlesex County to apply what they have learned from public health education in their everyday practice. Inability to apply public health knowledge affects not only the health of the individual, but that of entire communities. As such, an effort must be made to determine community members' perception of factors that contribute to the effectiveness or ineffectiveness of the content and delivery of public health education.

To this end, a hermeneutic phenomenological study was proposed, allowing the researcher to interpret the experiences in public health education of rural residents in Middlesex County. From the information gleaned from the answers to the central question and four guiding questions asked as part of this study, the gap in the literature relating to non-compliance on the part of rural residents to implement public health education was addressed. The findings can potentially allow researchers to be able to use that data for further research toward the goal of designing more effective public health education to meet the needs of rural audiences.

CHAPTER TWO: LITERATURE REVIEW

Overview

A systematic literature review is necessary to afford a better understanding of the problem of non-compliance to implement recommended public health measures, as expressed by rural residents of Middlesex County. The review contains an emphasis on the perceived efficacy of public health educational delivery by rural residents. This chapter presents a comprehensive evaluation of the current literature that is related to the selected topic of study.

In the first section, the theories relevant to human needs and human motivation, as they relate to learning, will be cataloged. Following will be a synthesis of the recent literature relating to public health education, goals and measurements of success, and public health education methods, both in-person and virtual. Public health education information, including an overview of content and deliverables, will also be outlined. Next, challenges relating to the field of public health education, both recent and current, and projected future challenges will be discussed. Finally, will be proposed strategies to address these needs. This information will effectively identify a gap in the literature that justifies the need for this study about the interpreted experiences in public health education of rural residents of Middlesex County.

Theoretical Framework

The concept of public health education is grounded in several socio-behavioral and socio-ecological theories (Madsen, 2016). The socio-behavioral theories frame the rationale for the choices that people make (Greenberg et al., 2017), and the socio-ecological theories explain the interaction between people and their environments (Schölmerich & Kawachi, 2016). While several of these theoretical models could be used as a framework for research into the

experiences in public health education of rural populations (Stilton et al., 2011), the theoretical model selected for this study is Maslow's theory of human needs (Maslow, 1954). This theory will be outlined below.

Theory of Human Needs

Maslow's (1954) theory of a hierarchy of human needs suggests that all humans have different tiers, or levels, of needs. Needs that are the most basic for survival are categorized as lower needs, and those which are not necessarily required for survival are categorized as higher needs. Maslow (1954) argued that the lower-level needs must first be met before higher-level needs can then be met. The levels of needs from the lowest to the highest are physiological needs, safety needs, love needs, esteem needs, and self-actualization needs. Physiological needs are those which provide for physiological functioning (food, water, shelter, clothing, etc.) and fulfill the most basic needs for human survival. Safety needs, the next tier in Maslow's hierarchy, include not only physical safety but emotional and mental safety, as well. The needs for love are not merely for *eros*, or romantic love, but also include *philia*, or the love of friends, children, and relatives (Franklin, 2001). Esteem needs are tied to the sense of value of the individual, not just that the individual feels that they are valued, but that others find them valuable, as well. Finally, self-actualization needs are the needs of the unique characteristics (talents, strengths, abilities, etc.) of each human to be realized through exploration and mastery of those characteristics.

According to Maslow (1954), the higher levels of needs, such as esteem and self-actualization, can only be attained if the lower levels, such as physiological and safety, are already met. This potentially establishes a scenario in which many individuals may not have the necessary resources available enabling them to attain those higher levels of needs. Simply put, if

basic human needs are not able to be met, then neither will higher-level needs. Since higher-level needs are equally important for humans to live lives that are healthy and fulfilled, it is imperative to better understand how human needs can be met. It is even more imperative to understand how humans can progress upward through the tiers, acquiring the impetus, or motivation, to continue to grow and develop higher-level skills and abilities.

For humans to be motivated to implement what they have been taught or to make any changes in their lives, people must first realize that changes are needed (Herzberg, 1996). This idea, described by Herzberg (1996), was based on Maslow's theory of a hierarchy of human needs (Maslow, 1954). Herzberg (1996) argued that motivators are needed to encourage individuals to make decisions that are outside of their scope of immediate needs. Otherwise, the effort that would be required to implement any changes would prove too great of a hurdle for the individual to overcome. The ensuing hardship would prevent individuals from making those changes or even realizing that changes are necessary.

For any changes to occur, external motivators must effectively facilitate the formation of internal motivators. When this occurs, the internal motivators will eventually dictate the desired changes in the form of measurable differences in human behavior. When considering this phenomenon in the context of Maslow's (1954) theory of a hierarchy of human needs, which suggests that the meeting of human needs is an underlying driving force for human behavior, Herzberg (1996) argued that the presence of motivators could facilitate the enlightenment of an individual as to the presence of as-to-yet unknown needs. These motivators will then help the individual to develop strategies to meet their needs.

External motivators can be physical in nature, such as the development of a physical condition that prompts the individual to implement changes in their behavior to address that physical condition (Flannelly et al., 2011). They can also be emotional, such as an emotional void of a broken relationship which then might prompt the individual to implement changes in their behavior to address the cause of that broken relationship. External motivators can also be environmental, such as experiencing the drawbacks of living in a rural location can prompt the individual to make changes that would allow them to leave that rural location and live elsewhere.

When considering the problem of non-compliance on the part of rural residents of Middlesex County to implement the beneficial public health measures that they have learned during public health educational efforts, the needs of the target population must be considered (Maslow, 1954). A large portion of the population of Middlesex County is either underemployed or seasonally unemployed, resulting in a high percentage of rural residents who are “working poor” or who heavily rely on governmental assistance for basic needs to be met (Calgary, 2021). Many residents have low levels of educational attainment, which results in the primary vocational choices of the residents to be seasonal jobs, such as logging, housekeeping, or other jobs relating to tourist activity, which are unstable employment. Additionally, abuse of intoxicants and other controlled substances is fairly widespread among those whose income places them on the lower level of the socioeconomic strata (Mitcham, 2016).

Geographic factors can also contribute to the needs of the target population. The Middlesex County residents who live in outlying mountain regions tend to exhibit a vehement refusal to consider any information or sources of information that differ from what they or their families have known or have practiced for generations (Mitcham, 2016). This characteristic is a

noted pattern of behavior of many residents of rural, mountainous regions (May et al., 2019). These residents, many of whom live in what could be considered squalid conditions, also exhibit notably higher rates of domestic violence, child abuse, and a general overall lack of willingness to conform to society's criminal laws when compared with other county residents (Nierenberg & Ward, 1975). Local educational professionals (general, special, health, and public health) who instruct residents from this subset of the Middlesex County population have noted distinctive traits of overall non-compliance exhibited by these individuals. This non-compliance presents as a general unwillingness on the part of the residents to accept any recommendations or instruction from any person who is not either related to or very well known by the residents. As a result, educational efforts made by any person not meeting these characteristics are very regularly met with stonewalling on the part of residents. As these residents rarely obtain further educational attainment, it is highly unlikely that any educational professionals who will attempt to provide education to this population will be accepted by the members of this population. This will likely result in further non-compliance of this subset of the population to accept and implement educational recommendations (S. Brooks, personal communication, August 17, 2020).

Although this subset of the population does not represent the entire population of Middlesex County, it does represent a fairly large portion (Mitcham, 2016). However, the negative factors such as low levels of educational attainment, abuse of intoxicants, poor health and dietary practices, and higher than average rates of overweight or obese individuals with associative comorbidities such as cardiovascular disease and type 2 diabetes do reflect an overwhelmingly large percentage of residents of Middlesex County (Calgary, 2021). These factors, when considered considering the compounding effect that occurs because of generational

patterns of repeated behaviors, could theoretically contribute to the lower-level needs of the rural residents of Middlesex County going unmet. As such, when considering Maslow's theory of human needs (Maslow, 1954), external factors such as poor indicators of health as experienced by those rural residents may not be enough to encourage patterns of changed behavior successfully. Inability to adopt changed patterns of behavior may be especially true when the residents in question are not regularly having many of their lower-level needs met.

Related Literature

Although some diseases are not preventable, a clear majority of them are. As such, the field of public health education is one that exists to help address the health needs of people (Mariott et al., 2015). It does this by delivering evidence-based information that can help to prevent detrimental health conditions, effectively meeting the physical, mental, and emotional needs of people on a personal, regional, and global level (Madsen, 2016). With this information in mind, it is important to consider characteristics of that education that have made public health education efforts effective in the past and present. It is also important to consider effectively providing strategies and information that can help to meet the needs of people when considering the field of public health education within the context of its importance in ensuring the well-being of people (Frenk et al., 2015).

To this end, the following topics will be discussed in the Related Literature section: the importance of public health education, the goals of public health education, and measurements of successful implementation and delivery of goals. Additionally, the benefits and detriments of in-person or distance-based public health education will be considered, as well as the importance of the content of public health education, informatics, and initiatives. Finally, there will be a

reflection on current and projected challenges to public health education, previous strategies that were considered to be effective, and strategies that have been proposed to address those challenges. By considering these components, a better understanding of the field of public health education should be obtained.

Public Health Education History and Modern Implications

Although the concepts embedded in the definition of public health have been in existence for millennia, the current field of public health education has been borne out of great strides made in the overall health conditions of American and Western European communities during the 1800s (Frenk et al., 2015; Walter et al., 2015; Drake et al., 2017). Namely, overall health conditions of the general population of the western world were poor in the early 1800s. These conditions arose out of a combination of factors. These factors were due to a lack of regular hygienic practices on the part of people and the medical community, a dearth of understanding or implementation of sanitation in the general populous and medical practices, a lack of readily available and safe food, continued rounds of preventable disease, and the design of public works systems such as drinking water and sewage that effectively combined the two substances all contributed towards the problem (Loving, 2017). These conditions contributed to high morbidity and mortality rates and many chronic health complications as exhibited by the majority of the population. The correlation between poor health and factors such as environmental conditions, hygiene, sanitation, or dietary intake was largely unknown until discoveries were made by leading public health experts like John Snow in the 1800s (Vineis, 2018).

At the time that these ideas on improving sanitation, hygiene, food safety, public works, and reducing preventable disease were developed by experts like Snow, they were not only

considered novel but also ran contrary to the policies and knowledge of the time (Vineis, 2018; Padek et al., 2021; Verguet et al., 2020). Perhaps unsurprisingly, many of these new ideas were not readily accepted by many medical professionals of that day. As such, to address the larger issues of preventable health disparities, the need for salubrious community environs, and the importance of sanitary methods of medical care, other professionals first had to be convinced of the existence of a problem. To meet this underlying need, public health professionals developed methods of disseminating their information first to other professionals (Rosenstock et al., 2011). In this way, the newly discovered public health information would be accepted and implemented first by medical professionals so that it could then later be accepted and implemented by the public (Dixon et al., 2015).

This approach was successful, resulting in changed knowledge and understanding on the part of medical and other healthcare professionals (Vineis, 2018). However, since the knowledge base of the general public has always differed greatly from that of medical and other healthcare professionals, experts in the field of public health recognized that additional steps would need to be taken. As such, the content and methods of the public health information shared by medical and other healthcare professionals would have to be developed in such a way as to be accepted by both the professional and the member of the public, as well as those individuals who oversaw governmental oversight and policy-making (Loving, 2017). Simply put, any information disseminated via public health education would have to be effective in ensuring that people would understand the need to make a change, the benefit that would be experienced because of making that change, and the steps that would be necessary to make those changes occur. This information would have to be easily comprehended by individuals in all levels of decision-

making, ranging from governmental leaders to a member of the general public (Ng & de Colombani, 2015).

Public Health Education Goals

Public health efforts such as the importance of clean drinking water, efforts to vaccinate individuals as a means of protection against life-threatening pathogens, overhauls of public works systems, or measures to ensure food safety have all been for one purpose. These efforts have been made to provide information to the public that enables the public to make informed decisions that will hopefully improve their health (Rosenstock et al., 2011). This initiative not only focuses on the improvement of the personal health of the individual but also contains components of the overall community, regional, and global health, as well (Madsen, 2016). As each individual chooses to personally implement public health information that has been shared via public health education efforts, their decision can result in an improvement in their respective quality of health. The beneficial effects of this can snowball, allowing the individual's decision to contribute toward improvements on a larger, more wide-sweeping platform that will positively affect their families, communities, regions, and, by extension, potentially the world (Frenk et al., 2015).

For these effects to take place, a policy must first be established (Langford et al., 2019). As such, an effort has been designed in a tiered structure that considers aspects of a governmental decree, public policy, and private choice (Levy et al., 2015). The rationale for this strategy is that if a law has been established, then the majority of businesses, professionals, and the general public will be more likely willing to adhere to the policies and procedures outlined in the law. Ultimately, although laws and policies can dictate some aspects of public health

practice, the benefits from that practice will only be realized if they are adopted by the general public. For this to occur, there first needs to be an understanding of the personal importance of the public health measure by the general public (Dixon et al., 2015; Herzberg, 1996).

Public Health Education Measurements of Success

It is not enough for public health laws to be established, although that is a good start in altering policy. In the field of public health, success is first measured by the concept of best practices (Greenberg et al., 2017). Best practices describe a public health effort that has been observed to be effective in improving public health conditions in at least one setting and shows promises to be effective in other settings (Ng & de Colombani, 2015). As such, the success of any public health education effort is measured by altered patterns of behavior on the part of the recipient of the public health education that ultimately results in improved health. This measurement includes personal health improvement, as well as regional health improvement (Dixon et al., 2015).

Since the goal of any public health effort is to address areas of public health concern effectively, measurements of the success of those initiatives must include small successes, as well as larger, more far-sweeping, and easily observable ones. These measurements will also illustrate improved conditions on a community or global level, providing a snapshot of the initiative's success (Medieros et al., 2018). By this approach, small results can be measured by noting the individual choices to implement the information learned from the public health education effort. Larger results can also be measured by noting an overall trend of many individuals choosing to implement the information learned from the public health education effort (Dixon et al., 2015). Even though these measurements of success can facilitate

understanding of whether public health education interventions are successful or not, the best measurement of success would ultimately be in overall health improvements in those populations. These improvements would be observable as the recipients of that education continue to want to learn more about healthy habits and then implement what they have learned (Levy et al., 2015).

Public Health Education Methods

Although success in public health can be measured by the impact that education has on the lives of those who receive that education, the methods used to deliver public health education vary greatly (Langford et al., 2019). The underlying message of all public health education is the same that adhering to the recommended guidelines delivered in the public health educational deliveries will result in a personal health improvement as experienced by the individual who has chosen to implement what they have learned (Dixon et al., 2015). Although some of the reasons for the diversity in public health educational delivery methods are readily understandable, such as restrictions to deliver in-person education, resulting in remote delivery of instruction, there are several other reasons for variance in public health educational delivery (Walker & Fox, 2018). The reasons for this variance in informational delivery can include the subject of the public health educational effort, the characteristics of the target population, the diversity in learning styles of the recipients of the public health educational efforts, and the available funding to support current educational efforts (Rosenstock et al., 2011).

Even though many different types of public health educational instructional methods do exist, including the use of public displays of infographics (the topic of which will be discussed later in the literature review), the field of public health education currently falls into two broad

categories: in-person instruction and distance-based instruction (Ng & de Colombani, 2015; Telles et al., 2021; Binns, 2021; Binns et al., 2017). The specifics of each type of instructional mode can vary greatly due to differences in the preferences of the public health educator, the needs of the target group intended to receive the instruction, the structure of the event at which the public health education delivery will take place, or even the specific characteristics of the group receiving the instruction. Despite these factors, in-person public health instruction has traditionally been characterized as having more interaction between educators and recipients of that education than distance-based or virtual education (Smith, 2019; MacDonald et al., 2021; Ghisi et al., 2021). Regardless of the category of educational delivery, each type of public health education delivery must allow for the recipient of that education to experience some connectivity with the mode of education. That connectivity will then facilitate the importance of the need for the delivered public health information to be implemented by the recipient of that educational effort (Muubuke, 2017).

In-person public health education often consists of an educator instructing a group of members of the public rather than an educator providing direct educational delivery to an audience of one. Although it does happen occasionally, it is very rare for a public health education effort to be one-on-one (Greenberg et al., 2017; Binns, 2021; Binns et al., 2017). As noted previously, the specific methods of in-person public health education vary greatly, depending on a variety of factors which include both the public health educator and the recipients of the public health education (Langford et al., 2019). Sometimes, the educational delivery will solely consist of a lecture-style lesson in which the educator speaks and the students listen. Other times, in-person public health education will consist of a combination of pre-

established video segments interspersed with a lecture-style delivery. The other most frequently implemented method of public health education consists of experiential or hands-on learning opportunities, where the educator interacts with the students, encouraging the students to learn and explore via kinesthetic methods (Marriott et al., 2015).

Although the vast majority of participants of public health education choose to do so voluntarily, participation in some instances of in-person delivery of public health education are mandatory requirements for receipt of assistance benefits or as part of a school's mandated health education curriculum (Rhodes et al., 2017). One example of this is through the Women, Infants, and Children (WIC) program which provides pregnant or lactating women and young children with nutrient-dense food and drinks in exchange for cooperation in receiving public health education and allowing for collection of data (Binns et al., 2017). The purpose of this delivery of public health education and information to WIC participants is to ensure that recipients receive tools that will allow them to wisely use the food-based resources that have been given to them. Another example is mandatory public health education related to the use and abuse of legal substances such as alcohol or tobacco provided by companies to their employees (Smith, 2019). Some companies mandate specific public health education for their employees as part of a cost-reducing insurance strategy, while others mandate to promote a healthy workplace.

For individuals who are disabled or present with other physical, emotional, or mental challenges, the in-person public health education design can effectively help to bridge the gap between hearing information and understanding it (Malcolm et al., 2019; Landeiro et al., 2017; Dahl & Crawford, 2017). During these in-person sessions, public health educators can use teaching tools, manipulatives, activities, and even body language to help facilitate a better

understanding of the material by the recipient population. These efforts will make it more likely that recipients of the in-person public health instruction will implement what they have learned. The same pattern of the apparent increased benefit of in-person public health education instruction also appears the same for impoverished individuals, especially those lacking additional formal education, or for public health education in environments where the recipients of the education and the educator are not both fluent in the same language (Leigh-Hunt et al., 2017; Ebu et al., 2019; Hodgson et al., 2020). For these recipients of public health education, the personalized delivery of public health information can assist with overcoming language challenges, promulgating understanding of challenging concepts on the part of the recipients, and in fostering a sense of camaraderie and trust between the public health educator and the recipients of their educational efforts (Fox et al., 2017).

Although each method of in-person public health education has its benefits and limitations, there is no one-size-fits-all approach, as the needs of each population targeted for receipt of public health education will be unique to that population (Dixon et al., 2015; Binns, 2021; Binns et al., 2017). One example of this is a public health educational design and delivery geared toward addressing the underlying health concern of obese and overweight populations, along with their likelihood of developing associative comorbidities such as type 2 diabetes, cardiovascular disease, and hypertension. Rather than focusing on dietary intake as the topic of interest for this public health education intervention, one group of public health professionals decided to implement education and information geared toward hiking (Mitten et al., 2016). Their rationale was that many communities already had an established infrastructure of walking or hiking trails which were made available to community members at no cost. Additionally, there

often was no cost to access these hiking trails, which eliminated at least one barrier to the use of the trails. As long as community members could physically get to the trails, they would be able to reap the myriad benefits of exercise and fresh air, providing them with exercise and exposure to the outdoors (Twohig-Bennet & Jones, 2018). Educational material developed by the public health professionals for this effort included infographics related to the benefits of hiking and information on what to bring along while hiking (e.g., specific nutrition and hydration recommendations). The goal of this educational initiative was to effectively convince the target population to try hiking in hopes that the activity would provide rural community members with an idea for an activity that would also promote regular physical activity, and, by doing so, ultimately address the health concern of obesity and associative comorbidities through the provision of a feasible, low-cost, exercise option (Mitten et al., 2016).

With the advancement of technology, virtual public health education opportunities have become increasingly available, especially when considering rural or other geographically isolated populations that may struggle to travel to sites where traditional, in-person public health educational lessons or workshops are offered (Liu et al., 2015). Despite the increased availability of virtual public health education, when in-person public health education was readily available, the method of virtual public health instructional delivery had not been broadly implemented by public health educators (Marriott et al., 2015; Binns, 2021; Binns et al., 2017). There were several reported reasons for the tepid reception to virtual public health education. First was a perception on the part of some recipients of public health education that virtual education lacked the desired interpersonal aspect provided in in-person instruction. The second was that participants did not feel connected to the public health professional delivering the virtual

education as they did to those educators who provided in-person public health education. The third was that the virtual format prevented many participants from being able to access information that they felt important if other members of their household were resistant to the topics of the virtual public health lessons (Dahl & Crawford, 2017).

Despite these limitations, the option of virtual public health education has greatly grown in popularity during recent periods of social isolation, mandated as part of a series of mitigating the severity of the COVID-19 pandemic experienced during the Western world during 2020 (Ros & Neuwirth, 2020; Creese et al., 2021). Since many previously scheduled in-person public health education efforts had been canceled during the late winter and spring months of 2020 because of widespread social distancing efforts, distance-based public health education delivery became even more imperative (Zhang, 2020; Zeng et al., 2021; Ramakrishnan et al., 2021; Seddighi et al., 2021; Arnold, 2021). Workshops and lectures that previously had only been delivered in person either had to be canceled or reworked to be delivered remotely. As a result, virtual public health educational delivery transformed from a lesser-used option for public health education to one that became increasingly popular. Professionals working in the field of public health strove to meet the previous demands of the general population, ensuring that superior public health education was continued to be delivered, but also were faced with the additional challenge of providing public health education and informational oversight related specifically to the novel viral contagion whose as-yet unstoppable spread resulted in a global pandemic (Morabia, 2020; Zeng et al., 2021; Arnold, 2021).

One interesting opportunity that arose out of the COVID-19-related necessity for virtual public health lessons instead of the traditional, in-person format was for individuals of all ages to

attend the virtual public health lessons together (Zhang, 2020; Zeng et al., 2021; Ramakrishnan et al., 2021). This approach vastly differed from traditional public health education, not only in the virtual aspect of public health education but in the intermingling of different ages of participants. There were some unexpected benefits that arose from the intergenerational approach to virtual public health education during the COVID-19 pandemic (Creese et al., 2021; Seddighi et al., 2021; Arnold, 2021). Many individuals who would have been completely socially isolated because of the social distancing and quarantine mandates were, instead, able to interact with people, meet new friends, and engage in fun and interactive activities while they simultaneously learned important public health knowledge and gained some important life skills. For these physically isolated individuals, the intergenerational virtual public health lessons helped to bolster their emotional and mental well-being, fostering connectivity instead of loneliness (Calati et al., 2018; Malinga et al., 2020; Franke et al., 2021; Van Houwelingen-Snippe et al., 2021; Hubbard et al., 2021; Griffiths et al., 2021).

Traditionally, public health education has not been intergenerational in design. Instead, the education has been geared toward addressing specific public health areas of concern. This has resulted in a cohort of individuals exhibiting or at risk for those areas of concern, often gathering for the public health lessons (Franke et al., 2021; Van Houwelingen-Snippe et al., 2021). Messages of tobacco use cessation might be geared toward adolescents, while education focused on not drinking alcohol and driving might be delivered to older teenagers (Wackowski & Delnevo, 2015). In a similar vein, public health education relating to best health practices for pregnant women would be delivered to pregnant women, and education regarding the specifics of diabetic diets would be of most interest to individuals with diabetes or who are concerned

about developing diabetes (Warren et al., 2017). Although there may be some overlap between the ages of the participants of these public health educational initiatives, more often than not, participants are in roughly the same age bracket (Wykoff, 2020).

One possible contributive factor toward this is the location of any public health educational opportunity. In-person public health education requires a physical location at which attendees must congregate. If lactation and prenatal dietary public health lessons are offered at a midwife's office, it is unlikely that many senior citizen males would be in attendance (Baron et al., 2017). Similarly, public health lessons on how to manage diabetic retinopathy, held at the renal center of a hospital, would not likely also be attended by many teenagers (Dahl & Crawford, 2017). In contrast, the delivery of virtual public health instruction means that anyone with internet or cellular access can participate in the lessons. Not only is the location of the lesson no longer a restrictive factor, but so are other potentially prohibitive factors, such as the cost and time related to transportation or the necessity of obtaining childcare (Ros & Neuwirth, 2020).

As many public health areas of concern are generational in nature, affecting not only one generation, but passed from one to the next it is imperative to ensure that individuals from all generations are receiving the same instruction relating to those areas of concern (Wykoff, 2020). The virtual delivery of public health lessons can effectively do just that. Instead of a public health educational session relating to maintaining an overall healthy lifestyle, including healthy mental health, only being attended by one age group, virtual delivery of those lessons allows for youth, teenagers, young adults, middle-aged adults, and senior citizens to all benefit from receiving the same instruction (Ward et al., 2016; Jarpe-Ratner & Marshall, 2021). This

approach not only provides the benefit of a comprehensive, wide-reaching approach to delivering public health education to members of the general public, ensuring that the same information is made available to a diverse audience, but also assists in addressing generational patterns of poor health behaviors (Waldhauer, 2018). It may also provide the additional advantage of promulgating a sense of connectivity between individuals, supplementing the positive public health instruction with an additional facet of healthy socio-emotional health (Baron et al., 2017).

Although remote, virtual delivery of public health education may have been a necessity during a point in time when groups of people simply were unable to congregate for any reason, it has also been more frequently implemented in recent years, before the COVID-19 pandemic, because of emerging and improving technology that has made virtual education of any sort possible (Morabia, 2020; Arnold et al., 2021). In a similar way as to how traditional, in-person public health instruction has been delivered face-to-face, but in varying formats, virtual or remote public health instruction also is delivered remotely, but in varying formats. Some of the virtual public health educational methods can include short videos that recipients can watch, such as short video presentations on how to properly store perishables in the refrigerator, how to dehydrate food properly, or even the most effective methods of handwashing. These presentations will often be lively and colorful, accompanied by music, and will provide information at the end of the short video that directs individuals who are watching to resources for additional information on those topics (Dunleavy et al., 2019). For rural residents who often have a poor internet connection and a lack of available cellular service, the options of short instructional or informational public health videos can be particularly helpful, considering the amount of available internet required to access the videos. Shorter videos require lower internet

bandwidth to access, as compared with the larger internet bandwidth required to play longer videos or even to access live streaming webinar platforms (Langford et al., 2019; Iboi et al., 2021). Although short videos do provide viewers with excellent public health information, the short video format can also include opportunities for experiential learning moments, in which recipients of the educational efforts could be encouraged to engage in the recommended activities (e.g., exercising, trying a new food or new recipes, implementing sanitary measures, etc.).

Other virtual formats of public health education involve live-streaming a webinar, where a presenter or panel of presenters will utilize presentation software to provide structure and visual interest during a lecture presentation. The inclusion of short videos embedded in the presentation may also be used. In this method of virtual instruction, participants may watch the presentation, but often do not have the opportunity to engage with the presenter during the presentation, although many of these virtual public health webinar presentations do offer a section at the end of the presentation for question and answers (Ros & Neuwirth, 2020; Hoehn-Velasco, 2020). This option is popular for professionals engaging in continuing education sessions or attending virtual conferences, as well as for community members who simply want to learn more about a particular public health topic (Lennox et al., 2018). This method of virtual public health instruction does not have to be experienced synchronously, but instead, can be recorded so that the virtual webinar can be accessed by professionals and members of the general public later on (Guo et al., 2015).

Additional methods of virtual public health education include experiential-based education, where participants engage in an activity along with the public health educator.

Examples of this could include a virtual public health education session where an instructor leads participants through mindful breathing exercises or another session where the instructor illustrates proper handwashing techniques and then has the participants mirror what is being instructed (Ng & de Colombani, 2015). For public health education that focuses on nutrition and dietary practices, this method can be particularly effective, as it allows for hands-on, or experiential, learning by participants, allowing them to learn and then practice new skills (Muubuke, 2017). For participants, this method of learning can deliver additional benefits to those of public health information and new skills that are cultivated. Although the format of virtual public health education does, by its very design, necessitate distance between participants and the instructor, experiential public health education delivered virtually can still promote a sense of community and synergistic energy among participants (Zhang, 2020). For individuals who might struggle with loneliness or depression, this additional benefit can be of inestimable value, ensuring that the participating individual has an opportunity to socially connect with other people, potentially reducing feelings of loneliness, and fostering an overall healthier socio-emotional state of mind (Ward et al., 2016).

Further options for virtual public health education include interactive social forums, overseen by public health or medical professionals, where individuals can encourage each other toward better emotional, physical, or mental health practices (Yan et al., 2016), or interactive games or apps that also promote better health practices through the provision of education in a fun and engaging manner, such as nutrition apps that allow users to track specific nutrient intake (Guo et al., 2016). Another form of distance-based public health education that is gaining momentum is that of telehealth, or the delivery of in-person education via an interactive video

conferencing platform, such as a lecture on the benefits of social connectivity that is simulcast to multiple senior centers at the same time, allowing clients of each one to reap the benefits of the instruction (Liu et al., 2015). This last method allows for individualized or even group-based instruction to meet the specific needs of the individual or group, but in a way in which the public health educator does not necessarily have to travel to deliver that information (Dunleavy et al., 2019).

Virtual delivery of public health education had not been implemented in a widespread manner in Middlesex County prior to the COVID-19 pandemic (Calgary, 2021). Historically, the county is a predominantly rural county whose general public health policies, practices, and procedures may lag behind the public health policies, practices, and procedures of more suburban or urban regions. However, the public health education delivered by public health professionals to residents of Middlesex County during the late winter and spring of 2020, during the height of the COVID-19 pandemic, followed in the same pattern of remote, or virtual, instruction used by much of the rest of the developed world (Morabia, 2020). Initially, there were challenges in transforming an overwhelmingly in-person public health educational delivery to one that was entirely remote. Some of the challenges included but were not limited to public health educators who were unfamiliar with virtual educational technology, public health educators outdated or older technological equipment, uncertainty if the remote public health instruction would be well received, and threats of funding cuts if virtual instruction was not immediately offered to community residents. Despite all of these challenges, virtual public health educational workshops, lectures, and lessons were quickly developed and delivered to their target audience (C. Sweet, personal communication, July 1, 2020).

Perhaps unsurprisingly, these challenges were also experienced by public health educators in other regions during the same timeframe, including rural, urban, and suburban regions (Ros & Neuwirth, 2020). For rural residents, who may lack reliable internet service, and who also lack any cellular phone service, distance-based education of any sort became the only method that they could use to acquire public health education. As such, it became even more important for rural public health educators, both in Middlesex County, as well as regionally and globally, to be able to develop and then deliver public health education to rural recipients of that education, to ensure that the rural population would not go without necessary and vital information that would be of benefit to them (C. Sweet, personal communication, July 1, 2020).

Public Health Education Information

Regardless of whether public health education is delivered remotely or in person, the topic of the information being relayed is important. Although the information that is delivered in any public health education effort will vary, based on the needs of the population receiving that education, there are some commonalities that will be characteristic of all public health educational efforts (Dixon et al., 2015). One commonality is that all public health education will be developed out of a foundational desire to improve the quality of healthy living experienced by the recipients of that educational effort (Rosenstock et al., 2011). This strategy is adopted to address specific needs that have been noted previously by public health professionals, addressing those needs to improve the quality of life for both the individual and the general community. This approach will not only ensure a personal application of any information that has been delivered for the individual who has been in receipt of the public health education information and effort but also for the community in which that individual resides (Baron et al., 2017). The

rationale for this approach is that if an implemented initiative is successful for one person, and others observe that success, then those other people also might be willing to implement similar initiatives.

Another characteristic of public health education is that all public health education should be evidence-based in nature (Marriott et al., 2016). An evidence-based approach to public health education will ensure an imbuing of the foundational necessity of solid and accurate scholarly data. Evidence-based public health education, in turn, will ensure that recipients of the educational efforts do not receive information that would be detrimental to them. Finally, another commonality is that all public health education will be able to be feasibly implemented by the recipients of that education (Yan et al., 2016). By taking this approach, the public health information that is delivered will be timely, important, and applicable. If the recommended measures to address those identified areas of public health need are not feasible for community members to employ or for local governments to support, then the recommended public health measures will likely not be implemented by the recipients of the education. Any public health initiative that is not implemented cannot be effective (Ebu et al., 2019). With each of these factors solidly in place, the quality, applicability, and actability of any public health education effort will be ensured.

As noted previously, the exact content of any public health education will vary slightly, depending on the subject matter being addressed, as well as the target population in receipt of the information (Guo et al., 2015). However, the basic categorical components of the content should be consistent. The content should always include the rationale behind the need for the intervention, the intervention itself, the benefits of implementing the intervention, and methods

of feasibly meeting that intervention (Rosenstock et al., 2011). Furthermore, resources should be included in any public health educational initiative, providing recipients of that education, or policymakers who read through the public health educational proposal, additional sources which can be utilized to support the proposed public health educational initiative.

One example of this would be a public health education effort to encourage breastfeeding of infants by their mothers (Fox et al., 2017). For the public health education initiative to be successful, the education should include the benefits that breastfeeding provides to mother and child, descriptions and information as to how the mother can facilitate breastfeeding, and additional resources for support of the breastfeeding mother (Marriott et al., 2016). Additionally, if the target population for receipt of this public health educational initiative is known to exhibit additional health concerns (e.g., high rates of HIV infection, malnutrition, unsanitary living conditions), then the public health education should also include information that addresses these additional health concerns. With this approach, the recipient of the public health education will understand why they should do something, what they should do, how they can do it, and will also have the necessary resources made available so that they can have a greater chance at successfully implementing those recommended changes (Kerr, 2010; Yan et al., 2016).

Although the underlying health need for some public health initiatives might seem easily discernable, other health needs may be more difficult to identify and then address (Bhalli et al., 2015; Pitch-Loeb et al., 2017). The reasons for this can vary. Sometimes, the health need might not be plain, as symptoms may be evident, but the underlying causal factors contributing to those symptoms may be as-unknown to medical and public health professionals (Rivero et al., 2017). Other times, there may be numerous ostensibly pressing needs among a target population,

making it very challenging for public health professionals to select just one need out of the many needs (Bridges et al., 2011; Mehta et al., 2017). This challenge is common when public health professionals work with populations in underdeveloped regions of the world.

In many of these instances, a multitude of factors, such as unstable infrastructures, poor sanitary conditions, a lack of easily accessible potable water and nutrient-dense foods, and erratic access to medical and dental care all contribute to overlapping health needs among the resident populations (D'Agostino et al., 2019; Harwood et al., 2018; Walker & Fox, 2017). When there are so many easily observable health needs, it can be difficult for public health professionals to select the most pressing areas of need so that they can then develop educational materials and strategies to then address those needs (Mehta et al., 2017). It can also be onerous for public health professionals to discern underlying health needs that may not be as plain when more obvious health needs are prevalent (Gerhardus et al., 2017; Rivero et al., 2017). In these instances, the strategy employed for public health education might be to first address the most pressing needs among the target population and then, once those needs are met, attempt to discern and then address the less obvious needs.

Another strategy used in public health education, in both the developed and the developing world, is the dissemination of deliverables, or handouts, posters, or other items of literature that are placed in places of high visibility by the general public (Liu et al., 2015). These items are designed to be eye-catching, easily understood by people of all ages and backgrounds, and to convey a message, quickly. Often, bright colors and large font will be used, along with images. This approach allows complex concepts and terms to be encapsulated and delivered in a manner that can be easily understood by diverse individuals, regardless of their educational

attainment, age, or socioeconomic background (Smith, 2019). It is still important to ensure that the integrity of the message is not watered down when considering the content and design of public health deliverables, even though the conveyance of the information may be easily comprehended by the general public (Dunleavy et al., 2019). As with the field of public health education in general, any deliverables should be evidence-based, founded on solid, scholarly data (Yan et al., 2016).

Public health infographics and other informational deliverables are often used as part of a public health educational effort, distributed by the educator as part of the educational initiative. However, they are more frequently distributed in places of public access, such as a hospital, in schools, or even in grocery stores. Since these tools are intended to promulgate informational delivery in the probable absence of an educator, it is important for the deliverables to be read by members of the public (Coleman & Appy, 2012; Liu et al., 2105). As such, they should have visual appeal, use bright colors to grab the attention of readers, have clear and easily understood diagrams and photos, and contain few, carefully selected words, allowing the pictures and diagrams to effectively tell the story, assisted by the support of text (Dominick et al., 2016). By following the same guidelines as any successful public health education initiative, the infographics should contain a design structure and information that effectively convince the audience of the need to take the time not only to read through but to then implement whatever is being recommended (Guo et al., 2016).

Public health initiatives are another educational tool used to disseminate public health information (Lennox et al., 2018; Walker, 1999). These efforts include a combination of promoting awareness of specific areas of public health concerns and then addressing those

concerns through a multi-modal approach. Often, the public health initiatives will be developed as the result of a health concern that is particularly costly to taxpayers, has been noted to be growing in severity, or is continuing ongoing health efforts and initiatives (Levy et al., 2015). Funding for these initiatives often includes a variety of funding sources, including federal, state, corporate, and even personal grants and donations. The funding that is obtained and raised will cover the costs of public promotion of the initiative in the form of posters, flyers, and deliverables to spread the message of the initiative. Deliverables can include items such as stress balls, drinking glasses, or pens, each with the logo of the initiative printed on them. Additionally, educational sessions that provide information on the topic of the initiative are held in high-traffic areas such as schools, conferences, or health fairs. Finally, videos, ads, and social media posts are also used as platforms from which public health educators can disseminate the core message of their initiative (Ng & de Colombani, 2015). Some examples of messages delivered via large-scale public health initiatives include tobacco cessation, anti-drinking and driving, and safe-sex practices, all areas of health concern that potentially affect a relatively large percentage of the population.

Many public health initiatives do include components of both in-person and virtual public health education, such as an evidence-based foundation for the initiative, the delivery of information (whether in-person or virtually), the distribution of deliverables, and an overall strategy to improve the health conditions of individuals on a large scale. However, there are some differences between public health initiatives and what could be considered usual public health education (Medeiros et al., 2018). First and foremost, the funding sources for public health initiatives in a region tend to be larger than the funds available for ongoing public health efforts.

Secondly, public health initiatives tend to be most widely available when there is a specific need for that initiative to address. If that need is met by the initiative, then the need for the initiative would no longer exist (Rosenstock et al., 2011). Thirdly, most public health initiatives are delivered to a much broader audience than most public health educational efforts. The more wide-spread dissemination is not only due to the widespread use of media and social media platforms as means of disseminating the information promoted by the initiative but is also due to the prolific nature of deliverables for public health initiatives (both informational and trinket handouts, embossed with the title of the initiative) (Rhodes et al., 2017).

Although public health initiatives have been noted to be successful in addressing regional and national patterns of behavior, as with the other educational strategies employed by public health educators, they may not be as successful in addressing those patterns of behavior in rural regions (Muscat et al., 2016). While there is some overlap between the areas of public health concern in urban, suburban, and rural regions, there are some differences as a result of factors such as selected lifestyle habits, dietary practices, availability of easily accessible health and dental care, and family history of chronic conditions (Greenberg et al., 2017). Additionally, as some rural regions have historically been populated by individuals who espouse a notably conservative mentality, public health strategies that may be effective in other urban regions may not be effective at all in rural regions (May et al., 2019). Regardless of these factors, public health initiatives do continue to be offered in rural regions and have been observed to result in successfully changed patterns of behavior among a subset of the population.

Challenges to Public Health Education

Despite the great strides that the professionals in the field of public health education have made in improving public health in rural and more urban regions, challenges to delivering effective public health education to the general public still exist (Frenk et al., 2015). New areas of public health concern continue to pop up, forcing public health professionals to have to constantly develop new materials to address those areas of need (Levy et al., 2015). This challenge was readily observed during the COVID-19 outbreak, which necessitated public health professionals rapidly developing and delivering innovative materials to specifically address how to avoid contracting or spreading the virus (Morabia, 2020). As each novel discovery related to the COVID-19 virus was made, public health educational materials and strategies had to be updated or even replaced (Juliano et al., 2021; Naja & Hamadeh, 2020; Uohara et al., 2020).

Even when areas of public health concern are not immediately pressing or of a level of global importance, affecting factors can promulgate changes in public health educational foci and overall delivery strategies. These can be because of novel discoveries, alterations in patterns of exhibited health behaviors, and new outcrops of contagions previously thought minimalized (Mehta et al., 2017). Another factor that can contribute to great challenges in developing and delivering public health education, unfortunately, lies outside of the capable hands of public health professionals. Politics affect funding, which then, in turn, affects policies (Muubuke, 2017). Even when policies support public health initiatives, those policies can fluctuate or even completely change direction when the political climate shifts. When this happens, public health educational programs, information, and initiatives that are successfully addressing areas of health concern can have their funding cut. When funding is cut, the once-effective programs are no longer able to be offered (Dahl & Crawford, 2017).

While some challenges are ongoing, such as efforts to reduce tobacco use or to encourage vaccinations, some arise out of emergent issues, such as novel viruses or disaster relief efforts (Frenk et al., 2015). One example of this, as noted previously, is the COVID-19 pandemic (Morabia, 2020). As new information emerges, so, too, does the content and delivery method of that information to the general public. Ultimately, each challenge must be faced and overcome to promote the continued ongoing health of the public, regardless of the topic of public health education or whether the problem that it addresses is established or novel (Muubuke, 2017).

Another challenge to the field of public health education is the consistent change in the demographic of populations, altering the need-based landscape of a region (Levy et al., 2015). This is evident in some areas of public health concern that are population-specific, such as cardiovascular health risks of African American populations. It is also evident in reflecting a shift in what had been generalized needs, such as an outdated model of rural populations presenting as overwhelmingly Caucasian, which are now ethnically diverse (Dunleavy et al., 2019). Another current challenge is a very limited public health staff, largely due to an extremely limited public health budget, as public policy has tended to lean more in favor of treatment-based care rather than preventive care (Muubuke, 2017). Thankfully, that factor has changed because of the COVID-19 pandemic, as politicians have realized the benefit of the field of public health and of public health education, so have shifted the foci of policies to reflect the newly-discovered vital importance of public health (Morabia, 2020; Uohara et al., 2020).

Finally, and perhaps the most challenging concern of all, is the trend toward decreasing scientific literacy, as the vast majority of the general public report that they obtain their health information primarily from friends, blogs, or other online platforms, not from reputable sources

(Hoekstra et al., 2016). This trend toward decreased scientific literacy has resulted in a general public who are largely confident in their health-based knowledge, even though much of that knowledge is not at all accurate. As a result, people who are not scientifically literate and who only follow recommendations promoted in social media, blogs, or friends or family members often exhibit patterns of behavior that may exacerbate certain health conditions rather than improving them (Pitch-Loeb et al., 2017). Although reliance on the part of the public on sources outside of those which are scholarly scientific for health-related information has been ongoing, when the area of public health concern is particularly serious, it is even more dangerous and places an even greater burden on public health professionals to address the erroneous sources of knowledge that circulate (Morabia, 2020).

To address the current and emerging challenges to the field of public health education, some strategies have been proposed. One is that of telehealth delivery of information, like that of medical telehealth interventions (Langford et al., 2015). While this strategy appears promising at first glance, especially for hard to reach rural residents, as noted previously, the lack of readily available internet or cellular service in rural regions could potentially prove to be a deterrent. Another proposed strategy is that of increased public health education in schools (Langford et al., 2019). This strategy has been noted to be effective in addressing some behaviors in youth, especially with anti-tobacco efforts, but has not proven as effective in convincing adults to alter their behaviors. However, if this approach contained an additional focus of improving and increasing scientific literacy among students, then the previously less successful effects among adult populations might be addressed and improved over time. Students in receipt of public

health education that incorporated information and lessons on the importance of scientific literacy would then develop to scientifically literate adults (Guo et al., 2016).

A third proposed strategy to address the current and future challenges of public health educational delivery is a greater reliance on technology by public health professionals, in the form of online communities or apps (Cohen, 2011; Greene, 2019; Guo et al., 2016; Holdsworth et al., 2016). As social media and apps appear to be the current and means by which a large portion of the younger demographic obtain information and engage with other individuals, this approach may prove to be successful in facilitating access to solid, evidence-based public health information by a subset of the population that does not regularly access viable sources of public health education (Langford et al., 2019). Again, while this may appear to be a solid idea, appealing to a younger demographic, it may be challenging for older adults, especially those who live in rural regions, not only to access online capabilities but to feel confident enough in their technological skills to implement those tools. Despite these potential challenges, more public health apps and social media blitzes have been implemented by public health professionals in hopes that the overall population will soon catch up to the new and emerging technology (Morabia, 2020).

Summary

Despite readily available public health education, many community members, including those living in rural regions, continue to be plagued with chronic poor health (Frenk et al., 2015). Many of the conditions from which these people suffer are easily preventive and are addressed by regularly offered public health efforts made available for free through local public health departments, schools, senior centers, hospitals, or local nonprofit organizations (Dixon et al.,

2015). Although the information shared through these public health educational efforts is valid, the design of that education and the mode of the delivery of that education are regularly based on a one-size-fits-all approach to the general population and are not usually specifically tailored to the cultures or community characteristics of rural regions (Guo et al., 2016).

Although these factors are known, what is still unknown is why many rural residents are not implementing what they learn through public health educational efforts (Levy et al., 2015). Even with the best educational material, methods, and delivery, public health education is only as effective as the decision of the general public to implement it (Muubuke, 2017). To address the gaps in the literature, this research effort will address the issue of non-compliance on the part of the rural residents of Middlesex County resulting in their refusal to implement public health information. The research will be conducted within the context of human needs so that the relative importance of public health education can be considered within the framework of the needs of the recipients of that education (Maslow, 1954).

CHAPTER THREE: METHODS

Overview

Effective public health education must be made available to the public to prevent indicators of poor health from presenting widely in any given population (Marriott et al., 2015). However, not all public health education is well received – or implemented – by the target audience. As such, it is imperative to research the perception of the target audience – the general public – to interpret their experiences in public health education. The rationale for this is that the research should offer public health professionals a better understanding of why some recipients of public health education do not implement what they have learned. To this end, this research will focus on the experiences in public health education of the rural residents of Middlesex County, as the framework to gain a better understanding of those residents' non-compliance in adopting the public health education that they have received. The reason for this need for research is that it is fundamentally necessary to ensure that the available public health educational design is well-received by that audience and is also able to be easily implemented by them, as well (Ng & de Colombani, 2015).

Additionally, understanding the role of Maslow's behavioral theory of human needs (Maslow, 1954) in this research is equally important. The rationale for incorporating Maslow's behavioral theory in this research is for the researcher to understand more accurately if and how the unmet needs of rural community members are affecting rural community members' receipt and implementation of public health education efforts. If this theoretical perspective can be understood within the framework of the rural community members' perceptions, using a hermeneutic phenomenological theoretical research model, then that study design's incorporation

of the study participants and the researcher as the study design would result in findings that are empirically significant (van Manen, 1990).

Consequently, the purpose of this hermeneutic phenomenological study is to interpret the experiences in public health education of rural residents in Middlesex County. In this chapter, the methods of the research design will be outlined. The supporting format will include the theoretical background of the research design choice, the questions that will be asked during the interview and focus group research, and the setting and participants involved in the research. Next will be the procedures of the research itself, including the role of the researcher, the use of interviews and focus groups for data collection, the analysis of that data, and the trustworthiness of the study design. By this approach, the researcher hopes to describe the research design with enough detail to ensure the validity of the research design, itself.

Design

For this study, the researcher selected the qualitative research design for its characteristic of descriptive analyses. Qualitative research is a method of gaining insight into a human or social problem, using the written word to frame the problem in its context. Since the problem of non-compliance on the part of some rural residents to adopt public health recommendations exists because of individual choices contributing to a larger problem, understanding the story of the individual, through their own words, is necessary. As such, the qualitative research design is appropriate for this study on the experiences in public health education of rural residents of Middlesex County (Creswell, 2018).

Although there are several qualitative research design methods, the one that the researcher believed to be the best fit for her study topic is that of hermeneutic phenomenology.

This study design, developed by German philosopher Martin Heidegger, was outlined in his work, *Being and Time*, originally published in 1927 (Heidegger, 1962), and was later expanded upon by Max van Manen (1990). Heidegger's original development of this philosophical construct occurred as a reaction to the theoretical design of phenomenology, as developed by Edmund Husserl (Neubauer et al., 2019).

Phenomenology, or a study design that focuses on the lived experiences of people, is based on the consideration of how those experiences are perceived (van Manen, 1990). This theoretical design focuses on the individual's perception of the lived moment, what they experienced, and how they described what they experienced. Heidegger's theory of hermeneutic phenomenology took a slightly different approach to Husserl's original theory of phenomenology (Lavery, 2003). Although like phenomenology, hermeneutic phenomenology also focuses on lived experiences of people, hermeneutic phenomenology differs from phenomenology. The difference lies in the totality of the human experience that in that hermeneutic phenomenology considers the totality of the human experience, both the easily perceptible and that which might not be as easily perceived (van Manen, 1990). Simply put, the theory of hermeneutic phenomenology considers the perception of human experience within the context of the effect that the totality of life experiences has on that individual (Lavery, 2003).

According to Heidegger (1962), one foundational aspect of hermeneutic phenomenology is the ontological concept of being, or *Dasein*. He further argued that to be and think must include the concept of time. Therefore, each person would strive for active being within the context of remaining in a state of active being in the future. This ontological concept frames the underlying ideology of hermeneutic phenomenology that humans are not free from biases. As

each experience that a person has effectively shaped that person's perception, every perception noted in the research, using a hermeneutic phenomenological design, must therefore take the totality of that person's experiences into consideration (van Manen, 1990). This type of research must, therefore, be conducted with the underlying ontological expectation that everyone, including the researcher and the research subjects, operates with a personal bias and that all perceptions will be affected by this inherent bias.

When considering the research focus of the experiences in public health education of rural residents of Middlesex County, the appropriateness of the hermeneutic phenomenological design becomes clear. Although the rural residents of Middlesex County have received public health education, they largely remain non-compliant, not implementing the knowledge or strategies they have learned. The hermeneutic phenomenological research design provided the researcher with an understanding of the phenomenon of non-compliance on the part of rural residents to implement public health information. Since the life experiences of the rural residents frame their perceptions and choices as they strive for Dasein, this can create biases that may contribute to their decisions of whether to comply with public health education directives or not (van Manen, 1990). The hermeneutic phenomenological design enabled the researcher to explore these biases in the context of Middlesex County residents' experiences in public health education. As the purpose of this hermeneutic phenomenological study was to interpret the experiences in public health education of rural residents in Middlesex County, the researcher incorporated members of that local community.

According to a study performed by Laverly (2003), for hermeneutic phenomenological research, there is not a single established methodology for research design. Data collection and

analysis must be an ongoing, evolving process that includes combining methods of interviewing research participants, such as in-person interviews, surveys, and focus groups, but also incorporates ongoing journaling and reflection on the part of the researcher (Laverty, 2003). This type of research is driven by continual writing, reading, and assessment, as each new interpretation of the data that leads to a new understanding. Each new understanding of the findings is done so within the context of previous interpretations of the findings. This approach requires maintaining a decision trail to maintain the integrity of the research. In light of each of these points, the process of data collection and data analysis for this hermeneutic phenomenological design was based on thematic analysis. It utilized analytic software such as QDA Miner Lite, Taguette, or Temi. By this approach, the researcher intended to better comprehend the perceptions of rural community members concerning public health education within the context of understanding the role of the needs of those individuals (Maslow, 1954) and the lived experiences of the same individuals (van Manen, 1990).

Research Questions

To determine the perceived effectiveness of public health education in Middlesex County, the following research question were answered by this study:

Central Research Question

How do rural residents of Middlesex County describe their experiences in public health education?

Guiding Question 1

What are the expectations of rural residents of Middlesex County for public health education, before receipt of that education?

Guiding Question 2

What factors of the public health education did rural residents of Middlesex County find meaningful to them?

Guiding Question 3

What factors of the public health education did rural residents of Middlesex County find irrelevant or unimportant?

Guiding Question 4

How do rural residents of Middlesex County describe how well public health education addresses their perceived current health needs?

Setting

The setting for this research is Middlesex County, a predominantly rural county in northeastern New York, which contains one small city and some outlying suburbs. There are roughly 65,000 residents of the county, most of whom are predominantly Caucasian (95%). The average income of county residents is around \$61,000, and the rate of poverty is around 13%. Around 14% of the population are disabled, and females comprise around 60% of the workforce. Although around 90% of the county residents have attained a high school diploma, fewer than 30% have earned a bachelor's or higher degree ("ADK," 2021).

While some residents have moved to Middlesex County from other, more urban or suburban, regions, a large percentage of the residents of Middlesex County are from families who have lived in the area for several generations. These families predominantly reside in remote, mountainous portions of the county. Despite impoverished conditions, they are characterized by pride in their independence and a noted distrust in "outsiders," or anyone whose

families have also not lived in the region for generations (Nierenberg & Wand, 1975). Additionally, these rural residents overwhelmingly exhibit low levels of educational attainment. Perhaps unsurprisingly, they are often either seasonally employed as loggers, housekeepers, or other low-income jobs made available during the tourist season, or they heavily depend on governmental assistance to meet their basic needs. This population also is characterized by a disproportionate number of children who have been diagnosed with disabilities, experience very high rates of young teenage pregnancy, and high rates of domestic violence (“ADK,” 2021).

The rural population of Middlesex County also presents with health disparities. Despite ongoing efforts on the part of public health professionals to deliver solid, beneficial education to members of the local community, there continues to be an increase in the percentages of Middlesex County residents who continue to practice unhealthy habits. Many of these residents are overweight or obese, are diagnosed with associative comorbidities such as type 2 diabetes or cardiovascular disease, engage in excessive tobacco or alcohol use, and do not regularly implement healthy dietary practices. Additionally, a large percentage of the population does not habitually consume fresh fruits or vegetables and does not engage in regular exercise (Calgary, 2021). Although these trends have been observed increasing in frequency among the general population, the most notable disparities have been observed among community members of lower socioeconomic brackets, particularly among the remotely-dwelling rural population previously described.

Participants

For this study, a purposive sample pool of twelve participants was selected using a purposeful sampling procedure. The purposive sample allowed the researcher to select

participants for the study who exhibited characteristics that supported her research efforts, rather than obtaining participants who may or may not have displayed those specific characteristics (Lincoln & Guba, 1985). Purposeful sampling also afforded the researcher another layer of directive focuses in the selection of participants, allowing her to ensure that she obtained the needed cross-section of community representation that her study required. Purposeful sampling also allowed her to achieve thematic saturation of data from the research participants. According to Creswell (2018), purposive sampling is appropriate when specific desired characteristics in subjects are required for the research to occur, and purposeful sampling is appropriate when the sample size is small and resources are limited. For this study, the researcher selected twelve participants from a pool of rural residents who already received public health education instruction. Although a purposive selection of research participants might be considered prone to researcher bias, the theoretical framework of hermeneutic phenomenology for this project supported the idea that all individuals are prone to bias (van Manen, 1990). As such, the researcher analyzed the data from this research with the acknowledgment of these potential biases.

Participants selected for this research represented a cross-section of the population, including adults and senior citizens. Since the ethnic distribution of Middlesex County is predominantly Caucasian, most, if not all, of the participants were likely Caucasian. According to van Manen (1990), a small individual sample size that reflects the population is appropriate when conducting hermeneutic phenomenological research. As such, a small number of participants (12) whose ethnicities are similar had the appropriate characteristics for research participants. Additionally, to ensure the privacy of participants, the researcher provided

pseudonyms and used no identifying data in the report. Since many of the residents of Middlesex County are distrustful of outsiders, no demographic data including the age or ethnicity of participants was gathered. The only identifying information that was collected and shared as part of this research was self-identified gender of each participant.

Procedures

As this research was conducted within the context of her primary job, an extension office for her state's land grant university, the researcher acquired permission from the executive director of that facility and the Board of Directors before engaging in any research efforts. As the research was conducted remotely, she did not need any additional site permission for conducting her research. All publicized findings were made available to those entities as well, thus ensuring additional accountability and an added layer of protection from unnecessary bias.

For this study, the researcher secured IRB approval from Liberty before conducting the study (see Appendix A for IRB approval). Once the IRB approval was granted, a purposive pool of study participants was selected using purposeful selection. To obtain participants, the researcher presented an overview of this study during her regularly scheduled community-based educational programs and workshops for her work for the state land grant university in which she is employed. She provided participant consent and assent forms to individuals who volunteered to participate in this study (see Appendix X for participant consent/assent forms). In the unlikely event that there were no respondents, the researcher would have contacted other community organizations for which she does not currently provide regular programs. Since this research was conducted in a rural region, a better participant response resulted from verbal requests for participation rather than the distribution of a sign-up sheet ("ADK," 2021).

One set methodology for hermeneutic phenomenology does not exist (van Manen, 1990). For this study, data was collected and analyzed via a process that incorporated three different interview methods: interviews, surveys, and focus groups. The interviews, surveys, and focus groups were performed remotely, using Zoom as the software platform. Each of these methods also involved consistent journaling and reflection on the part of the researcher to ensure consistent interpretation and re-interpretation of the data (Laverty, 2003). By a strategy of writing, reading, and assessment within the context of previous understandings, the researcher ensured a method of decision trail documentation that maintained the integrity of the research.

Her research questions were peer-reviewed for greater accuracy. She also ensured that participants were able to review the transcript of their responses for additional accuracy. Thematic analysis was used as the methodology for data collection and data analysis, with analytic software assisting in the transcription of interviews and analysis of findings. This methodological approach, also combined with the reflective journaling on the part of the researcher, ensured that the underlying study design of hermeneutic phenomenology was maintained. This chosen research approach promoted reflection on the part of the researcher as to the perceptions of the research subjects toward public health education, with the understanding that those perceptions were biased as a result of the lived experiences of the research subjects (van Manen, 1990). Additionally, this type of research ensured that the biases of the candidate were taken into consideration for observation and interpretation of the data collected from the research participants. As the researcher fully understood that she also has ingrained biases that could affect her interpretation of the data, she believed that this additional component supported the appropriateness of her research procedures.

The Researcher's Role

As the “human instrument” for this study, the researcher used her role as a resource educator for her local university extension office to select and then conduct interviews with community members, focusing on individuals who have previously received public health education from her (Lincoln & Guba, 1985). The researcher had no authority over her research participants. Since the research was hermeneutic in its qualitative phenomenological design, the research questions were framed from relevant literature and the theoretical frameworks previously described. The researcher then strove to thematically analyze the data obtained from the research questions to come up with a better understanding of community members’ experiences in public health education. She also analyzed the data to determine whether the research participants chose to apply the public health information with which what they had been provided during the educational workshops.

The researcher understood that there may have been an internal bias from her life experiences of childhood and early adulthood characterized by poverty and other hardships that prevented her from having many of her needs met. As such, she ensured to record and document that potential bias in her regular journaling throughout the research process. Although she did not interview anyone to whom she is related, the nature of the relatively “small town” community mentality of her county did mean that the potential of bias in the form of established community-based friendships did exist. As such, she strove to exclude close friends and acquaintances in her participant sample, to not knowingly introduce this additional bias into her research, or to create potential complications.

Data Collection

For this hermeneutic phenomenological study, data was gathered, relating to the interpreted experiences in public health education of rural residents of Middlesex County. As this study was solely focused on the experiences of everyone, the method of data collection consisted of interviews, focus groups, and surveys. Each of these methods of data collection were conducted remotely, using Zoom as the research software platform.

Interviews

When attempting to describe the phenomena or perceptions of life experiences of different individuals, interview questions afforded the researcher the greatest opportunity to foster understanding of what was experienced by the research participant. According to Creswell (2018), interviews are the primary method of data collection for qualitative phenomenological research. The interview questions can be specific, asking study participants the same, detailed questions that demand specific answers, or they can be more open-ended, allowing the participants to infuse their perspectives in their responses (van Manen, 1990). This research effort is inquiry-based rather than descriptive, utilizing a hermeneutic approach to the phenomenological research design. As such, an emphasis was made on the part of the researcher to allow the responses of the study participants to be open-ended. This approach empowered the study participants to effectively frame their responses, and in doing so, accurately craft the stories of their experiences. As a result, rich, thick qualitative data was able to be collected.

In response to current social distancing mandates, all interviews were held remotely, using Zoom. The researcher conducted her research either at her work office or at her home office. Each interview was recorded using Zoom's recording feature. The researcher also took

notes during the interview process. Different questions were used for interviews, focus groups, and surveys.

Open-Ended Interview Questions

1. What are a few of your favorite foods?
2. What are some things that you like to do in your free time?
3. What public health education have you received?
4. What were some public health education experiences that you enjoyed?
5. What about it did you enjoy?
6. What ways did you find to use what you learned?
7. What were some public health education experiences that you did not enjoy?
8. What about it did you not enjoy?
9. What ways did you find to use what you learned?
10. What type of public health education instruction have you liked best (e.g., in-person, interactive, remote, etc.)?
11. What about it did you like?
12. What type of public health education instruction have you liked least?
13. What about it did you not like?
14. What type of public health education do you feel has provided the best information to support your health needs?
15. When considering public health education, would you consider the information or the way that the information is delivered to be more important to you?
16. What are some public health education subjects that you think you might find helpful?

17. What are some public health education subjects that you think you might not find helpful?

18. Please share anything else that you would to share or recommend about this topic?

Questions one and two are icebreaker questions that allowed participants to share something about themselves. Questions three through eighteen are perception questions (Creswell, 2018) designed to function as a springboard for further commentary on the part of the research subjects. As noted previously, each participant was encouraged to extrapolate upon their responses, providing whatever information they thought would be important to convey to the researcher. If additional clarification or direction was required for research participants' understanding of the information, the questions and subsequent responses were recorded. Each of these questions was intended to be answered from the perspective of the research subject, allowing them to answer from their perspective.

The questions posed in numbers three through nine are supported by research conducted by Marriott et al. (2015). Their research found that open-ended questions that pertained to the efficacy of different public health educational methods were able to assist researchers in determining whether proposed innovative methods in public health educational structure and delivery were successful. The open-ended nature of the questions, in particular, enabled participants to expound upon their responses. This approach effectively provided the researcher with a greater quantity of high-quality data. While questions four and seven elicited a simple response, asking the research subject to identify public health educational experiences that they did or did not enjoy, questions five, six, eight, and nine delved further into why the research subjects did or did not like those experiences. These questions were supported by research

conducted by Frenk et al. (2015), in which the modern field of public health education is considered within the context of whether the delivery of education is efficient. The responses to questions five, six, eight, and nine were designed to provide further insight into what public health educational experiences research subjects consider to be efficient or inefficient.

The questions posed in numbers ten through seventeen were supported by research conducted by Rosenstock et al. (2011). Their findings were that the field of public health education has been slowly evolving to meet the needs of community members but that those same community members are not always included when considering the structure and delivery of information. As such, open-ended questions relating to the perceived efficacy of public health information would provide the researcher with the necessary community-based perspective. These questions are also supported by the research of Dixon et al. (2015), who also noted that public health information in the form of informatics might not always be optimally designed for the expressed purpose of disseminating information to the general public.

Question eighteen is supported by the research of Greenberg et al. (2017), whose findings were that the social and emotional aspect of learning is of great importance. The rationale to allow research subjects the opportunity to expound upon their previous responses were chosen to elicit further information. This information should enable the researcher to gain a better understanding of the perception of local community members into the efficacy of public health education, informatics, and delivery.

Focus Groups

The use of focus groups for data collection provided the researcher with an opportunity to obtain multiple quanta of data at once while fostering a synergistic environment in which

additional, possibly differing, data could be gathered. Three research participants were selected for the focus group via random sampling. This allowed the researcher to provide an accurate representation of the participant pool for the focus groups (Lincoln & Guba, 1985). The focus group participants were asked three open-ended questions that enabled the researcher to gain a better understanding of the preferred learning styles of each member of the group.

Open-Ended Focus Group Questions

1. To start us off today, please share one good thing that has happened to you this month.
2. Think of a time when someone taught you a helpful skill like cooking or how to change a tire, and share with the group why you remember that learning experience.
3. What do you think the biggest overall needs are in the region for individuals and families?

As with the interview questions, question one is an ice breaker question, allowing participants to share something positive about themselves with the rest of the group. These questions are also designed to help foster positive thinking as well as direct participants' focus toward thinking about needs and education. Questions two and three are perception questions (Creswell, 2018), which should provide the foundation for additional discussion on the part of the research subjects. As with the interviews, participants in focus groups were encouraged to provide additional information in their responses and will be given the opportunity for cross-dialogue with each other. As is the case with the interviews, all focus group responses were recorded, including any additional clarification or direction provided by the researcher.

In the same vein as questions three through nine of the interview questions, research conducted by Marriott et al. (2015), and Frenk et al. (2015), provided the framework for

questions two and three. While the research of Marriott et al. (2015) focused on the benefit of open-ended questions provided an optimal framework for responses relating to the efficacy of public health education, the research of Frenk et al. (2015) instead considered that public health education – or any education – is only as effective as it is perceived to be by learners. As such, it is important not only to provide research participants with opportunities to respond to open-ended questions, but to gain their perceptions as to what methods of education they consider to be the most effective. Additionally, the open-ended nature of the focus group sessions should have also fostered the ability of cross-discussion directly relating to this topic. The researcher's expectation was that the ability to compare experiences enabled participants to be more willing to share about their perceptions.

Research conducted by Greenberg et al. (2017) supported the second and third questions. Their findings were that social and emotional learning frames the efficacy of public health educational absorption and implementation by learners. By eliciting a response from research participants into their perception as to what characterizes a healthier community, the emotions of the participants were engaged. Additionally, the researcher's expectation was that the focus group structure and open-ended questions would enable participants to use the group discussion format as a synergistic opportunity for deeper discussions.

Survey Questions

To fully facilitate the triangulation of research, the third method of data collection was conducted via survey question responses. A link to a Qualtrics survey was sent to each participant. The survey contained two questions, each of which had a fill-in text box response. This approach enabled participants to answer the survey question, using whatever words or

length of words they considered would best represent their perceptions and experiences.

Survey Questions

1. Describe what good health means to you.
2. What are some things that you believe people should do (or avoid doing) to remain healthy?

As with the interview and focus group questions, survey questions one and two are also perception questions (Creswell, 2018). The responses gleaned from these questions helped with the triangulation of information, ultimately facilitating a better understanding of the researcher as to the issue. These questions are supported by the research of Frenk et al. (2015), who found that public health education that is considered to be of personal import to learners will be more likely to be implemented than that which is not considered to be of personal import. As such, questions one and two in the survey allowed the researcher to consider the perception of public health education efficiency from a slightly different perspective than participants might have indicated in their responses to the interview and focus group questions.

These survey questions were created within the context of the hermeneutic phenomenological study design. Their purpose was to afford the researcher a better interpretation of the perceptions of rural community members into public health education and how those perceptions were affected by community members' daily experiences. As such, questions one and two were written in such a way to allow the research participant to share, in their answers, their life experiences, some of what they consider to be their knowledge base, and what they perceive others' health practices to be. This approach is supported by the research of van Manen (1990), who recommended phenomenological research to consider as much context of the life

experience of the individual as possible, as that life experience then creates the perceptions of the individual. This approach allowed the researcher to gain insight into the potential biases of research participants, as well as a better understanding of their past and current health practices.

Data Analysis

For this hermeneutic phenomenological study, data was analyzed utilizing thematic analysis, an approach based on the principles and practices derived from the hermeneutic phenomenological theory (van Manen, 1990). Software was used to identify common concepts and themes from the interview and focus group transcripts, and from the survey data. This approach allowed the researcher to be able to identify the emergent themes from the research data, using a narrative analysis as the basis for the thematic coding. At each stage of analysis, data was cross-referenced with the original transcripts to ensure faithfulness to the research participant's intent. This method of data interpretation, as described by Lincoln and Guba (1985), was originally designed so as to preserve the authenticity of the research. By cross-referencing each stage of data analysis with the original transcripts, the researcher was able to avoid pre-conceived bias, prejudices, and assumptions.

Following the guidelines for thematic analysis, the stages of data interpretation occurred in the following stages: Review, Primary Themes, Sub-Themes, Synthesis, Integration (van Manen, 1990). During the review stage, all audio data was transcribed into text-based transcripts, utilizing the Zoom transcript feature. Next, an initial assortment of the data occurred. Using Taguette as the coding software, the researcher used a narrative coding process to determine the emergent themes. Once the emergent themes were identified, the researcher then used the coding

software to group the themes by content. This approach enabled her to systematically develop a better understanding of the recurring themes within the participant responses.

During the primary themes stage, utilizing the transcripts, underlying data themes from the study participants emerged. During the sub-themes stage, again utilizing the transcripts, underlying data themes as noted by the researcher occurred. During the synthesis stage, all themes (including both primary and sub) were compared and correlated, with the findings then cross-referenced with current existing literature. Finally, during the integration stage, the internal and external critique of the findings emerged, and the findings were reported. Thematic emergent coding (Saldana, 2009) was utilized, to identify themes that emerge from participants' responses.

The goal of the phenomenological study design is to effectively transpose the experience of the individual into a textual interpretation of that experience so that commonalities of experiences can be identified (van Manen, 1990). This approach ensures that the intent of the study participants and the interpretation of the researcher elicited a thematic response, holding true to the integrity of the research. As previously noted, a journal of the researcher's experiences and perceptions throughout the research process was entered into the coding matrix, to additionally ensure a comprehensive summarization of the findings, eliminating as much additional bias as possible.

Trustworthiness

As with any research, ensuring the trustworthiness of the end product requires attention to exact detail at each stage of the research project (Creswell, 2018). If any area of the research design or project lacks in quality, the entire project will then also take on that same tarnish. For

that comprehensive loss of integrity not to occur, there must be a guarantee of the credibility, dependability, transferability, and confirmability of the research.

Credibility

In any research, credibility ensures that the research and its subsequent findings are within the realm of believability and consistent with all aspects (Lincoln & Guba, 1985). This appropriateness of the research itself and the interactions between the researcher and the research participants are part of the credibility of the research (van Manen, 1990). For this study, the researcher implemented an external review facilitated by a colleague experienced in qualitative research. An inquiry audit was incorporated to ensure that there was a level of oversight and accountability. This audit safeguarded the credibility of the research and the interactions of all involved parties.

The accountability approach to ensuring credibility, as outlined by van Manen (1990), ensured that the researcher's biases and interpretive methodology did not result in a skewed interpretation of the data. Additionally, the external review allowed some professionals who do and some professionals who do not work with the rural population of Middlesex County to review the data. The researcher's prolonged engagement in the field, coupled with the triangulation of data, further contributed to this study's credibility. This approach provided a triangulation of oversight, lending to overall credibility.

Dependability and Confirmability

For any research to be considered valid, it must also exhibit dependability and confirmability (Lincoln & Guba, 1985). Dependability in research is ensured when all findings and interpretations of data are supported by the data. Confirmability occurs when other

researchers can conduct the same type of study and arrive at very similar findings (van Manen, 1990). It is fundamentally imperative to ensure that these characteristics are integrated into any research effort.

For this study, the researcher ensured dependability by implementing cross-references between the original transcripts and the findings, at each stage of data analysis as well as having her research questions peer reviewed and her entire research process member checked. She ensured confirmability by providing enough rich detail of each step of the research and its subsequent analysis that other researchers could replicate her research, effectively providing an audit trail. Additionally, she journaled her experiences and perceptions during the research process. Journaling provided a record of her interpretation of the data, as well as any biases, whether known or unknown by the researcher. This approach, incorporating rich thematic descriptions, external checks of the findings and interpretations of those findings, the reflective journal kept by the researcher throughout the research process, and the inquiry audit previously described, ensured dependability and confirmability, as outlined by van Manen (1990).

Transferability

Although the findings from this research effort will be of benefit to professionals and educators in the Middlesex County region, the experiences of this exact population are not likely to be widely transferable. However, any research which does not apply to situations or scenarios outside of the specific research scenario is not of great value to the rest of the world (Lincoln & Guba, 1985). Researchers must ensure transferability, or the applicability of the findings to other research efforts.

To ensure the transferability of the research findings (van Manen, 1990), the researcher ensured to provide detailed information in her report of the research. This information included details of the research and the context of the issues contributing to the research. She also included possible aspects of replicability of findings in her report.

Ethical Considerations

Although transferability is important to any research effort, ensuring a high level of ethical standard in research is essential, not only in protecting the identity of the research subjects, but in ensuring the confidentiality of findings (Creswell, 2018). As such, every researcher should incorporate ethical measures within the research design and process. To address potential research bias, the researcher implemented the following safety and security measures to ensure a high level of ethical standard in research.

The researcher used pseudonyms to protect research subjects and will ensure IRB approval for research before conducting research. Additionally, she ensured that all data was protected using password protection for electronic files. Access to identifiable information was controlled. All electronic devices used by the researcher were password-protected and data was not saved on the researcher's mobile devices. All data was kept on the researcher's encrypted work laptop; no data contained any identifiers. Paper data was shredded, and electronic data was erased.

Research participants were provided with copies of consent forms that comprehensively outlined their part in the research. This form included an overview of the study focus, expectations of each participant, and each task and an approximate timeframe for each task to be completed. The form also included any risks and discomforts expected because of participation,

any personal benefits for research participants because of participation, whether participants will receive any compensation for participation in the research, and whether there will be any video or audio recording of data. Additionally, this form provided participants with methods to ensure their privacy and security, whether de-identified data from the study will be shared with the research community at large to advance science and health, and that participation in the study is voluntary so that participants can withdraw from the study, at any time, without penalty. Finally, the form concluded with a request for follow-up contact information and researcher's contact information so that the research subjects could contact her at any time, with any questions. By these steps, a high ethical standard of research was maintained (Creswell, 2018).

Summary

Integrity in design for any research project is of paramount importance, not only to ensure the validity of the data, but to give proper honor to the individuals who agree to take part in the research project. To this end, the researcher has disseminated the detailed characteristics of the proposed hermeneutic phenomenological research study to better understand the experiences in public health education of rural residents of Middlesex County. This research should provide illumination into the phenomenon of widespread non-compliance on the part of those rural residents in not implementing the public health information that they have received. It is her sincere hope that the findings of this study will benefit the members of her local community in ensuring a better, more efficient, quality of public health education and enable other public health educators to do the same, as they each strive to serve their fellow community members by promoting best health practices.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this hermeneutic phenomenological study is to interpret the experiences in public health education of rural residents in one predominantly rural county in New York State, referred to by its pseudonym of Middlesex County for this paper. According to Van Manen, (1997), phenomenological research should enable the researcher to encapsulate the unadulterated experience of the research participant. Phenomenological research details the shared encounters of individuals who have undergone a common phenomenon (Creswell & Poth, 2018). Considering this definition, the goal of this study was to provide the researcher with a better understanding of the phenomenon of the experience of public health education, as expressed by the recipients of that education.

Chapter Four will offer the results of the qualitative data analysis, using thick, rich descriptive emergent themes. Thematic coding of the collected data, combined with concurrent coding of the emergent themes, enabled the researcher to arrive at some surprising and profound findings. For the data collection in this study, the researcher had the participants complete an open-ended survey that consisted of two questions, participate in a remote, face-to-face interview, and had three of the participants engage in a remote focus group. The survey questions were designed to enable participants to freely share whatever information they desired in response to the question prompts. The interviews were structured, but participants were encouraged to disclose whatever information they considered appropriate during their interviews. The focus group activity enabled a synergetic response among participants, as each response effectively prompted further discussion from other participants. This chapter will conclude with

textural and structural descriptions of the phenomenon of experiences in public health education from the 12 participants who participated in this study.

Participants

A purposeful sample of 12 participants engaged in the research of this study. All participants were adult residents of Middlesex County, who had also experienced at least one public health educational opportunity (e.g., workshop, lesson, presentation, etc.). Participants were recruited from public health education workshops, lessons, and presentations offered by the researcher as part of her work as an Extension agent for her state's land grant university. No demographics or any identifying information was collected from participants, to avoid a potential lack of involvement in this project due to rural participants' distrust of individuals who collect personal information.

The recruitment and research for this study were conducted during state-imposed COVID-19-related social distancing restrictions. The researcher recruited participants for this study during Zoom-based, remotely held public health education, so was able to ensure that all recruited participants already had access to the internet and Zoom prior to their interviews. Recruitment and consent forms were emailed to participants, with requests for the signed and dated forms to be emailed or mailed back to the researcher. After receipt of the signed and dated consent forms, participants were emailed the link to the Qualtrics survey and scheduled for remote interviews using Zoom. The last three participants who submitted their signed and dated consent forms were additionally scheduled for the focus group interviews. No participants withdrew from the study. The following is a description of each participant, using pseudonyms to

identify each of them. Pseudonyms were used to avoid compromising the identity of the participants.

John

John is a relatively new resident of Middlesex County. He has lived in the county for two years. He is a former nutrition educator and “self-avowed independent thinker.” John prefers “to eat foods that are either super healthy or super unhealthy,” and emphatically stated that he insists “on being creative when developing new recipes” for himself. His favorite healthy foods include “whole grains like oats, quinoa, or barley, combined with cruciferous veggies and greens like collards or turnip greens, and legumes.” His favorite unhealthy foods include “anything made with castoreum, canned hash, and pork rinds.” He volunteered that he doesn’t “trust what the media and people in general” tell him, and that he “always checks things out for myself.”

Esther

Esther moved to Middlesex County during the COVID-19 pandemic to “escape from the city” and so that her children “can grow up in a safe community.” She is a former history professor who has taken a sabbatical from work to homeschool her children. Esther is a vegetarian who “only” purchases “locally-sourced organic vegetables with a low-carbon footprint.” She also does “not keep any processed foods in the house.” Esther is not involved in social media, volunteers “with many social action organizations,” and also helps “to fundraise for social and affirmative action organizations.”

Sarah

Sarah has lived in Middlesex County for “several years.” She is “highly health conscious,” and does “not drink or smoke.” Sarah is a “vegetarian who avoids cheese,” and

exercises “every day.” Sarah volunteers her time to help run two faith-based non-profit organizations, and loves to give “organic herbal teas as gifts, because they are so good for you!” Sarah was a ballerina when she was a teenager, and although she does not still “follow the extremely strict diet” required of ballerinas, she admits that her “diet and exercise habits are stricter than most people’s are.”

Lynn

Lynn has lived in Middlesex County for her entire life. She recently retired, and has decided “to live out the rest of” her “years with health and gusto!” Lynn recently adopted a whole-food, plant-based, no-oil (WFPBNO) diet. She is excited that after following this new dietary plan, she “lost over 35 pounds,” “has good A1C levels,” and that she was able to be taken off her cholesterol medication. Lynn’s current favorite food to eat is a baked potato, topped with roasted broccoli. She has also been trying to encourage her children and grandchildren to follow a more plant-based diet “so they can be healthy when they’re younger and hopefully avoid getting sick with diabetes and stuff.”

Paul

Paul is a resident of Middlesex County, but did not indicate the length of time that he has lived in the county. He is an outdoorsman who prefers to eat “meat and potatoes, but especially lots of venison.” Paul hunts and fishes “for good, clean, quality meat,” and does not drink or smoke. He spends “as much time outdoors as possible, watching the wildlife, immersing [himself] in nature, breathing the clean, fresh air, and avoiding politics.” He volunteers his time to teach youth outdoor skills, and believes that “kids are much better off spending time outdoors than in front of the T.V.”

Zinnia

Zinnia is a “long time” resident of Middlesex County. She is a retired medical professional who worked for “several decades” in “a pediatric practice and local hospital” in Middlesex County. Zinnia is enjoying retirement, spending much of her time “learning new languages, travelling – when the world isn’t shut down from COVID, and gardening. Oh, and failing miserably at cooking.” She also enjoys “visiting new places to eat” and “expanding the diversity of [her] palate.”

Shawn

Shawn is a resident of Middlesex County. He enjoys “fishing with [his] wife” in his free time and his favorite food to eat is “ice cream. Any kinda ice cream.” He likes to “learn how to do things the right way. Always the right way versus the wrong.” Shawn is extremely quiet, and usually responds to questions with one or two-word answers.

Jane

Jane is a more recent resident of Middlesex County, who moved to the region several years ago. Her food preferences are eclectic, including “pasta,” although she tries “not to eat that anymore because it’s high in carbs. Soups, stews, anything with tomato sauce, ice cream, Indian food, that’s not that spicy...fish, all kinds of fish, even oysters.” She enjoys “to read, gardening, to go out for walks, to travel, [and] go to museums.” She is retired, so has “free time” in which she gets her “housework done, like painting garage doors,” and tries to “look for stuff outside to do.”

Polly

Polly has lived in Middlesex County for several years. She loves “popcorn...salad, anything tangy and tart together, salads with fruit in it, lots of veggies, goat cheese, anything like that, and yogurt.” During her free time, she likes to “hike...be outdoors doing anything but cleaning [the] house, outside working. Hike, canoe, kayak - anything like that.” Polly also is “glad when the weather is warmer,” so that she can kayak with her daughter.

Mary

Mary is not a life-long resident of Middlesex County. Rather, she moved to the county from the state’s most dense urban region so that she and her husband could “enjoy some peace and quiet.” Mary likes to eat “potato chips...grapes, oranges, tangerines, rice, any kind of rice. Soups. And Danishes.” In her free time (“Free time? Who’s got free time?”), Mary stated that she prefers to “read, go outside and garden, catch up on housework.” In the winter, Mary also enjoys snowshoeing so that she can remain physically active.

Dorothy

Dorothy has lived in Middlesex County for “many years.” She likes “to eat all kinds of food...burgers, green smoothies, that kombucha stuff, meatloaf, kefir, pumpkin, kale...pretty much anything. No tofu.” Dorothy stated that she is “a need-to-be-with-people person,” so prefers activities that enable her to be with people and to be outdoors. “Mountain biking, kayaking, hiking, hanging around a bonfire, playing with the dog, cross country skiing, and snowshoeing” are her favorite things to do in her free time.

Marie

Marie has lived in Middlesex County, off and on throughout her life. She prefers “ethnic food. Mostly Latin American food, but authentic anything is good. Middle Eastern, Ethiopian,

Indian, Pakistani, Nepalese...pretty much anything real and traditional and made with real ingredients. Anything but American food.” Marie loves “to travel overseas to work with people – especially kids and women – who are disadvantaged.” When not travelling, she likes to “watch telenovelas and cooking shows.”

Results

The transcripts from the interviews and focus group, along with the responses from the Qualtrics survey, provided rich, thick, qualitative data. Throughout the entire research process, the researcher used the methodology of self-journaling so that the inherent biases of the researcher could be identified and considered. This task was completed as part of the pre-understanding component necessary for the hermeneutic phenomenological research process (Heidegger & Heim, 1984). Unlike phenomenological research, in which researchers identify and compartmentalize their feelings and perspectives to not introduce biases into the research process (Creswell, 2018), hermeneutic phenomenological research incorporates those biases into the research process (Heidegger & Heim, 1984). The introduction of these biases, and the understanding that these biases exist, are fundamentally integral to the hermeneutic phenomenological design. The researcher’s life experiences, which include residing in a rural region, experiencing some hardships, and having an educational background in public health education, may well influence her perception of the research data.

Theme Development

After receiving participant consent, the researcher contacted participants. She distributed the links to the Qualtrics survey and Zoom interview meeting rooms, along with the date and time of each scheduled interview. The researcher also requested that the surveys be completed

prior to the interviews. She then distributed the link to the Zoom focus group meeting room and the date and time of the focus group meeting to the three participants who were selected for participation in the focus group.

The interviews began with a review of the rights of the research participants, and the appreciation of the researcher of the participants' willingness to be part of the research process. This introduction was followed by the 18 interview questions. The interviews each lasted between 12 minutes and approximately one hour. The focus group began with appreciation of the focus group participants' willingness to be part of an additional research process. This introduction was followed by the three focus group questions. The focus group lasted 44 minutes. The laptop used to conduct the interviews and focus group was locked in the researcher's home office or work office desk drawers when it was not being used by the researcher. The interviews and focus group were recorded using the Zoom record feature, which also provided an audio transcript of each interview and the focus group. The researcher also kept an audio journal during the research process, again using the Zoom record feature to create an audio transcript. Each audio transcript was thoroughly reviewed to ensure the accuracy of the interviews and focus group recordings, prior to coding and analyzing the data.

The researcher read through each transcript and wrote down the words and phrases that she observed frequently appearing in the transcripts. She then printed the transcripts and used a highlighter to code the identified common words and phrases on each transcript. The same process of printing and highlighting common words and phrases was also used for the survey data. Taguette software was used to organize the data and to tag the commonly occurring words and phrases on each transcript and survey result. This process allowed the researcher to

determine the shared experiences of the participants and to identify which participants exhibited those experiences. She also used a separate color highlighter to identify words and phrases in the transcripts and surveys that emerged as distinct and notable. These words and phrases were tagged with a separate tag indicator in Taguette and considered along with the other tagged codes.

The emergent themes from the coded data of the survey results were compared with the themes from the interview and focus group audio transcripts. This process created sub-themes that were then further synthesized into themes. These themes were then linked back to the literature, and the interpreted experiences of the participants were reconstructed into stories that illustrated the emergent themes. The stories were critiqued internally by the researcher and externally by a scholarly review of the findings and were finally reported. The top coded sub-themes that emerged were: (a) the importance of personal connectedness, (b) the importance of the personal applicability of information, (c) making good choices promotes good health, (d) the ability to ask questions, and (e) the preference of interactive education.

Table 1 outlines the survey questions, focus group questions, and interview questions as they are associated with the specific guiding research question.

Table 1

Research Questions Alignment with Data Points

Guiding Research Question	Survey Question	Focus Group Question	Interview Questions	Emergent Themes
Guiding Research Question 1: What are the	Describe what good health means to you.	To start us off today, please share one good thing that has	What are a few of your favorite foods?	The importance of personal connectedness

<p>expectations of rural residents of Middlesex County for public health education, before receipt of that education?</p>	<p>happened to you this month.</p>	<p>What are some things that you like to do in your free time?</p>	<p>Making good choices promotes good health</p>	
<p>Guiding Research Question 2: What factors of the public health education did rural residents of Middlesex County find meaningful to them?</p>	<p>What are some things that you believe people should do (or avoid doing) to remain healthy?</p>	<p>Think of a time when someone taught you a helpful skill like cooking or how to change a tire, and share with the group why you remember that learning experience.</p>	<p>What were some public health education experiences that you enjoyed?</p> <p>What about it did you enjoy?</p> <p>What ways did you find to use what you learned?</p> <p>What type of public health education instruction have you liked best (e.g., in-person, interactive, remote, etc.)?</p> <p>What about it did you like?</p>	<p>The Importance of Personal Connectedness</p> <p>The Ability to Ask Questions</p> <p>The Importance of the Personal Applicability of Information</p>
<p>Guiding Research Question 3: What factors of the public health education did rural residents of Middlesex County find</p>			<p>What were some public health education experiences that you did not enjoy?</p>	<p>The Importance of Personal Connectedness</p> <p>The Importance of Personal Applicability of Information</p>

irrelevant or unimportant?	What about it did you not enjoy?	What ways did you find to use what you learned?	What type of public health education instruction have you liked least?	What about it did you not like?
Guiding Research Question 4: How do rural residents of Middlesex County describe how well public health education addresses their perceived current health needs?	What do you think the biggest overall needs are in the region for individuals and families?	What type of public health education do you feel has provided the best information to support your health needs?	The Importance of Personal Connectedness Making Good Choices Promotes Good Health	When considering public health education, would you consider the information or the way that the information is delivered to be more important to you? What are some public health education subjects that you

think you might
find helpful?

What are some
public health
education
subjects that you
think you might
not find helpful?

Please share
anything else
that you would
to share or
recommend
about this topic?

The Importance of Personal Connectedness

The theme of the importance of personal connectedness emerged as the top thematic response. Respondents overwhelmingly included the mention of other people when indicating positive things that had happened to them and when discussing things that they liked to do in their free time. Additionally, many respondents correlated the importance of good health with being able to be capable of caring for their loved ones. Relationships with family and friends provide joy and motivation. Additionally, the ability to connect with the instructor was also mentioned. If the instructor actively engaged with the attendees of the public health educational workshop, then the attendees were far more likely to enjoy the education, and apply it. Research participants remembered learning skills from people who took the time to connect with them. They also enjoyed attending public health education with a friend or family member, as well as learning more about topics that could benefit a loved one. The impetus to remain healthy was also largely due to wanting to be able to care for, or spend time with, family or friends. Research

participants did not enjoy learning from an instructor who was condescending or dismissive. They also did not enjoy education where the instructor did not interact. When personal connectedness was lacking between the instructor and participants, the participants did not enjoy the instruction.

Marie said, "I need to be around people to be happy. I also need people to like me. So, I do things that are with people and that can help people so that I feel good on the inside." Paul stated, "I detest interacting with any individual who appears to value themselves more than others. I won't listen to a word they say." Mary indicated that, "My family is everything to me. I want them to ask me for help if they need it. Most of what I do revolves around my family." John expressed a similar sentiment. "We were designed for connection." Polly agreed. "Relationships drive people to achieve more than they would otherwise. We do things for the people in our lives, before we do things for ourselves."

The Importance of the Personal Applicability of Information

The importance of the personal applicability of information was the second most prevalent emergent theme. Research participants overwhelmingly indicated a lack of interest in the topic if the information that was being taught was not personally relevant, either for that person or for someone in their care. If the topic of instruction would not directly benefit them, then respondents did not want to learn. Very few, if any, participants wanted to learn anything simply to learn. Rather, they wanted to learn about topics that could benefit them or their friends and family members. All respondents indicated that the topics and learning styles that they preferred, or that directly related to known needs of the people in their lives, were valued.

Similarly, information that was not personally relevant or applicable was not enjoyed or sought after.

Esther said, “I have so many responsibilities, and want to be a good steward of my time. I will not actively seek out any opportunity that does not have a direct benefit.” Paul agreed. “Time is a precious commodity. It is arguably the most precious commodity that we have. Why waste it on frivolity when it can be put to good use, for our betterment, and for the betterment of our society.” John used more direct language. “I ain’t got no time to waste.” Sarah’s statement beautifully summarized this concept. “Each of us have been gifted with the ability to make a difference. I do not want to waste my gift, not when that waste will hurt others as well as me.”

Making Good Choices Promotes Good Health

The concept that making good choices promotes good health emerged as another theme. Each participant appeared to place a value on some health-related choices as “good” and others as “poor.” “Good” choices led to good health outcomes, while “poor” choices led to poor health outcomes. These values emerged especially in response to the survey prompt of describing what good health meant to the participant and to the interview question regarding food preferences. Research participants also indicated that the relationship between good choices and good health were important for the continued well-being of every member of their community. The relationship between good choices and good health were also mentioned in context of the greater good, as individual choices were mentioned within the context of their effect on other people. If many people make good choices, thinking about how those choices affect other people, then everyone will be okay. Conversely, a lack of considering the greater good when making decisions can lead to the detriment of the community.

Dorothy said, “When one person hurts, others hurt, too. We’ve seen this a lot this past year, but anyone in a small town sees this. Nothing happens to just one person. What happens to one happens to the whole community.” Jane agreed. “If I get sick, it’s not just me who is affected. My husband has to take care of me. My kids and grandkids will worry.” Lynn said, “I know that the [COVID] vaccine is controversial. But we should be teaching our young people that what they do can help or hurt others. It isn’t about us. It never is. It’s about everyone else.”

The Ability to Ask Questions

The ability to ask questions was another theme that emerged. Research participants indicated that they preferred educational opportunities where they were able to ask questions of the instructor. They also remembered valued the opportunities to ask questions when discussing previous instances of learning how to do something. The opportunity to ask questions effectively changed the shape of learning for them, affording them the opportunity to personalize what they were learning, and simultaneously enabling them to personally connect with the instructor.

Paul remembered, “Learning by doing is good. Very good. But you learn by messing up even better. Making mistakes, and then asking questions to discover what could have been done differently – now THAT is the best way to learn.” Esther agreed. “Everyone needs a safe place to ask questions and learn. That is one of the things that I enjoy about homeschooling my daughters. I can ask them questions, and they can ask me questions. We build intentionality into our day. Too few people do that, I think.” Shawn offered, “If they don’t ask, they won’t know.”

The Preference of Interactive Education

The final emergent theme from the data was that of the preference of interactive education. Learning by doing was far preferred over any other learning style. Research

participants remembered – and valued – learning experiences that they had where they were able to put knowledge into practice. They not only enjoyed the learning experience far more when they were able to engage in experiential education, but they also retained the knowledge of what they had learned.

Marie said, “I hate science. But I remember the disgusting things that we did in science class. Not what [the teacher] said. I blocked all that out.” Dorothy offered, “Doing. Not reading. Not writing. Not listening. Those things are good, but by themselves won’t teach most people. But when you add doing to the reading or writing or listening, then people learn.” Polly laughed, “Tell me what to do and I will confuse myself. Show me and have me do it, and I will learn in in a snap.”

Research Question Responses

Thematic responses were elicited from each of the guiding research questions. Thematic responses were also elicited from the specific research questions prompted by those guiding research questions. The themes and sub-themes that emerged will be explored in greater detail below.

Guiding Research Question One

The first guiding research question, “What are the expectations of rural residents of Middlesex County for public health education before receipt of that education?” was designed to determine the fundamental understanding of basic health concepts by rural residents. Two themes emerged after analyzing participants’ responses; (a) the importance of personal connectedness and (b) making good choices promotes good health. These themes will be explored further below.

The Importance of Personal Connectedness. Throughout the interviews, focus group activity and in every survey response the theme of the importance of personal connectedness was continually presented. Every respondent who participated in the focus group used their relationship with another person or how that person made them feel when asked questions about good things that had happened to them that month. Lynn shared that she “spent a day visiting shops and having lunch at a nice restaurant with some girlfriends.” Polly was excited that she “had been able to spend an entire week with the family at the cabin, playing board games, sitting ‘round the fire pit, eating, and just talking and laughing together.” Shawn happily shared, “I went fishing with my wife.”

When asked about what they liked to do during their free time, every person described an activity that was done with someone else. For example, John responded that he liked “to play the guitar in jam sessions with friends” of his “from church.” Paul prefers “to spend free time teaching young people the outdoor skills that they won’t learn in schools.” Lynn indicated that she “likes to spend as much time as I can with my daughter and my grandkids. I can never get enough time with them!” Sarah loves to “go on long walks with [her] husband, just holding hands and talking.” Even Esther, who declared herself “a self-avowed introvert,” also stated that she enjoyed “sitting and listening” to her daughters “playing the piano and violin.”

The response to the interview question about what public health education respondents had received also supported the theme of the importance of personal connectedness. Mary had “attended a lecture on Lyme Disease...how to do tick checks the right way and how to avoid being bitten and stuff like that...so that [her] family can stay safe when spending time outdoors.” Shawn indicated that he had taken a public health course on “food safety steps...the right way

versus the wrong ways to make people not sick” so that he could “understand the rules...so many rules that don’t always make sense.” As a young mother, Sarah chose to pursue public health education opportunities so that she “could be well prepared to know how to properly care for an infant.”

Even when discussing favorite foods, the theme of the importance of personal connectedness continued to present. Many of the respondents indicated foods that a relative or friend made for them, while others mentioned foods that they enjoyed eating with other people. For example, Esther’s favorite foods include “kombucha, because our family makes it together!” Zinnia loves to eat ethnic food at restaurants that she visits “with friends.” Marie’s favorite foods are ones that she “ate while traveling...and meeting new people.”

The importance of personal connectedness was also a theme that was illustrated by the responses to the survey question about what good health meant to the respondents. One response to the prompt included the phrase, “to have meaningful connections with each other and to God.” Another one stated “to be able to make meaningful contributions to society.” Four of the responses indicated that the respondents believed that good health meant that people could be healthy “for family” and “for friends.”

Making Good Choices Promotes Good Health. The second underlying theme from the responses to the first guiding research question was that of the concept that making good choices promotes good health. When responding to the interview question about favorite foods, most respondents replied with food choices that they also mentioned were healthy, so therefore, good choices. For example, some of John’s favorite foods include “whole grains like oats, brown rice, quinoa, and amaranth, foods with anti-inflammatory spices like turmeric, greens – turnip greens,

collards, spinach, kale, and legumes...some unhealthy stuff as well, but the healthy stuff is my favorite.” Polly loves “salads with fruit in it. Lots of veggies. Goat cheese. Anything healthy like that. And yogurt.” Interestingly, the concept of making good choices promotes good health also suggests the presence of poor choices, and its correlation with poor health. Zinnia stated, “I love ice cream, but I know that it isn’t a good choice, so I probably shouldn’t mention that, right?” John also added that, although healthy foods are his favorite, he “can’t get enough canned Vienna sausages, chunks of fatty cheese, and castoreum-laced vanilla cream horns. Really bad for you, but I gotta eat them.”

When responding to the survey question of what good health means to them, the responses overwhelmingly included indicators of good choices. One response was “making good choices for a healthy body and mind.” Another was “making good choices that give you the ability to feel and look well, be free from pain and other disabilities.” “Being physically active and eating healthy and washing my hands” was another response. “Making good choices for myself so that I can be illness, disease, and pain-free, and have the ability to live and move freely” was yet another response. Each of these responses indicated that a value of good was made for health choices that would have a greater likelihood of resulting in desired health outcomes. Interestingly, none of the responses included avoiding any behaviors.

Guiding Research Question Two

The second guiding research question, “What factors of the public health education did rural residents of Middlesex County find meaningful to them?” was designed to elicit responses from research participants that would afford the researcher a better understanding of aspects of public health education that were valued by recipients of that education. After analyzing the data,

the themes of (a) the importance of personal connectedness, (b) the importance of personal applicability of information, and (c) the ability to ask questions emerged. These themes will be explored in further detail below.

The Importance of Personal Connectedness. The survey question, focus group question, and interview questions that were supported by the second guiding research question overwhelmingly maintained the primary theme of the importance of personal connectedness. In response to the survey question, “What are some things that you believe people should do (or avoid doing) to remain healthy?” many of the responses included the mention of other people. “Eat healthy and exercise with other people” was one response. Another was, “getting to know one's own mind and body are crucial to living well. Making peace with other people and with God solves a lot (if not all) of life's problems.” “Have meaningful interactions with other, worship God, pray, observe the Sabbath... avoid harboring unforgiveness, staying bitter toward others ” was yet another response indicating the importance of personal connectedness. One response included, “be a part of a strong and loving community.”

In response to the focus group question, “Think of a time when someone taught you a helpful skill like cooking or how to change a tire, and share with the group why you remember that learning experience,” the responses also supported the theme of personal connectedness.

Lynn described the following:

A few years ago, I rented a little cottage. I'd had some plugged drains, and I wanted to know how to clean out a drain, you know, in the bathroom, by myself. I asked one of the guys that I worked with, and he showed me how to do it. He walked me through how to do it, how to turn the water off and do the whole thing. So, I did it myself. From what he

showed me, I was able to fix the drains myself. I was like, I did it myself! I didn't have to ask my landlord to do it. I thought now I know how to do it. Now, mind you, I was married to a plumber, and I never learned that but you know now. I hadn't thought to ask my husband how to fix anything; I just took for granted that he would always be there and could do it for me. But now, I know that people won't always be there, so you need to make sure to ask the people that you do have around you for help when you can, because they won't always be there. I had more fun learning how to fix a clogged drain than I ever thought I would, partly because I know that I can do it, but more because I know to value the time that I do have with people more now.

Polly's response to the focus group question also supported the theme of the importance of personal connectedness. "I had an aunt that I lived with in college...she taught me how to can. It is a life-long skill that I have now." She went on to add, "I used that skill to make applesauce for my daughter's wedding, so my aunt's gift of teaching me is still being used."

When responding to the interview questions related to guiding research question two (e.g., what public health education experiences were enjoyed, what about it did people enjoy, what ways did people find to use what they had learned, what type of public health education instruction have people liked best, and what about it did they like), many of the responses from research participants again supported the theme of the importance of personal connectedness. Marie, a new mother, said, "I like attending classes where I can bring my baby and spend time with him when I learn." Zinnia enjoys learning about topics that she can share with others to help them become healthier. "I feel so much better after eating better...I want my family to eat better, too, so that they can also feel better." Dorothy said, "I don't want to die young like my mom did,

and leave my kids without a parent. I am going to learn how to be healthy so that I can live a long time for them.” Jane also indicated that she prefers public health education that provides her with information that can help other people. She said, “When my husband had his hip replacement, I knew what to expect because I had already had education about it.” She went on to add, “I can’t imagine having to go through that experience unprepared to actually help my husband.”

The Ability to Ask Questions. The theme of the ability to ask questions was also supported by the participant responses to the survey question, focus group question, and personal interviews as part of guiding research question two. Some of the responses to the survey question, “What are some things that you believe people should do (or avoid doing) to remain healthy?” included, “Don’t be afraid to ask your doctor questions,” and “ask other people to walk with you so that you don’t have to go by yourself.” In response to the focus group question, “Think of a time when someone taught you a helpful skill like cooking or how to change a tire, and share with the group why you remember that learning experience,” Shawn shared, “When I was younger, I had a job as a landscaper. I was able to ask a lot of questions, and learned skills that I’ve been able to carry through for my whole life.” Polly mentioned that her aunt, who taught her how to can, encouraged her to ask questions. “I asked lots of questions...she was very patient. I learned a lot.”

When responding to the personal interview questions related to public health educational experiences, Paul responded, “I like being able to ask questions. If I can’t ask questions, then I don’t find it useful.” He went on to add, “Anyone can read something and learn a little. But there are always gaps that can only be filled by asking questions.” Mary’s response was very similar.

She stated, “When you have questions or doubts about different things...many people will tell you different things, but if you can ask someone who knows, then you will be able to learn the truth.” Dorothy said, “You can read all sorts of things on social media. I liked being able to ask questions in person during and after the lesson so that I knew what was right and what wasn’t.” Marie also offered, “I like learning in small groups best, because I can ask questions. I feel weird and won’t ask questions if the group is big or if we are on Zoom.”

The Importance of the Personal Applicability of Information. The third emergent theme from the findings of the responses to the survey question, focus group questions, and personal interviews that supported the second guiding research question was that of the importance of the personal applicability of information. One survey response was, “I am a firm believer that folks ought to view food intake on a "seldom-sometimes-anytime" type of spectrum. People need to enjoy what they are eating and aren’t going to only eat what so-called experts tell them to eat.” Another survey response was, “getting to know one's own mind and body are crucial to living well. Do what works best for your body, mind, and emotions.” In response to the focus group prompt, Polly indicated that she learned how to can from her aunt, because she wanted to learn. “I lived with my aunt and didn’t have to pay rent because I babysat her little ones. She knew that I was willing to work, and wanted to learn. So, I did.”

The responses to the in-person interview questions that supported the second guiding research question also reinforced the theme of the importance of the personal applicability of information. Sarah stated, “I enjoy learning when I can directly apply what I am learning...to help myself, my family, or other people.” She added, “if I learn how to do something, rather than just learning about something, then I feel that I can be more helpful to others.” Jane had a similar

perspective. When describing how she used information that she learned from a Lyme Disease workshop, she stated, “We live in a YouTube society. Everyone watches YouTube videos. They want to learn how to do things, so they watch YouTube to learn how.” She continued, “I want to be that YouTube video for my family. Instead of them watching a stupid video, I want them to ask me for help. I want to learn for them.” Shawn’s responses also reflected this theme of the importance of the personal applicability of information. “The right way and wrong way of doing things...I want to know the right way. So, I pay attention in the classes.” Dorothy’s response to the question of how she applied what she learned beautifully summarized this theme. “You heard the saying, ‘If it ain’t broke, don’t fix it?’ Well, it broke and needed to be fixed. I learned how to fix it. Now it ain’t broke.”

Guiding Research Question Three

The third guiding research question, “What factors of the public health education did rural residents of Middlesex County find irrelevant or unimportant?” was designed to prompt responses from research participants that allowed the researcher to better understand what aspects of public health education were not valued by recipients of that education. After analyzing the data, the themes of; (a) the importance of personal connectedness and (b) the importance of personal applicability of information emerged. These themes will be explored in further detail below.

The Importance of Personal Connectedness. Much like the responses to the question prompts for the first and second guiding research questions, the responses to the interview questions that reinforced the third guiding research question (e.g., what were some public health education experiences that you did not enjoy, what about it did you not enjoy, what ways did you

find to use what you learned, what type of public health education instruction have you liked least, and what about it did you not like?) also supported the theme of the importance of personal connectedness. Mary responded that she did not enjoy learning about the potential things that could go wrong for a patient post-surgery because when she saw her husband after his surgery, she remembered everything that she had learned. She said, “I knew what he was going through, so when I went to visit him at the ICU, I literally almost fainted because of how much pain I knew he must be in.” She added, “So that I did not enjoy, because I knew too much, and could not stop thinking about how what I knew was affecting him.” Marie responded similarly, indicating that she “did not enjoy learning about all the things that could go wrong with [her] baby,” because she “couldn’t stop thinking about [the baby] being sick or hurt or in pain or not okay.” She also stated, “If my baby isn’t okay, I am not okay. So, I don’t want to hear all the ways that my baby might possibly not be okay.” Polly said, “I don’t enjoy finding out what is in a product that can be harmful to you and that you choose to put that on your face or under your arms like aluminum in deodorant.” She concluded with, “I think of my friends and family who also use those products and I get worried about them using those products. So, that I don’t enjoy.”

Potential negative connotations of acquired knowledge were not the only way that participants’ responses supported the theme of the importance of personal connectedness. John said, “When anyone – instructor or otherwise – is a jerk, I don’t want to listen to them.” He added, “If an educator is condescending, or acts like a know-it-all, I won’t bother listening to them.” Jane phrased it a little differently. “If someone instructing the class is boring as dirt, then I will tune them out.” “If they are interesting, I will listen. If they are boring, I won’t. It doesn’t

matter what they are saying, if they aren't saying it in the right way." Paul stated (in a monotone voice) that he doesn't "pay attention well when the teacher speaks in monotone." After laughing, he also said, "If the teacher is engaging, the students will engage. If the teacher isn't engaging, the students won't engage. Teaching 101." Esther also agreed with this perspective. She said, "I have learned so much when I have had teachers who were dynamic, even when I did not want to learn." She added, "To my discredit, I have not learned when teachers were not dynamic, even if the material would have been helpful for me to learn." She concluded with, "I find that I simply do not enjoy the learning process – or learn – when the teacher doesn't appear that they care about what they are doing."

The Importance of Personal Applicability of Information. The second theme that emerged from the questions supporting the third guiding research question was that of the importance of personal applicability of information. Shawn said, "I don't like to learn anything that I am not gonna use or that my family isn't gonna use." He added, "if it might be helpful someday, then maybe, but probably not even then." Zinnia stated, "Life is too short to waste not learning anything that will help me or my family." Sarah said, "I prefer to learn something that I can use at that stage of my life. So, right now, I would not want to learn about breastfeeding, for example. I would not find that helpful." She added, "I do love learning, but there is so much information out there, that it can be overwhelming to learn too much at one time, especially if that information might not be immediately helpful." Esther had a slightly different perspective. She stated, "You can always glean knowledge. You never know what you might need to know later on." She ended with, "It is much better to have read or heard something and not have to use

it right away – but have that knowledge just in case – than to need that knowledge and never have taken the time to learn.”

Guiding Research Question Four

The fourth guiding research question, “How do rural residents of Middlesex County describe how well public health education addresses their perceived current health needs?” was created to better determine the relationship between rural public health education and the actual needs of the recipients of that education. After data analysis, the themes of (a) the importance of personal connectedness, (b) making good choices promotes good health, and (c) the preference of interactive education emerged. These themes will be explored in further detail below.

The Importance of Personal Connectedness. As with every other response to the focus group and interview questions, the theme of the importance of personal connectedness emerged in response to the focus group question and the interview questions supporting guiding research question four. In response to the focus group question, “What do you think the biggest overall needs are in the region for individuals and families?” Zinnia responded, “I think one of the biggest things that I feel is important, not just for me but for all families, is good food at a decent price and maybe learning new skills, like maybe learning how to garden.” She added, “The other thing that we’ve learned this last year and a half is socialization is important to people of all ages. Good food and socializing with people – especially if the two can be together.” Polly agreed with Zinnia, but added “I think that in this region and in this area, those are important, but so is senior housing. It’s huge because the seniors don’t want to leave their friends and their town, but they can’t afford to stay.” “When the seniors leave their home base, the transition is really hard for them. And it’s even harder because it’s a rural area, so there is the factor of

limited mobility. That's huge, too." She concluded with "The seniors need their friends. They need to be able to afford food and housing in their home town. And they need to be able to navigate in their home town, too." Shawn's perspective was a little different, but also focused on the importance of personal connectedness. "Good jobs...jobs with benefits, jobs with good pay. Money determines a lot. It not only provides for you, but for your spouse and family as well." "A good job that you enjoy you enjoy, you feel you can be creative, and you can do naturally. Without having to pay for a lot of training." He finished with, "Because a good job not only provides for household needs, but it also creates like an inner balance. An inner peace. When you have that, you can provide for your family's other needs, the ones that don't need money."

The responses to the interview questions (e.g., what type of public health education do you feel has provided the best information to support your health needs, when considering public health education, would you consider the information or the way that the information is delivered to be more important to you, what are some public health education subjects that you think you might find helpful, what are some public health education subjects that you think you might not find helpful, and please share anything else that you would to share or recommend about this topic) also carried the theme of the importance of personal connectedness. Polly shared, "The information is important...if it helps me or helps my family. Whatever pertains to my life." "If there is something specific that I need help with, then that specific information would be helpful. Generalized information is helpful if it pertains to my life." Marie said, "I don't think about stuff that might happen when I get old, so knowing that stuff won't help me now." She added, "I don't want to hear about all the bad stuff that might happen at some point. Only what will help me right now."

Paul had a slightly different perspective. “I like to file away information, because I never know when I might need it. That being stated, there are some things that I just don’t want to know.” Shawn said, “I think there should be more information out there about keeping the air, clean water, clean, these are basics.” “We need to face those issues because without clean air and clean water we're nothing. So, we got to start with basic water and air.” He concluded with, “I’m not gonna live forever, so I want to know what to do to leave the world a better place for my kids and their kids. So, yeah, clean water and air.”

Making Good Choices Promotes Good Health. The theme that making good choices promotes good health was also supported by the responses to the focus group and interview questions. When responding to the focus group question about the biggest needs of the community, Shawn mentioned the prevalence of minimum-wage jobs. “Some of my son’s friends, they have minimum wage jobs. And they go from job to job to job and don’t care.” “They don’t care about maybe losing their job through doing something stupid, so they go out and get drunk or high and then don’t show up to work.” He concluded with, “If they had jobs they cared about, maybe they’d make better choices for themselves.”

When responding to the interview questions about what she would find helpful or not helpful, Dorothy said, “I want to know why. Why I should eat something. Why I should do something. Why I shouldn’t eat something or do something. Don’t just tell me what to do; tell me why.” She followed that statement with, “I know I’ll be healthy if I make good choices to eat and stuff like that, so I want to know why some things are better than others.” Sarah said something similar. “Children in schools are taught that they need to wash their hands...to cover their faces when they sneeze...that vaccines are important.” “They learn that by following the

rules, they will keep themselves safe. I think that it is important to continue to teach them these ideas, especially since they might not be learning them at home.” She concluded with, “if children learn that doing the right thing – like getting vaccinated – will help to make their friends safe, and not just themselves, they might...make the right choice for themselves and others to stay healthy.”

The Preference of Interactive Education. The final theme that emerged was that of the preference for interactive education. When responding to the interview questions about the type of public health education that has provided the best information to support health needs and whether the information or the way that the information is delivered is more important, many participants responded that they preferred to engage in education that is collaborative, not just delivered. Mary said, “Slideshows are boring. Monotonous and boring. Presentation is everything. Information delivered in an interesting way won’t be tuned out.” She added, “If they just talk...and expect us to just listen, that is boring. I will tune out. If they get me involved, I can’t tune out.” She concluded with, “I hate slideshows and conferences and Zoom and everything where I am supposed to just listen and shut up.” Polly had something similar to say, “I would say that the information is more important, but it will get lost if it’s not interestingly presented.” “Interesting to me is if I get to do stuff. To move, to use my hands, move my body. Not just sit there and listen.”

Paul said, “Have you ever tried to teach a child something, like how to ride a bike? You don’t say, ‘now you sit there and listen to me tell you what to do, and then you’re gonna go and do it.’” “You show them with your body, and have them try it out and then give feedback and try, try, try again. You learn by doing. Not by sitting.” He concluded with, “The method of

instruction is far more important than the content. If you teach well, you can teach anything, no matter how boring. If you can't, well, you won't be able to teach anything." Esther said, "I still remember learning how to care for Monarch Butterflies in fourth grade. Our class took care of eggs that grew to larvae that grew to butterflies. We were part of their entire life cycle." She added, "I don't remember anything else that I learned in fourth grade, but I do remember the butterflies." "We did something together, as a class, using our hands, and our emotions and imaginations were engaged. Years later, I still remember."

Marie shared, "In high school health, this one teacher had us swab the toilets and stuff in the bathroom for germs. She also had us swab the school light switches, doorknobs, our lockers, and our cell phones." "I remember...the bathrooms didn't have a lot of germs, but everything else did. I always washed my hands after using bathrooms, but hadn't after doing other stuff like opening my locker." "I wash my hands all the time now. That lesson creeped me out and made me learn...much better than just being told that germs were on stuff...I learned that they were by doing something and finding out myself." She concluded with, "I don't remember learning much of anything else from high school, but I remember that germs are everywhere, and I always wash my hands now. That was the best lesson ever. Even though it creeped me out."

Summary

Through survey responses, focus group questions, and interview questions, the 12 research participants from Middlesex County shared their stories and perspectives as to how they interpreted public health education. The analysis of the data revealed the following top themes: (a) the importance of personal connectedness, (b) the importance of personal applicability of information, (c) making good choices promotes good health, (d) the ability to ask questions, and

(e) the preference of interactive education. These emergent themes support and address the central research question and the four guiding research questions, and provide the framework to better understand the experiences of rural residents in public health education. The results of survey responses, focus group questions, and interview questions provided thick, rich, qualitative data that provided insight into the unique perspective into public health education that is experienced by rural residents. Participant quotes were used to help provide additional understanding of the emergent themes.

In the next chapter, a summary of the findings will be presented. Additionally, a discussion of the themes, relating to the theoretical framework of the study, will be provided. Finally, a discussion of the study implications, recommendations for future research, and limitations will be discussed.

CHAPTER FIVE: CONCLUSION

Overview

The purpose of this hermeneutic phenomenological study was to interpret the experiences in public health education of rural residents in Middlesex County. Chapter Five will begin with a concise summary of the research findings. It will be followed by a discussion of those findings as they relate to the theoretical framework and relevant literature, the implications of the findings, the delimitations and limitations of the study, and the recommendations for future research. Finally, the chapter will conclude with a summary.

Summary of Findings

This hermeneutic phenomenological study was guided by the central research question: How do rural residents of Middlesex County describe their experiences in public health education? This central question was dissected into four supporting, guiding research questions that helped focus the research process. The four guiding research questions were:

Guiding Research Question 1: What are the expectations of rural residents of Middlesex County for public health education, before receipt of that education?

Guiding Research Question 2: What factors of the public health education did rural residents of Middlesex County find meaningful to them?

Guiding Research Question 3: What factors of the public health education did rural residents of Middlesex County find irrelevant or unimportant?

Guiding Research Question 4: How do rural residents of Middlesex County describe how well public health education addresses their perceived current health needs?

Twelve adult residents of Middlesex County who had previously attended a public health workshop offered by the researcher volunteered for this study. Each participant completed a two-

question Qualtrics survey and an in-person interview that consisted of 18 questions. Three participants were part of a focus group that consisted of three questions. The interviews and focus groups were conducted remotely and recorded using Zoom. Audio transcripts of each interview and the focus group were created by Zoom. The data analysis was conducted using hermeneutic phenomenology as informed by the work of Max van Manen (1997). This process of research intertwines language and communication, enabling the researcher to understand the human experiences in public health education from the responses of the research participants and from the inherent biases of the researcher. Taguette software was used to tag different terms and to elicit thematic coding. This step was supported by the hand sorting and coding of the printed transcripts and survey results by the researcher. The researcher also journaled throughout the research process and subjected the transcripts of that audio journal to the same coding and sorting processes as the rest of the transcripts and survey result. The analysis of the data enabled the researcher to elicit the following five primary themes: (a) the importance of personal connectedness, (b) the importance of personal applicability of the information, (c) making good choices promotes good health, (d) the ability to ask questions, and (e) the preference of interactive education.

The first guiding research question was: What are the expectations of rural residents of Middlesex County for public health education before receipt of that education? Two themes emerged from an exploration of the focus group questions, interview questions, and survey question that were supported by this guiding research question: (a) the importance of personal connectedness and (b) making good choices promotes good health. These two themes will be explored further below.

The first emergent theme of the importance of personal connectedness is presented strongly throughout each mode of data collection. In response to the survey question that asked participants to describe what good health meant to them, many of the responses included information about how good health would help them to be able to care for other people (e.g., family members and friends) or how good health would enable them to remain active and able to enjoy the company of others. Similarly, the responses to the focus group question of what good things had happened this month also overwhelmingly included personal connectedness. All respondents mentioned activities or events that involved other people (e.g., that they were able to do with other people or that happened to people whom they cared about). When responding to the interview questions, again, most of the responses included aspects of connection with another person. Many favorite foods were enjoyed when eaten with loved ones, most leisure time was enjoyed when spent with loved ones or friends, and the public health education that had been received was either attended in the company of friends or family, or was attended to benefit a family member.

The second emergent theme was that making good choices promotes good health. The responses to the survey question that asked respondents what good health meant to them included a valuation of some health choices as “good” (e.g., exercising, eating fresh fruits and vegetables, drinking water, etc.), and suggestive comments that good choices would lead to good health. Contrastingly, there were also some healthy choices that were considered “poor choices” (e.g., drinking heavily, using illicit drugs, smoking, etc.) that respondents indicated that they should avoid if they wanted to be healthy. The responses to the interview question about favorite foods also resulted in similar findings, with participants valuing some food selections as “good

choices” that they prefer and other food selections that they enjoyed as “unhealthy.” The choice of previously attended public health education also carried the theme of making good choices results in good health. Respondents indicated that they had sought public health education as a good choice to enable them (or a loved one) to experience good health.

The second guiding research question was: What factors of the public health education did rural residents of Middlesex County find meaningful to them? When exploring the focus group questions, interview questions, and survey question that were supported by this guiding research question, the following three themes emerged: (a) the importance of personal connectedness, (b) the importance of personal applicability of the information, and (c) the ability to ask questions. These three themes will be explored further below.

The first emergent theme of the importance of personal connectedness was found in each of the responses to the focus group question, survey question, and interview questions that were supported by the second guiding research question. In response to the survey question regarding the things that respondents believed that people should do (or avoid doing) to remain healthy, responses included maintaining connectedness to other people and to God. When responding to the focus group question of sharing a time where someone had taught a skill, research participants valued the time spent with the person teaching them the skill and the ability to share the practical knowledge of that new skill with other people. The responses to the interview questions also supported the theme of the importance of personal connectedness. All respondents indicated that they pursued public health education to be able to help someone else. Additionally, many respondents valued an instructor with whom they connected. The personal connectedness factor also drove the implementation of what was learned, as research participants who felt that

they connected with the instructor and/or who attended public health workshops to be able to care for the needs of a loved one were far more likely to implement what they had learned than those who had not.

The second emergent theme for the second guiding research question was that of the importance of personal applicability of information. Each respondent indicated that they not only sought out public health educational opportunities to learn information that would be of direct benefit to them (either for personal or secondary application), but that they also better enjoyed educational opportunities that they knew would provide information that they would personally apply to them or to their sphere of influence. The research participants also indicated in their responses that they were more likely to apply what they had learned if the material directly applied to their situation.

The third emergent theme for the second guiding research question was the ability to ask questions. Not only did the research participants prefer educational opportunities where they could ask the instructor questions but they also were more likely to implement what they had learned if they had the opportunity to learn more through the process of asking questions. Research participants also indicated that they remembered what they learned better if they had the opportunity to ask questions, and that they valued the instructor more if the instructor was willing to take the time to answer questions.

The third guiding research question was: What factors of the public health education did rural residents of Middlesex County find irrelevant or unimportant? The following two themes emerged when exploring the interview questions that were supported by this guiding research

question: (a) the importance of personal connectedness and (b) the importance of personal applicability of information. These two themes will be explored further below.

The recurring theme of the importance of personal connectedness was present in the responses to guiding research question three. As the interview questions were focused on what research participants did not enjoy, or did not find useful about public health education, their responses also illustrated a negative connotation. Many respondents indicated that they did not enjoy receiving education from an instructor who would be condescending or who delivered information in a boring or unengaging manner. They reported that they were unlikely to enjoy the education or even learn if there was not a spark of personal connectedness between the instructor and the students in that class. Furthermore, even if research participants had attended a class or workshop because they were truly interested in the topic, if they did not feel personal connectedness with the instructor, they would be far less likely to learn information and/or implement what was being instructed.

The second emergent theme from the responses to guiding research question three was that of the importance of the personal applicability of the information. All respondents indicated that they would not prefer to attend public health educational workshops if the information being taught did not directly apply to their lives. Furthermore, they would be even less likely to consider applying what they had learned unless they could perceive a direct benefit from that application. Several respondents also indicated that they did not enjoy public health education at all when the information was not personally applicable.

The fourth guiding research question was: How do rural residents of Middlesex County describe how well public health education addresses their perceived current health needs? Three

themes emerged when exploring the interview questions that were supported by this guiding research question: (a) the importance of personal connectedness, (b) making good choices promotes good health, and (c) the preference of interactive education. These three themes will be explored further below.

The first emergent theme from the focus group and interview questions that supported guiding research question four was the recurring theme of the importance of personal connectedness. Research participants indicated that their perspective of the biggest overall needs of members of the local community were factors that contributed to the residents' ability to maintain active roles as family members and friends. Each of these factors, from jobs providing financial security and self-actualization of the employed, to affordable housing for seniors so that they could remain in their hometown community, all centered around the understanding of the individual in the context of their connectedness with others. In response to the interview questions, the research participants again indicated that personal connectedness with the instructor was imperative in learning. Additionally, respondents indicated that they valued opportunities to learn public health information that would enable them to effectively function in their role as family members and friends, supporting those with whom they were personally connected.

The second emergent theme for guiding research question four was that making good choices promotes good health. A lack of readily available good jobs that would provide financial stability and opportunities for self-actualization among local workers was mentioned as one factor. Respondents indicated that many poor choices that contributed to poor health outcomes among local youth were a direct result of the prevalence of poorly-paying, seasonal jobs, that

youth did not enjoy, and that formed the impetus of many unhealthy coping mechanisms like alcohol abuse and illicit drug use. Responses to interview questions also supported this theme that making good choices promotes good health. Research participants indicated that they knew that there were “right” ways to make healthy choices for themselves and their families. As such, they wanted to know what would be the right choices so that they could support good health outcomes.

The third emergent theme from the fourth guiding research question was the preference for interactive education. When responding to the interview questions, research participants overwhelmingly indicated that, although the information being taught was important, the method in which the information was taught was, in their opinion, far more important. They preferred hands-on, interactive learning opportunities, where they could learn skills in addition to knowledge. Although the ability to ask questions, another emergent theme that presented in other guiding research questions, was considered part of interactive education, experiential characteristics such as being able to learn by doing were what respondents considered extremely important.

Discussion

This study was conducted to interpret the experiences in public health education of rural residents of Middlesex County. The analysis of the data from the study revealed the following top themes: (a) the importance of personal connectedness, (b) the importance of personal applicability of information, (c) making good choices promotes good health, (d) the ability to ask questions, and (e) the preference of interactive education. The following section explains the

relevancy of the theoretical and empirical foundation of information found in the literature review.

Theoretical Framework

This study's theoretical framework was based on Maslow's (1954) theory of a hierarchy of needs. The theory of a hierarchy of needs suggests that all humans have needs that must be met. Each of these needs exist on tiered levels. Lower-level needs, such as safety, must be met before higher-level needs, such as esteem, can be met.

Within the context of this theoretical framework, individuals tend to remain functioning within whatever tier of needs are currently being met, unless some factors prompt them to change (Maslow, 1954; Herzberg, 1996). For upward progression to occur through the tiers, individuals must be motivated to make changes (Herzberg, 1996). These motivators are often first external in nature, which can then be translated into the internal motivators that will prompt behavioral change.

When considering needs as they relate to health practices, the responses of the participants of this study suggested that the meeting of their lower-level needs were prioritized over the meeting of their higher-level needs (Herzberg, 1996). For example, the lower-level needs of physiological, safety, and belonging were highly valued by all participants. This was indicated by the thematic responses of the importance of personal connectedness, the importance of the personal applicability of the information, the ability to ask questions, and making good choices results in good health. In each of these thematic responses, participants reinforced the valuation of meeting their lower-level needs.

The final emergent theme, the preference of interactive education, might not initially appear to fall in any of the need tiers, but the responses of the participants indicate otherwise. They favored interactive education to help them quickly grasp health-related skills and information. Since every participant also indicated that they valued public health education that would help a loved one or that was personally relevant, the ready absorption of that information directly related to meeting the lower-level needs of physiological, safety, and belonging (Maslow, 1954).

Participants also indicated that a dearth of available steady employment and affordable housing negatively affected the health choices of the local community. This inability to meet the basic physiological and safety needs of those community members also appeared to prevent those individuals from implementing necessary changes to meet higher needs (Calgary, 2021). As a result, unhealthy practices, such as substance abuse, physical inactivity, and poor dietary patterns were commonly practiced by this subset of the population. These findings are consistent with other literature relating to rural populations.

Empirical Framework

Much of current public health-related literature relates to public health education in urban or suburban settings in the United States or rural settings in developing countries (Mariott et al., 2015; Madsen, 2016). There is little qualitative research relating to rural public health education in the United States. This study was conducted to address the gap in the literature related to this problem. To do this, the lived experiences in public health education of rural residents of Middlesex County were explored. The relationship between the empirical literature review and the analyzed data elicited from the study will be outlined further below.

Previous literature has examined the relationship between public health education and overall good health (Madsen, 2016). Namely, that effective public health education can help to prevent individuals from developing many harmful health conditions (Calgary, 2021). It does this by efficiently providing practical health-related information that can easily be adopted by members of the public (Greenberg et al., 2017). However, although public health information is widely distributed, it is not always widely adopted, as observed in the overall non-compliance on the part of many rural residents to adopt recommended public health practices, as well as in the current literature. The responses from the 12 participants of this study suggest that the delivery of the public health education may potentially contribute towards the observed non-compliance. Every participant indicated that personal connectedness was an important factor to them. One component of this phenomenon was in the desire to pursue public health education to have knowledge to help loved ones, or to attend public health education workshops with loved ones. However, another component was in the connectedness with the public health educator. A public health educator who was welcoming and encouraging elicited a better response among participants, resulting in an increased likelihood that the public health information would be implemented. Public health education that is implemented is considered successful (Dixon et al., 2015; Walker & Fox, 2018; Telles et al., 2021). As such, according to the responses from the study participants, the presence of a personable public health educator would help to support successful public health education.

The literature also indicated that public health education can be delivered in a variety of modalities (Greenberg et al., 2017; Binns, 2021; Binns et al., 2017). These modalities can include in-person education, remote education, and the distribution of infographics. Current

literature suggests that each of these modalities have a similar likelihood at being successful in encouraging learners to adopt public health practices (Malcolm et al., 2019; Landeiro et al., 2017; Dahl & Crawford, 2017). The responses from the participants did not support this information. Their responses indicated that in-person education was the most effective mode of public health education. The reasons for this as suggested by the research participants included the opportunity to ask questions and the interactive nature of many in-person public health lessons. Since personal connectedness was a primary emergent theme from the analysis of the study data, the ability to connect with the instructor may be a contributive factor towards this phenomenon.

Remote public health education had been the only available form of public health education during the COVID-19 pandemic. The literature supported that, in some cases, remote public health education may be effective (Calati et al., 2018; Malinga et al., 2020; Franke et al., 2021; Van Houwelingen-Snippe et al., 2021; Hubbard et al., 2021; Griffiths et al., 2021). These remote learning opportunities include webinars, lectures, workshops, and even interactive workshops. Remote learning opportunities have been increasingly common. According to the literature, they can be an effective mode of reaching remote audiences. For the research participants in this study, remote public health education was only effective when it was interactive. When participants were able to ask questions, be involved in hands-on learning opportunities, or attend remote public health education with friends, they were also more likely to adopt what they had learned.

The public health information that is delivered is also important in any public health educational effort (Baron et al., 2017; Mariott et al., 2016). This factor is present in the literature

and is also supported by the responses of the research participants. Public health education recipients desire information that is personally relevant, either for self-application or for use to help a loved one. Information that is not personally relevant is considered unimportant. The literature also supports the concept that some relevance of the public health information may not initially be readily comprehended by the target audiences (Bhalli et al., 2015; Pitch-Loeb et al., 2017). This is the case when people either do not understand the necessity of making changes in their health practices. It can also occur when they have so many pressing health concerns that other, less clearly evident issues are masked. The results of this study support the literature findings. Respondents indicated that they preferred public health education that was personally applicable. However, there were a small number of public health workshops that provided information that the attendees did not initially think was relevant, but that they later learned was relevant when health diagnoses were made.

According to the literature, public health initiatives and deliverables designed to promote those initiatives can also be an effective tool in distributing public health information (May et al., 2019; Muscat et al., 2016; Greenberg et al., 2017). However, this may not be as effective in rural regions, which are more community-driven than initiative-driven (Morabia, 2020). Interestingly, the responses of the research participants both agreed and disagreed with the information supported by recent literature. Respondents indicated that several large-scale public health initiatives, such as tobacco cessation or efforts to stop drinking and driving, were intermittently successful in their rural community. However, other efforts, like encouraging young mothers and pregnant women to sign up for the WIC program, were largely effective. Public health initiatives to promote foot care for diabetics was also effective, as there is a large percentage of the

community population who have diabetes. However, initiatives to encourage mass COVID-19 vaccination was largely unsuccessful in the rural community.

People who live in rural communities value personal connectedness. Public health education delivered by a trusted source, who understands the rural residents' need for personal connectedness, will have a greater likelihood of being implemented than when that education is delivered by an authoritative figure. Public health education that is personally applicable to rural residents (especially when it applies to their loved ones) will also be more readily accepted. Rural residents also value the opportunity to learn by doing, so public health education that enables them to learn via kinesthetic methods will also be more readily accepted. By understanding the needs and preferences of rural residents, public health educators can successfully deliver public health education to rural audiences.

Implications

The theoretical, empirical, and practical implications will be detailed in this section. The literature and current research findings indicate that individuals who struggle to meet their basic needs may not be able to make decisions that focus on meeting any non-essential needs in their lives. The research findings support Maslow's (1954) theory of a hierarchy of needs. Additionally, the lack of literature review relating to rural public health education places a greater value on the findings of this research. The implications of the theoretical and empirical foundations used to frame this research project will be explained in the following section.

Theoretical Implications

The theoretical framework for this study was based on Abraham Maslow's theory of motivation as it related to a hierarchy of human needs (1954). Maslow's theory of a hierarchy of

needs indicates that all humans have needs that exist in five-tiered layers. These tiered needs, in order from lowest-level to highest-level include: physiological, safety, social, esteem, and self-actualization. Each tiered level of needs must be met before a higher-level tiered need can be met. For example, if the need for safety cannot be met, then esteem needs cannot be met.

People make decisions within the framework of the needs that they want to meet (Herzberg, 1996). For example, if someone perceives that they are hungry (physiological need), then they will seek out something that will meet that perceived need. Namely, they would likely find food and then eat it to meet that perceived need of physical hunger. Although the lower-level needs like physiological or safety needs may seem more straightforward, thus providing the implication that meeting these needs should also be straightforward, the reality is that the process of meeting lower-level needs can be challenging (Greenberg et al., 2017).

One example of this is in the context of public health education. A recommendation may be made that it would be beneficial for a young mother to attend a workshop to learn food preservation skills and be able to socialize, thus helping her meet physiological and social needs. However, if she is stuck on the lowest-level need for physiological support, she may not be capable at that time of pursuing those options. If lower-level needs continue to go unmet, then people can be prevented from successfully being able to meet their higher-level needs (May et al., 2019).

The social conditions that affect the meeting of these needs – especially the lower-level needs – are also known in the field of public health as social determinants of health (Greenberg et al., 2017). Social determinants of health include economic stability, the social and community context of a region, access to affordable and quality healthcare, access to education, and the

conditions of the neighborhood in which people live. For rural residents, there is a higher likelihood that they will experience some of the contributing social factors that impact successfully meeting lower-level needs. This study found that this was true with many of the participants.

For many impoverished rural residents, the process of meeting lower-level needs can be challenging, as many of what the general population might consider necessities like affordable food, clean water, heat, and shelter, are sometimes a struggle to acquire or sustain (Nierenberg & Ward, 1975). This struggle to meet basic needs is exacerbated by the lack of abundant reliable, year-long, benefit-granting employment in rural regions, coupled with the dearth of amenities accessible within an easy community distance, as indicated by several of the research participants. Each participant indicated in their responses that they were in some way experiencing challenge to meet their basic needs, either directly or indirectly.

This struggle to meet lower-level needs is not solely experienced by individuals from one specific age bracket but, instead, is reflected by individuals of all ages (May et al., 2019). Several seniors who were interviewed for this research project indicated that a lack of easily affordable senior housing in their hometown presented a challenge to seniors who wanted to stay socially connected with their friends and families. Furthermore, the challenge of having to drive comparatively long distances to access any amenities, like grocery stores, the senior center, or their pharmacies, also added to the challenge of meeting their basic needs. One respondent indicated that the only jobs that were locally available for teens and young adults were seasonal jobs that paid minimum wage, employment that could not fully support the basic needs of an individual or of a family.

When individuals focus on meeting their lower-level needs, their continued growth and development can be negatively affected (Maslow, 1954, Herzberg, 1996). This can prevent people from pursuing public health education for the skills and knowledge to meet their lower-level needs. For people to continue to grow and attain their higher-level needs, they need to experience motivators (Flannelly et al., 2011). This study's findings support that concept. Some of the research participants who were interviewed for this project indicated external motivators that had prompted them to actively pursue public health education and then implement what they had learned. For most research participants, the external motivators presented as a health challenge (e.g., illness, injury, or chronic condition) experienced by a loved one. The second most prevalent external motivator was a health challenge that had been personally experienced and that had potentially prevented the research participant from being able to care for or enjoy time with a loved one.

A chronic distrust of outsiders and authority figures is another characteristic of many residents of rural, mountainous regions that often prevents residents from seeking or accessing resources, such as public health education, that could help them attain their higher-level needs (May et al., 2019). This study's findings also supported this concept, as every respondent indicated that they would not enjoy or implement what they had learned from public health education if they did not feel that the instructor was taking the time and trying to connect with them. For many rural residents, socialization is fundamentally important. As such, as this study's findings indicated, incorporating the concept of social connection into public health education may help to overcome the barrier of distrust between instructors and recipients of public health education (Nierenberg & Ward, 1975).

Although it may appear to be a straightforward concept to ensure that the needs of individuals are met, the actual process of meeting those needs can be convoluted and challenging (Maslow, 1954). When considering needs within a public health context, the social determinants of health are often used to help frame the needs of the members of a community (Greenberg et al., 2017). Although it is generally understood that there are specific needs characteristic to rural populations, there is also a notable dearth of established literature relating to public health education designed for or delivered to rural residents. As such, the findings of this study provide an important insight into a very real ongoing problem.

Empirical Implications

Although the field of public health education is a relatively modern one, it is one that is present – and active – throughout the United States (Frenk et al., 2015; Ebu et al., 2019). As public health education exists to provide members of the public with information, knowledge, and skills to help support a healthy lifestyle, that information is only helpful if it is implemented by the recipients of that education. As such, the information delivered through public health educational efforts and the mode of education used to deliver public health educational efforts are equally important.

Many public health educational efforts are designed for delivery to urban populations since that demographic reflects the greatest population density (Fox et al., 2019). Since rural populations are sparsely populated, they, therefore, are not able to provide grantors or other funding sources with the large numbers of program participants who are desired when conducting research or outreach efforts. As a result, those populations are often overlooked by

empirical literature relating to public health (Frenk et al., 2015). It is for this very reason that any information regarding public health educational efforts in rural populations is so important.

Modern public health education is usually delivered to the public in person or remotely (Hodgson et al., 2020). Although COVID-19 restrictions prevented many in-person educational opportunities during 2020-2021, mandating remote education, that mode has not historically been widely used among rural residents. A lack of cellular service and internet access in many rural regions is one predominant factor for this lack of remote public health education, but a preference for face-to-face socialization by many rural residents is another (Van Houwelingen-Snippe et al., 2021). This preference was supported by the data from this research. All research participants overwhelmingly preferred in-person education over remote education. They all valued the personal connectedness that corresponded with in-person instruction, including feeling more connected with the instructor, having the ability to ask questions, and being able to attend public health educational workshops or classes with someone else. Although each respondent had also participated in remote public health education, none preferred remote education over in-person education.

The topics covered by public health education are selected to meet a specific need for a target audience (Hoehn-Velasco, 2020). For this reason, needs assessments are often conducted prior to holding any public health workshop. The rationale behind this is that if a health need has been identified in the community, then the members of the community will be more inclined to attend the public health workshop since the information that will be relayed will be personally applicable to their health situation. The findings from this study supported these claims. Every research participant indicated that the personal applicability of public health education was

extremely important to them. None wanted to learn if the information that they were learning did not correspond to either their own health needs or the health needs of a loved one.

Although infographics and interactive apps can be used to help support public health educational efforts (Zhang, 2020), there is not much literature to support their use in rural regions. Perhaps unsurprisingly, given the overwhelming preference of research participants for in-person public health education instead of remote public health education, apps and infographics were not valued by the respondents. Although several had used those tools before, every respondent preferred to be able to learn directly from a person. Similarly, the nature of the in-person public health educational design also supported the preference of many rural residents for socialization (Muubuke, 2017). Instead of simply sitting and listening, research respondents indicated that they preferred education where they could learn by doing. In addition to asking questions, they wanted to be able to engage in experiential learning opportunities, manipulating items, and learning through kinesthetic opportunities whenever possible.

Although much of the current literature explores facets of public health education, from design and delivery, to exploration of innovative strategies to address underlying health conditions, very few, if any, consider the perspective of the problem of noncompliance on the part of recipients of public health education to implement what they have learned. Additionally, very few examples of current literature explore rural public health education (Muubuke, 2017). These factors make the findings of this research project even more significant. The responses of the rural research participants provided insight as to what they valued most in public health education – personal connectedness and personal applicability of information. Conversely, their responses also provided insight as to factors of public health education that would make them

less likely to enjoy or implement what they had learned. This data is invaluable and provides public health educators with a rare insight into rural public health education that can, hopefully, help to start reshaping the field of public health education, making it more applicable to the preferences and needs of rural residents.

Practical Implications

This study provided practical implications for public health educators, rural public health professionals, and individuals who design and/or write public health lesson plans or curricula designed for rural audiences. Rural residents have health needs that can be addressed by public health education. However, if that information is not designed or delivered in a way that is accepted by those rural residents, then it will not be usable, and therefore, will not benefit the target population.

The first practical implication is for any educator involved in rural public health education to expect to invest time spent in socialization and personally connecting with their intended target audience. Rural residents characteristically value socialization and relationships. Although they can, and often will, view people who are not from their communities as outsiders, they will listen to what those outsiders have to say, if those outsiders try at connecting with their rural audience. In practical terms, connecting means talking with rural residents, outside of the actual public health lesson, asking them questions about their families, their hobbies, and their communities. Connecting also means listening to their stories, politely, and with interest. Additionally, connecting means sharing back with rural residents, so public health educators and professionals should be willing to share information about their lives with rural residents. If time

is taken to personally connect with rural residents, then any information that is shared will have a greater chance at being accepted.

The second practical implication is to ensure that public health education intended for rural audiences is designed to be highly interactive. In fact, the more interactive it is, the better. Rural audiences prefer to be highly involved in activities, learning through hands-on experiences and asking many questions. Rather than designing a lesson where the audience is expected to sit and listen and possibly ask questions at the end of the presentation, rural public health education should incorporate plentiful opportunities for questions throughout a lesson. Additionally, it should also incorporate experiential learning opportunities for anyone who would like to participate.

The third practical implication is that rural residents value public health education that is personally applicable to them. As such, rather than conducting a needs assessment for a region that considers the preferences and needs of the suburban and urban populations, the successful public health professional, author of curricula, or educator should conduct a needs assessment of their rural target population. Distrust of outsiders is another potential deterrent to successfully offering rural public health education. Utilizing trusted members of their community to help gather information can be a very effective tool. If the actual and not perceived needs of rural residents are considered when designing and delivering public health education, those rural residents will be far more likely to attend the lessons, enjoy those lessons, and implement what they have learned.

Delimitations and Limitations

The decisions that are made during any research study result in delimitations and limitations. Delimitations are the boundaries that are set for the study. In this study, specific characteristics were used to remain focused on the central phenomenon. The limitations for this study are those influences that were not able to be controlled. This section discusses the delimitations and limitations that were incorporated into this qualitative study.

Delimitations

There were several delimitations that were used for this study. This research was conducted to interpret the experiences in public health education of rural residents. Purposeful sampling was used to elicit volunteers who had attended previous public health education workshops, who were rural residents, and who were older than 18 years of age. These requirements eliminated individuals who would not have met the required characteristics for this study.

Limitations

Every research study has limitations that cannot be avoided but that could potentially threaten the quality or validity of the research study (Creswell, 2018). There were several limitations present in this study. First, although the small sample size of 12 participants met the requirements for the methodology that was used, it provided a minimal example of the overall perspective of public health education by rural residents. Secondly, since every participant had attended at least one public health workshop offered by the researcher, an established, albeit limited, personal relationship existed between research participants and the researcher. Finally,

each participant resided in the same county. As such, the sample pool may not be reflective of all rural residents.

Recommendations for Future Research

This study was conducted to gain a better understanding of the lived experiences in public health education of rural residents. The participants for this study were 12 adult residents of one rural county, identified by its pseudonym, Middlesex County. All participants currently resided within the county boundaries at the time of this research, and all participants had previously attended at least one public health workshop held by the researcher. Future research should include participants from other rural counties, to determine if the lived experiences in public health education were consistent with other residents.

Since very little literature exists relating to the specifics of rural public health education, the researcher believes that more research relating to rural public health education should be conducted. Many preventable health conditions exist among rural residents; preventable health conditions that can be addressed using the information in public health education. Specifically, the researcher recommends that research into the expressed health needs of rural communities from the perspective of the rural residents would be helpful in determining future design of public health education. Additionally, the researcher recommends further research into the apparent commonality of rural residents' valuation of personal connectedness, as that factor may be fundamentally important in helping to overcome some of the barriers that are preventing rural residents from implementing public health education.

Summary

Chapter Five summarized the findings and interpretations of the guiding research questions, leading to implications for further research regarding rural public health education. The responses of research participants helped to reinforce the theoretical and empirical foundations that formed the framework for this study. One central research question and four guiding research questions helped to direct the focus of this study. Through survey responses, focus group questions, and interview questions, the researcher was able to thoroughly address each of those questions.

The findings of this study support Maslow's (1954) theory of a hierarchy of needs, which indicates that all humans have needs that exist in tiers. Lower-level needs, such as physiological needs, must be met before higher-level needs, such as self-actualization, can be met. There are multiple challenges that exist for many rural residents, preventing them from easily meeting their lower-level needs. As such, the higher-level needs that could possibly be met through public health education may go unmet, simply because many rural residents are focused on meeting their basic needs.

The findings of this study also support the findings that do exist within the current literature relating to generalized observations about public health education. There is a noted lack of literature that exists relating to either rural public health education or the non-compliance on the part of many recipients of public health education to implement what they have learned. As such, the findings from this study, namely that rural residents value personal connectedness and personal applicability of information, helps to fill the gaps left in the literature. These findings

also provide invaluable information for public health professionals, as they design and deliver public health education to rural residents in the future.

Ultimately, rural residents are as deserving of superior public health information and education as their urban and suburban counterparts. Unfortunately, most grants and other funding interests are numbers-driven, so focus on urban instead of rural populations. By pursuing research into community-centric public health needs and into successful methods of rural public health educational delivery, public health educators who deliver that education to rural populations should, hopefully, start to observe more compliance as rural residents implement what they have learned. Maybe by sharing their stories – the very stories that rural residents value so much – other public health professionals, policymakers, and grant funders will be able to perceive the value in rural public health education. Maybe, then, they will want to be part of helping rural residents find success in making healthy choices, and in living healthy lives.

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doi:10.21203/rs.3.rs-40889/v1

APPENDIX A: IRB Approval Letter

July 1, 2021

Marybeth Mitcham
Marsha Coker

Re: IRB Exemption - IRB-FY20-21-128 AN EXPLORATION INTO PUBLIC HEALTH EXPERIENCES OF RURAL RESIDENTS TO FACILITATE UNDERSTANDING OF CHRONIC POOR HEALTH HABITS: A PHENOMENOLOGICAL STUDY

Dear Marybeth Mitcham, Marsha Coker:

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:101(b):

Category 2.(ii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording).

Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation.

Your stamped consent form(s) and final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB. Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,
G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

APPENDIX B: Open-Ended Interview Questions

1. What are a few of your favorite foods?
2. What are some things that you like to do in your free time?
3. What public health education have you received?
4. What were some public health education experiences that you enjoyed?
5. What about it did you enjoy?
6. What ways did you find to use what you learned?
7. What were some public health education experiences that you did not enjoy?
8. What about it did you not enjoy?
9. What ways did you find to use what you learned?
10. What type of public health education instruction have you liked best (e.g., in-person, interactive, remote, etc.)?
11. What about it did you like?
12. What type of public health education instruction have you liked least?
13. What about it did you not like?
14. What type of public health education do you feel has provided the best information to support your health needs?
15. When considering public health education, would you consider the information or the way that the information is delivered to be more important to you?
16. What are some public health education subjects that you think you might find helpful?
17. What are some public health education subjects that you think you might not find helpful?

18. Please share anything else that you would to share or recommend about this topic.

APPENDIX C: Open-Ended Focus Group Questions

1. To start us off today, please share one good thing that has happened to you this month.
2. Think of a time when someone taught you a helpful skill like cooking or how to change a tire, and share with the group why you remember that learning experience.
3. What do you think the biggest overall needs are in the region for individuals and families?

APPENDIX D: Survey Questions

1. Describe what good health means to you.
2. What are some things that you believe people should do (or avoid doing) to remain healthy?

APPENDIX E: Recruitment Letter

Dear [Recipient]:

As a doctoral candidate in the School of Education at Liberty University, I am conducting research as part of the requirements for a Ph.D. The purpose of my research is to interpret the experiences in public health education of rural residents in [REDACTED] County, New York, and I am writing to invite eligible participants to join my study.

Participants must be 18 years of age or older and reside within [REDACTED] County, New York. Participants, if willing, will be asked to complete a pre-program briefing (5 minutes) and an anonymous online survey (10 minutes), participate in an interview (20 minutes) and in a focus group with 2 other people (40 minutes), and complete a post-program debriefing (5 minutes). Names and other identifying information will be requested as part of this study, but the information will remain confidential.

In order to participate, please contact me at [REDACTED] or on my cell phone (call or text): [REDACTED]. You can also reach me via postal mail at Marybeth Mitcham, [REDACTED].

A consent document will be emailed, mailed, or handed to you before the study procedures begin. The consent document contains additional information about my research. If you choose to participate, please sign the consent document and return it to me by email or mail.

Participants will each receive a \$20 gift card to Stewart's Shops.

Sincerely,

Marybeth Mitcham, MPH
Doctoral Candidate, Ph.D., Resource Educator

[REDACTED]

APPENDIX F: Consent Form

Consent

Title of the Project: An Exploration into Public Health Experiences of Rural Residents to Facilitate Understanding of Chronic Poor Health Habits: A Phenomenological Study

Principal Investigator: Marybeth Mitcham, MPH, Doctoral Candidate, Ph.D., Liberty University, and Resource Educator at ██████ Cooperative Extension of ██████ County

Invitation to be Part of a Research Study

You are invited to participate in a research study. In order to participate, you must be over 18 years old and a resident of ██████ County, New York. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

What is the study about and why is it being done?

The purpose of the study is to interpret the experiences in public health education of rural residents in ██████ County, New York. Since public health education is only effective if people who receive that education start to do what they have learned, this study should help public health professionals to know how to more effectively design their education so that it will be well received by their target audience.

What will happen if you take part in this study?

If you agree to be in this study, I would ask you to do the following things:

1. Complete a pre-program briefing (5 minutes).
2. Take an online survey (10 minutes).
3. Participate in an interview (20 minutes).
4. Participate in a focus group with 2 other people (40 minutes).
5. Complete a post-program debriefing (5 minutes).

Briefing, interviews, and focus groups will be conducted online via Zoom, and will be recorded (an audio transcript, not a video).

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include the knowledge gained from this study that will enable public health educators to more effectively design their educational efforts.

What risks might you experience from being in this study?

The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be kept confidential through the use of pseudonym-based identifiers. Interviews will be conducted in a location where others will not easily overhear the conversation.
- Data will be stored on a password-locked computer, only accessible to the researcher, and may be used in future presentations. After three years, all electronic records will be deleted.
- Debriefings, interviews, and focus groups will be audio recorded and transcribed. Recordings will be stored on a password locked computer for three years and then erased. Only the researcher will have access to these recordings.
- Completed surveys will not contain any identifiers.
- Confidentiality cannot be guaranteed in focus group settings. While discouraged, other members of the focus group may share what was discussed with persons outside of the group.

How will you be compensated for being part of the study?

Participants will be compensated for participating in this study. Each participant who completes this study will receive a \$20 gift card to Stewarts Shops. Names and mailing addresses will be requested for compensation purposes; however, they will be pulled and separated from your responses to maintain your anonymity.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University or ██████ Cooperative Extension. If you decide to participate, you are free to not answer any question or withdraw at any without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Marybeth Mitcham. You may ask any questions you have now. If you have questions later, you are encouraged to contact her at [REDACTED]. You may also contact the researcher's faculty sponsor, Dr. Marsha Coker, at [REDACTED].

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

The researcher has my permission to audio record me as part of my participation in this study.

Printed Subject Name

Signature & Date